

# TV ERF PLOT – DORMAN POINT, FORMER STEELWORKS, REDCAR

DRAFT Interim Remediation and Earthworks Verification  
Report

South Tees Development Corporation  
10035117

JULY 2021



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# DRAFT Interim Remediation and Earthworks Verification Report – ERF Plot - Dorman Point

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## VERSION CONTROL

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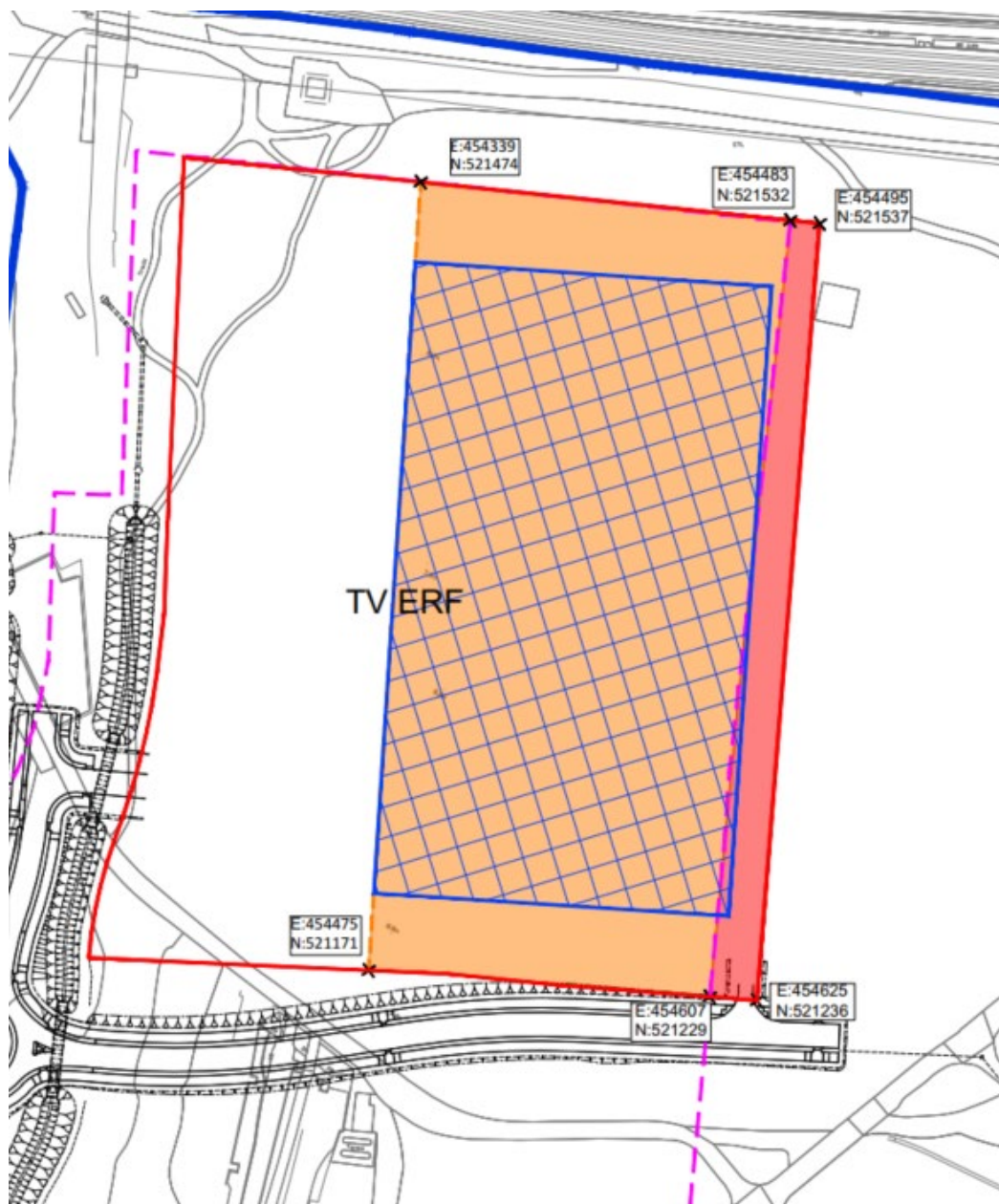
# 1 Introduction

## 1.1 Background Information

In March 2021, Arcadis (UK) Limited (Arcadis) was commissioned by South Tees Development Corporation (STDC) to verify that the enabling earthworks and remediation activities undertaken at the Dorman Point area of the Teesworks site have met the agreed remediation objectives. The “Site” as referenced within this report relates to a portion of the Dorman Point site which is due to become the Tees Valley Energy Recovery Facility (TV ERF) plot (presented in TSWK-STDC-DMP-P1-C-0006 (Appendix A) and below).

The site is located within the Teesworks Site indicative postcode TS6 6TZ, and the centre point of site at 454413, 521365. The site is located in the northwest of the wider Dorman Point development area (Figure 1 in Appendix B).

*Teesworks Drawing TSWK-STDC-DMP-P1-C-0006 - TV ERF plot. Redline indicates plot boundary. Pink dashed line indicates contractor's original tender boundary. Blue hatched relates to TV ERF Priority Remediation Area.*



Remediation has been undertaken to address the presence of asbestos fibres in soils and non-aqueous phase liquids (NAPL) when excavated as part of enabling earthworks to prepare a development platform for further redevelopment.

The remediation works were conducted voluntarily by STDC prior to the proposed leasing of the freehold of the Site for redevelopment. It is understood that the lease proposes to construct an energy from waste recovery facility. Full details of the proposed development are not currently available.

In conducting environmental works at the Site, consideration has been given to the Department of the Environment Food and Rural Affairs (DEFRA) and the EA's Land Contamination: Risk Management, May 2020 (LC:RM) and Verification of Remediation of Land Contamination (EA, 2009) and with reference to English legislation and regulatory guidance.

## 1.2 Report Objectives

The objective of this interim verification report is to provide the prospective lessee information on the extent of works carried out to date (9<sup>th</sup> July 2021) and to demonstrate through multiple lines of evidence that the enabling earthworks completed to date (9<sup>th</sup> July 2021) have met the objectives of the project and the remediation works have achieved the agreed remediation criteria and objectives, and that no further remedial intervention is required at the Site based on a future commercial / industrial end use.

A further report will be issued on completion of the full remedial works at the site.

## 1.3 Previous Environmental Works

The Site has undergone a series of intrusive environmental investigations, and risk assessment as part of a wider investigation. The environmental works to date conducted are detailed below.

- Arcadis 2020a. Phase II Environmental Site Assessment, Grangetown Prairie Area, Former Steelworks, Redcar, prepared by Arcadis for STDC, Ref 10035117-AUK-XX-XX-RP-ZZ-0062-01-Prairie\_ESA dated June 2020
- Arcadis 2020b. Remediation Options Appraisal, Enabling Earthworks and Remediation Strategy Report, Grangetown Prairie Area, Former Steelworks, Redcar, prepared by Arcadis for STDC, Ref 10035117-AUK-XX-XX-RP-ZZ-0066-01-Prairie ROA and Strategy dated June 2020
  - Including summary 10035117-AUK-XX-XX-CO-ZZ-0261-04-Prairie\_Rem\_Summary (Arcadis 2021a)
- Arcadis 2020c. Detailed Conceptual Site Model Review and Risk Assessment, Grangetown Prairie Area, Former Steelworks, Redcar, prepared by Arcadis for STDC, Ref 10035117-AUK-XX-XX-RP-ZZ-0088-01-Prairie\_Risk\_Assessment, dated July 2020
- Arcadis 2020d. Earthworks Specification; Grangetown Prairie Site, Redcar, prepared by Arcadis for STDC, Ref 10035117-AUK-XX-XX-RP-ZZ-0171-01-Earthworks\_Spec, dated September 2020.
- Arcadis 2020e. Phase II Environmental Site Assessment – Addendum, Grangetown Prairie Area, Former Steelworks, Redcar, prepared by Arcadis for STDC, Ref 10035117-AUK-XX-XX-RP-ZZ-0117-01-Prairie\_ESA\_Addendum, dated November 2020
- 4251 - Prairie Site Ground Investigation Works (Final Report r01), Prepared for Hartlepool Borough Council by Allied Exploration & Geotechnics Ltd (AEG), Ref 4251, dated November 2020
- 4289 - Tees Valley, Energy Recovery Facility - Updated Draft Report Rev.01 Prepared for South Tees Development Corporation by Allied Exploration & Geotechnics Ltd (AEG), Ref 4289, dated November 2020
- Eston Road Intrusive Works, Final Factual Report (Rev. 00), Prepared for South Tees Development Corporation by Allied Exploration & Geotechnics Ltd (AEG), Ref 4287, dated November 2020
- Enviro 2004. Soil and Groundwater Baseline Characterisation Study, Teesside Works, prepared by Enviro for Corus UK Ltd, Comprising:
  - Volume 1 – Factual Report, Ref. Rlp250604corusteessidefactual.Doc dated 25th June 2004 and marked Final;
  - Volume 2 – Interpretive Report Ref. Mwicorusdraftinterpretivemmdv#2.Doc dated 25th June 2004 and marked Final; and,
  - Volume 3 – Summary Report dated June 2004

- Enviro 2007. Corus Cleveland Prairie Teesside Site Phase I Environmental Review, prepared by Enviro Consulting Ltd. for Graphite Resources, Ref. GR1280001 dated August 2007
- Enviro 2008. Phase II Geo-environmental Assessment at Corus Cleveland Prairie Teesside Site, prepared by Enviro Consulting Ltd. for Graphite Resources, Ref. GR1280001 dated March 2008
- Shadbolt 2011. Prairie Site, Off Clay lane – Ground Investigation Factual Report, Prepared for One North East by Shadbolt Environmental dated July 2011
- MD2 2011. Former Corus Cleveland Prairie Site: Land off Clay Lane – Ground Investigation Interpretative Report, prepared by MD2 for One North East, Ref MD2\_113 dated 25th July 2011
- CH2M 2017. TS3 Grangetown Prairie – Phase 1 Geo-Environmental Desk Study, prepared by CH2M Hill for the Homes and Communities Agency, report ref. 678079\_TS3\_001 dated August 2017 and marked Final

This report should be read in conjunction with the previous environmental reports as the information contained in those reports forms the basis of the conceptual model for the Site.

## 1.4 Reliability of Information/ Limitations

This report is only valid when read in its entirety. Any information or advice included in this report should not be relied on unless considered in the context of the whole report. Reference should be made to the notes on study limitations at the end of this report.

A copy of Arcadis' study limitations is presented in Section 11.

***At the time of writing earthworks and remedial works within the TV ERF Plot are still ongoing. This DRAFT interim report relates to data received prior to 9<sup>th</sup> July 2021.***

## 1.5 User Reliance

There are neither third party rights nor benefits conferred under this report. Use of this report is strictly limited to STDC, who are the sole party to whom Arcadis intends to confer any rights. Any reliance on the contents of this report by any other party is the sole responsibility of that party.

## 2 Site Characteristics

Full details of the wider environmental characteristics of the Site are presented in the Risk Assessment (Arcadis 2020c) and Remediation Options Appraisal (Arcadis 2020b), with a summary provided in this section.

### 2.1 Site Description and Setting

The Site is approximately 9 hectares in size and is located in the northwest corner of the wider Dorman Point site, and surrounded by Teesworks land on all sides. To the north of the site is a Teesworks utilities corridor and the Darlington to Saltburn Railway, on the other three sides the site is surrounded by Teesworks land undergoing remediation as part of the wider Dorman Point enabling earthworks. Prior to the earthworks the Site has been demolished to slab level with concrete foundations, roadways and crushed aggregate including steelmaking biproducts forming the bulk of the site surfacing which was covered by scrub in places.

The site was broadly level with the exception of isolated bunds and mounds associated with historic use (former blast furnaces). The works described herein will once complete result in the site being levelled to 9m above Ordnance Datum (AOD) create a development platform.

Holme Beck is culverted just beyond the western boundary of the site and works will be undertaken to open up the culverted stream to form the western boundary of the Site.

### 2.2 Geology

The geological setting of the Dorman Point site is discussed in detail within the ESA (Arcadis 2020a) and a summary is provided below.

Made Ground was found covering the entire footprint, with the majority of the site covered by between 1 and 4m of Made Ground. Areas of deeper Made Ground were noted, particularly in the area of the No. 3 Primary Mill on the north of the TV ERF site, and around the former blast furnaces.

Obstructions including slabs and foundations prevented the base of the Made Ground being proven in a number of locations across the Site (frequently associated with concrete or brick slabs).

Three types of Made Ground were noted across the wider site:

- **Slag-dominant material (>50% slag):** The slag was generally vesicular and grey-green in colour with some white crystallisation/dicolouration often noted on the outer surface along with occasional iron rich areas.
- **Granular Made Ground:** Identified widely across the site of varying composition, most frequently a sandy gravel with varying cobble content, although occasionally also clayey. Gravel and cobbles include brick (including refractory), concrete and other demolition materials, slag was not the dominant constituent although often still present within the soil matrix.
- **Cohesive Made Ground:** identified below the granular Made Ground and comprising a sandy and or gravelly clay with demolition materials within the matrix.

Generally, the Made Ground deposits were generally underlain by a sequence of superficial deposits comprising Tidal Flat Deposits over Glaciolacustrine Deposits, over Glacial Till. The bedrock underlying TV ERF portion of the site is the Mercia Mudstone formation.

### 2.3 Hydrogeology

Groundwater was frequently noted within the Made Ground at depths as shallow as 0.4m bgl; inflow rates ranged between low to heavy. Typically, groundwater was noted to be at a shallower depth in the north of the Site and is considered to be locally confined within relict sub surface structures and more permeable granular Made Ground and is not considered to represent a consistent groundwater body across the site.

Groundwater was identified in both the Superficial Deposits and bedrock, inferred groundwater flow is outlined in the table below:



Geology	Aquifer Classification	Groundwater flow
Tidal Flat Deposits	Secondary (A) Aquifer	Not confirmed, aquifer of limited thickness
Glaciolacustrine Deposits	Non-aquifer	Flow dictated by localised preferential pathways
Glacial Till	Non-aquifer	
Mercia Mudstone	Secondary (undifferentiated) Aquifer	North to north-east

## 2.4 Hydrology

The closest surface water feature to the site is the Holme Beck which runs just beyond the western edge of the site, the watercourse is culverted as it passes the Site and ultimately discharges into the River Tees via the SLEMS.

Works to daylight sections of Holme Beck are being carried out as part Development works to provide new highway access to the Dorman Point area.

## 2.5 Pre-Remediation Contaminant Distribution

The GQRA conducted within the ESA (Arcadis 2020a) considers the broader Dorman Point site. Within this section the extent of contamination is summarised to the TV ERF plot.

### 2.5.1 Human Health

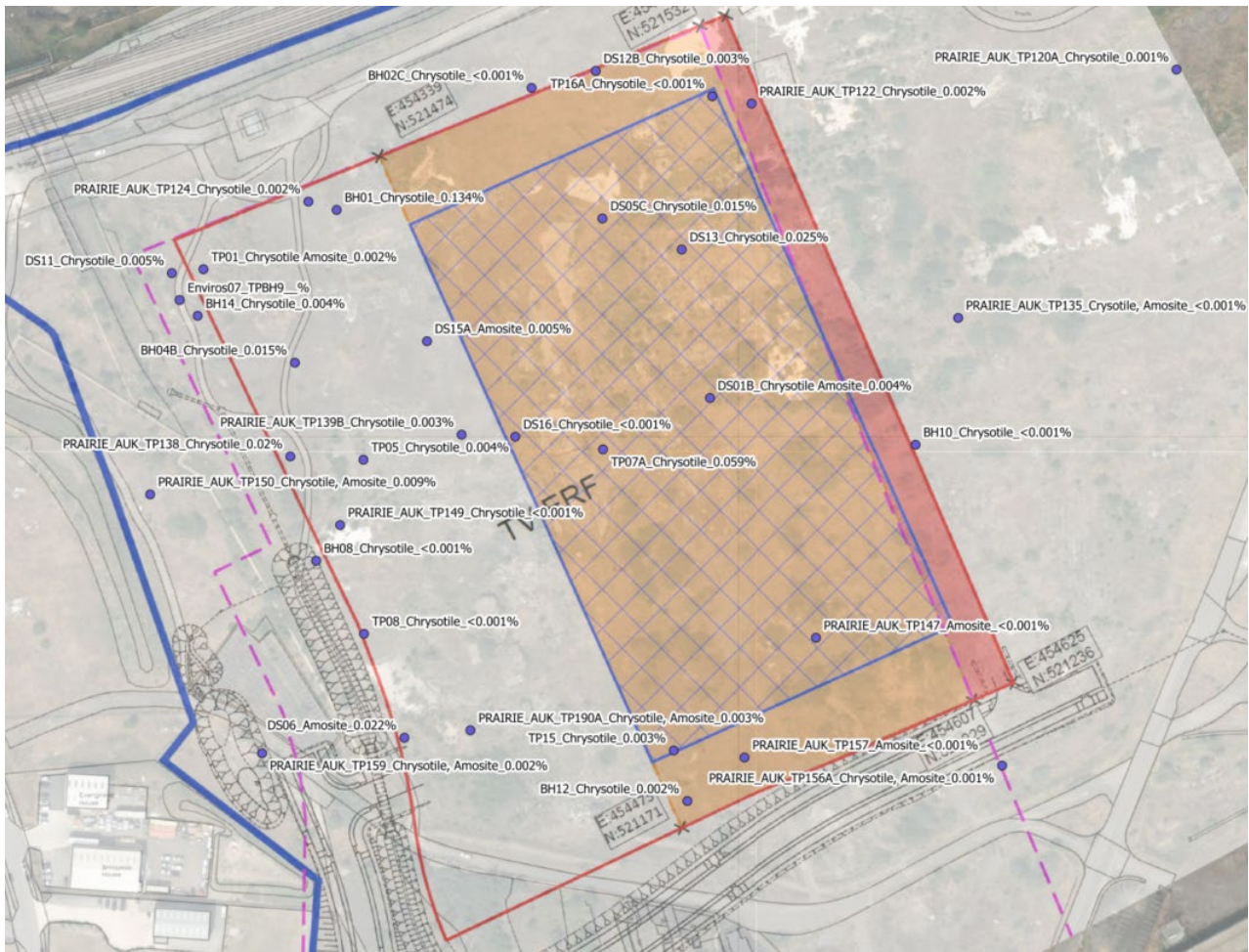
#### Asbestos in Soils

Asbestos was identified in approximately 25 samples and widely distributed across the Site. Asbestos was predominantly in the form of free fibres (chrysotile and amosite) within the Made Ground.

The asbestos was present at levels up to 0.134% by mass (Stantec TP01) although 8 of the samples were below the limit of quantification (0.001%).

The asbestos locations are presented in Figure 2 in Appendix B and below.

Figure 2: TV ERF Plot asbestos detections. Tags = Location ID\_Asbestos Type\_% by volume of sample



### Contaminants

Within the TV ERF plot a limited number of samples were found to contain levels of PAH (dibenzo(a,h)anthracene, benzo(a)pyrene) above the adopted screening criteria. These exceedances were identified within the upper 0.5m of Made Ground. On the wider Dorman point site isolated levels of arsenic, dibenzofuran, naphthalene, and other PAH were measured above the screening criteria and these contaminants are considered as part of this report.

### NAPL

Hydrocarbon contamination (odour and sheen) predominantly within the upper 3m bgl was identified within the TV ERF plot during the AEG 2020 investigation (AEG 4289).

Tar and NAPL have been identified within intrusive locations around the TV ERF plot to the east and to the south.

### **2.5.2 Water Resources**

Remediation was not considered necessary to address risks to Controlled Waters in line with the conclusions of section 9.2 of Arcadis 2020c.

## 3 Conceptual Site Model

A Conceptual Site Model (CSM) was developed and evolved during the environmental works undertaken at the Site in order to conceptualise Source Pathway Receptor (SPR) linkages as well as identify and address uncertainties relevant to understanding sub surface conditions and potential risks to identified receptors.

### 3.1 Environmental

The ESA (Arcadis 2020a, Arcadis 2020c, and Arcadis 2020e) developed a conceptual site model (CSM) based on ground investigation findings. The CSM identified a number of potentially active source-pathway-receptor (SPR) linkages the significance of which was assessed by comparison to appropriate generic screening criteria.

The identified SPR linkages for the TV ERF plot were:

- Human Health - Risk to commercial workers via inhalation of asbestos fibres, originated from shallow Made Ground across the site.
- Human Health - Risk to commercial workers via dust inhalation and direct contact with soils for selected PAH, originated from shallow soils across the site.

#### 3.1.1 Ground Gas

The ESA did not identify an unacceptable risk to human health or built receptors from the accumulation of ground gas. However, as the ground investigation was not designed with a particular redevelopment scenario in mind, the gas data monitoring was limited and may not be representative of the entire extent of the site under a particular redevelopment.

Additional ground gas monitoring at greater density may be required

prior to any specific redevelopment to determine the risk from ground gases on the site, the scope of this investigation would depend on the proposed redevelopment scenario. Arcadis understand from STDC that it is expected this would be the responsibility of the developer.

#### 3.1.2 Geotechnical

It is not the intention of STDC that the remediation and enabling earthworks address geotechnical risks associated with the site, however the enabling works have been designed to deal with shallow obstructions / relic structures which may be present at the site.

It is anticipated that other geotechnical constraints identified such as variable ground conditions, elevated sulphates etc., will be dealt with by engineering controls to be incorporated in the detailed building design.

The enabling works will allow for removal (as far as practicable) of oversize slag and refractory materials, however such materials may remain present within Made Ground.

#### 3.1.3 Management of Slag Deposits

STDC have not conducted remedial works to address the geotechnical risks associated with expansive slag and refractory materials, both of which have been identified within Made Ground (Arcadis 2020a). Although STDC have attempted to re-use slag rich deposits outside the TV ERF plot as far as reasonably practical. In addition, expansive slag and refractory materials are considered to be present in minor quantities in all Made Ground deposits.

## 4 Enabling Earthworks

Enabling earthworks are ongoing at the site to produce a development platform at 9.0mAOD suitable for redevelopment. The required remediation works to address the SPR linkages detailed in Section 3.1 are being conducted in parallel to the enabling earthworks and are designed to be complimentary to this process.

### 4.1 Creation of Development Platform

To facilitate redevelopment, STDC are in the process of preparing the TV ERF development plot by creating a formation layer suitable for a generic commercial / industrial redevelopment at 9.0m AOD. This involved turning over Made Ground to a depth of 2.5m below the development platform (i.e. to 6.5m AOD for the TV ERF plot) level including the removal of sub-surface obstructions and placement of bulk fill to form development levels.

Where sub surface obstructions within the Made Ground were noted to extend >2.5m below the formation layer, with the exception of piles, these were removed. The position of any piles or structures left in situ were recorded.

Excavated soils, including slag deposits and relic underground structures and foundations were processed for reuse as bulk fill. Where encountered, the works included the removal and treatment of perched water encountered in the Made Ground, and remedial activities to address environmental contamination. Materials suitable for reuse will be used as backfill within the excavation to an engineered specification (Arcadis 2020e).

### 4.2 Removal of NAPL

Where encountered, as part of the enabling earthworks soils containing visible / suspected NAPL or tars were excavated (including if required >2.5m below formation level) regardless of whether the risk assessment indicated a risk to human health.

These materials were segregated pending treatment to remove the NAPL element before reinstatement if confirmed as suitable fill based on the screening criteria. Due to the timescales of the TV ERF site no treated soil has to date been used as backfill.

### 4.3 Materials Management

Earthworks were conducted under CL:aire Definition of waste Code of Practice (DoWCoP) to maximise the sustainable reuse of excavated soils throughout the project, as detailed in the MMP for the works:

- Arcadis 2020d; 10035118-AUK-XX-XX-RP-ZZ-0119-02-Prairie\_MMP\_inc appendices (reuse and removal of site won material)
- Atkins 2021; Tunnel Arisings MMP Rev 3 Final w appendices (direct transfer of natural occurring material (mudstone) and placement of material)
- Environment Agency 2013; WRAP quality protocol – aggregates from inert waste (processing of site won concrete for reuse)

## 5 Remediation Objectives

The aim of the remediation works at the site is to address the identified development constraints pertaining to environmental ground conditions and to facilitate redevelopment for a generic future commercial / industrial end use.

The remediation works were undertaken at the same time as enabling earthworks (detailed in Section 4) to create a suitable formation level, and therefore should be considered holistically with these works.

### 5.1 Remediation Objectives

The remediation objectives will be achieved by controlling or breaking the identified SPR linkage in order to mitigate identified risks to the identified environmental receptors. The remediation objectives are to:

- Manage the contamination in excess of screening levels identified in Arcadis 2020a.
- Manage the identified pollutant linkage identified between asbestos in shallow Made Ground such that that exposure pathway for on-site commercial workers is inactive.
- Maximise the reuse of excavated NAPL impacted soils by making them suitable for use under DoWCoP.

### 5.2 Remediation Approach

#### 5.2.1 Capping

To break the exposure pathway for PAH (exc. naphthalene), arsenic, benzofuran, and asbestos a cap is required to prevent direct contact and inhalation via dust generation. Processed soils and aggregates containing these contaminants may be used as fill below the cap as the pollutant linkage is not considered active.

The final cap design will be dependent on the final development proposals. In the absence of detailed design plans and to facilitate development STDC will install a temporary cover system across the footprint of the site comprising 200mm of certified asbestos free imported materials or recycled aggregates with contaminant levels below the screening criteria. Any subsequent decision to incorporate the temporary capping layer as an integral part of the permanent development capping solutions, will be for the TV ERF developer to determine.

The cap to be installed by STDC will not serve the purpose of a long term remedial solution but a measure to prevent exposure to site users between the completion of remediation and the start of the TV ERF development works. A compliant long-term capping system within the TV ERF Plot shall be incorporated within the development design and will depend on the final layout of buildings, hardstanding, and green space.

#### 5.2.2 NAPL Removal

The exposure pathway for naphthalene is considered to be addressed by the removal of NAPL as part of the enabling earthworks Section 4.2.

### 5.3 Remediation Criteria

The following Remediation Criteria have been developed for Human Health receptors at the Site (in order of priority):

- No asbestos fibres in surfacing materials (upper 600mm) at the site,
- 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)

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 and the use of the LQM S4ULs were acceptable to the regulator for this site.



The following Remediation Criteria have been developed for NAPL removal:

- No visual NAPL within soil matrix;
- Negative result with a qualitative field screening NAPL test kit; and,
- Laboratory testing indicates soils do not exceed the assessment criteria produced for the site.

### 5.3.1 Lines of Evidence

Multiple lines of evidence have been assessed to demonstrate that the remediation objectives and criteria have been achieved and to provide confidence that the risks from each pollutant linkages have satisfactorily been managed, as detailed in the table below.

Relevant Pollutant Linkage	Remediation Criteria	Lines of Evidence for Remediation Verification
<ul style="list-style-type: none"> <li>• Human Health - Risk to commercial workers via inhalation of asbestos fibres, originated from shallow Made Ground across the site.</li> <li>• Human Health - Risk to commercial workers via dust inhalation and direct contact with soils for selected PAH, originated from shallow soils across the site.</li> </ul>	<ul style="list-style-type: none"> <li>• No asbestos fibres in surfacing materials (upper 200mm) at the site</li> <li>• LQM/CIEH Suitable for Use Levels (S4UL) (LQM / CIEH, 2015),</li> <li>• Department of Environment Food and Rural Affairs (DEFRA) Category 4 Screening Levels (C4SL) (DEFRA, 2012),</li> <li>• Arcadis derived generic assessment criteria based on CLEA v1.07,</li> <li>• Wood derived GAC based on CLEA v1.07</li> <li>• United States Environmental Protection Agency (U.S. EPA) Regional Screening Levels (RSLs)</li> </ul>	<ul style="list-style-type: none"> <li>• Soil sampling – measured concentration of asbestos fibres in surface soils comprising a temporary clean cover system (upper 200mm) less than the method detection limit (0.001%).</li> <li>• Soil sampling – measured concentrations within emplaced / in-situ soil not to exceed Remediation Criteria</li> <li>• Field Screening - of soil samples with a photo ionisation detector (PID)</li> </ul>
<ul style="list-style-type: none"> <li>• Human Health - Risk to commercial workers via inhalation of naphthalene associated with NAPL, originated from Made Ground across the site.</li> </ul>	<ul style="list-style-type: none"> <li>• No visual NAPL within soil matrix;</li> <li>• LQM/CIEH Suitable for Use Levels (S4UL) (LQM / CIEH, 2015),</li> <li>• Department of Environment Food and Rural Affairs (DEFRA) Category 4 Screening Levels (C4SL) (DEFRA, 2012),</li> <li>• Arcadis derived generic assessment criteria based on CLEA v1.07,</li> <li>• United States Environmental Protection Agency (U.S. EPA) Regional Screening Levels (RSLs)</li> </ul>	<ul style="list-style-type: none"> <li>• Negative result with a qualitative field screening NAPL test kit;</li> <li>• Laboratory testing indicates soils do not exceed the assessment criteria produced for the site.</li> </ul>

## 6 Enabling Earthworks and Site Remediation Summary

This section provides a brief overview of remediation works undertaken at the Site.

### 6.1 Enabling Earthworks

A watching brief from Arcadis was conducted throughout the earthworks to ensure the Earthworks Specification (*Arcadis 2020e*) was followed.

#### 6.1.1 Dates

The enabling earthworks completed to date comprised:

- Excavation, processing and stockpiling of potential fill - August 2020 – 9<sup>th</sup> July 2021 (ongoing)
- Arcadis verification of excavation extents - 9<sup>th</sup> November 2020 – 9<sup>th</sup> July 2021 (ongoing)
- Arcadis verification of potential fill materials - 9<sup>th</sup> November 2020 – 9<sup>th</sup> July 2021 (ongoing)
- Arcadis verification of Contractor backfilling and compaction to create development platform – 17<sup>th</sup> February 2021 – 9<sup>th</sup> July 2021 (ongoing)

#### 6.1.2 Earthworks Approach

The Contractor has carried out excavation works in line with Section 4.1. Up to 9<sup>th</sup> July 2021, information provided by the contractor indicates total earthworks excavation volumes of 307,905m<sup>3</sup>. The extent of the excavations on 25<sup>th</sup> June 2021 is shown on Contractor drawing [Arcadis Topographic Information (25.06.2021)] (Appendix A). Excavated materials were processed by the Contractor as far as practical to:

- Remove materials not suitable as fill under the Earthworks Specification (*Arcadis 2020e*).
  - Remove metals and scrap
  - Remove deleterious material
  - Remove NAPL containing soils
- Granular made ground was screened and stockpiled for reuse by the Contractor.
- Concrete and oversize demolition aggregates were crushed and stockpiled for reuse by the Contractor.
- Slag deposits were segregated and stockpiled for reuse outside the TV ERF plot by the Contractor.
- Refractory materials were segregated as far as practical and stockpiled for reuse outside the TV ERF plot by the Contractor.
- Clay rich soils were segregated and stockpiled for reuse by the Contractor.

#### 6.1.3 Structure Removal

Very significant relic structures were identified across the TV ERF plot to a maximum depth of 11.5m below finished level (i.e. -2.5mAOD). With the exception of concrete and sheet piles these were broken out and removed by the Contractor.

The contractor records of the base of the excavation following removal of all large structures and showing the piles left in situ are presented in Appendix A.

#### 6.1.4 Backfilling

Backfilling of bulk fill material was in line with *Arcadis 2020e* and is summarised in Section 8. The backfill completed to 9<sup>th</sup> July 2021 (176,879m<sup>3</sup>) is shown on Contractor Drawing C1096 - SEY Weekly Material Tracking (WC 05.07.2021) and C1096 British Steel - SEY Compaction Layer (05.07.2021) included as Appendix A.

### 6.1.5 Material Tracking

Stockpiles were given individual unique numbers to facilitate tracking, while the excavation was divided into grid squares (25m, 50m, and 100m) for material tracking and sampling purposes, the grid square is denoted by the ID in the north west corner.

The 100m and 50m tracking grids are shown on Figure 4 [10035117-AUK-XX-XX-DR-ZZ-0224-01-100\_Grid\_Prairie 1] in Appendix B.

## 6.2 Remediation Excavations

During the works described in Section 6.1, soils and associated structures containing NAPL and potential NAPL were identified and removed by the Contractor. The NAPL was identified as numerous isolated hotspots associated with the structures, sumps and pits comprising the former steelworks rather than a distinct source within made ground soils. Stockpile survey records provided by the Contractor [09.07.2021 - C1117 - All Survey Content West Of Coke Oven Pipe (Eston Road) and 09.07.2021 - C1117 - All Survey Content Main Storage Area] (Appendix A) indicate approximately 6,475m<sup>3</sup> of NAPL impacted soils and materials have been excavated to date.

Where NAPL was observed to re-enter the excavation from fissures in the clay-rich natural geology, a second phase of excavation was conducted to remove this material. Excavations judged complete by the Contractor were visually inspected by Arcadis and, if necessary, extended to remove additional identified impacts. Photographs detailing the remediation process are presented as Appendix C.

The excavated NAPL impacted soils were stockpiled prior to treatment to make suitable for reuse and have not been used as fill within the TV ERF Site. The sampling strategy for the soils remaining in situ following completion of the remedial excavations was as follows:

Testing Required	Frequency	Compliance Criteria
Asbestos Screen*	<ul style="list-style-type: none"> <li>• One sample per 50 linear metres of excavation; and,</li> <li>• One sample per stratum or at 1.0m vertical intervals (whichever is the greater)</li> <li>• One sample per 2,500m<sup>2</sup> of excavation base (50m grid point)</li> <li>• One sample per 500m<sup>3</sup> of stockpiled excavated Made Ground</li> <li>• One sample per 1,000m<sup>3</sup> of stockpiled crushed site aggregate</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• 1 per 1,000m<sup>3</sup> of import material</li> </ul>	<0.001%
NAPL Excavation Areas	<ul style="list-style-type: none"> <li>• NAPL dye test kits                             <ul style="list-style-type: none"> <li>○ One sample per 50m linear metres of excavation; and,</li> <li>○ One sample per 625m<sup>2</sup> of excavation base (25m grid point)</li> </ul> </li> </ul>	Negative test result, see below for TPH analysis.
Metals/metalloids** <ul style="list-style-type: none"> <li>• Arsenic</li> <li>• Boron (w sol)</li> </ul>	<ul style="list-style-type: none"> <li>• One sample per 50m linear metres of excavation; and,</li> </ul>	Presented in Appendix D



Testing Required	Frequency	Compliance Criteria
<ul style="list-style-type: none"> <li>• Cadmium</li> <li>• Chromium III</li> <li>• Chromium VI</li> <li>• Copper</li> <li>• Lead</li> <li>• Mercury (inorganic)</li> <li>• Nickel</li> <li>• Vanadium</li> <li>• Zinc</li> </ul>	<ul style="list-style-type: none"> <li>• One sample per stratum or at 1.0m vertical intervals (whichever is the greater)</li> <li>• One sample per 2,500m<sup>2</sup> of excavation base (50m grid point)</li> <li>• One sample per 500m<sup>3</sup> of stockpiled excavated Made Ground</li> <li>• One sample per 1,000m<sup>3</sup> of stockpiled crushed site aggregate</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• 1 per 1,000m<sup>3</sup> of import material</li> </ul>	
<p>Inorganics/other</p> <ul style="list-style-type: none"> <li>• Cyanide (Total and Free)</li> <li>• Thiocyanate</li> <li>• pH**</li> <li>• Sulphur</li> <li>• Total sulphate**</li> <li>• Water soluble sulphate**</li> <li>• Organic matter**</li> <li>• Phenol – monohydric**</li> </ul>	<ul style="list-style-type: none"> <li>• One sample per 50 linear metres of excavation; and,</li> <li>• One sample per stratum or at 1.0m vertical intervals (whichever is the greater)</li> <li>• One sample per 2,500m<sup>2</sup> of excavation base (50m grid point)</li> <li>• One sample per 500m<sup>3</sup> of stockpiled excavated Made Ground</li> <li>• One sample per 1,000m<sup>3</sup> of stockpiled crushed site aggregate</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• 1 per 1,000m<sup>3</sup> of import material</li> </ul>	Presented in Appendix D
<p>Organics</p> <ul style="list-style-type: none"> <li>• Speciated PAH</li> <li>• TPH CWG-</li> </ul>	<ul style="list-style-type: none"> <li>• One sample per 50 linear metres of excavation; and,</li> <li>• One sample per stratum or at 1.0m vertical intervals (whichever is the greater)</li> <li>• One sample per 2,500m<sup>2</sup> of excavation base (50m grid point)</li> <li>• One sample per 625m<sup>2</sup> of excavation base where NAPL removal has occurred</li> <li>• One sample per 500m<sup>3</sup> of stockpiled excavated Made Ground</li> <li>• One sample per 1,000m<sup>3</sup> of stockpiled crushed site aggregate</li> </ul> <p>OR</p> <ul style="list-style-type: none"> <li>• 1 per 1,000m<sup>3</sup> of import material</li> </ul>	Presented in Appendix D
<ul style="list-style-type: none"> <li>• VOC/SVOC</li> <li>• PCB</li> <li>• Calorific value</li> </ul>	As Directed on oily/impacted soils	Presented in Appendix D

### 6.3 Material Management Plans

Earthworks were conducted under DoWCoP to maximise the sustainable reuse of excavated soils throughout the project, and secondary aggregates were recycled under WRAP Protocols.

### 6.3.1 Total Material Quantities

The volume of material processed during the remedial works within the contract including the TV ERF site to 9<sup>th</sup> July 2021 was reported to Arcadis by the Contractor to be approximately 307,902m<sup>3</sup>. The total quantity of material excavated and subsequently processed, backfilled, imported, or removed from site was sub-divided into the following material quantities:

Material	Quantity (m <sup>3</sup> )
Screened Made Ground	108,137
Recycled Secondary Aggregate (site won)	101,132
Slag	16,824
Cohesive Made Ground	53,970
Refractory Materials	11,422
Contaminated materials	6,475
Topsoil like soils	344
Imported Mudstone	33,944
Imported Recycled Secondary Aggregate	Awaiting data from Contractor

### 6.3.2 Backfilled Materials

The quantities of material backfilled within the TV ERF site as of 9<sup>th</sup> July 2021 is presented in the table below.

Material	Quantity (m <sup>3</sup> )
Screened Made Ground	69,253
Recycled Secondary Aggregate (site won)	97,546
Slag	0
Cohesive Made Ground	0
Refractory Materials	0
Contaminated materials	0
Topsoil like soils	0
Imported Mudstone	19,665
Imported Recycled Secondary Aggregate	Awaiting data from Contractor

### **6.3.3 Material Disposed Off-Site**

Materials identified for disposal of off-site were segregated and classified in the European Waste Catalogue (EWC). The total quantities of these materials (calculated from weighbridge tickets), as disposed of off-site, are will be presented in the final report once information is received from the Contractor.

## 7 Remediation Verification

A summary of the remediation performance and the key lines of evidence demonstrating achievement of the remediation criteria and objectives (described in Section 4) is given in the sections below.

### 7.1 Capping Validation

The cap has not been installed as of 9<sup>th</sup> July 2021 as earthworks are ongoing.

### 7.2 NAPL Removal

The Contractor reported to Arcadis that approximately 6,475m<sup>3</sup> of NAPL impacted soils and materials have been excavated to date from numerous isolated hotspots associated with the structures, sumps and pits comprising the former steelworks.

Arcadis undertook a visual assessment of excavation sides and bases across the excavation to confirm that NAPL had been removed and conducted field screening with NAPL dye test kits to provide a qualitative assessment. A photographic log documenting examples of the post-remediation conditions is presented in Appendix C, illustrating that the NAPL was clearly identifiable once uncovered in the subsurface, due to the differing colour / appearance in relation to the soils.

### 7.3 Sampling of Excavations

The results of laboratory analysis undertaken on the validation samples from the excavation are summarised in Table 1 in Appendix D, and displayed on Figure 3 in Appendix B, with laboratory certificates presented as Appendix E.

#### 7.3.1 Sampling Frequencies

The approximate frequency of in situ material validation sampling undertaken during the remediation works (including sampling for laboratory analysis and visual assessment) is presented in the table below. The proposed sampling frequency is also presented for comparison.

Item	Sampling Type	Proposed Sampling Frequency	Area Excavated or Face Length	Number of Samples Taken	Actual Sampling Frequency
Main Excavation Faces*	Visual	1 / 50 m	275m	6	1 / 45 m
	Chemical Analysis	1/ 50 m		5**	1 /55 m
Excavation Sides Hotspot Removal	Chemical Analysis	1/ 50 m or as required	n/a	39	n/a
	NAPL Test Kits			39	
Excavation base	Visual	1 / 625 to 1 / 2500 m <sup>2</sup>	55,000m <sup>2</sup> to 90,000m <sup>2***</sup>	544	1 / 404 to 1/ 661 m <sup>2</sup>
	Chemical Analysis	1 / 625 to 1 / 2500 m <sup>2</sup>		136	
	NAPL Test Kits	1 / 625 or as required		28	
	Chemical	As required	55,000m <sup>2</sup> to	25	1 / 2,200 to 1 /

Item	Sampling Type	Proposed Sampling Frequency	Area Excavated or Face Length	Number of Samples Taken	Actual Sampling Frequency
	Analysis PCB		90,000m <sup>2</sup>		3,600
Additional analysis of in situ material following hotspot removal	Chemical Analysis VOC	As required	55,000m <sup>2</sup> to 90,000m <sup>2</sup>	67	1 / 821 to 1 / 1,345
	Chemical Analysis SVOC	As required	55,000m <sup>2</sup> to 90,000m <sup>2</sup>	64	1 / 859 to 1 / 1,406

\* Only northern edge of TV ERF plot represents the edge of the overall excavation on Dorman Point, other faces subject to ongoing remedial work.

\*\*Significant relic structure in situ northern boundary further sampling not possible.

\*\*\*TV ERF Priority Area and full plot area

Given the estimates used in calculating excavation areas, the sporadic isolated nature of the NAPL hotspots identified and the uneven base of the excavation due to structure removal activities, the frequency of validation sampling including visual validation and laboratory analysis are considered appropriate, and in line with the proposed sampling frequencies.

### 7.3.2 Comparison to Remediation Criteria

The results of laboratory analysis undertaken on the validation are compared to the remediation criteria in Table 1.

Asbestos was detected in three verification samples PRA-AY-23-S1, (6.44m AOD 0.002%), PRA-BA-25-S1 (7.1m AOD 0.003%) and PRA-AW-26-S2 (5.0mAOD 0.004%). No further CoC were measured above the remediation criteria for the site.

### 7.3.3 Risk Evaluation - Excavations

The findings of the risk evaluation using remediation criteria are that the residual concentrations of the CoC left in situ at the bases and sides of the excavations do not represent a significant risk to the identified receptors, based on commercial / industrial end use. The residual asbestos concentrations are a significant depth below the final platform level (9.0m AOD) and are not considered to pose a significant risk.

## 7.4 Sampling of Materials used as Backfill (Environmental)

The results of laboratory analysis undertaken on the validation samples from the excavation are summarised in Tables 2 to 5 with a summary in Table 6 with a summary in Appendix D, laboratory certificates presented as Appendix E.

### 7.4.1 Sampling Frequencies

The approximate frequency of in situ material validation sampling undertaken during the remediation works (including sampling for laboratory analysis) is presented in the table below. The proposed sampling frequency is also presented for comparison.

Item	Sampling Type	Proposed Sampling Frequency	Amount Used	Number of Samples Taken	Actual Sampling Frequency
Screened Made Ground	Chemical Analysis	1/ 500 m	69,253	206	1 / 366m <sup>3</sup>
Recycled Secondary Aggregate (site won)	Chemical Analysis	1/ 1,000	101,132	91	1 / 1,111m <sup>3</sup>
Imported Mudstone	Chemical Analysis	1/ 1,000	19,665	17	1 / 1,157m <sup>3</sup>
Imported Recycled Secondary Aggregate	Chemical Analysis	1/ 1,000	Awaiting data from Contractor	5	

#### 7.4.2 Comparison to Remediation Criteria

The results of laboratory analysis undertaken on the validation are compared to the remediation criteria in Tables 2 to Table 5.

Low levels of asbestos were frequently detected in the majority of site won recycled secondary aggregate and screened Made Ground. No further CoC were measured above the remediation criteria for the site.

#### 7.5 Suitability for Use

From the testing and analysis that has occurred throughout the earthworks programme it has been determined that the Made Ground meets the requirements of the remedial strategy for the site and it is considered that it meets the objectives of the project and, therefore, no further remedial intervention is required at the site based on a future commercial / industrial end use.

## 8 Enabling Earthworks Verification

### 8.1 Background

***At the time of writing earthworks within the TV ERF Plot are still ongoing. Data reviewed within this report relates to information received prior to 9<sup>th</sup> July 2021.***

Prior to earthworks ground levels across the wider site ranged from 7.568 to 9.29m AOD, the final finished level (detailed on Contractor Drawing STDC-SIZ-GP-GEN-0018b in Appendix A) for the proposed site is 9.0m AOD.

The development platform at 9.0m AOD will include minor slopes to grade to adjoining boundaries.

It was estimated that the cut and fill necessary to achieve the desired finish levels for the wider Dorman Point Phase 1 area proposed development level would be 581,721m<sup>3</sup> and 59,826m<sup>3</sup>, generating a net surplus of material.

Significant structures were noted within the footprint of the priority area, including No 3 Primary Mill (extensive basement with side walls and floor slab backfilled in an uncontrolled manner) and Holme Beck Culvert (along the western edge of the Phase 1 area).

The earthworks specification (*Arcadis 2020e*) detailed the requirements for the site prior to development. The document outlines the necessary standards and processes that are required and highlighted the need for an MMP (*Arcadis 2020d*) to outline the reuse of site won material strategy.

Acceptable bulk fill materials were defined as:

- General granular fill (Class 1A/B/C) and cohesive soils (Class 2B) including clays and marls containing more than 20% gravel or rock and/or a moisture content less than the value of the plastic limit minus 4,
- Cohesive soil including clays and marls with up to 20% gravel or rock and having a moisture content of not less than the value of the moisture limit plus 4. Upper moisture content limit of not more than the value required to compact 95% of the maximum dry density as determined by 4.5kg rammer method (Class 2),
- Site generated secondary aggregate (Class 1A / 1C)
- Materials with a calorific value in excess of 7 MJ/kg shall not be used within the bulk earthworks.
- Engineered fill to be used under proposed highway infrastructure, recycled made ground containing refractory material or slag to be removed as far as reasonably practicable.

All site-won material and imported material was to meet the reuse criteria set out in the remediation strategy (*Arcadis 2020b*).

### 8.2 Site Works

#### 8.2.1 Enabling Earthworks

Initial proposals were for Made Ground to be excavated to 2.5m below the proposed final level (i.e. 6.5m AOD). During this excavation a large number of relic structures, sumps and foundations were identified within the TV ERF plot. Where these presented a potential development constraint, the client agreed to the removal of these structures with subsequent backfill with engineered fill.

Removal of these structures required excavation to varying levels across the site with deepest excavations reaching -2.42 mAOD in the northern area of the site. The contractor has provided drawing (*Arcadis Topographic Information (25.06.2021)*) in Appendix A which records the extent of excavations across the TV ERF site.

Removal of individual bearing and sheet piles was not possible, however these were broken out or removed as deep as practicable. Where piles have been left in situ, their location and elevation are recorded on drawing (*SEY In-Situ Structure (19.07.2021)*) in Appendix A.

Concrete arising from the removal of structures was processed to make the material suitable for use as an engineered fill material.

On reaching natural ground, the contractor informed Arcadis who undertook a visual inspection of the formation, recorded ground conditions, carried out in situ hand vane testing and obtained samples for geotechnical and environmental laboratory analysis. Locally Arcadis instructed the contractor to excavate trial pits beneath to confirm that no further obstructions or made ground remained in situ.

### 8.2.2 Engineered Fill

As noted above, the removal of relic structures resulted in an irregular base to the excavation, in particular in the northern area of the TV ERF plot. This variation in excavation depth reduced the overall efficiency of the filling process, as such to increase efficiency, allow for safer operation of plant, and ensure placement and validation was more consistent, fill was placed to a regulation level of 6.5m AOD when infilling excavation areas to create a level platform at 6.5m AOD prior to placing the final 2.5m of fill to bring the site up to the development platform level.

Within the Earthworks Specification (*Arcadis 2020b*) a number of material classes were identified as being suitable for use as engineered fill to create the development platform (Section 8.1).

Two Materials Management Plans exist for the Site (Section 4.3) and relate to the reuse of site-won soils and the import of suitable granular material. The WRAP protocol provides a method in which site-won aggregate can be treated to be made suitable for use.

Excavated material was processed to remove deleterious, oversize or other unsuitable material. Suitable oversize material was processed for reuse as a secondary aggregate, while other unsuitable material (e.g. timber, tyres, scrap metal) was removed from site. As far as practicable, oversize slag and refractory products were removed from the TV ERF plot.

Material was placed in stockpiles for testing (test regime outlined in *Arcadis 2020e* with test results provided in Appendix F), following the receipt of the test results material was classified and placed in accordance with the Specification for Highway Works (2857861 MCHW Vol 1 600.indd (standardsforhighways.co.uk)). Material placement was tracked by the contractor and overseen by the Arcadis watching brief. Material tracking documents are provided in Appendix G.

In addition to site won material, a quantity of other suitable materials was imported to site for use as fill including arisings from the Woodsmith Mine tunnelling project and secondary aggregate provided by CW Russell. These materials were subject to similar classification testing to the site won material.

Bulk fill material was placed in layers of suitable thickness and rolled in accordance with Table 6/4 within the Specification for Highway Works. Material classifications, estimated volumes and appropriate placement method are outlined in the table below. Where necessary, excavations were dewatered prior to material placement.

The material was compacted using a vibratory roller with a mass per metre width of the vibratory roll greater than 5000 kg.

Material	Dominant Material Classification	Stockpile Reference (PRA_SPXXX)	Placement Method
Site Won – Processed - Granular	1A	SP001 – SP007, SP011, SP012, SP027, SP041, SP043, SP045, SP050	Method 2: 275mm layers, 4 passes with roller
Site Won – Processed – Cohesive	2C	SP029	Method 2: 275mm layers, 4 passes with roller
Site Won – Embankment	1A	SP034	Method 2: 275mm layers, 4 passes with roller



Material	Dominant Material Classification	Stockpile Reference (PRA_SPXXX)	Placement Method
Recycled secondary aggregate – site won	1A	SP009, SP010, SP013, SP023, SP031, SP033, SP036, SP037, SP039, SP040, SP042, SP044, SP049, SP051 – SP058	Method 2: 275mm layers, 4 passes with roller
Recycled secondary aggregate – site won	1C	SP013	Method 5: 300mm layers, 5 passes with roller
Import – Mudstone	1A	SP047, SP048	Method 2: 275mm layers, 4 passes with roller
Recycled secondary aggregate – imported	1A	Exploration and Testing Associates L21-225	Method 2: 275mm layers, 4 passes with roller

The total volumes of site won and imported fill will be provided by the contractor on completion of the earthworks.

### 8.2.3 Groundwater Control

During excavation works, groundwater was encountered. Groundwater was found to be ponded within relic structures and recharged with rainwater, this groundwater was removed via pumping and discharged into the Northumbrian Water Limited (NWL) foul drainage networks via a treatment network as detailed in Arcadis' water treatment plan (10035117-AUK-XX-XX-SP-ZZ-0258-P1-Water Treatment Prairie Excavations).

On removal of the perched groundwater, no further significant groundwater inflow was noted.

### 8.2.4 In-situ testing

While the fill was placed to a method specification, in situ testing was carried out as works proceeded to provide information for future developers on the degree of compaction achieved. In-situ plate load tests, soil density gauge and sand replacement density tests were conducted on the emplaced engineered fill on a 50x50m grid as quality control on the emplacement process. In-situ testing is presented in Appendix H.

Material	MDD range	OMC range	95% MDD range
Site Won – Processed – Granular (Class 1 A)	Average: 1.97	Average: 11.2	Average: 1.87
	Max: 2.10	Max: 14	Max: 2.00
	Min: 1.88	Min: 9	Min: 1.79
Site Won – Processed – Cohesive (Class 2C)	Average: 1.99	Average: 11.3	Average: 1.89
	Max: 2.01	Max: 13	Max: 1.91
	Min: 1.96	Min: 10	Min: 1.86
Site Won – Embankment (Class 1 A)	Average: 1.92	Average: 11.5	Average: 1.82
	Max: 2.04	Max: 13	Max: 1.94
	Min: 1.86	Min: 10	Min: 1.77

Material	MDD range	OMC range	95% MDD range
WRAP – Concrete (Class 1A)	Average: 1.98	Average: 10.76	Average: 1.88
	Max: 2.16	Max: 14	Max: 2.05
	Min: 1.79	Min: 7.7	Min: 1.70
WRAP – Concrete (Class 1C – 1 sample only)	1.85	17	1.76

### 8.2.5 Soft Spots

Areas that were noted to produce low plate load test values were removed and reengineered as best practice. The extent to which such works were required was limited, however at location AY21 1800 (test reference MT0318 – 18610), plate tests indicated reduced CBR values of 3.5%. Additional plate tests were carried out in this area as were five trial pits to allow inspection of the compacted soils and collection of additional samples to confirm moisture content of the placed fill. No further evidence of soft spots was encountered, and the contractor removed a 10 x 15m panel and replaced the fill at the original test location. Further testing in this area revealed moisture contents within the acceptable range as such it was deemed a localised issue that was resolved by removing the material and recompacting.

Minor areas of rutting were observed locally, particularly in highly trafficked areas during periods of wet weather. In such instances the contractor arranged for removal of the softened / wet material and replacement with well compacted fill.

### 8.2.6 Petrology

STDC have not conducted remedial works to address the geotechnical risks associated with expansive slag and refractory materials, both of which had been identified within Made Ground prior to remedial works being undertaken. Excavated visually slag dominant deposits were segregated and not reused as fill at the TV ERF Plot, however slag and refractory materials are present in minor quantities in all Made Ground deposits.

Slag petrology testing for the various backfill materials used are presented in Appendix I.

## **9 Summary and Conclusions**

### **9.1.1 Earthworks**

Material has been excavated across the TV ERF plot to various depths to chase out relic structures. Material excavated has been tested, screened and reused as bulk fill in accordance with the Series 600 Specification for Highways.

Emplaced material was quality controlled using in-situ testing, a limited number of localised soft spots were excavated and replacement fill compacted .

The development platform for the TV ERF plot is not complete at the time of writing. The platform that has been developed to date is considered to meet the specification set out in Arcadis 2020e.

### **9.1.2 Remediation**

From the testing and analysis that has occurred throughout the earthworks programme it has been determined that the Made Ground meets the requirements of the remedial strategy for the site and it is considered that it meets the objectives of the project and, therefore, no further remedial intervention is required at the site based on a future commercial / industrial end use.

## 10 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) Limited (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's 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's 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 issues.
13. Unless otherwise stated, samples from the Site (soil, groundwater, building fabric or other samples) have NOT been analysed or assessed for waste classification purposes.

# APPENDIX A

## Contractor and Teesworks Drawings

1. TSWK-STDC-DMP-P1-C-0006 TV ERF Priority Remediation Area Rev B – Site Redline provided by Teesworks

Arcadis Topographic Information (25.06.2021) – Excavation Base survey provided by Seymour Civils

SEY In-Situ Structure (19.07.2021) – Residual structures left in situ survey provided by Seymour Civils

SEY Major Structure A (25.03.2021) – Residual structure left in situ survey provided by Seymour Civils

SEY Major Structure A (JPEG) (25.03.2021) – Photograph of structure left in situ provided by Seymour Civils

C1096 - SEY Weekly Material Tracking (WC 05.07.2021) – Plan showing backfill progress provided by Seymour Civils

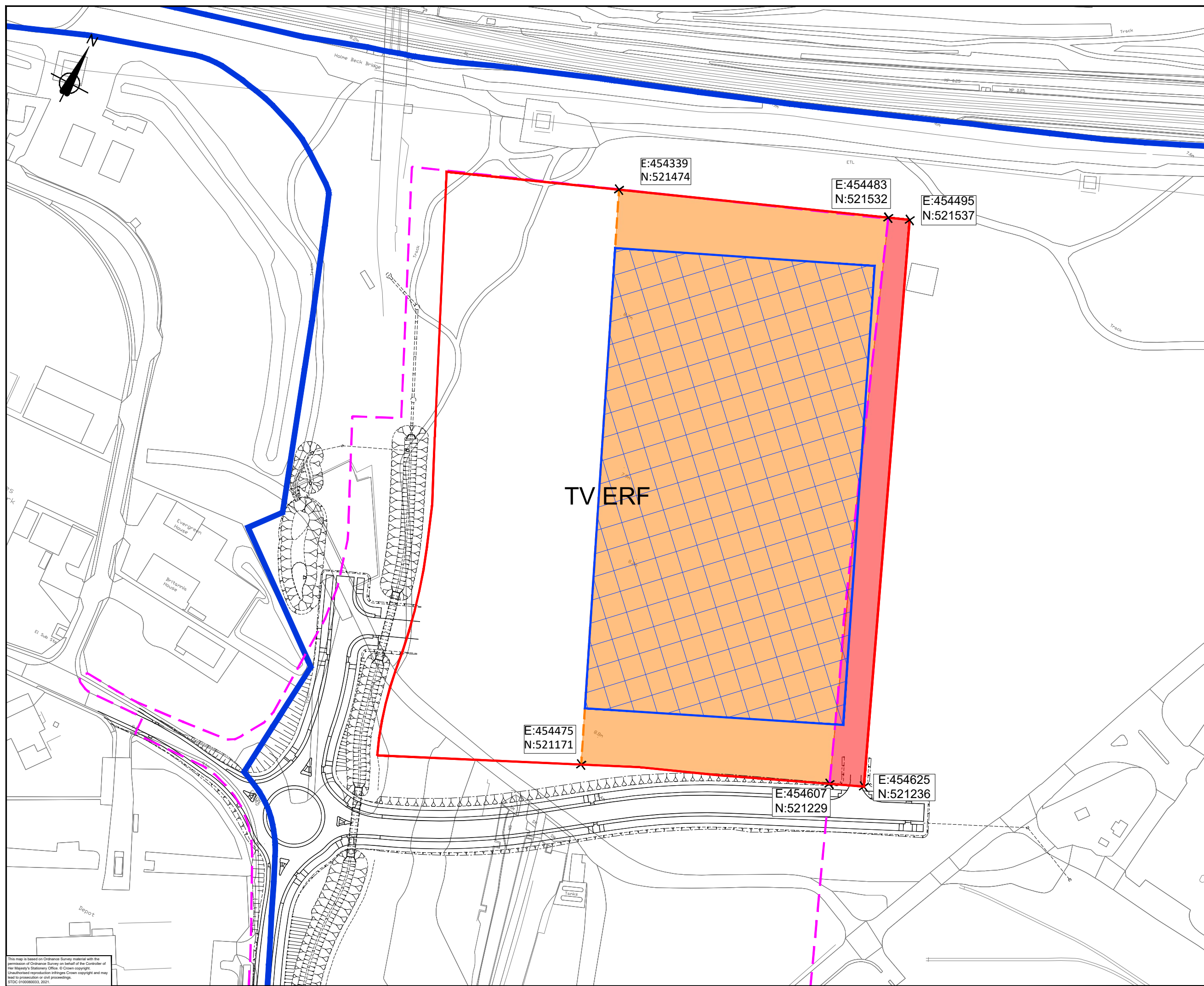
C1096 British Steel - SEY Compaction Layer (05.07.2021) – Plan showing backfill progress provided by Seymour Civils

09.07.2021 - C1117 - All Survey Content Main Storage Area – Plan showing stockpile status 09.07.21 provided by Seymour Civils

09.07.2021 - C1117 - All Survey Content West Of Coke Oven Pipe (Eston Road) – Plan showing stockpile status 09.07.21 provided by Seymour Civils

DO NOT SCALE

Millimetres  
0 10 100



- KEY**
- STDC Land Ownership
  - TV ERF Plot Boundary
  - - - Seymours Original Tender Boundary
  - Phase 1 Extended Priority Remediation Area Boundary
  - Phase 1 Priority Remediation Area
  - Stantec Priority Remediation Area

Rev.	Date	Description	By	Chk'd	App'd
A	17.03.21	Phase 1 Priority Boundary Altered to match Stantec Mark-up	KW	DE	DE
A	11.03.21	TV ERF Stantec Priority area added for info	KW	DE	DE

STDC  
Teesside Management Offices,  
Redcar, TS10 5QW  
www.southteesdc.com

Project Title: **TEESWORKS**  
The UK's largest industrial zone

Drawing Name:  
**DORMAN POINT  
TV ERF PRIORITY REMEDIATION  
AREA PLAN**

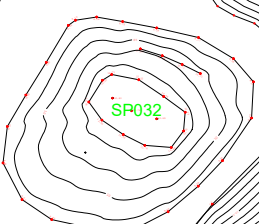
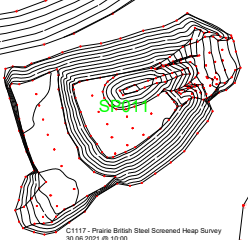
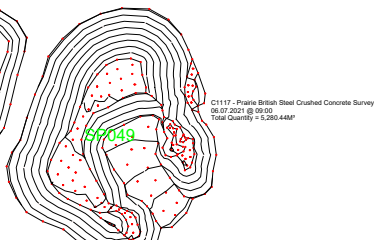
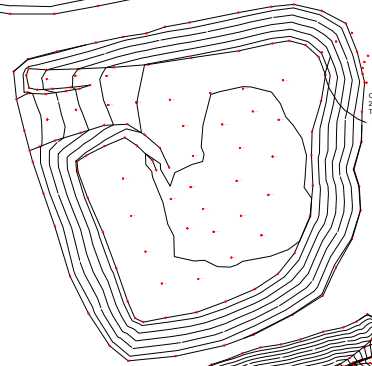
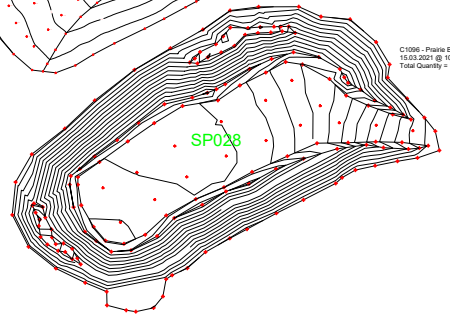
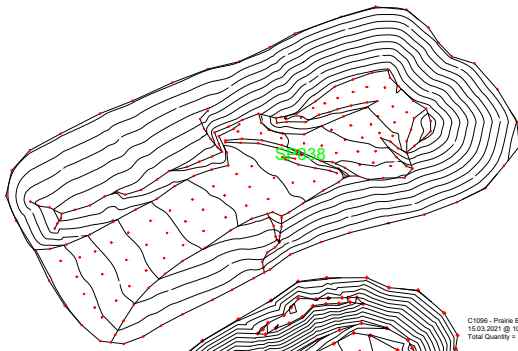
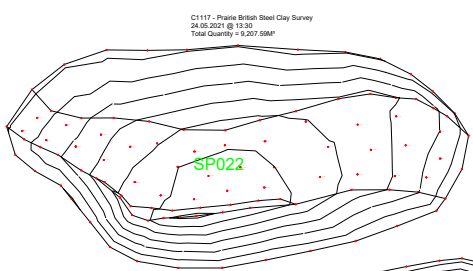
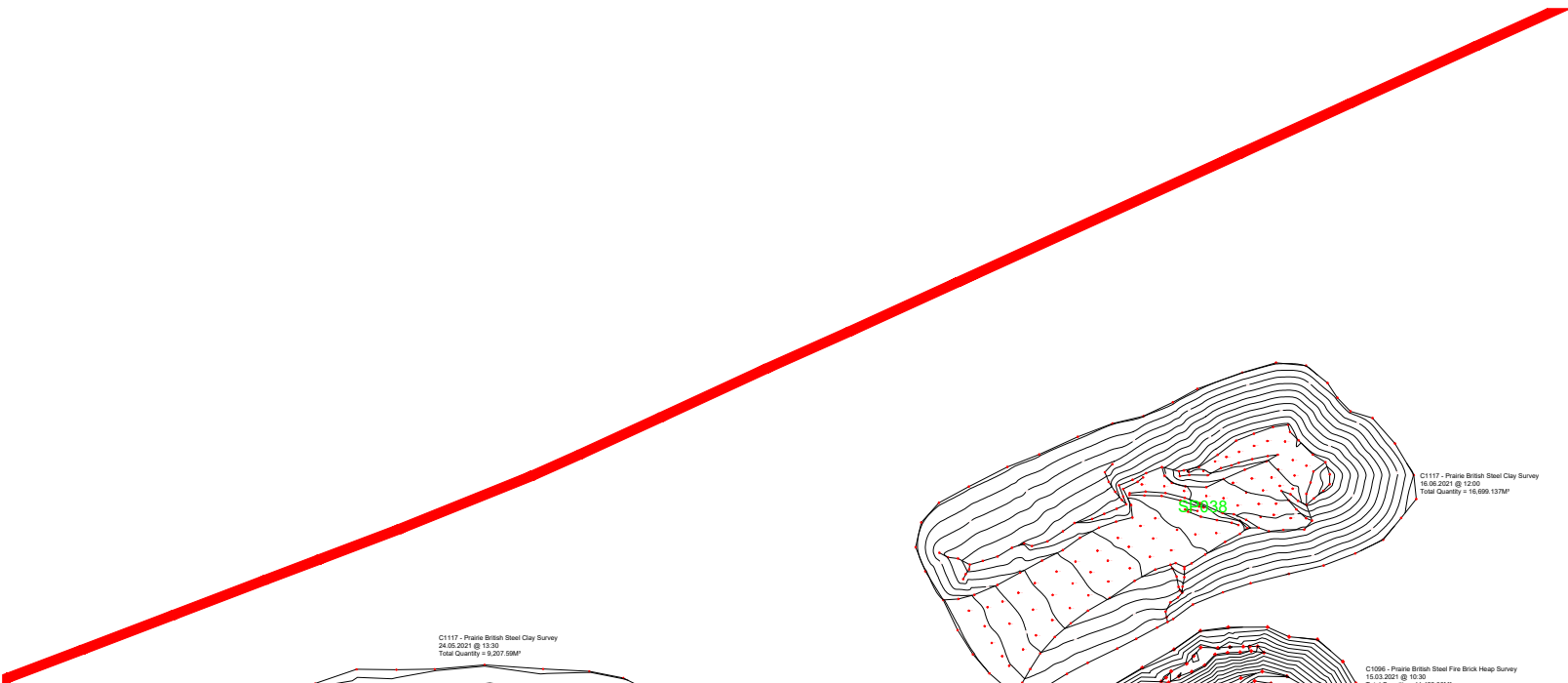
Drawn by: KW Date: MAR 21  
Checked by: DE Date: MAR 21  
Approved by: JMC Date: MAR 21

Drawing Number: TSWK-STDC-DMP-P1-C-0006 Revision: **B**

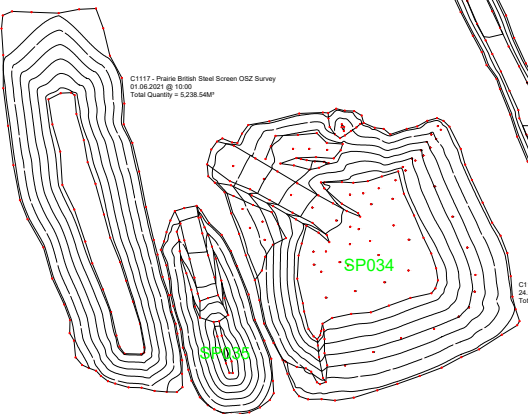
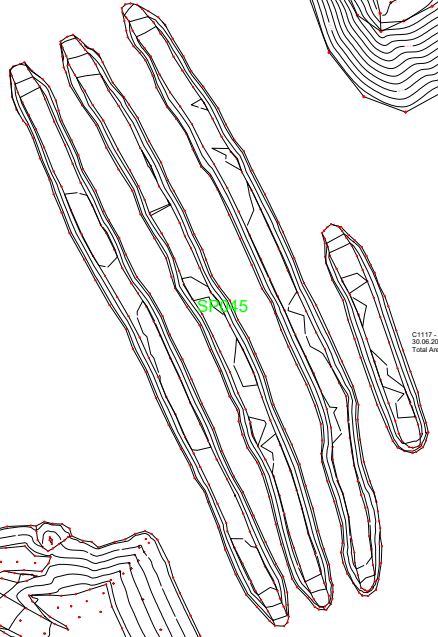
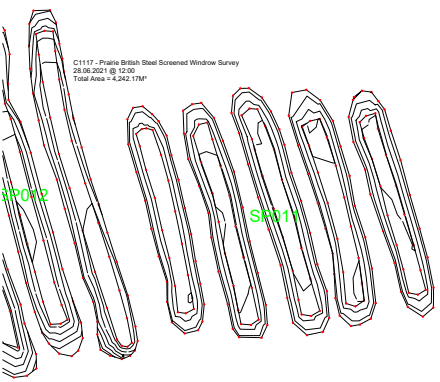
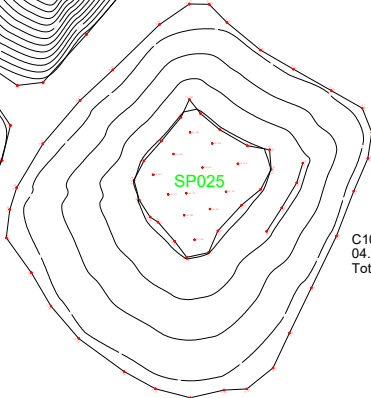
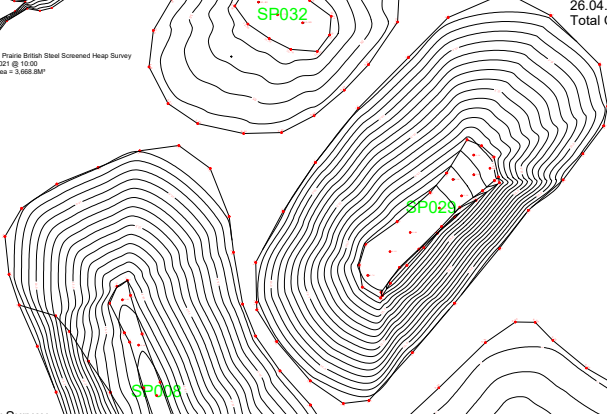
Drawing Scale: 1:1,000 Page Size: A1

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C1096 - Prairie British Steel Screen Survey  
26.04.2021 @ 11:30  
Total Quantity = 11,214.884M<sup>3</sup>



C1117 - Prairie British Steel Screened Survey  
24.05.2021 @ 13:00  
Total Quantity = 8,874.02M<sup>3</sup> + 227.8M<sup>3</sup> (Taken For Fill) = 9,101.8M<sup>3</sup>

C1117 - Prairie British Mid-Fraction Survey

Spoil Storage  
Quantity = ?

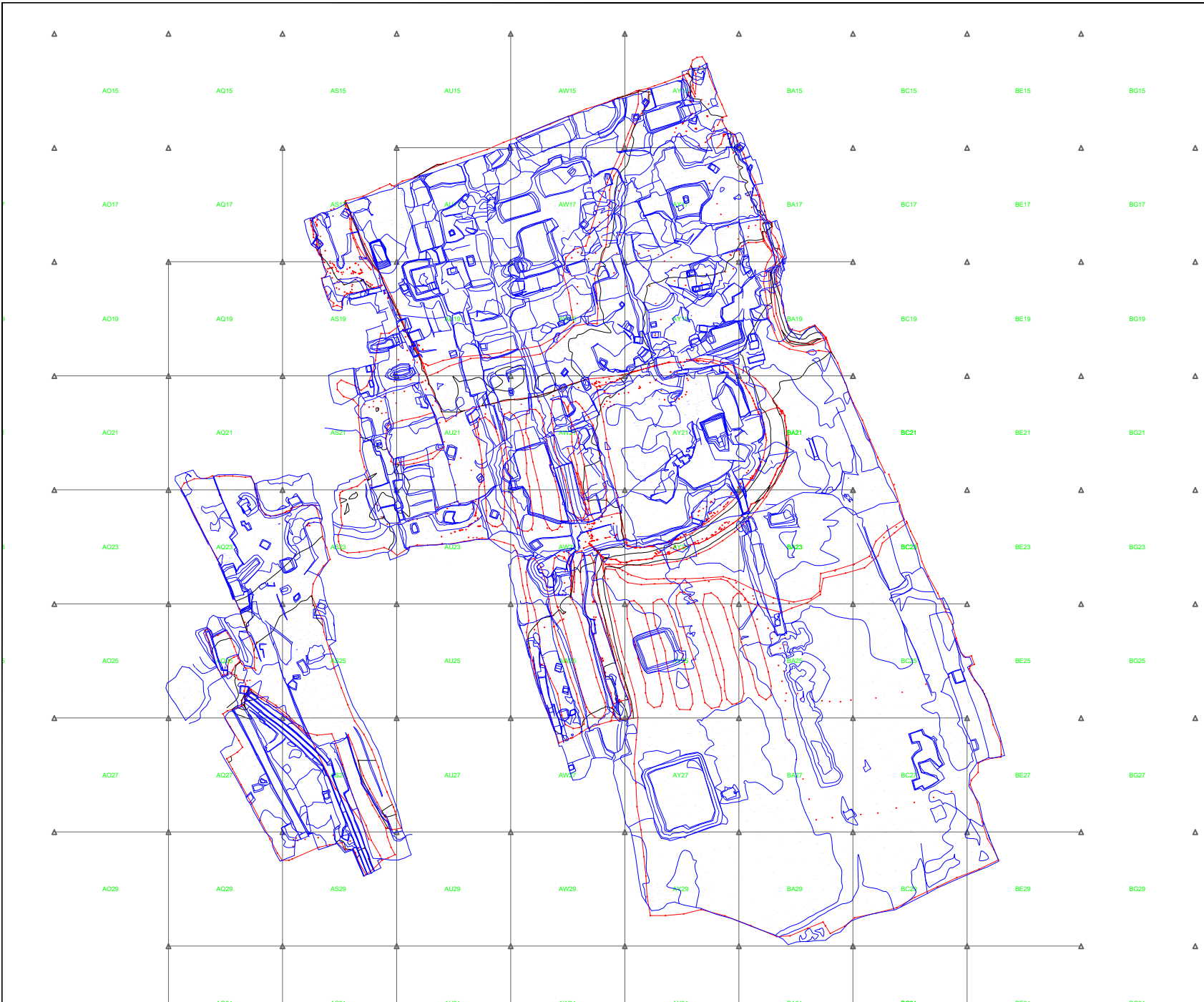
Concrete Storage  
Quantity = ?

Concrete Storage  
Quantity = ?





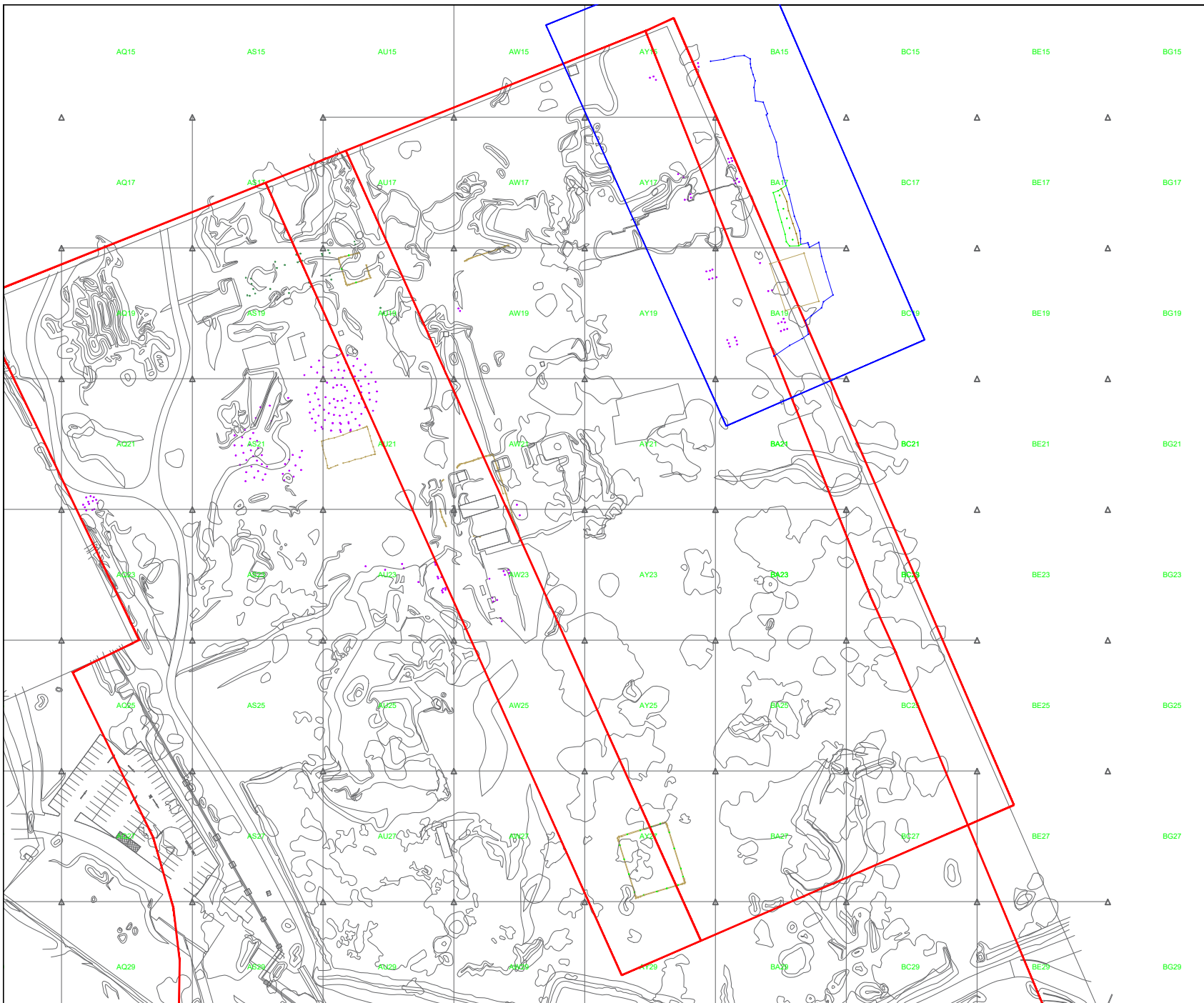




Client  
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 Teeside Management  
 Office,  
 Redcar, TS10 5QW

Project Title  
 Prairie Enabling Work

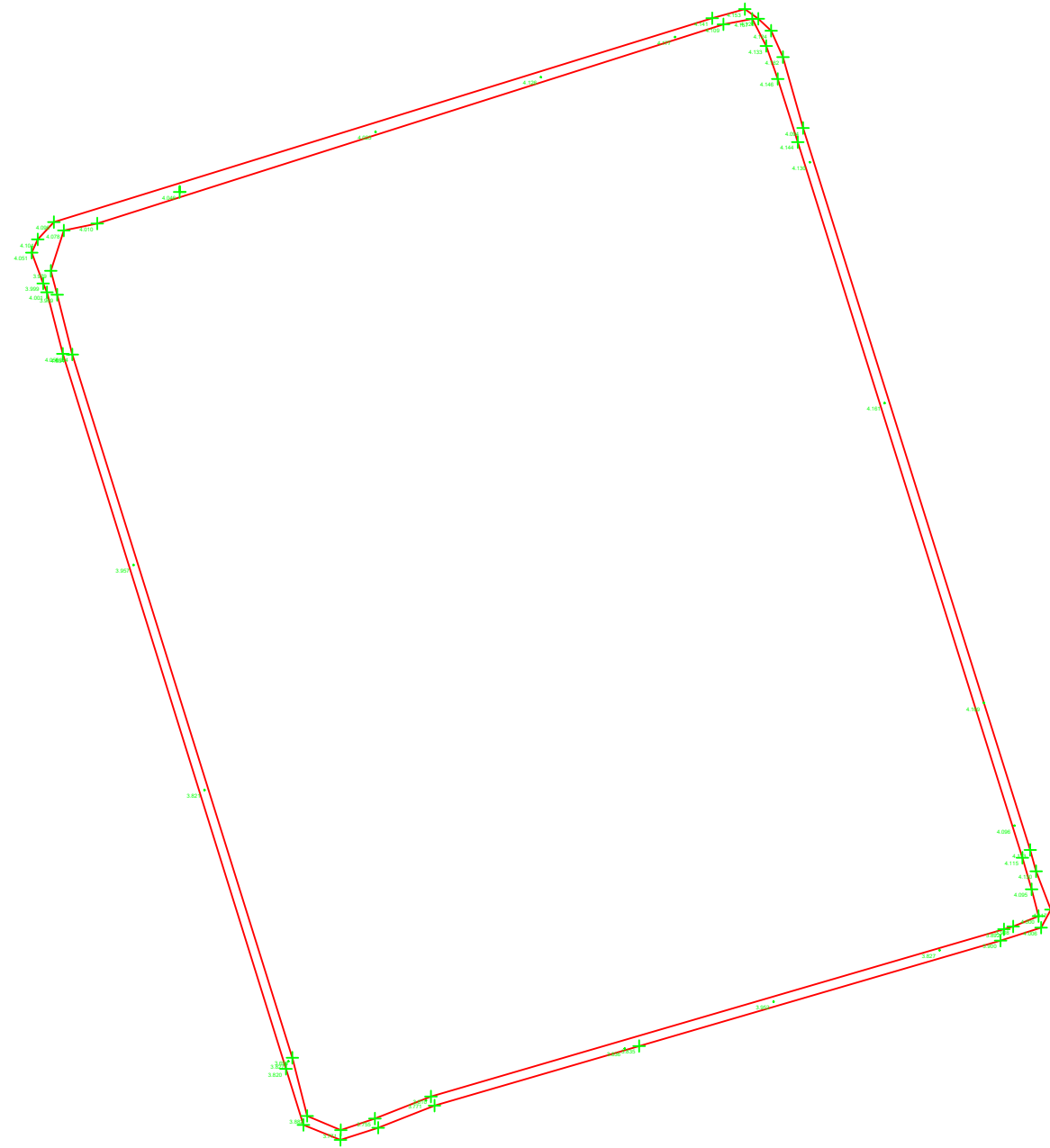
Drawing Title  
 SEY CEC Weekly Tracking  
 Prairie Enabling Work  
 Phase 1  
 05.07.2021



Client  
 STDC  
 Teeside Management  
 Office,  
 Redcar, TS10 5QW

Project Title  
 Prairie Enabling Work

Drawing Title  
 SEY CEC In-Situ Structural Drawing  
 Prairie Enabling Work  
 Phase 1  
 19.07.2021



Client  
STDC  
Teesside Management  
Office,  
Redcar, TS10 5QW

Project Title  
Prairie Enabling Work

Drawing Title  
SEY CEC Structure A (Coffer Dam)  
Prairie Enabling Work  
Phase 1  
25.03.2021





Easting - 454478.397  
Northing - 521223.259  
Elevation - 4.121

Easting - 454491.942  
Northing - 521229.259  
Elevation - 4.128

Easting - 454480.330  
Northing - 521201.029  
Elevation - 3.882

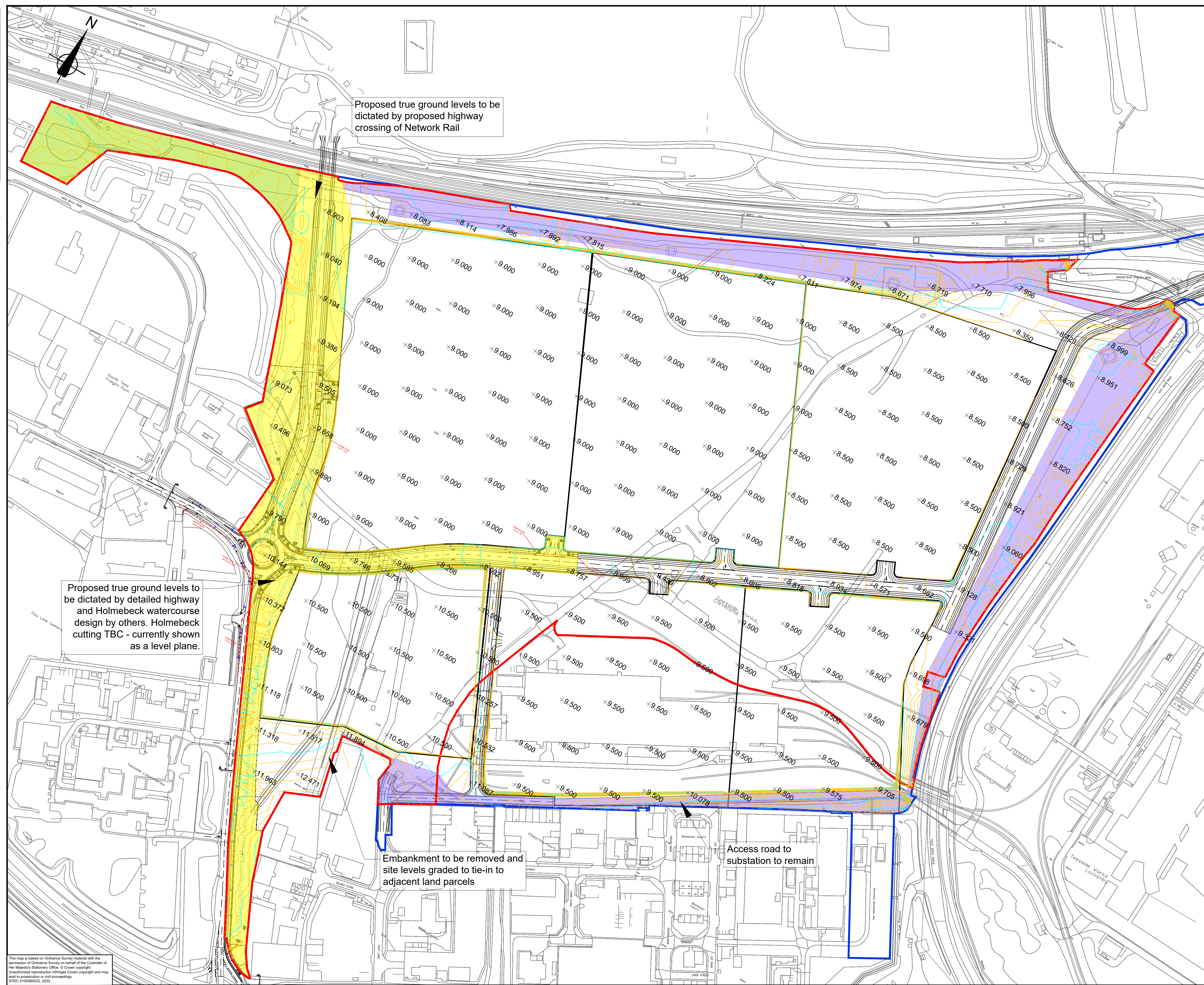
Easting - 454499.160  
Northing - 521206.062  
Elevation - 4.006



DO NOT SCALE

Millimetres

0 10 100



- NOTES**
1. Do not scale from this drawing.
  2. Existing ground level data is a combination of topographical survey data (June 2020) and EA Lidar Data (2017).
  3. This drawing is for indicative use and information purposes only.

- KEY**
- Planning Application Boundary
  - STDC Land Ownership
  - 0.2m Minor Contours
  - 1m Major Contours
  - ×0.000 Spot levels (50m grid)
  - No development use - land proposed to remain to existing levels.
  - Proposed levels to remain close to existing ground levels due to fixed features, i.e. land boundary, pylons and retained access routes.
  - Proposed levels shown indicatively as smooth gradient - true levels to be informed from designs by others.

# DRAFT

Rev.	Date	Description	By	Chk'd	App'd

STDC  
Teesside Management Offices,  
Redcar, TS10 5QW  
www.southteesdc.com

**South Tees Development Corporation**

Project Title: **FORMER STEELWORKS SOUTH TEES**

Drawing Name: **GRANGETOWN PRAIRIE REVIEW OF INDICATIVE PROPOSED DEVELOPMENT PLATFORM LEVELS**

Drawn by: LCD	Date: JUL 20
Checked by: DE	Date: JUL 20
Approved by: JMC	Date: JUL 20
Drawing Number: STDC-SIZ-GP-GEN-0018b	Revision: -
Drawing Scale: 1:2,000	Page Size: A1

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# APPENDIX B

## Arcadis Figures

Figure 1 - Site Location Plan

Figure 2 – Pre-Remediation Asbestos Distribution in Soils

Figure 3 – Excavation Verification Locations

Figure 4 – 10035117-AUK-XX-XX-DR-ZZ-0224-01-100\_Grid\_Prairie 1





Legend  
 Drawings Bing

 Prairie



Notes:

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CONTACT ARCADIS IN CASE OF ANY QUERIES.

Background mapping shows the proposed TV ERF plot as presented in TSWK-STDC-DMP-P1-C-0006 TV ERF Priority Remediation Area Rev B

Title: TV ERF Plot - Site Location

Site:  
 Redcar Steelworks - TV ERF Plot

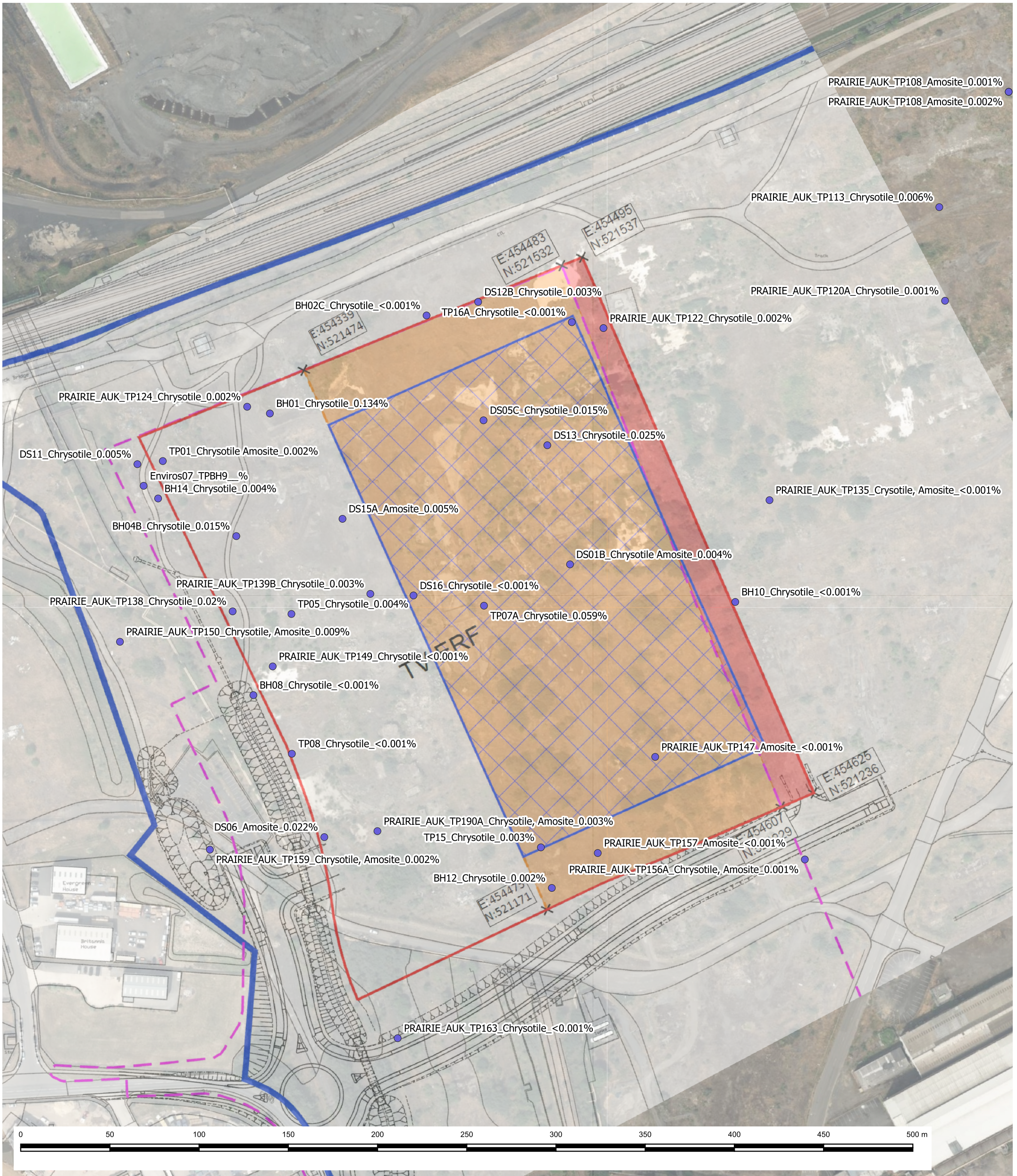
Client:  
 South Tees Development Corporation

Project:  
 10035117

Figure

Date: 23/07/2021  
 Drawn By: DW  
 DRG No: 10035117-AUK-XX-XX-DR-ZZ-0362-01-TV ERF Site location





- Legend**
- Bing
  - Asbestos detected
    - Yes
  - ▭ Prairie Priority Area 1



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CONTACT ARCADIS IN CASE OF ANY QUERIES.

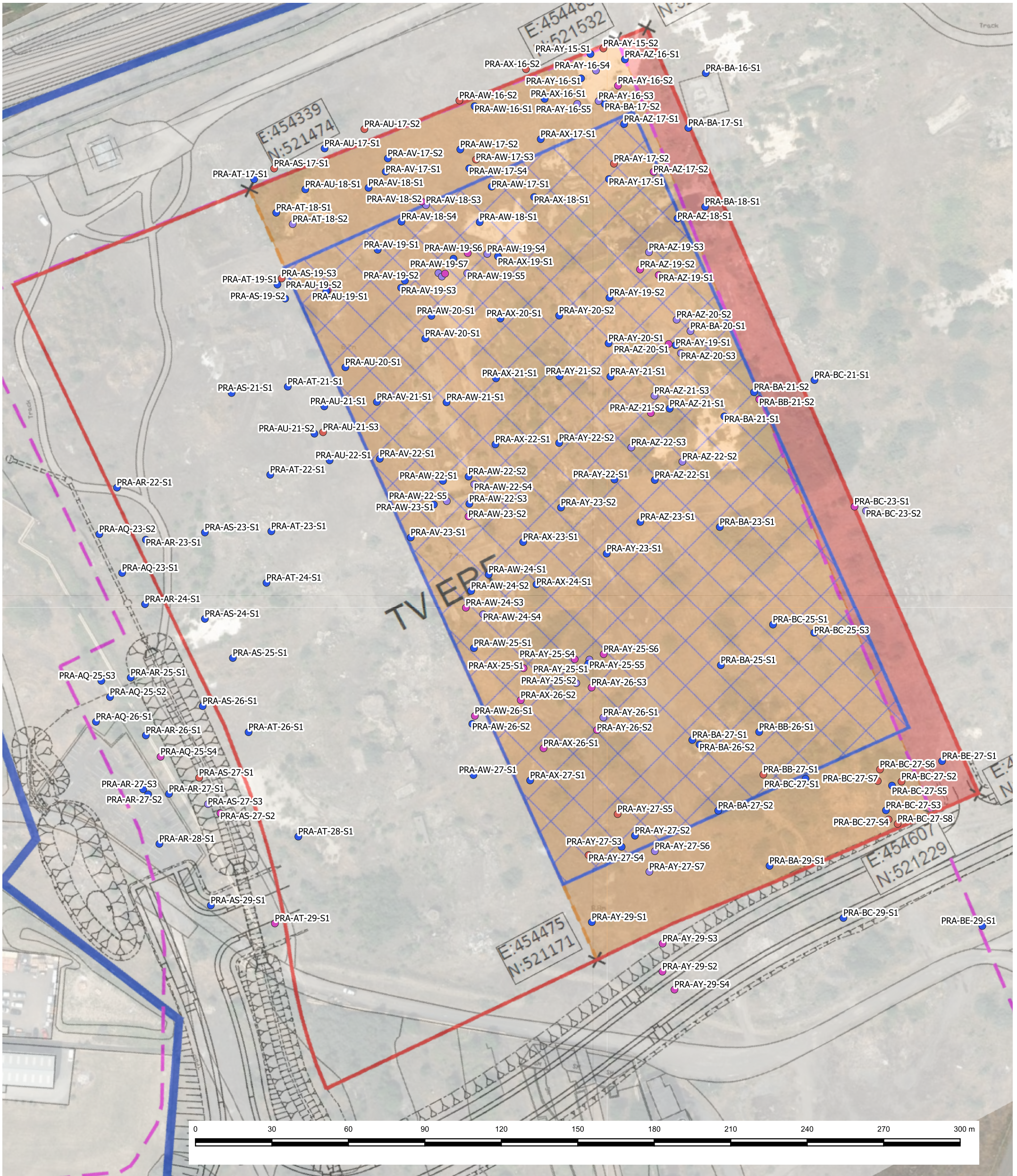
Tags = Location ID\_Asbestos Type\_Asbestos Quantification %

Background mapping shows the proposed TV ERF plot as shown in Figure 1. Asbestos fibres within the plot and in the near vicinity are shown.

<b>Title: TV ERF Plot - Asbestos Fibre detections</b>	
<b>Site: Redcar Steelworks - TV ERF Plot</b>	
<b>Client: South Tees Development Corporation</b>	
<b>Project: 10035117</b>	<b>Figure 3</b>
<b>Date: 19/07/2021</b> <b>Drawn By: DW</b> <b>DRG No: 10035117-AUK-XX-XX-DR-ZZ-0352-01-TV ERF Plot Asb</b>	







## Legend

### Remediation

#### Fulcrum Output

- Excavation Base Sample
- Excavation Side Sample
- Excavation Base Sample NAPL Hotspot
- Excavation Side Sample NAPL Hotspot

Bing

#### Notes:

Drawing overlay TSWK-STDC-DMP-P1-C-0006 TV ERF Priority Remediation Area Rev B

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CONTACT ARCADIS IN CASE OF ANY QUERIES.

#### Title: TV ERF Plot - Excavation Verification Sample Locations

Site: Teesworks - TV ERF Plot

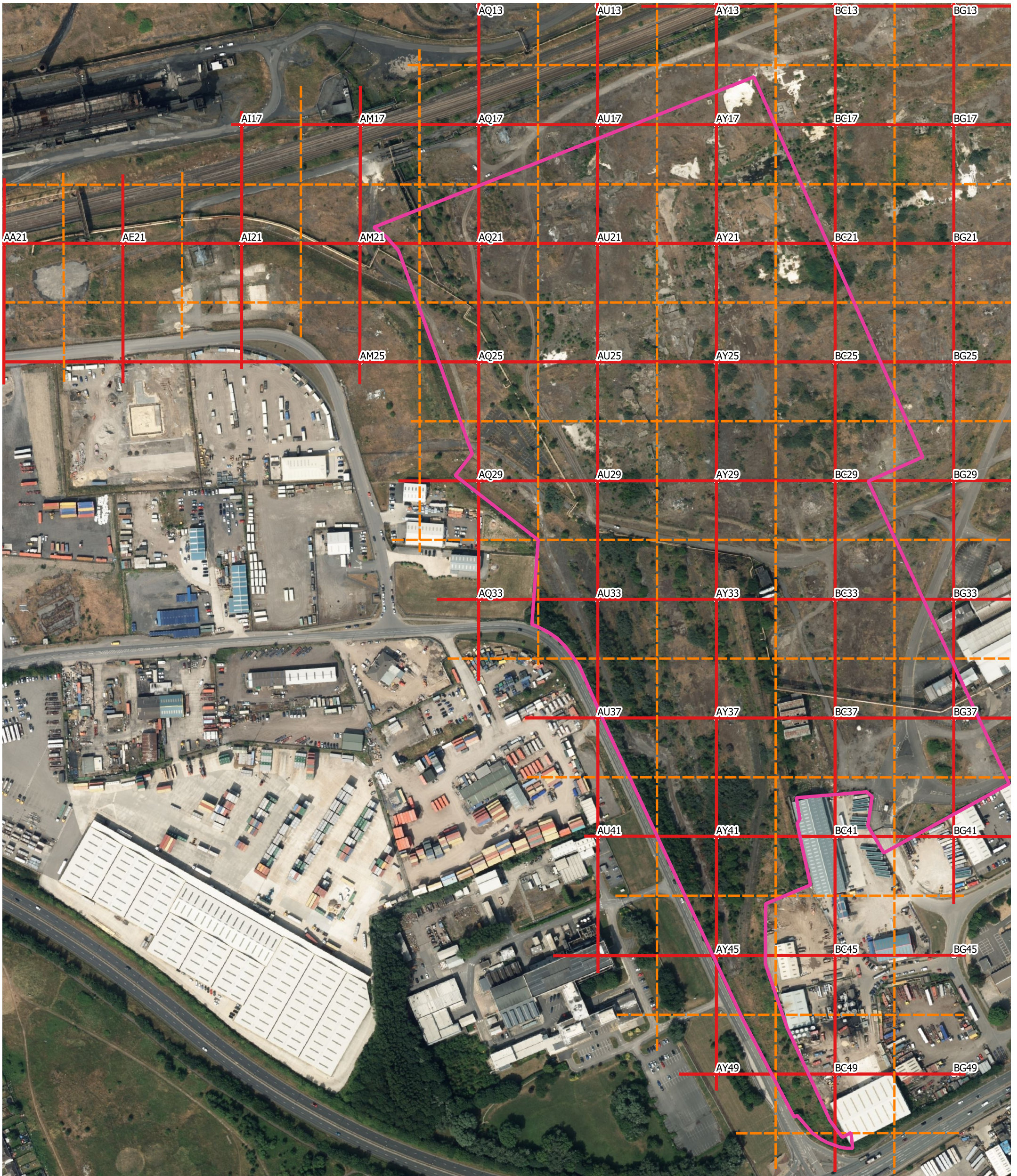
Client: South Tees Development Corporation

Project:  
37774100

Date: 23/07/2021  
Drawn By: JALM  
DRG No: 10035117-AUK-XX-XX-DR-ZZ-0361-01-  
ERF\_Ex\_Verification\_Loc  
DRAFT







**Legend**

Notes:  
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 CONTACT ARCADIS IN CASE OF ANY QUERIES.  
 Grid square identified by top left corner.

**Title: Prairie Tracking Phase 1**

**Site: Redcar Steelworks - Prairie**

**Client: South Tees Development Corporation**

**Project: 37774100**

Date: 04/11/20  
 Drawn By: JALM  
 DRG No: 10035117-AUK-XX-XX-DR-ZZ-0224-01-100\_Grid\_Prairie\_1





**APPENDIX C**

**Photolog**

**CLIENT:** South Tees Development Corporation

**Project:** 10035117

**Site Name:** Redcar Steelworks  
– TV ERF Plot

1 Whitehall Riverside  
Leeds  
LS1 4BN

Plate 1

Earthworks to turn over made ground and create development platform.



Plate 2

TV ERF area looking west.

Excavation prior to removal of Made Ground and structures.





**CLIENT:** South Tees Development Corporation

**Project:** 10035117

**Site Name:** Redcar Steelworks  
– TV ERF Plot

1 Whitehall Riverside  
Leeds  
LS1 4BN

Plate 3

Break out of concrete structures at BA23 (eastern boundary of TV ERF plot).





Plate 4

Concrete and brick foundation removed from BA19 (eastern boundary of TV ERF plot).

Slight hydrocarbon odour.





**CLIENT:** South Tees Development Corporation

**Project:** 10035117

**Site Name:** Redcar Steelworks  
– TV ERF Plot

1 Whitehall Riverside  
Leeds  
LS1 4BN

Plate 5

Base of excavation at AY21 within TV ERF plot.





**CLIENT:**

South Tees Development Corporation

**Project:**

10035117

**Site Name:**

Redcar Steelworks  
– TV ERF Plot

1 Whitehall Riverside  
Leeds  
LS1 4BN

Plate 6

Large structure removed from AU17 (northern boundary) within TV ERF plot.





**CLIENT:** South Tees Development Corporation

**Project:** 10035117

**Site Name:** Redcar Steelworks  
– TV ERF Plot

1 Whitehall Riverside  
Leeds  
LS1 4BN

Plate 7

Deep brick structure located within AW22 (central TV ERF plot).

Water pumped out and structure removed.





**CLIENT:** South Tees Development Corporation

**Project:** 10035117

**Site Name:** Redcar Steelworks  
– TV ERF Plot

1 Whitehall Riverside  
Leeds  
LS1 4BN

Plate 8

Piles identified and left in situ at AU19 within TV ERF plot.



Plate 9

Break out of structure at AU19 (northern boundary of TV ERF plot).





**CLIENT:** South Tees Development Corporation

**Project:** 10035117

**Site Name:** Redcar Steelworks  
– TV ERF Plot

1 Whitehall Riverside  
Leeds  
LS1 4BN

Plate 10

Concrete recovered from broken out structures being screened and crushed for reuse.



Plate 11

Base of excavation at AW19 (northern boundary of TV ERF plot).  
Natural clay.





**CLIENT:**

South Tees Development Corporation

**Project:**

10035117

**Site Name:**

Redcar Steelworks  
– TV ERF Plot

1 Whitehall Riverside  
Leeds  
LS1 4BN

Plate 12

Base of excavation at AW22 (central TV ERF plot).

Natural clay.



Plate 13

Emplaced site won material placed across TV ERF plot.

Class 1A.





**CLIENT:**

South Tees Development Corporation

**Project:**

10035117

**Site Name:**

Redcar Steelworks  
– TV ERF Plot

1 Whitehall Riverside  
Leeds  
LS1 4BN

Plate 14

Emplaced site  
won material  
placed across  
TV ERF plot.

Class 1A.



**CLIENT:** South Tees Development Corporation

**Project:** 10035117

**Site Name:** Redcar Steelworks  
– TV ERF Plot

1 Whitehall Riverside  
Leeds  
LS1 4BN

Plate 15

Emplaced site  
won material  
placed across  
TV ERF plot.

Class 1A





**CLIENT:**

South Tees Development Corporation

**Project:**

10035117

**Site Name:**

Redcar Steelworks  
– TV ERF Plot

1 Whitehall Riverside  
Leeds  
LS1 4BN

Plate 16

Material emplaced  
across the TV  
ERF plot.

View to the  
north.





**CLIENT:** South Tees Development Corporation

**Project:** 10035117

**Site Name:** Redcar Steelworks  
– TV ERF Plot

1 Whitehall Riverside  
Leeds  
LS1 4BN

Plate 17

Crushed aggregate placed across TV ERF plot.

Class 1A.





**CLIENT:**

South Tees Development Corporation

**Project:**

10035117

**Site Name:**

Redcar Steelworks  
– TV ERF Plot

1 Whitehall Riverside  
Leeds  
LS1 4BN

Plate18

NAPL test kit showing negative result from grid BA26 within the TV ERF plot.



**APPENDIX D**

**Environmental Summary Tables**

Table 1: In Situ Soil GAC Protective of Human Health

Contaminant of Concern	MDL	Units	Human Health (Commercial Worker)	GAC Source	Tests Conducted	Maximum Concentration Measured
<b>Metals</b>						
Arsenic	0.2	mg/kg	640	S4UL	181	29
Boron, Water Soluble	0.2	mg/kg	240,000	S4UL	181	7.7
Cadmium	0.1	mg/kg	190	S4UL	181	1.0
Chromium	0.15	mg/kg	8,600	S4UL	181	290
Chromium, Hexavalent	1	mg/kg	33	S4UL	181	<MDL
Copper	0.2	mg/kg	68,000	S4UL	181	130
Lead	0.3	mg/kg	2,300	C4SL	181	200
Mercury	0.05	mg/kg	58*	S4UL	181	2.4
Nickel	1	mg/kg	980	S4UL	181	55
Vanadium	0.8	mg/kg	9,000	S4UL	181	790
Zinc	1	mg/kg	730,000	S4UL	181	500
<b>Inorganics</b>						
pH		pH	-		181	12
Cyanide, Total	0.1	mg/kg	-		181	180
Cyanide, Free	0.1	mg/kg	66	DQRA	181	0.5
Thiocyanate	0.6	mg/kg	230	USEPA	181	27
Organic matter	0.1	%	-		181	6.3
Sulphate Aqueous Extract as SO4	10	mg/l	-		181	2,700
Sulphur (free)	0.75	mg/kg	-		181	210
<b>Petroleum Hydrocarbons</b>						
Aliphatic C5-C6	0.01	mg/kg	3200**	S4UL	181	0.2
Aliphatic C6-C8	0.01	mg/kg	7800**	S4UL	181	0.0
Aliphatic C8-C10	0.01	mg/kg	2000**	S4UL	181	0.3
Aliphatic C10-C12	1.5	mg/kg	9700**	S4UL	181	3.5
Aliphatic C12-C16	1.2	mg/kg	59000**	S4UL	181	3.2
Aliphatic C16-C21	1.5	mg/kg	1,600,000	S4UL	181	22
Aliphatic C21-C35	3.4	mg/kg	1,600,000	S4UL	181	74
Aromatic C5-C7	0.01	mg/kg	26000**	S4UL	181	1.0
Aromatic C7-C8	0.01	mg/kg	56000**	S4UL	181	0.0
Aromatic C8-C10	0.01	mg/kg	3500**	S4UL	181	0.1
Aromatic C10-C12	0.9	mg/kg	16000**	S4UL	181	0.0
Aromatic C12-C16	0.5	mg/kg	36000**	S4UL	181	1.8
Aromatic C16-C21	0.6	mg/kg	28,000	S4UL	181	13
Aromatic C21-C35	1.4	mg/kg	28,000	S4UL	181	69
TPH Ali/Aro Total	10	mg/kg	na		181	130
<b>PAHs</b>						
Naphthalene	0.03	mg/kg	1,900	Wood	181	21.0
Acenaphthylene	0.03	mg/kg	83000**	S4UL	181	0.12
Acenaphthene	0.03	mg/kg	84000**	S4UL	181	0.18
Fluorene	0.03	mg/kg	63000**	S4UL	181	0.11
Phenanthrene	0.03	mg/kg	22,000	S4UL	181	0.96
Anthracene	0.03	mg/kg	520,000	S4UL	181	0.21
Fluoranthene	0.03	mg/kg	23,000	S4UL	181	2.80
Pyrene	0.03	mg/kg	54,000	S4UL	181	2.70
Benzo(a)anthracene	0.03	mg/kg	170	S4UL	181	1.80
Chrysene	0.03	mg/kg	350	S4UL	181	1.20
Benzo(b)fluoranthene	0.03	mg/kg	44	S4UL	181	2.10
Benzo(k)fluoranthene	0.03	mg/kg	1,200	S4UL	181	0.65
Benzo(a)pyrene	0.03	mg/kg	77	Wood	181	0.92
Indeno(1,2,3-c,d)pyrene	0.03	mg/kg	500	S4UL	181	0.53
Dibenzo(a,h)anthracene	0.03	mg/kg	3.5	S4UL	181	0.19
Benzo(g,h,i)perylene	0.03	mg/kg	3,900	S4UL	181	0.71
<b>Phenols</b>						
Phenol - Monohydric	0.3	mg/kg	760	S4UL	181	1.0

The following GACs have been used in order of availability:

S4UL: (Commercial End Use, 1% LQM / CIEH (2015) The LQM / CIEH S4ULs for Human Health Risk Assessment. Copyright Land Department for Environment, Food and Rural Affairs (DEFRA) (2014) SP1010: Development of Where published criteria above are not available, Arcadis has derived GAC based on EA guidance  
C4SL: (Commercial End Use) Department for Environment, Food and Rural Affairs (DEFRA) (2014) SP1010: Development of Where published criteria above are not available, Arcadis has derived GAC based on EA guidance  
Arcadis GAC based on US Environmental Protection Agency (USEPA) Regional Screening Levels (RSL).  
USEPA GAC based on US Environmental Protection Agency (USEPA) Regional Screening Levels (RSL).  
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

**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  
<0.1 Concentration less than the method detection limit  
Contaminant of Concern in excess of Human Health GAC

Table 1: In Situ Soil GAC Protective of Human Health

Contaminant of Concern	MDL	Units	Human Health (Commercial Worker)	GAC Source	Tests Conducted	Maximum Concentration Measured
<b>PCBs</b>						
PCB 28 + PCB 31	0.01	mg/kg	-		25	<MDL
PCB 52	0.01	mg/kg	-		25	<MDL
PCB 101	0.01	mg/kg	-		25	<MDL
PCB 118	0.01	mg/kg	-		25	<MDL
PCB 153	0.01	mg/kg	-		25	<MDL
PCB 138	0.01	mg/kg	-		25	<MDL
PCB 180	0.01	mg/kg	-		25	<MDL
PCB 7 Total	0.01	mg/kg	-		25	<MDL
<b>VOCs</b>						
Vinyl Chloride	0.01	mg/kg	0.059	S4UL	67	<MDL
1,1 Dichloroethylene	0.01	mg/kg	1,000	USEPA	67	<MDL
Trans-1,2-dichloroethylene	0.01	mg/kg	23,000	USEPA	67	<MDL
1,1-dichloroethane	0.01	mg/kg	16	USEPA	67	<MDL
Cis-1,2-dichloroethylene	0.01	mg/kg	2,300	USEPA	67	<MDL
2,2-dichloropropane	0.01	mg/kg	-		67	<MDL
Bromochloromethane	0.01	mg/kg	630	USEPA	67	<MDL
Chloroform	0.01	mg/kg	99	S4UL	67	<MDL
1,1,1-trichloroethane	0.01	mg/kg	660	S4UL	67	<MDL
1,1-dichloropropene	0.01	mg/kg	-		67	<MDL
Carbon tetrachloride	0.01	mg/kg	2.9	S4UL	67	<MDL
Benzene	0.01	mg/kg	27	S4UL	67	0.80
1,2-dichloroethane	0.01	mg/kg	0.67	S4UL	67	<MDL
Trichloroethylene	0.01	mg/kg	1.2	S4UL	67	<MDL
1,2-dichloropropane	0.01	mg/kg	11.0	USEPA	67	<MDL
Dibromomethane	0.01	mg/kg	99.0	USEPA	67	<MDL
Bromodichloromethane	0.01	mg/kg	1.3	USEPA	67	<MDL
cis-1,3-dichloropropene	0.01	mg/kg	8.2	USEPA	67	<MDL
Toluene	0.01	mg/kg	56,000	S4UL	67	<MDL
trans-1,3-dichloropropene	0.01	mg/kg	8.2	USEPA	67	<MDL
1,1,2-trichloroethane	0.01	mg/kg	5	USEPA	67	<MDL
Tetrachloroethylene	0.01	mg/kg	19	S4UL	67	0.04
1,3-dichloropropane	0.01	mg/kg	23,000	USEPA	67	<MDL
Dibromochloromethane	0.01	mg/kg	39	USEPA	67	<MDL
1,2-dibromoethane	0.01	mg/kg	0.16	USEPA	67	<MDL
Chlorobenzene	0.01	mg/kg	56	S4UL	67	<MDL
1,1,1,2-tetrachloroethane	0.01	mg/kg	110	S4UL	67	<MDL
Ethylbenzene	0.01	mg/kg	5,700	S4UL	67	<MDL
m+p-Xylene	0.01	mg/kg	5,900	S4UL	67	0.02
o-Xylene	0.01	mg/kg	6,600	S4UL	67	<MDL
Styrene	0.01	mg/kg	35,000	USEPA	67	<MDL
Bromoform	0.01	mg/kg	86	USEPA	67	<MDL
Isopropylbenzene	0.01	mg/kg	-		67	<MDL
Bromobenzene	0.01	mg/kg	1,800	USEPA	67	<MDL
1,2,3-trichloropropane	0.01	mg/kg	0.11	USEPA	67	0.03
n-propylbenzene	0.01	mg/kg	-		67	<MDL
2-chlorotoluene	0.01	mg/kg	23,000	USEPA	67	<MDL
1,3,5-trimethylbenzene	0.01	mg/kg	1,500	USEPA	67	<MDL
4-chlorotoluene	0.01	mg/kg	23,000	USEPA	67	<MDL
Tert-butylbenzene	0.01	mg/kg	120,000	USEPA	67	<MDL
1,2,4-trimethylbenzene	0.01	mg/kg	1,800	USEPA	67	<MDL
sec-butylbenzene	0.01	mg/kg	120,000	USEPA	67	<MDL
p-isopropyltoluene	0.01	mg/kg	-		67	<MDL
1,3-dichlorobenzene	0.01	mg/kg	30	S4UL	67	<MDL
1,4-dichlorobenzene	0.01	mg/kg	4,400	S4UL	67	<MDL
n-butylbenzene	0.01	mg/kg	58,000	USEPA	67	<MDL
1,2-dichlorobenzene	0.01	mg/kg	2,000	S4UL	67	<MDL
1,2-dibromo-3-chloropropane	0.01	mg/kg	0.06	USEPA	67	<MDL
1,2,4-trichlorobenzene	0.01	mg/kg	220	S4UL	67	<MDL
Hexachlorobutadiene	0.01	mg/kg	31	S4UL	67	<MDL
1,2,3-trichlorobenzene	0.01	mg/kg	102	S4UL	67	<MDL
MTBE	0.01	mg/kg	210	USEPA	67	<MDL

The following GACs have been used in order of availability:

S4UL: (Commercial End Use, 1% SOM)

C4SL: (Commercial End Use)

Arcadis

USEPA

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

**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

<0.1

Concentration less than the method detection limit

Contaminant of Concern in excess of Human Health GAC

Table 1: In Situ Soil GAC Protective of Human Health

Contaminant of Concern	MDL	Units	Human Health (Commercial Worker)	GAC Source	Tests Conducted	Maximum Concentration Measured
<b>SVOCs</b>						
Phenol	0.1	mg/kg	760	S4UL	64	<MDL
Aniline	0.1	mg/kg	400	USEPA	64	<MDL
2-Chlorophenol	0.1	mg/kg	3,500	S4UL	64	<MDL
Benzyl Alcohol	0.1	mg/kg	82,000	USEPA	64	<MDL
2-Methylphenol	0.1	mg/kg	41,000	USEPA	64	<MDL
Bis(2-chloroisopropyl)ether	0.1	mg/kg	47,000	USEPA	64	<MDL
3&4-Methylphenol	0.1	mg/kg	82,000	USEPA	64	<MDL
2,4-Dimethylphenol	0.1	mg/kg	16,000	USEPA	64	<MDL
Bis-(dichloroethoxy)methane	0.1	mg/kg	-		64	<MDL
2,4-Dichlorophenol	0.1	mg/kg	2,500	USEPA	64	<MDL
1,2,4-Trichlorobenzene	0.1	mg/kg	110	USEPA	64	<MDL
4-Chloro-3-methylphenol	0.1	mg/kg	82,000	USEPA	64	<MDL
2-Methylnaphthalene	0.1	mg/kg	3,000	USEPA	64	<MDL
Hexachlorocyclopentadiene	0.1	mg/kg	8	USEPA	64	<MDL
2,4,6-Trichlorophenol	0.1	mg/kg	210	USEPA	64	<MDL
2,4,5-Trichlorophenol	0.1	mg/kg	82,000	USEPA	64	<MDL
2-Chloronaphthalene	0.1	mg/kg	60,000	USEPA	64	<MDL
2-Nitroaniline	0.1	mg/kg	8,000	USEPA	64	<MDL
2,4-Dinitrotoluene	0.1	mg/kg	7.4	USEPA	64	<MDL
3-Nitroaniline	0.1	mg/kg	-		64	<MDL
4-Nitrophenol	0.1	mg/kg	-		64	1.10
Dibenzofuran	0.1	mg/kg	1,000	USEPA	64	<MDL
2,6-Dinitrotoluene	0.1	mg/kg	1.50	USEPA	64	<MDL
2,3,4,6-Tetrachlorophenol	0.1	mg/kg	25,000	USEPA	64	<MDL
Diethylphthalate	0.1	mg/kg	660,000	USEPA	64	<MDL
4-Chlorophenylphenylether	0.1	mg/kg	-		64	<MDL
4-Nitroaniline	0.1	mg/kg	110	USEPA	64	<MDL
2-Methyl-4,6-Dinitrophenol	0.1	mg/kg	-		64	<MDL
Diphenylamine	0.1	mg/kg	82,000	USEPA	64	<MDL
4-Bromophenylphenylether	0.1	mg/kg	-		64	<MDL
Hexachlorobenzene	0.1	mg/kg	110	S4UL	64	<MDL
Pentachlorophenol	0.1	mg/kg	400	S4UL	64	<MDL
Di-n-butylphthalate	0.1	mg/kg	-		64	<MDL
Butylbenzylphthalate	0.1	mg/kg	1,200	USEPA	64	<MDL
Bis(2-ethylhexyl)phthalate	0.1	mg/kg	160	USEPA	64	<MDL
Di-n-octylphthalate	0.1	mg/kg	8,200	USEPA	64	<MDL
1,4-Dinitrobenzene	0.1	mg/kg	82	USEPA	64	<MDL
Dimethylphthalate	0.1	mg/kg	-		64	<MDL
1,3-Dinitrobenzene	0.1	mg/kg	82	USEPA	64	<MDL
1,2-Dinitrobenzene	0.1	mg/kg	82	USEPA	64	<MDL
2,3,5,6-Tetrachlorophenol	0.1	mg/kg	-		64	<MDL
Azobenzene	0.1	mg/kg	26	USEPA	64	<MDL
Carbazole	0.1	mg/kg	-		64	<MDL
<b>Asbestos</b>						
Total Mass% Asbestos (a+b+c)	<0.001	%	<0.001	Arcadis	182	0.03

The following GACs have been used in order of availability:

S4UL: (Commercial End Use, 1% SOM)

C4SL: (Commercial End Use)

Arcadis

USEPA

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

**Notes**

GAC

na

123\*

123\*\*

-

<0.1

Generic Assessment Criteria

Comprises multiple contaminant, no applicable GAC

S4UL exceeds the vapour saturation limit

S4UL exceeds the solubility saturation limit

No applicable GAC readily available

Concentration less than the method detection limit

Contaminant of Concern in excess of Human Health GAC

Table 3: Screened Made Ground (site won) GAC Protective of Human Health

Contaminant of Concern	MDL	Units	Human Health (Commercial Worker)	GAC Source	Tests Conducted	Maximum Concentration Measured
<b>Metals</b>						
Arsenic	0.2	mg/kg	640	S4UL	220	200
Boron, Water Soluble	0.2	mg/kg	240,000	S4UL	220	12.0
Cadmium	0.1	mg/kg	190	S4UL	220	6.9
Chromium	0.15	mg/kg	8,600	S4UL	220	370
Chromium, Hexavalent	1	mg/kg	33	S4UL	220	2.6
Copper	0.2	mg/kg	68,000	S4UL	220	920
Lead	0.3	mg/kg	2,300	C4SL	220	640
Mercury	0.05	mg/kg	58*	S4UL	220	4.8
Nickel	1	mg/kg	980	S4UL	220	80
Vanadium	0.8	mg/kg	9,000	S4UL	220	1,200
Zinc	1	mg/kg	730,000	S4UL	220	38,000
<b>Inorganics</b>						
pH		pH	-		220	12
Cyanide, Total	0.1	mg/kg	-		220	250
Cyanide, Free	0.1	mg/kg	66	DQRA	220	1.4
Thiocyanate	0.6	mg/kg	230	USEPA	220	7
Organic matter	0.1	%	-		220	5
Sulphate Aqueous Extract as SO4	10	mg/l	-		220	1,900
Sulphur (free)	0.75	mg/kg	-		220	200
<b>Petroleum Hydrocarbons</b>						
Aliphatic C5-C6	0.01	mg/kg	3200**	S4UL	220	0.0
Aliphatic C6-C8	0.01	mg/kg	7800**	S4UL	220	0.0
Aliphatic C8-C10	0.01	mg/kg	2000**	S4UL	220	0.0
Aliphatic C10-C12	1.5	mg/kg	9700**	S4UL	220	20.0
Aliphatic C12-C16	1.2	mg/kg	59000**	S4UL	220	19.0
Aliphatic C16-C21	1.5	mg/kg	1,600,000	S4UL	220	160
Aliphatic C21-C35	3.4	mg/kg	1,600,000	S4UL	220	660
Aromatic C5-C7	0.01	mg/kg	26000**	S4UL	220	0.0
Aromatic C7-C8	0.01	mg/kg	56000**	S4UL	220	0.0
Aromatic C8-C10	0.01	mg/kg	3500**	S4UL	220	0.0
Aromatic C10-C12	0.9	mg/kg	16000**	S4UL	220	14.0
Aromatic C12-C16	0.5	mg/kg	36000**	S4UL	220	30.0
Aromatic C16-C21	0.6	mg/kg	28,000	S4UL	220	320
Aromatic C21-C35	1.4	mg/kg	28,000	S4UL	220	760
TPH Ali/Aro Total	10	mg/kg	na		220	1,700
<b>PAHs</b>						
Naphthalene	0.03	mg/kg	1,900	Wood	220	1.2
Acenaphthylene	0.03	mg/kg	83000**	S4UL	220	0.80
Acenaphthene	0.03	mg/kg	84000**	S4UL	220	1.10
Fluorene	0.03	mg/kg	63000**	S4UL	220	2.20
Phenanthrene	0.03	mg/kg	22,000	S4UL	220	17.00
Anthracene	0.03	mg/kg	520,000	S4UL	220	3.30
Fluoranthene	0.03	mg/kg	23,000	S4UL	220	29.00
Pyrene	0.03	mg/kg	54,000	S4UL	220	24.00
Benzo(a)anthracene	0.03	mg/kg	170	S4UL	220	9.70
Chrysene	0.03	mg/kg	350	S4UL	220	8.30
Benzo(b)fluoranthene	0.03	mg/kg	44	S4UL	220	10.00
Benzo(k)fluoranthene	0.03	mg/kg	1,200	S4UL	220	4.40
Benzo(a)pyrene	0.03	mg/kg	77	Wood	220	6.20
Indeno(1,2,3-c,d)pyrene	0.03	mg/kg	500	S4UL	220	3.00
Dibenzo(a,h)anthracene	0.03	mg/kg	3.5	S4UL	220	0.83
Benzo(g,h,i)perylene	0.03	mg/kg	3,900	S4UL	220	3.70
PAH - USEPA 16, Total	0.1	mg/kg	na		220	31
<b>Phenols</b>						
Phenol - Monohydric	0.3	mg/kg	760	S4UL	220	0.6
<b>Asbestos</b>						
Total Mass% Asbestos (a+b+c)	<0.001	%	<0.001	Arcadis	220	0.218
Total Mass% Asbestos (a+b+c) Duplicate	<0.001	%	<0.001	Arcadis	13	0.778

The following GACs have been used in order of availability:

S4UL: (Commercial End Use, 1% SOM)

C4SL: (Commercial End Use)

Arcadis

USEPA

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

**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

<0.1

Elements present naturally in soil with typically low toxicity

<0.1

Concentration less than the method detection limit

Contaminant of Concern in excess of Human Health GAC



Table 3: Recycled Secondary Aggregate (site won) GAC Protective of Human Health

Contaminant of Concern	MDL	Units	Human Health (Commercial Worker)	GAC Source	Tests Conducted	Maximum Concentration Measured
<b>Metals</b>						
Arsenic	0.2	mg/kg	640	S4UL	91	22
Boron, Water Soluble	0.2	mg/kg	240,000	S4UL	91	5.6
Cadmium	0.1	mg/kg	190	S4UL	91	15.0
Chromium	0.15	mg/kg	8,600	S4UL	91	190
Chromium, Hexavalent	1	mg/kg	33	S4UL	91	0.0
Copper	0.2	mg/kg	68,000	S4UL	91	350
Lead	0.3	mg/kg	2,300	C4SL	91	750
Mercury	0.05	mg/kg	58*	S4UL	91	3.6
Nickel	1	mg/kg	980	S4UL	91	64
Vanadium	0.8	mg/kg	9,000	S4UL	91	510
Zinc	1	mg/kg	730,000	S4UL	91	
<b>Inorganics</b>						
pH		pH	-		91	13
Cyanide, Total	0.1	mg/kg	-		91	99
Cyanide, Free	0.1	mg/kg	66	DQRA	91	0.6
Thiocyanate	0.6	mg/kg	230	USEPA	91	10
Organic matter	0.1	%	-		91	3
Sulphate Aqueous Extract as SO4	10	mg/l	-		91	2,300
Sulphur (free)	0.75	mg/kg	-		91	65
<b>Petroleum Hydrocarbons</b>						
Aliphatic C5-C6	0.01	mg/kg	3200**	S4UL	91	0.0
Aliphatic C6-C8	0.01	mg/kg	7800**	S4UL	91	0.0
Aliphatic C8-C10	0.01	mg/kg	2000**	S4UL	91	0.0
Aliphatic C10-C12	1.5	mg/kg	9700**	S4UL	91	10.0
Aliphatic C12-C16	1.2	mg/kg	59000**	S4UL	91	26.0
Aliphatic C16-C21	1.5	mg/kg	1,600,000	S4UL	91	160
Aliphatic C21-C35	3.4	mg/kg	1,600,000	S4UL	91	860
Aromatic C5-C7	0.01	mg/kg	26000**	S4UL	91	0.0
Aromatic C7-C8	0.01	mg/kg	56000**	S4UL	91	0.0
Aromatic C8-C10	0.01	mg/kg	3500**	S4UL	91	0.0
Aromatic C10-C12	0.9	mg/kg	16000**	S4UL	91	14.0
Aromatic C12-C16	0.5	mg/kg	36000**	S4UL	91	40.0
Aromatic C16-C21	0.6	mg/kg	28,000	S4UL	91	260
Aromatic C21-C35	1.4	mg/kg	28,000	S4UL	91	710
TPH Ali/Aro Total	10	mg/kg	na		91	2,100
<b>PAHs</b>						
Naphthalene	0.03	mg/kg	1,900	Wood	91	2.6
Acenaphthylene	0.03	mg/kg	83000**	S4UL	91	1.30
Acenaphthene	0.03	mg/kg	84000**	S4UL	91	0.86
Fluorene	0.03	mg/kg	63000**	S4UL	91	1.30
Phenanthrene	0.03	mg/kg	22,000	S4UL	91	8.20
Anthracene	0.03	mg/kg	520,000	S4UL	91	1.70
Fluoranthene	0.03	mg/kg	23,000	S4UL	91	14.00
Pyrene	0.03	mg/kg	54,000	S4UL	91	13.00
Benzo(a)anthracene	0.03	mg/kg	170	S4UL	91	8.50
Chrysene	0.03	mg/kg	350	S4UL	91	6.20
Benzo(b)fluoranthene	0.03	mg/kg	44	S4UL	91	10.00
Benzo(k)fluoranthene	0.03	mg/kg	1,200	S4UL	91	3.60
Benzo(a)pyrene	0.03	mg/kg	77	Wood	91	7.60
Indeno(1,2,3-c,d)pyrene	0.03	mg/kg	500	S4UL	91	2.80
Dibenzo(a,h)anthracene	0.03	mg/kg	3.5	S4UL	91	0.64
Benzo(g,h,i)perylene	0.03	mg/kg	3,900	S4UL	91	3.00
<b>Phenols</b>						
Phenol - Monohydric	0.3	mg/kg	760	S4UL	91	0.7
<b>Asbestos</b>						
Total Mass% Asbestos (a+b+c)	<0.001	%	<0.001	Arcadis	182	0.255
Total Mass% Asbestos (a+b+c) Duplicate	<0.001	%	<0.001	Arcadis	7	0.090

The following GACs have been used in order of availability:

S4UL: (Commercial End Use, 1% SOM) LQM / CIEH (2015) The LQM / CIEH S4ULs for Human Health Risk Assessment. Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3223. All rights reserved.  
 C4SL: (Commercial 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 guidance  
 USEPA GAC based on US Environmental Protection Agency (USEPA) Regional Screening Levels (RSL).  
 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

**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 than the method detection limit  
 Contaminant of Concern in excess of Human Health GAC



Table 4: Imported Mudstone (site won) GAC Protective of Human Health

Contaminant of Concern	MDL	Units	Human Health (Commercial Worker)	GAC Source	Tests Conducted	Maximum Concentration Measured
<b>Metals</b>						
Arsenic	0.2	mg/kg	640	S4UL	17	26
Boron, Water Soluble	0.2	mg/kg	240,000	S4UL	17	5.6
Cadmium	0.1	mg/kg	190	S4UL	17	0.5
Chromium	0.15	mg/kg	8,600	S4UL	17	71
Chromium, Hexavalent	1	mg/kg	33	S4UL	17	<MDL
Copper	0.2	mg/kg	68,000	S4UL	17	33
Lead	0.3	mg/kg	2,300	C4SL	17	74
Mercury	0.05	mg/kg	58*	S4UL	17	0.6
Nickel	1	mg/kg	980	S4UL	17	50
Vanadium	0.8	mg/kg	9,000	S4UL	17	120
Zinc	1	mg/kg	730,000	S4UL	17	
<b>Inorganics</b>						
pH		pH	-		17	12
Cyanide, Total	0.1	mg/kg	-		17	<MDL
Cyanide, Free	0.1	mg/kg	66	DQRA	17	<MDL
Thiocyanate	0.6	mg/kg	230	USEPA	17	<MDL
Organic matter	0.1	%	-		17	3
Sulphate Aqueous Extract as SO4	10	mg/l	-		17	430
Sulphur (free)	0.75	mg/kg	-		17	2
<b>Petroleum Hydrocarbons</b>						
Aliphatic C5-C6	0.01	mg/kg	3200**	S4UL	17	2.5
Aliphatic C6-C8	0.01	mg/kg	7800**	S4UL	17	2.7
Aliphatic C8-C10	0.01	mg/kg	2000**	S4UL	17	1.5
Aliphatic C10-C12	1.5	mg/kg	9700**	S4UL	17	19.0
Aliphatic C12-C16	1.2	mg/kg	59000**	S4UL	17	13.0
Aliphatic C16-C21	1.5	mg/kg	1,600,000	S4UL	17	21
Aliphatic C21-C35	3.4	mg/kg	1,600,000	S4UL	17	37
Aromatic C5-C7	0.01	mg/kg	26000**	S4UL	17	<MDL
Aromatic C7-C8	0.01	mg/kg	56000**	S4UL	17	0.2
Aromatic C8-C10	0.01	mg/kg	3500**	S4UL	17	0.3
Aromatic C10-C12	0.9	mg/kg	16000**	S4UL	17	<MDL
Aromatic C12-C16	0.5	mg/kg	36000**	S4UL	17	<MDL
Aromatic C16-C21	0.6	mg/kg	28,000	S4UL	17	<MDL
Aromatic C21-C35	1.4	mg/kg	28,000	S4UL	17	<MDL
TPH Ali/Aro Total	10	mg/kg	na		17	90
<b>PAHs</b>						
Naphthalene	0.03	mg/kg	1,900	Wood	17	0.7
Acenaphthylene	0.03	mg/kg	83000**	S4UL	17	<MDL
Acenaphthene	0.03	mg/kg	84000**	S4UL	17	<MDL
Fluorene	0.03	mg/kg	63000**	S4UL	17	0.23
Phenanthrene	0.03	mg/kg	22,000	S4UL	17	0.47
Anthracene	0.03	mg/kg	520,000	S4UL	17	0.24
Fluoranthene	0.03	mg/kg	23,000	S4UL	17	0.09
Pyrene	0.03	mg/kg	54,000	S4UL	17	0.07
Benzo(a)anthracene	0.03	mg/kg	170	S4UL	17	0.09
Chrysene	0.03	mg/kg	350	S4UL	17	0.09
Benzo(b)fluoranthene	0.03	mg/kg	44	S4UL	17	0.04
Benzo(k)fluoranthene	0.03	mg/kg	1,200	S4UL	17	<MDL
Benzo(a)pyrene	0.03	mg/kg	77	Wood	17	<MDL
Indeno(1,2,3-c,d)pyrene	0.03	mg/kg	500	S4UL	17	<MDL
Dibenzo(a,h)anthracene	0.03	mg/kg	3.5	S4UL	17	<MDL
Benzo(g,h,i)perylene	0.03	mg/kg	3,900	S4UL	17	0.04
<b>Phenols</b>						
Phenol - Monohydric	0.3	mg/kg	760	S4UL	17	<MDL
<b>Asbestos</b>						
Total Mass% Asbestos (a+b+c)	<0.001	%	<0.001	Arcadis	17	Not Detected

The following GACs have been used in order of availability:

S4UL: (Commercial End Use, 1% SOM) LQM / CIEH (2015) The LQM / CIEH S4ULs for Human Health Risk Assessment. Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3223. All rights reserved.  
 C4SL: (Commercial 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 guidance  
 USEPA GAC based on US Environmental Protection Agency (USEPA) Regional Screening Levels (RSL).  
 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

**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 than the method detection limit  
 Contaminant of Concern in excess of Human Health GAC

Table 5: Recycled Secondary Aggregate (imported) GAC Protective of Human Health

Contaminant of Concern	MDL	Units	Human Health (Commercial Worker)	GAC Source	Tests Conducted	Maximum Concentration Measured
<b>Metals</b>						
Arsenic	0.2	mg/kg	640	S4UL	5	36
Boron, Water Soluble	0.2	mg/kg	240,000	S4UL	5	8.4
Cadmium	0.1	mg/kg	190	S4UL	5	46.0
Chromium	0.15	mg/kg	8,600	S4UL	5	140
Chromium, Hexavalent	1	mg/kg	33	S4UL	5	<MDL
Copper	0.2	mg/kg	68,000	S4UL	5	98
Lead	0.3	mg/kg	2,300	C4SL	5	3,200
Mercury	0.05	mg/kg	58*	S4UL	5	0.1
Nickel	1	mg/kg	980	S4UL	5	30
Vanadium	0.8	mg/kg	9,000	S4UL	5	350
Zinc	1	mg/kg	730,000	S4UL	5	4,000
<b>Inorganics</b>						
pH		pH	-		5	12
Cyanide, Total	0.1	mg/kg	-		5	2.9
Cyanide, Free	0.1	mg/kg	66	DQRA	5	0.0
Thiocyanate	0.6	mg/kg	230	USEPA	5	1.0
Organic matter	0.1	%	-		5	2.3
Sulphate Aqueous Extract as SO4	10	mg/l	-		5	2,100
Sulphur (free)	0.75	mg/kg	-		5	42
<b>Petroleum Hydrocarbons</b>						
Aliphatic C5-C6	0.01	mg/kg	3200**	S4UL	5	<MDL
Aliphatic C6-C8	0.01	mg/kg	7800**	S4UL	5	0.2
Aliphatic C8-C10	0.01	mg/kg	2000**	S4UL	5	0.3
Aliphatic C10-C12	1.5	mg/kg	9700**	S4UL	5	3.4
Aliphatic C12-C16	1.2	mg/kg	59000**	S4UL	5	7.9
Aliphatic C16-C21	1.5	mg/kg	1,600,000	S4UL	5	120
Aliphatic C21-C35	3.4	mg/kg	1,600,000	S4UL	5	2,600
Aromatic C5-C7	0.01	mg/kg	26000**	S4UL	5	<MDL
Aromatic C7-C8	0.01	mg/kg	56000**	S4UL	5	<MDL
Aromatic C8-C10	0.01	mg/kg	3500**	S4UL	5	<MDL
Aromatic C10-C12	0.9	mg/kg	16000**	S4UL	5	5.9
Aromatic C12-C16	0.5	mg/kg	36000**	S4UL	5	15.0
Aromatic C16-C21	0.6	mg/kg	28,000	S4UL	5	98
Aromatic C21-C35	1.4	mg/kg	28,000	S4UL	5	1,300
TPH Ali/Aro Total	10	mg/kg	na		5	4,200
<b>PAHs</b>						
Naphthalene	0.03	mg/kg	1,900	Wood	5	0.2
Acenaphthylene	0.03	mg/kg	83000**	S4UL	5	4.50
Acenaphthene	0.03	mg/kg	84000**	S4UL	5	4.20
Fluorene	0.03	mg/kg	63000**	S4UL	5	3.00
Phenanthrene	0.03	mg/kg	22,000	S4UL	5	4.00
Anthracene	0.03	mg/kg	520,000	S4UL	5	4.10
Fluoranthene	0.03	mg/kg	23,000	S4UL	5	14.00
Pyrene	0.03	mg/kg	54,000	S4UL	5	11.00
Benzo(a)anthracene	0.03	mg/kg	170	S4UL	5	4.10
Chrysene	0.03	mg/kg	350	S4UL	5	4.50
Benzo(b)fluoranthene	0.03	mg/kg	44	S4UL	5	3.60
Benzo(k)fluoranthene	0.03	mg/kg	1,200	S4UL	5	3.10
Benzo(a)pyrene	0.03	mg/kg	77	Wood	5	5.70
Indeno(1,2,3-c,d)pyrene	0.03	mg/kg	500	S4UL	5	1.60
Dibenzo(a,h)anthracene	0.03	mg/kg	3.5	S4UL	5	0.50
Benzo(g,h,i)perylene	0.03	mg/kg	3,900	S4UL	5	1.70
<b>Phenols</b>						
Phenol - Monohydric	0.3	mg/kg	760	S4UL	5	<MDL
<b>Asbestos</b>						
Total Mass% Asbestos (a+b+c)	<0.001	%	<0.001	Arcadis	5	0.009

The following GACs have been used in order of availability:

S4UL: (Commercial End Use, 1% SOM) LQM / CIEH (2015) The LQM / CIEH S4ULs for Human Health Risk Assessment. Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3223. All rights reserved.  
 C4SL: (Commercial End Use) Department for Environment, Food and Rural Affairs (DEFRA) (2014) SP1010: Development of Where published criteria above are not available, Arcadis has derived GAC based on EA guidance  
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 USEPA GAC based on US Environmental Protection Agency (USEPA) Regional Screening Levels (RSL).  
 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

**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 than the method detection limit  
 - Not analysed  
 Contaminant of Concern in excess of Human Health GAC

Stockpile or (Placed Source)	Stockpile Size	Material	Environmental Tests Conducted	Used As Fill at TVERF Site July 9th 2021	Complete Lab Data Available at Time of Issue
PRA_SP001	2,161	Screened Material	5	Yes = Below Cap	Yes
PRA_SP002	3,710	Screened Material	8	Yes = Below Cap	Yes
PRA_SP003	4,525	Screened Material	9	Yes = Below Cap	Yes
PRA_SP004	4,261	Screened Material	9	Yes = Below Cap	Yes
PRA_SP005	5,433	Screened Material	11	Yes = Below Cap	Yes
PRA_SP006	5,325	Screened Material	11	Yes = Below Cap	Yes
PRA_SP007	8,182	Screened Material	16	Yes = Below Cap	Yes
PRA_SP008	13,680	Cohesive Made Ground	13	No	n/a
PRA_SP009	11,879	Recycled Secondary Aggregate	12	Yes = Below Cap	Yes
PRA_SP010	15,664	Recycled Secondary Aggregate	18	Yes = Below Cap	Yes
PRA_SP011	16,209	Screened Material	34	Yes = Below Cap	Yes
PRA_SP012	7,946	Screened Material	16	Yes = Below Cap	Yes
PRA_SP013	22,630	Recycled Secondary Aggregate	23	Yes = Below Cap	Yes
PRA_SP014	3,500	Slag	8	No	n/a
PRA_SP015	2,614	Slag	8	No	n/a
PRA_SP016	955	Contaminated materials for treatment	n/a	No	n/a
PRA_SP017	135	Contaminated materials for treatment	n/a	No	n/a
PRA_SP018	90	Contaminated materials for treatment	n/a	No	n/a
PRA_SP019	3	Contaminated materials for treatment	n/a	No	n/a
PRA_SP020	481	Slag	5	No	n/a
PRA_SP021	n/a	Contaminated materials for treatment	2	No	n/a
PRA_SP022	9,207	Cohesive Made Ground	3	No	n/a
PRA_SP023	2,901	Recycled Secondary Aggregate	6	Yes = Below Cap	Yes
PRA_SP024	n/a	Contaminated materials for treatment	3	No	n/a
PRA_SP025	14,384	Cohesive Made Ground	4	Below cover	n/a
PRA_SP026	1,118	Contaminated materials for treatment		No	n/a
PRA_SP027	4,817	Screened material	12	Yes = Below Cap	Yes
PRA_SP028	11,422	Refractory	4	No	n/a
PRA_SP029	11,215	Screened material	20	Yes = Below Cap	Yes
PRA_SP030	4,173	Contaminated materials for treatment	0	No	n/a
PRA_SP031	651	Recycled Secondary Aggregate	5	Yes = Below Cap	Yes
PRA_SP032	3,919	Screened Material	0	No	n/a
PRA_SP033	6,045	Recycled Secondary Aggregate	6	Yes = Below Cap	Yes
PRA_SP034	8,874	Screened Material	20	Yes = Below Cap	Yes
PRA_SP035	3,983	Slag	2	No	n/a
PRA_SP036	4,429	Recycled Secondary Aggregate	5	Yes = Below Cap	Yes
PRA_SP037	1,897	Recycled Secondary Aggregate	2	Yes = Below Cap	Yes
PRA_SP038	16,699	Clay	0	No	n/a
PRA_SP039	1,537	Recycled Secondary Aggregate	2	Yes = Below Cap	Yes
PRA_SP040	3,217	Recycled Secondary Aggregate	4	Yes = Below Cap	Yes
PRA_SP041	2,405	Screened material	3	Yes = Below Cap	Yes
PRA_SP042	3,793	Recycled Secondary Aggregate	4	Yes = Below Cap	Yes
PRA_SP043	6,925	Screened material	12	Yes = Below Cap	Yes
PRA_SP044	4,481	Recycled Secondary Aggregate	4	Yes = Below Cap	No
PRA_SP045	3,113	Screened material	13	Yes = Below Cap	Yes
PRA_SP046	not used	not used	not used	not used	Yes
PRA_SP047	7,432	Imported Mudstone	0	Yes = Cap	No
PRA_SP048	6,848	Imported Mudstone	0	Yes = Cap	No
PRA_SP049	5,280	Recycled Secondary Aggregate	3	Yes = Below Cap	No
PRA_SP050	6,004	Screened material	20	Yes = Below Cap	Yes
PRA_SP051	6,342	Recycled Secondary Aggregate	5	Yes = Below Cap	No
PRA_SP052	2,000	Recycled Secondary Aggregate	2	Yes = Below Cap	No
PRA_SP053	1,800	Recycled Secondary Aggregate	2	Yes = Below Cap	No
PRA_SP054	3,113	Screened Material	9	Yes = Below Cap	No
PRA_SP055	1,638	Recycled Secondary Aggregate	2	Yes = Below Cap	No
PRA_SP056	1,500	Recycled Secondary Aggregate	2	Yes = Below Cap	No
PRA_SP057	1,500	Recycled Secondary Aggregate	2	Yes = Below Cap	No
PRA_SP058	1,948	Recycled Secondary Aggregate	2	Yes = Below Cap	No
Oversize	6,247	Slag	0	No	n/a
PRA_SP201	Awaiting Contractor data	Imported Recycled Secondary Aggregate	2	Yes = Below Cap	Yes

Stockpile or (Placed Sample)	Stockpile Size	Material	Environmental Tests Conducted	Used As Fill at TVERF Site July 9th 2021	Complete Lab Data Available at Time of Issue
(PRA-AY-15-S3, PRA-AY-17-S7, PRA-AY-19-S4)	Awaiting Contractor data	Imported Recycled Secondary Aggregate	3	Yes = Below Cap	Yes
(PRA-AY-33-S2, PRA-AY-35-S2, PRA-AY-37-S3)	n/a	Emvbankment material in situ later screened into SP034	3	Yes = Below Cap	Yes
(PRA-AX-18-S2 PRA-AU-17-S5 PRA-AW-17-S7 PRA-AV-17-S3 PRA-AW-20-S3 PRA-AU-19-S3 PRA-AW-17-S8 PRA-AW-20-S2 PRA-AX-19-S2 PRA-AU-19-S5 PRA-AX-23-S2 PRA-AU-19-S4 PRA-AU-17-S6 PRA-AW-17-S11 PRA-AY-17-S4 PRA-AW-17-S10 PRA-AW-17-S9)	19,665	Imported Mudstone	17	Yes = Below Cap	Yes

**APPENDIX E**

**Laboratory Certificates - Environmental Testing**



# DETS

## Certificate of Analysis

*Certificate Number* 20-22901-1

03-Dec-20

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 20-22901-1

*Client Reference* (not supplied)

*Order No* C1096/MA/0034

*Contract Title* Redcar Praire Phase 1

*Description* 30 Soil samples.

*Date Received* 12-Nov-20

*Date Started* 12-Nov-20

*Date Completed* 03-Dec-20

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

**Notes This report supersedes 20-22901, testing added.**

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



# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-22901-1

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	1759641	1759642	1759643	1759644	1759645
Sample ID	PRA-SP003-1	PRA-SP003-2	PRA-SP003-3	PRA-SP003-4	PRA-SP003-5
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	09/11/2020	09/11/2020	09/11/2020	09/11/2020	09/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETSC 1102	0.001	%			0.002		
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	33	18	20	19	16
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	6.4	4.5	3.2	3.3	3.2
Cadmium	DETSC 2301#	0.1	mg/kg	2.1	1.9	0.9	0.9	1.2
Chromium	DETSC 2301#	0.15	mg/kg	160	140	100	76	93
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	160	73	76	75	76
Lead	DETSC 2301#	0.3	mg/kg	310	160	95	89	360
Mercury	DETSC 2325#	0.05	mg/kg	4.2	1.4	0.55	0.62	0.29
Nickel	DETSC 2301#	1	mg/kg	37	26	19	22	21
Vanadium	DETSC 2301#	0.8	mg/kg	290	330	450	220	270
Zinc	DETSC 2301#	1	mg/kg	790	470	320	290	590
<b>Inorganics</b>								
pH	DETSC 2008#		pH	10.4	10.5	10.5	10.0	9.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg	72	40	15	18	4.3
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.9	0.4	0.1	0.1	0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	2.1	1.7	< 0.6	1.0	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.9	2.0	3.4	2.8	3.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	360	270	270	280	270
Sulphur (free)	DETSC 3049#	0.75	mg/kg	3.3	0.92	3.0	4.4	5.0
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10





# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-22901-1

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	1759641	1759642	1759643	1759644	1759645
Sample ID	PRA-SP003-1	PRA-SP003-2	PRA-SP003-3	PRA-SP003-4	PRA-SP003-5
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	09/11/2020	09/11/2020	09/11/2020	09/11/2020	09/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.11	0.09	0.07	0.07	0.04	
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.12	0.08	0.09	0.04	0.06	
Fluorene	DETSC 3303	0.03	mg/kg	0.09	0.06	0.07	0.05	0.06	
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.95	0.74	0.73	0.52	1.1	
Anthracene	DETSC 3303	0.03	mg/kg	0.21	0.15	0.18	0.12	0.25	
Fluoranthene	DETSC 3303#	0.03	mg/kg	3.1	2.2	2.8	1.8	4.1	
Pyrene	DETSC 3303#	0.03	mg/kg	3.0	2.2	2.7	1.7	3.7	
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	1.2	0.88	0.96	0.58	1.6	
Chrysene	DETSC 3303	0.03	mg/kg	1.4	0.94	1.0	0.64	1.5	
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	1.6	1.0	1.2	0.77	1.7	
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.74	0.48	0.44	0.30	0.82	
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	1.3	0.78	0.88	0.61	1.5	
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.49	0.30	0.33	0.23	0.56	
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.15	0.09	0.09	0.06	0.15	
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.60	0.35	0.35	0.25	0.61	
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	15	10	12	7.8	18	
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	

# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-22901-1

Client Ref

Contract Title Redcar Praire Phase 1

Test	Method	LOD	Units	Lab No				
				1759646	1759647	1759648	1759649	1759650
				PRA-SP003-6	PRA-SP003-7	PRA-SP003-8	PRA-SP003-9	PRA-SP002-1
				SOIL	SOIL	SOIL	SOIL	SOIL
				09/11/2020	09/11/2020	09/11/2020	09/11/2020	09/11/2020
				n/s	n/s	n/s	n/s	n/s
Asbestos Quantification	DETSC 1102	0.001	%			0.002		
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	22	20	24	22	23
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	5.4	4.1	2.2	2.6	6.5
Cadmium	DETSC 2301#	0.1	mg/kg	2.1	1.3	0.8	0.8	2.4
Chromium	DETSC 2301#	0.15	mg/kg	150	150	100	94	100
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	93	82	78	95	67
Lead	DETSC 2301#	0.3	mg/kg	210	250	100	96	200
Mercury	DETSC 2325#	0.05	mg/kg	1.2	1.6	0.14	0.22	2.1
Nickel	DETSC 2301#	1	mg/kg	26	30	27	22	24
Vanadium	DETSC 2301#	0.8	mg/kg	370	350	310	340	250
Zinc	DETSC 2301#	1	mg/kg	670	440	320	260	520
<b>Inorganics</b>								
pH	DETSC 2008#		pH	11.1	10.3	9.8	9.7	11.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	59	54	13	6.9	86
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.3	0.5	< 0.1	< 0.1	0.3
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.4	0.8	1.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.9	1.5	4.4	5.4	2.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	270	400	270	190	500
Sulphur (free)	DETSC 3049#	0.75	mg/kg	2.7	3.9	1.7	3.8	3.7
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10



# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-22901-1

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	1759646	1759647	1759648	1759649	1759650
Sample ID	PRA-SP003-6	PRA-SP003-7	PRA-SP003-8	PRA-SP003-9	PRA-SP002-1
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	09/11/2020	09/11/2020	09/11/2020	09/11/2020	09/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.08	0.08	0.04	0.04	0.14
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.08	0.08	0.10	0.05	0.12
Fluorene	DETSC 3303	0.03	mg/kg	0.07	0.06	0.09	0.04	0.11
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.78	0.73	1.0	0.55	0.99
Anthracene	DETSC 3303	0.03	mg/kg	0.15	0.16	0.23	0.14	0.23
Fluoranthene	DETSC 3303#	0.03	mg/kg	2.1	2.5	4.1	2.8	2.9
Pyrene	DETSC 3303#	0.03	mg/kg	2.1	2.4	3.7	2.7	2.8
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.69	0.94	1.3	1.0	1.1
Chrysene	DETSC 3303	0.03	mg/kg	0.77	1.0	1.3	0.96	1.1
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.88	1.2	1.5	1.1	1.2
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.35	0.46	0.55	0.46	0.51
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.65	0.96	1.0	0.96	0.98
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.25	0.36	0.39	0.31	0.35
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.07	0.10	0.11	0.10	0.10
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.26	0.42	0.40	0.37	0.38
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	9.3	11	16	12	13
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3







# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-22901-1

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	1759651	1759652	1759653	1759654	1759655
Sample ID	PRA-SP002-2	PRA-SP002-3	PRA-SP002-4	PRA-SP002-5	PRA-SP002-6
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	09/11/2020	09/11/2020	09/11/2020	09/11/2020	09/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.09	0.09	0.12	0.09	0.06
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.08	0.08	0.12	0.12	0.07
Fluorene	DETSC 3303	0.03	mg/kg	0.06	0.05	0.09	0.08	0.05
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.77	0.76	1.2	1.2	0.66
Anthracene	DETSC 3303	0.03	mg/kg	0.18	0.18	0.31	0.31	0.14
Fluoranthene	DETSC 3303#	0.03	mg/kg	3.2	2.8	4.3	5.2	2.6
Pyrene	DETSC 3303#	0.03	mg/kg	3.0	2.7	4.1	5.0	2.4
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	1.4	1.1	1.8	1.9	1.1
Chrysene	DETSC 3303	0.03	mg/kg	1.3	1.1	1.8	1.8	1.1
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	1.5	1.3	2.2	2.1	1.3
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.65	0.52	0.93	0.86	0.54
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	1.3	1.1	1.9	1.5	0.95
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.47	0.35	0.59	0.54	0.37
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.13	0.10	0.17	0.16	0.11
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.53	0.41	0.74	0.67	0.42
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	15	12	20	22	12
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3





# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-22901-1

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	1759656	1759657	1759658	1759659	1759660
Sample ID	PRA-SP002-7	PRA-SP002-8	PRA-SP001-1	PRA-SP001-2	PRA-SP001-3
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	09/11/2020	09/11/2020	09/11/2020	09/11/2020	09/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.09	0.13	0.13	0.14	0.39	
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	< 0.03	< 0.03	< 0.03	
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.08	0.16	0.09	0.12	0.65	
Fluorene	DETSC 3303	0.03	mg/kg	0.06	0.12	0.05	0.07	0.37	
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.65	1.2	0.60	0.89	3.2	
Anthracene	DETSC 3303	0.03	mg/kg	0.17	0.27	0.13	0.16	0.56	
Fluoranthene	DETSC 3303#	0.03	mg/kg	3.0	5.0	2.1	2.2	5.1	
Pyrene	DETSC 3303#	0.03	mg/kg	3.1	5.0	2.0	1.9	4.4	
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	1.4	2.2	0.84	0.73	2.0	
Chrysene	DETSC 3303	0.03	mg/kg	1.4	2.1	0.91	0.90	1.8	
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	1.7	2.5	1.1	0.89	1.6	
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.69	1.1	0.45	0.45	0.75	
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	1.4	1.9	0.71	0.61	1.4	
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.48	0.79	0.34	0.27	0.49	
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.13	0.22	0.10	0.08	0.14	
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.53	0.90	0.38	0.30	0.55	
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	15	24	9.9	9.7	23	
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	







# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-22901-1

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	1759661	1759662	1759663	1759664	1759665
Sample ID	PRA-SP001-4	PRA-SP001-5	PRA-BA-25	PRA-AY-29	PRA-BA-29
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	09/11/2020	09/11/2020	09/11/2020	09/11/2020	09/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.08	0.06	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.08	0.04	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.04	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.52	0.29	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	0.09	0.07	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.7	0.68	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	1.6	0.65	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.73	0.34	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.81	0.39	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.93	0.44	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.36	0.17	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.63	0.27	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.32	0.13	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.10	0.04	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.38	0.17	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	8.3	3.7	< 0.10	< 0.10	< 0.10
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3





# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-22901-1

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	1759666	1759667	1759668	1759669	1759670
Sample ID	PRA-AY-25	PRA-BA-27	PRA-BC-27	PRA-BC-29	PRA-BE-29
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	09/11/2020	09/11/2020	09/11/2020	09/11/2020	09/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	< 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
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.05	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 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	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 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
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Asbestos Analysis Soil Samples

Our Ref 20-22901-1

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1759641	PRA-SP003-1	SOIL	NAD	none	A Christodoulou
1759642	PRA-SP003-2	SOIL	NAD	none	A Christodoulou
1759643	PRA-SP003-3	SOIL	Chrysotile	Chrysotile Present as bundles	A Christodoulou
1759644	PRA-SP003-4	SOIL	Chrysotile	Chrysotile Present as bundles	A Christodoulou
1759645	PRA-SP003-5	SOIL	NAD	none	A Christodoulou
1759646	PRA-SP003-6	SOIL	NAD	none	A Christodoulou
1759647	PRA-SP003-7	SOIL	NAD	none	A Christodoulou
1759648	PRA-SP003-8	SOIL	Chrysotile	Chrysotile Present as bundles	A Christodoulou
1759649	PRA-SP003-9	SOIL	NAD	none	A Christodoulou
1759650	PRA-SP002-1	SOIL	Chrysotile	Chrysotile present in microscopic loose fibrous asbestos debris	A Christodoulou
1759651	PRA-SP002-2	SOIL	Chrysotile	Chrysotile Present as bundles	A Christodoulou
1759652	PRA-SP002-3	SOIL	Chrysotile	Chrysotile present in microscopic loose fibrous asbestos debris	A Christodoulou
1759653	PRA-SP002-4	SOIL	Chrysotile	Chrysotile present in microscopic loose fibrous asbestos debris	A Christodoulou
1759654	PRA-SP002-5	SOIL	Chrysotile	Chrysotile present in microscopic loose fibrous asbestos debris	A Christodoulou
1759655	PRA-SP002-6	SOIL	Chrysotile	Chrysotile present in microscopic loose fibrous asbestos debris	A Christodoulou
1759656	PRA-SP002-7	SOIL	Chrysotile Amosite	Chrysotile present in microscopic loose fibrous asbestos debris Amosite present as bundles	A Christodoulou
1759657	PRA-SP002-8	SOIL	Chrysotile Amosite Crocidolite	Chrysotile present in microscopic loose fibrous asbestos debris Amosite and Crocidolite present in bundles	A Christodoulou
1759658	PRA-SP001-1	SOIL	Chrysotile	Chrysotile present in bundles	A Christodoulou
1759659	PRA-SP001-2	SOIL	Chrysotile	Chrysotile Present as bundles	A Christodoulou
1759660	PRA-SP001-3	SOIL	Chrysotile	Chrysotile Present as bundles	A Christodoulou
1759661	PRA-SP001-4	SOIL	Chrysotile	Chrysotile Present as bundles	A Christodoulou
1759662	PRA-SP001-5	SOIL	Chrysotile	Chrysotile Present as bundles	A Christodoulou
1759663	PRA-BA-25	SOIL	NAD	none	A Christodoulou
1759664	PRA-AY-29	SOIL	NAD	none	A Christodoulou
1759665	PRA-BA-29	SOIL	NAD	none	A Christodoulou
1759666	PRA-AY-25	SOIL	NAD	none	A Christodoulou
1759667	PRA-BA-27	SOIL	NAD	none	A Christodoulou

## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 20-22901-1

*Client Ref*

*Contract Title* Redcar Praire Phase 1

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1759668	PRA-BC-27	SOIL	NAD	none	A Christodoulou
1759669	PRA-BC-29	SOIL	NAD	none	A Christodoulou
1759670	PRA-BE-29	SOIL	NAD	none	A Christodoulou

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.



## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 20-22901-1

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	1759643	1759648	1759651	1759653
Sample ID	PRA-SP003-3	PRA-SP003-8	PRA-SP002-2	PRA-SP002-4
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	09/11/2020	09/11/2020	09/11/2020	09/11/2020
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.002	0.002	0.004	0.021
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	0.021
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.002	0.002	0.004	na
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1188.08	1085.21	1420.73	1334.96
ACMs present*		type				LFAD
Mass of ACM in sample		g				0.33
% ACM by mass		%				0.02
% asbestos in ACM		%				85
% asbestos in sample		%				0.021

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na	na	na
% Chrysotile bundles in sample		Mass %	0.002	0.002	0.004	na

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 20-22901-1

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	1759657	1759659	1759661
Sample ID	PRA-SP002-8	PRA-SP001-2	PRA-SP001-4
Depth			
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	09/11/2020	09/11/2020	09/11/2020
Sampling Time			

Test	Method	Units			
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.044	0.002	0.005
Gravimetric Quantification (a)	DETSC 1102	Mass %	0.042	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.002	0.002	0.005
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na

### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1333.71	1210.90	995.30
ACMs present*		type	LFAD		
Mass of ACM in sample		g	0.65		
% ACM by mass		%	0.05		
% asbestos in ACM		%	85		
% asbestos in sample		%	0.042		

### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	0.002	na	na
% Chrysotile bundles in sample		Mass %	na	0.002	0.005

### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na

### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na
Chrysotile fibres		Fibres/g	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample



## Information in Support of the Analytical Results

Our Ref 20-22901-1

Client Ref

Contract Redcar Praire Phase 1

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1759641	PRA-SP003-1 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759642	PRA-SP003-2 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759643	PRA-SP003-3 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759644	PRA-SP003-4 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759645	PRA-SP003-5 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759646	PRA-SP003-6 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759647	PRA-SP003-7 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759648	PRA-SP003-8 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759649	PRA-SP003-9 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759650	PRA-SP002-1 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759651	PRA-SP002-2 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759652	PRA-SP002-3 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759653	PRA-SP002-4 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759654	PRA-SP002-5 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759655	PRA-SP002-6 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759656	PRA-SP002-7 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759657	PRA-SP002-8 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759658	PRA-SP001-1 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759659	PRA-SP001-2 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759660	PRA-SP001-3 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759661	PRA-SP001-4 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759662	PRA-SP001-5 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759663	PRA-BA-25 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759664	PRA-AY-29 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759665	PRA-BA-29 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759666	PRA-AY-25 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759667	PRA-BA-27 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759668	PRA-BC-27 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759669	PRA-BC-29 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		
1759670	PRA-BE-29 SOIL	09/11/20	GJ 250ml, GJ 60ml, PT 1L		

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.

## Information in Support of the Analytical Results

*Our Ref* 20-22901-1

*Client Ref*

*Contract* Redcar Praire Phase 1

### 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

End of Report





# DETS

## Certificate of Analysis

*Certificate Number* 20-23344-1

03-Dec-20

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 20-23344-1

*Client Reference* (not supplied)

*Order No* C1096/MA/0034

*Contract Title* Redcar Praire Phase 1

*Description* 13 Soil samples.

*Date Received* 17-Nov-20

*Date Started* 17-Nov-20

*Date Completed* 03-Dec-20

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

*Notes* **This report supersedes 20-23344, extra testing added.**

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



## Summary of Chemical Analysis

### Soil Samples

Our Ref 20-23344-1

Client Ref

Contract Title Redcar Praire Phase 1

Test	Method	LOD	Units	Lab No				
				1762220	1762221	1762222	1762223	1762224
				PRA - SP008-1	PRA - SP008-2	PRA - SP008-3	PRA - SP008-4	PRA - SP008-5
				SOIL	SOIL	SOIL	SOIL	SOIL
				13/11/2020	13/11/2020	13/11/2020	13/11/2020	13/11/2020
				n/s	n/s	n/s	n/s	n/s
Asbestos Quantification	DETSC 1102	0.001	%				< 0.001	
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	17	20	13	16	12
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	4.3	4.7	2.8	2.4	1.6
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	0.3	0.6	0.4	0.5
Chromium	DETSC 2301#	0.15	mg/kg	39	45	40	53	28
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	54	44	48	64	42
Lead	DETSC 2301#	0.3	mg/kg	75	66	130	120	51
Mercury	DETSC 2325#	0.05	mg/kg	0.12	0.05	0.17	0.65	0.19
Nickel	DETSC 2301#	1	mg/kg	35	31	26	25	31
Vanadium	DETSC 2301#	0.8	mg/kg	76	86	79	100	48
Zinc	DETSC 2301#	1	mg/kg	160	160	200	170	120
<b>Inorganics</b>								
pH	DETSC 2008#		pH	8.4	8.5	9.4	9.6	8.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	34	18	8.6	6.9	2.9
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	0.7	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.9	1.6	1.5	2.0	1.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	480	390	350	440	350
Sulphur (free)	DETSC 3049#	0.75	mg/kg	3.0	4.0	19	4.0	4.8
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10

## Summary of Chemical Analysis

### Soil Samples

Our Ref 20-23344-1

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	1762220	1762221	1762222	1762223	1762224
Sample ID	PRA - SP008-1	PRA - SP008-2	PRA - SP008-3	PRA - SP008-4	PRA - SP008-5
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	13/11/2020	13/11/2020	13/11/2020	13/11/2020	13/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	< 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
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 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
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.13	0.21	0.09	0.04	0.05
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.07	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.32	0.39	0.19	0.10	0.09
Pyrene	DETSC 3303#	0.03	mg/kg	0.29	0.36	0.17	0.09	0.07
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.13	0.13	0.07	0.04	0.04
Chrysene	DETSC 3303	0.03	mg/kg	0.15	0.15	0.08	0.05	0.04
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.16	0.15	0.09	0.05	0.05
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.07	0.07	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.11	0.08	0.06	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.05	0.05	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.06	0.05	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	1.5	1.7	0.74	0.37	0.30
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3



## Summary of Chemical Analysis

### Soil Samples

Our Ref 20-23344-1

Client Ref

Contract Title Redcar Praire Phase 1

	Lab No	1762225	1762226	1762227	1762228	1762229
Sample ID		PRA - SP008-6	PRA - SP008-7	PRA - SP008-8	PRA - SP008-9	PRA - SP008-10
Depth						
Other ID						
Sample Type		SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date		13/11/2020	13/11/2020	13/11/2020	13/11/2020	13/11/2020
Sampling Time		n/s	n/s	n/s	n/s	n/s
Test	Method	LOD	Units			
Asbestos Quantification	DETSC 1102	0.001	%	< 0.001		
<b>Metals</b>						
Arsenic	DETSC 2301#	0.2	mg/kg	20	16	15
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.4	1.5	2.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.7	0.5	0.5
Chromium	DETSC 2301#	0.15	mg/kg	85	330	47
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	76	64	58
Lead	DETSC 2301#	0.3	mg/kg	93	52	78
Mercury	DETSC 2325#	0.05	mg/kg	2.1	0.53	0.45
Nickel	DETSC 2301#	1	mg/kg	26	24	49
Vanadium	DETSC 2301#	0.8	mg/kg	180	1300	130
Zinc	DETSC 2301#	1	mg/kg	260	170	190
<b>Inorganics</b>						
pH	DETSC 2008#		pH	10.2	8.3	8.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	14	11	15
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.9	< 0.6	0.8
Organic matter	DETSC 2002#	0.1	%	1.8	1.3	2.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	270	500	1300
Sulphur (free)	DETSC 3049#	0.75	mg/kg	5.8	3.4	10
<b>Petroleum Hydrocarbons</b>						
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 C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10

## Summary of Chemical Analysis

### Soil Samples

Our Ref 20-23344-1

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	1762225	1762226	1762227	1762228	1762229
Sample ID	PRA - SP008-6	PRA - SP008-7	PRA - SP008-8	PRA - SP008-9	PRA - SP008-10
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	13/11/2020	13/11/2020	13/11/2020	13/11/2020	13/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.06	0.13	0.08
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.05	0.11	0.05
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.04	0.07	0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.13	0.11	0.78	0.24	0.22
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.11	0.04	0.05
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.28	0.09	1.3	0.30	0.48
Pyrene	DETSC 3303#	0.03	mg/kg	0.23	0.06	0.84	0.25	0.42
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.10	< 0.03	0.30	0.08	0.15
Chrysene	DETSC 3303	0.03	mg/kg	0.11	< 0.03	0.36	0.08	0.15
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.11	< 0.03	0.35	0.08	0.16
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03	0.14	< 0.03	0.06
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.07	< 0.03	0.11	0.04	0.10
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	0.08	< 0.03	0.05
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	0.08	< 0.03	0.05
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	1.2	0.26	4.6	1.4	2.0
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Chemical Analysis

### Soil Samples

Our Ref 20-23344-1

Client Ref

Contract Title Redcar Praire Phase 1

Test	Method	LOD	Units	Lab No		
				1762230	1762231	1762232
				PRA - SP008-11	PRA - SP008-12	PRA - SP008-13
				SOIL	SOIL	SOIL
				13/11/2020	13/11/2020	13/11/2020
				n/s	n/s	n/s
Asbestos Quantification	DETSC 1102	0.001	%			< 0.001
<b>Metals</b>						
Arsenic	DETSC 2301#	0.2	mg/kg	14	14	16
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.8	2.2	2.9
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	0.4	0.6
Chromium	DETSC 2301#	0.15	mg/kg	34	47	74
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	69	53	83
Lead	DETSC 2301#	0.3	mg/kg	190	140	84
Mercury	DETSC 2325#	0.05	mg/kg	0.11	0.16	0.81
Nickel	DETSC 2301#	1	mg/kg	29	29	25
Vanadium	DETSC 2301#	0.8	mg/kg	79	84	110
Zinc	DETSC 2301#	1	mg/kg	170	160	200
<b>Inorganics</b>						
pH	DETSC 2008#		pH	8.9	9.3	10.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	1.1	6.7	14
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	0.7	0.7
Organic matter	DETSC 2002#	0.1	%	1.9	2.0	2.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	480	420	420
Sulphur (free)	DETSC 3049#	0.75	mg/kg	29	25	3.5
<b>Petroleum Hydrocarbons</b>						
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 C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10



## Summary of Chemical Analysis

### Soil Samples

Our Ref 20-23344-1

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	1762230	1762231	1762232
Sample ID	PRA - SP008-11	PRA - SP008-12	PRA - SP008-13
Depth			
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	13/11/2020	13/11/2020	13/11/2020
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>PAHs</b>						
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.10
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	0.09	0.05	0.26
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.04
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.26	0.10	0.52
Pyrene	DETSC 3303#	0.03	mg/kg	0.23	0.08	0.45
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.10	0.04	0.16
Chrysene	DETSC 3303	0.03	mg/kg	0.11	0.03	0.18
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.13	0.03	0.17
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03	0.08
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.09	< 0.03	0.11
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.05	< 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	0.05	< 0.03	0.06
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	1.2	0.23	2.2
<b>Phenols</b>						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 20-23344-1

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1762220	PRA - SP008-1	SOIL	NAD	none	D Wilkinson
1762221	PRA - SP008-2	SOIL	NAD	none	D Wilkinson
1762222	PRA - SP008-3	SOIL	NAD	none	D Wilkinson
1762223	PRA - SP008-4	SOIL	Amosite	Amosite present as fibre bundles	D Wilkinson
1762224	PRA - SP008-5	SOIL	Chrysotile	Chrysotile present in microscopic cement fragment	D Wilkinson
1762225	PRA - SP008-6	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1762226	PRA - SP008-7	SOIL	NAD	none	D Wilkinson
1762227	PRA - SP008-8	SOIL	NAD	none	D Wilkinson
1762228	PRA - SP008-9	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1762229	PRA - SP008-10	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1762230	PRA - SP008-11	SOIL	NAD	none	D Wilkinson
1762231	PRA - SP008-12	SOIL	NAD	none	D Wilkinson
1762232	PRA - SP008-13	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 20-23344-1

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	1762223	1762225	1762232
Sample ID	PRA - SP008-4	PRA - SP008-6	PRA - SP008-13
Depth			
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	13/11/2020	13/11/2020	13/11/2020
Sampling Time			

Test	Method	Units			
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	< 0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	<0.001	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1258.43	1377.88	877.37
ACMs present*		type			
Mass of ACM in sample		g			
% ACM by mass		%			
% asbestos in ACM		%			
% asbestos in sample		%			

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	<0.001	na	na
% Chrysotile bundles in sample		Mass %	na	<0.001	<0.001

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na
Chrysotile fibres		Fibres/g	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample



## Information in Support of the Analytical Results

Our Ref 20-23344-1

Client Ref

Contract Redcar Praire Phase 1

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1762220	PRA - SP008-1 SOIL	13/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762221	PRA - SP008-2 SOIL	13/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762222	PRA - SP008-3 SOIL	13/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762223	PRA - SP008-4 SOIL	13/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762224	PRA - SP008-5 SOIL	13/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762225	PRA - SP008-6 SOIL	13/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762226	PRA - SP008-7 SOIL	13/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762227	PRA - SP008-8 SOIL	13/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762228	PRA - SP008-9 SOIL	13/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762229	PRA - SP008-10 SOIL	13/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762230	PRA - SP008-11 SOIL	13/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762231	PRA - SP008-12 SOIL	13/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762232	PRA - SP008-13 SOIL	13/11/20	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 20-23346-1

03-Dec-20

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 20-23346-1

*Client Reference* (not supplied)

*Order No* C1096/MA/0034

*Contract Title* Redcar Prairie Phase 1

*Description* 31 Soil samples.

*Date Received* 17-Nov-20

*Date Started* 17-Nov-20

*Date Completed* 03-Dec-20

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

*Notes* **This report supersedes 20-23346, extra testing added.**

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



# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23346-1

Client Ref

Contract Title Redcar Prairie Phase 1

Test	Method	LOD	Units	Lab No				
				1762234	1762235	1762236	1762237	1762238
				PRA-SP009-1	PRA-SP009-2	PRA-SP009-3	PRA-SP009-4	PRA-SP009-5
				SOIL	SOIL	SOIL	SOIL	SOIL
				12/11/2020	12/11/2020	12/11/2020	12/11/2020	12/11/2020
				n/s	n/s	n/s	n/s	n/s
Asbestos Quantification	DETSC 1102	0.001	%	0.003	< 0.001		< 0.001	
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	10	6.4	9.7	8.7	11
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.6	2.1	1.9	2.6	2.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.7	0.3	0.5	0.6	0.6
Chromium	DETSC 2301#	0.15	mg/kg	140	40	68	57	82
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	36	25	37	36	38
Lead	DETSC 2301#	0.3	mg/kg	77	29	69	84	70
Mercury	DETSC 2325#	0.05	mg/kg	0.86	0.39	0.44	0.35	0.66
Nickel	DETSC 2301#	1	mg/kg	12	6.0	13	11	13
Vanadium	DETSC 2301#	0.8	mg/kg	270	100	140	110	130
Zinc	DETSC 2301#	1	mg/kg	190	78	160	220	170
<b>Inorganics</b>								
pH	DETSC 2008#		pH	11.4	11.6	11.9	11.3	11.4
Cyanide, Total	DETSC 2130#	0.1	mg/kg	24	11	14	9.4	13
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.4	0.2	0.1	0.1	0.3
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.4	1.0	1.1	0.8	0.9
Organic matter	DETSC 2002#	0.1	%	1.0	0.8	1.2	1.4	1.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	450	340	350	450	410
Sulphur (free)	DETSC 3049#	0.75	mg/kg	31	5.8	7.3	6.4	2.2
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	2.8	< 1.5	< 1.5	3.6
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	2.3	< 1.2	< 1.2	3.6
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	12	< 1.5	< 1.5	8.2
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	68	< 3.4	< 3.4	58
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	85	< 10	< 10	73
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	85	< 10	< 10	73



# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23346-1

Client Ref

Contract Title Redcar Prairie Phase 1

Lab No	1762234	1762235	1762236	1762237	1762238
Sample ID	PRA-SP009-1	PRA-SP009-2	PRA-SP009-3	PRA-SP009-4	PRA-SP009-5
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/11/2020	12/11/2020	12/11/2020	12/11/2020	12/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.15	0.09	0.08	0.07	0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.12	0.09	0.13	0.08	0.04
Fluorene	DETSC 3303	0.03	mg/kg	0.07	0.06	0.08	0.06	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.96	0.84	0.94	0.76	0.39
Anthracene	DETSC 3303	0.03	mg/kg	0.20	0.17	0.20	0.14	0.08
Fluoranthene	DETSC 3303#	0.03	mg/kg	2.3	2.2	2.9	2.4	1.3
Pyrene	DETSC 3303#	0.03	mg/kg	2.3	2.2	2.7	2.3	1.2
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	1.0	1.0	1.0	0.92	0.55
Chrysene	DETSC 3303	0.03	mg/kg	1.1	1.1	1.1	0.99	0.51
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	1.3	1.2	1.2	1.1	0.65
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.48	0.47	0.44	0.41	0.26
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.88	0.78	0.84	0.80	0.50
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.38	0.38	0.37	0.35	0.24
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.11	0.10	0.10	0.09	0.06
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.50	0.45	0.44	0.44	0.28
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	12	11	13	11	6.0
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23346-1

Client Ref

Contract Title Redcar Prairie Phase 1

Test	Method	LOD	Units	Lab No				
				1762239	1762240	1762241	1762242	1762243
				PRA-SP009-6	PRA-SP009-7	PRA-SP009-8	PRA-SP009-9	PRA-SP009-10
				SOIL	SOIL	SOIL	SOIL	SOIL
				12/11/2020	12/11/2020	12/11/2020	12/11/2020	12/11/2020
				n/s	n/s	n/s	n/s	n/s
Asbestos Quantification	DETSC 1102	0.001	%	< 0.001				
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	9.1	6.0	8.9	7.9	14
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.4	1.4	2.1	2.1	3.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	0.3	0.5	0.3	0.7
Chromium	DETSC 2301#	0.15	mg/kg	58	51	69	27	160
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	35	26	41	22	55
Lead	DETSC 2301#	0.3	mg/kg	68	43	65	30	75
Mercury	DETSC 2325#	0.05	mg/kg	0.29	0.19	0.70	0.15	0.77
Nickel	DETSC 2301#	1	mg/kg	12	12	13	7.7	16
Vanadium	DETSC 2301#	0.8	mg/kg	200	110	140	63	280
Zinc	DETSC 2301#	1	mg/kg	130	98	160	90	190
<b>Inorganics</b>								
pH	DETSC 2008#		pH	12.1	12.0	11.5	11.8	12.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	2.7	7.0	9.8	7.9	7.4
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	0.1	0.1	< 0.1	0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.9	1.1	< 0.6	1.3	1.3
Organic matter	DETSC 2002#	0.1	%	1.0	0.9	0.8	0.8	0.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	290	110	290	470	230
Sulphur (free)	DETSC 3049#	0.75	mg/kg	5.2	17	6.0	4.8	3.2
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	2.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	5.4
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	18
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	73
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	99
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	99

## Summary of Chemical Analysis

### Soil Samples

Our Ref 20-23346-1

Client Ref

Contract Title Redcar Prairie Phase 1

Lab No	1762239	1762240	1762241	1762242	1762243
Sample ID	PRA-SP009-6	PRA-SP009-7	PRA-SP009-8	PRA-SP009-9	PRA-SP009-10
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/11/2020	12/11/2020	12/11/2020	12/11/2020	12/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.06	0.06	0.08	0.08	0.15
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.10	0.06	0.07	0.06	0.09
Fluorene	DETSC 3303	0.03	mg/kg	0.07	0.04	0.06	0.04	0.07
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.86	0.65	0.84	0.49	0.93
Anthracene	DETSC 3303	0.03	mg/kg	0.14	0.13	0.17	0.09	0.17
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.9	1.8	2.4	1.2	2.7
Pyrene	DETSC 3303#	0.03	mg/kg	1.6	1.6	2.2	1.2	2.9
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.67	0.82	1.0	0.52	1.4
Chrysene	DETSC 3303	0.03	mg/kg	0.70	0.90	1.1	0.60	1.4
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.79	1.1	1.4	0.66	1.6
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.29	0.42	0.51	0.25	0.56
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.56	0.80	0.98	0.46	1.1
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.24	0.36	0.43	0.21	0.49
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.05	0.09	0.11	0.06	0.13
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.30	0.43	0.49	0.26	0.59
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	8.3	9.2	12	6.1	14
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3



# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23346-1

Client Ref

Contract Title Redcar Prairie Phase 1

Test	Method	LOD	Units	Lab No				
				1762244	1762245	1762246	1762247	1762248
				PRA-SP009-11	PRA-SP009-12	PRA-SP010-1	PRA-SP010-2	PRA-SP010-3
				SOIL	SOIL	SOIL	SOIL	SOIL
				12/11/2020	12/11/2020	12/11/2020	12/11/2020	12/11/2020
				n/s	n/s	n/s	n/s	n/s
<b>Asbestos Quantification</b>	DETSC 1102	0.001	%		< 0.001			< 0.001
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	8.3	12	7.9	8.1	14
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.1	1.2	1.4	1.6	1.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	0.6	0.4	0.5	0.6
Chromium	DETSC 2301#	0.15	mg/kg	21	47	51	110	92
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	29	32	40	34	57
Lead	DETSC 2301#	0.3	mg/kg	44	45	34	70	120
Mercury	DETSC 2325#	0.05	mg/kg	0.41	0.38	0.25	0.36	0.67
Nickel	DETSC 2301#	1	mg/kg	9.3	11	14	9.9	21
Vanadium	DETSC 2301#	0.8	mg/kg	48	95	99	130	220
Zinc	DETSC 2301#	1	mg/kg	110	120	110	150	230
<b>Inorganics</b>								
pH	DETSC 2008#		pH	11.6	12.1	11.8	12.1	12.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	14	15	6.7	6.9	15
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.1	0.2	0.1	0.1	0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.6	1.0	2.5	1.6	2.9
Organic matter	DETSC 2002#	0.1	%	1.1	0.6	0.7	0.7	0.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	610	390	440	340	350
Sulphur (free)	DETSC 3049#	0.75	mg/kg	8.0	< 0.75	3.8	1.0	4.2
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	2.9
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	2.2	2.8
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	10	11
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	100	71
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	110	88
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	110	88

# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23346-1

Client Ref

Contract Title Redcar Prairie Phase 1

Lab No	1762244	1762245	1762246	1762247	1762248
Sample ID	PRA-SP009-11	PRA-SP009-12	PRA-SP010-1	PRA-SP010-2	PRA-SP010-3
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/11/2020	12/11/2020	12/11/2020	12/11/2020	12/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.15	0.07	0.07	0.09	0.06
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.12	0.05	0.05	0.08	0.10
Fluorene	DETSC 3303	0.03	mg/kg	0.08	0.04	0.04	0.06	0.06
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.87	0.46	0.53	0.66	0.96
Anthracene	DETSC 3303	0.03	mg/kg	0.19	0.11	0.11	0.14	0.20
Fluoranthene	DETSC 3303#	0.03	mg/kg	2.4	1.5	1.3	1.9	3.2
Pyrene	DETSC 3303#	0.03	mg/kg	2.2	1.7	1.2	1.6	2.9
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	1.1	0.83	0.58	0.67	1.4
Chrysene	DETSC 3303	0.03	mg/kg	1.1	0.85	0.63	0.69	1.3
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	1.3	1.0	0.74	0.76	1.8
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.59	0.35	0.26	0.25	0.61
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	1.0	0.68	0.51	0.51	1.3
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.48	0.34	0.24	0.24	0.53
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.13	0.09	0.07	0.06	0.19
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.58	0.39	0.27	0.27	0.63
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	12	8.5	6.6	8.0	15
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Chemical Analysis

### Soil Samples

Our Ref 20-23346-1

Client Ref

Contract Title Redcar Prairie Phase 1

Test	Method	LOD	Units	Lab No				
				1762249	1762250	1762251	1762252	1762253
				PRA-SP010-4	PRA-SP010-5	PRA-SP010-6	PRA-SP010-7	PRA-SP010-8
				SOIL	SOIL	SOIL	SOIL	SOIL
				12/11/2020	12/11/2020	12/11/2020	12/11/2020	12/11/2020
				n/s	n/s	n/s	n/s	n/s
Asbestos Quantification	DETSC 1102	0.001	%				0.003	
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	16	6.6	7.6	13	10
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.5	1.3	1.9	2.4	2.6
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	0.3	0.6	0.8	0.5
Chromium	DETSC 2301#	0.15	mg/kg	130	56	50	110	110
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	77	30	35	59	45
Lead	DETSC 2301#	0.3	mg/kg	81	44	210	100	61
Mercury	DETSC 2325#	0.05	mg/kg	0.60	0.29	0.38	0.73	0.40
Nickel	DETSC 2301#	1	mg/kg	21	12	10	17	12
Vanadium	DETSC 2301#	0.8	mg/kg	220	130	110	190	250
Zinc	DETSC 2301#	1	mg/kg	190	110	160	250	130
<b>Inorganics</b>								
pH	DETSC 2008#		pH	11.6	11.8	11.6	11.7	11.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	6.2	8.0	11	12	8.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	0.1	< 0.1	0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.0	1.9	1.4	1.8	1.4
Organic matter	DETSC 2002#	0.1	%	0.8	0.7	1.0	1.1	1.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	490	440	510	420	460
Sulphur (free)	DETSC 3049#	0.75	mg/kg	4.7	< 0.75	5.7	16	12
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	2.5	< 1.5	3.1	2.9	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	3.7	< 1.2	6.9	3.5	3.3
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	19	< 1.5	47	12	22
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	100	< 3.4	190	63	110
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	130	< 10	240	81	140
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	7.0	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	12	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	45	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	190	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	250	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	130	< 10	500	81	140



## Summary of Chemical Analysis

### Soil Samples

Our Ref 20-23346-1

Client Ref

Contract Title Redcar Prairie Phase 1

Lab No	1762249	1762250	1762251	1762252	1762253
Sample ID	PRA-SP010-4	PRA-SP010-5	PRA-SP010-6	PRA-SP010-7	PRA-SP010-8
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/11/2020	12/11/2020	12/11/2020	12/11/2020	12/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.09	0.06	0.10	0.10	0.20
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.03	0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.14	0.11	0.17	0.18	0.66
Fluorene	DETSC 3303	0.03	mg/kg	0.12	0.09	0.11	0.14	0.56
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.2	1.3	1.4	1.4	8.2
Anthracene	DETSC 3303	0.03	mg/kg	0.23	0.30	0.27	0.28	0.76
Fluoranthene	DETSC 3303#	0.03	mg/kg	2.6	3.0	3.0	2.9	7.3
Pyrene	DETSC 3303#	0.03	mg/kg	2.3	2.6	2.6	2.5	5.1
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	1.0	1.1	1.2	1.1	1.9
Chrysene	DETSC 3303	0.03	mg/kg	1.0	1.1	1.1	1.1	1.8
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	1.2	1.3	1.5	1.4	1.7
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.46	0.50	0.54	0.47	0.65
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.88	1.0	1.1	0.99	1.3
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.36	0.42	0.44	0.41	0.49
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.12	0.14	0.16	0.14	0.15
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.41	0.48	0.52	0.47	0.56
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	12	13	14	14	31
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23346-1

Client Ref

Contract Title Redcar Prairie Phase 1

Test	Method	LOD	Units	Lab No				
				1762254	1762255	1762256	1762257	1762258
				PRA-SP010-9	PRA-SP010-10	PRA-SP010-11	PRA-SP010-12	PRA-SP010-13
				SOIL	SOIL	SOIL	SOIL	SOIL
				12/11/2020	12/11/2020	12/11/2020	12/11/2020	12/11/2020
				n/s	n/s	n/s	n/s	n/s
<b>Asbestos Quantification</b>	DETSC 1102	0.001	%			< 0.001		
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	22	12	7.9	5.8	5.5
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.6	2.4	2.0	1.2	5.6
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	0.8	0.5	< 0.1	0.2
Chromium	DETSC 2301#	0.15	mg/kg	150	66	87	7.5	25
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	350	50	39	11	13
Lead	DETSC 2301#	0.3	mg/kg	62	68	52	7.3	11
Mercury	DETSC 2325#	0.05	mg/kg	3.6	0.93	0.23	< 0.05	0.17
Nickel	DETSC 2301#	1	mg/kg	64	15	10	3.9	2.2
Vanadium	DETSC 2301#	0.8	mg/kg	150	180	210	27	54
Zinc	DETSC 2301#	1	mg/kg	240	230	140	18	42
<b>Inorganics</b>								
pH	DETSC 2008#		pH	11.5	11.9	12.0	12.6	11.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	42	17	4.5	0.4	2.3
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.4	0.2	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	2.1	2.2	2.0	< 0.6	1.0
Organic matter	DETSC 2002#	0.1	%	1.3	0.9	0.6	< 0.1	0.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	390	420	410	230	380
Sulphur (free)	DETSC 3049#	0.75	mg/kg	9.4	12	8.0	5.0	55
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	10	2.3	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	21	4.0	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	43	13	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	150	73	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	230	92	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	230	92	< 10	< 10

## Summary of Chemical Analysis

### Soil Samples

Our Ref 20-23346-1

Client Ref

Contract Title Redcar Prairie Phase 1

Lab No	1762254	1762255	1762256	1762257	1762258
Sample ID	PRA-SP010-9	PRA-SP010-10	PRA-SP010-11	PRA-SP010-12	PRA-SP010-13
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/11/2020	12/11/2020	12/11/2020	12/11/2020	12/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.11	0.12	0.08	0.23	0.05
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.18	0.19	0.07	0.06	0.07
Fluorene	DETSC 3303	0.03	mg/kg	0.14	0.18	0.05	0.05	0.07
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.0	1.7	0.72	0.38	0.46
Anthracene	DETSC 3303	0.03	mg/kg	0.19	0.32	0.12	0.06	0.08
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.8	3.1	2.0	0.51	0.61
Pyrene	DETSC 3303#	0.03	mg/kg	1.6	2.8	1.9	0.41	0.47
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.58	1.0	0.86	0.20	0.21
Chrysene	DETSC 3303	0.03	mg/kg	0.64	1.0	0.92	0.22	0.24
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.54	0.98	0.95	0.20	0.22
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.29	0.42	0.40	0.10	0.11
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.42	0.53	0.51	0.15	0.16
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.17	0.28	0.33	0.08	0.09
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.05	0.08	0.09	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.22	0.35	0.42	0.09	0.10
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	7.9	13	9.5	2.7	2.9
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3



# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23346-1

Client Ref

Contract Title Redcar Prairie Phase 1

Test	Method	LOD	Units	Lab No				
				1762259	1762260	1762261	1762262	1762263
				PRA-SP010-14	PRA-SP010-15	PRA-SP010-16	PRA-SP010-17	PRA-SP010-18
				SOIL	SOIL	SOIL	SOIL	SOIL
				12/11/2020	12/11/2020	12/11/2020	12/11/2020	12/11/2020
				n/s	n/s	n/s	n/s	n/s
<b>Asbestos Quantification</b>	DETSC 1102	0.001	%					
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	4.0	2.0	12	12	13
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	3.0	1.4	2.4	2.3	2.0
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	0.1	0.5	1.3	0.8
Chromium	DETSC 2301#	0.15	mg/kg	9.9	8.6	68	110	83
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	14	10	50	59	30
Lead	DETSC 2301#	0.3	mg/kg	4.8	6.8	57	130	160
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.29	0.22	0.67	0.46
Nickel	DETSC 2301#	1	mg/kg	3.9	2.2	13	14	14
Vanadium	DETSC 2301#	0.8	mg/kg	37	46	180	330	170
Zinc	DETSC 2301#	1	mg/kg	16	17	150	290	200
<b>Inorganics</b>								
pH	DETSC 2008#		pH	12.6	12.3	11.7	11.4	11.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.3	0.6	12	11	5.5
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.0	< 0.6	0.9	1.1	< 0.6
Organic matter	DETSC 2002#	0.1	%	0.3	0.1	1.1	1.1	0.7
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	230	200	490	800	870
Sulphur (free)	DETSC 3049#	0.75	mg/kg	12	14	2.9	5.7	3.8
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	3.1	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	4.3	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	18	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	140	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	160	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	6.5	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	11	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	23	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	110	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	150	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	310	< 10	< 10

# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23346-1

Client Ref

Contract Title Redcar Prairie Phase 1

<b>Lab No</b>	1762259	1762260	1762261	1762262	1762263
<b>Sample ID</b>	PRA-SP010-14	PRA-SP010-15	PRA-SP010-16	PRA-SP010-17	PRA-SP010-18
<b>Depth</b>					
<b>Other ID</b>					
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	12/11/2020	12/11/2020	12/11/2020	12/11/2020	12/11/2020
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	0.09	0.08	0.06
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.17	< 0.03	0.07	0.19	0.06
Fluorene	DETSC 3303	0.03	mg/kg	0.14	< 0.03	0.06	0.16	0.05
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.7	0.08	0.70	1.7	0.67
Anthracene	DETSC 3303	0.03	mg/kg	0.21	< 0.03	0.14	0.32	0.12
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.4	0.19	1.8	2.8	1.5
Pyrene	DETSC 3303#	0.03	mg/kg	1.1	0.16	1.8	2.5	1.4
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.44	0.08	0.63	1.0	0.57
Chrysene	DETSC 3303	0.03	mg/kg	0.49	0.11	0.75	1.1	0.66
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.48	0.11	0.65	1.0	0.63
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.25	0.06	0.32	0.55	0.31
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.34	0.07	0.46	0.77	0.43
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.18	0.05	0.21	0.37	0.19
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03	0.06	0.09	0.06
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.23	0.06	0.27	0.44	0.25
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	7.2	0.97	8.0	13	6.9
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Chemical Analysis

### Soil Samples

Our Ref 20-23346-1

Client Ref

Contract Title Redcar Prairie Phase 1

Lab No	1762264
Sample ID	PRA-BA-25
Depth	
Other ID	
Sample Type	SOIL
Sampling Date	12/11/2020
Sampling Time	n/s

Test	Method	LOD	Units	
Asbestos Quantification	DETSC 1102	0.001	%	
<b>Metals</b>				
Arsenic	DETSC 2301#	0.2	mg/kg	14
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	7.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.4
Chromium	DETSC 2301#	0.15	mg/kg	43
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	46
Lead	DETSC 2301#	0.3	mg/kg	85
Mercury	DETSC 2325#	0.05	mg/kg	0.07
Nickel	DETSC 2301#	1	mg/kg	22
Vanadium	DETSC 2301#	0.8	mg/kg	110
Zinc	DETSC 2301#	1	mg/kg	150
<b>Inorganics</b>				
pH	DETSC 2008#		pH	8.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	180
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.2
Organic matter	DETSC 2002#	0.1	%	2.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	360
Sulphur (free)	DETSC 3049#	0.75	mg/kg	1.2
<b>Petroleum Hydrocarbons</b>				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10



## Summary of Chemical Analysis

### Soil Samples

Our Ref 20-23346-1

Client Ref

Contract Title Redcar Prairie Phase 1

<b>Lab No</b>	1762264
<b>Sample ID</b>	PRA-BA-25
<b>Depth</b>	
<b>Other ID</b>	
<b>Sample Type</b>	SOIL
<b>Sampling Date</b>	12/11/2020
<b>Sampling Time</b>	n/s

Test	Method	LOD	Units	
<b>PAHs</b>				
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10
<b>Phenols</b>				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 20-23346-1

Client Ref

Contract Title Redcar Prairie Phase 1

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1762234	PRA-SP009-1	SOIL	Chrysotile	Large bundles/clumps of Chrysotile present	Jordan Eadington
1762235	PRA-SP009-2	SOIL	Crocidolite	Bundles of Crocidolite present	Jordan Eadington
1762236	PRA-SP009-3	SOIL	Chrysotile	Bundles of Chrysotile present	Jordan Eadington
1762237	PRA-SP009-4	SOIL	Chrysotile	Bundles of Chrysotile present	Jordan Eadington
1762238	PRA-SP009-5	SOIL	Chrysotile	Bundles of Chrysotile present	Jordan Eadington
1762239	PRA-SP009-6	SOIL	Chrysotile	Small Bundle of Chrysotile Present	Jordan Eadington
1762240	PRA-SP009-7	SOIL	NAD	none	Jordan Eadington
1762241	PRA-SP009-8	SOIL	NAD	none	Jordan Eadington
1762242	PRA-SP009-9	SOIL	NAD	none	Jordan Eadington
1762243	PRA-SP009-10	SOIL	NAD	none	Jordan Eadington
1762244	PRA-SP009-11	SOIL	Chrysotile	Bundle of Chrysotile Present	Jordan Eadington
1762245	PRA-SP009-12	SOIL	Crocidolite	Small Bundles of Crocidolite Present	Jordan Eadington
1762246	PRA-SP010-1	SOIL	Chrysotile	Chrysotile present as visible insulation bundles	Jordan Eadington
1762247	PRA-SP010-2	SOIL	NAD	none	Jordan Eadington
1762248	PRA-SP010-3	SOIL	Chrysotile	Small Bundles of Chrysotile Present	Jordan Eadington
1762249	PRA-SP010-4	SOIL	Chrysotile	Bundles of Chrysotile present	Jordan Eadington
1762250	PRA-SP010-5	SOIL	Chrysotile	Bundles of Chrysotile present	Jordan Eadington
1762251	PRA-SP010-6	SOIL	Chrysotile	Bundles of Chrysotile Present	Jordan Eadington
1762252	PRA-SP010-7	SOIL	Chrysotile	Chrysotile present as visible insulation bundles	Jordan Eadington
1762253	PRA-SP010-8	SOIL	NAD	none	Jordan Eadington
1762254	PRA-SP010-9	SOIL	Chrysotile	Bundles of Chrysotile Present	Jordan Eadington
1762255	PRA-SP010-10	SOIL	NAD	none	Jordan Eadington
1762256	PRA-SP010-11	SOIL	Chrysotile	Bundles of Chrysotile Present	Jordan Eadington
1762257	PRA-SP010-12	SOIL	NAD	none	Jordan Eadington
1762258	PRA-SP010-13	SOIL	NAD	none	Jordan Eadington
1762259	PRA-SP010-14	SOIL	NAD	none	Jordan Eadington
1762260	PRA-SP010-15	SOIL	NAD	none	Jordan Eadington
1762261	PRA-SP010-16	SOIL	NAD	none	Jordan Eadington
1762262	PRA-SP010-17	SOIL	NAD	none	Jordan Eadington
1762263	PRA-SP010-18	SOIL	NAD	none	Jordan Eadington
1762264	PRA-BA-25	SOIL	Amosite	Small Bundles of Amosite Present	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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 20-23346-1

Client Ref

Contract Title Redcar Prairie Phase 1

Lab No	1762234	1762235	1762237	1762239
Sample ID	PRA-SP009-1	PRA-SP009-2	PRA-SP009-4	PRA-SP009-6
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/11/2020	12/11/2020	12/11/2020	12/11/2020
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.003	< 0.001	< 0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.003	<0.001	<0.001	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1335.74	1195.44	1324.82	1393.06
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	<0.001	na	na
% Chrysotile bundles in sample		Mass %	0.003	na	<0.001	<0.001

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample



# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 20-23346-1

Client Ref

Contract Title Redcar Prairie Phase 1

Lab No	1762245	1762248	1762252	1762256
Sample ID	PRA-SP009-12	PRA-SP010-3	PRA-SP010-7	PRA-SP010-11
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/11/2020	12/11/2020	12/11/2020	12/11/2020
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	< 0.001	0.003	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	0.003	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	<0.001	na	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na

### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1239.48	1004.25	1135.01	1127.06
ACMs present*		type			Insulation	
Mass of ACM in sample		g			0.04	
% ACM by mass		%			0.00	
% asbestos in ACM		%			85	
% asbestos in sample		%			0.003	

### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	<0.001	na	na	na
% Chrysotile bundles in sample		Mass %	na	<0.001	na	<0.001

### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na

### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 20-23346-1  
 Client Ref  
 Contract Redcar Prairie Phase 1

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1762234	PRA-SP009-1 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762235	PRA-SP009-2 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762236	PRA-SP009-3 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762237	PRA-SP009-4 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762238	PRA-SP009-5 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762239	PRA-SP009-6 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762240	PRA-SP009-7 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762241	PRA-SP009-8 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762242	PRA-SP009-9 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762243	PRA-SP009-10 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762244	PRA-SP009-11 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762245	PRA-SP009-12 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762246	PRA-SP010-1 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762247	PRA-SP010-2 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762248	PRA-SP010-3 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762249	PRA-SP010-4 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762250	PRA-SP010-5 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762251	PRA-SP010-6 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762252	PRA-SP010-7 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762253	PRA-SP010-8 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762254	PRA-SP010-9 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762255	PRA-SP010-10 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762256	PRA-SP010-11 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762257	PRA-SP010-12 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762258	PRA-SP010-13 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762259	PRA-SP010-14 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762260	PRA-SP010-15 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762261	PRA-SP010-16 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762262	PRA-SP010-17 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762263	PRA-SP010-18 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		
1762264	PRA-BA-25 SOIL	12/11/20	GJ 250ml, GJ 60ml x2, PT 1L		

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.

## Information in Support of the Analytical Results

*Our Ref* 20-23346-1

*Client Ref*

*Contract* Redcar Prairie Phase 1

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425 $\mu$ m 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

End of Report





# DETS

## Certificate of Analysis

*Certificate Number* 20-23397-1

03-Dec-20

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 20-23397-1

*Client Reference* (not supplied)

*Order No* C1096/MA/0034

*Contract Title* Redcar

*Description* 52 Soil samples.

*Date Received* 18-Nov-20

*Date Started* 18-Nov-20

*Date Completed* 03-Dec-20

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

*Notes* **This report supersedes 20-23397, extra testing added.**

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



# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Lab No	1762692	1762693	1762694	1762695	1762696
Sample ID	PRA-SP004-1	PRA-SP004-2	PRA-SP004-3	PRA-SP004-4	PRA-SP004-5
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	10/11/2020	10/11/2020	10/11/2020	10/11/2020	10/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETSC 1102	0.001	%	0.005		0.005		
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	22	17	23	23	28
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	5.5	3.0	3.8	3.6	4.9
Cadmium	DETSC 2301#	0.1	mg/kg	1.2	0.8	0.9	1.2	1.5
Chromium	DETSC 2301#	0.15	mg/kg	190	180	140	230	170
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	91	61	83	100	100
Lead	DETSC 2301#	0.3	mg/kg	210	170	230	260	230
Mercury	DETSC 2325#	0.05	mg/kg	1.5	0.95	0.90	2.3	2.2
Nickel	DETSC 2301#	1	mg/kg	25	19	26	26	22
Vanadium	DETSC 2301#	0.8	mg/kg	290	310	320	1200	340
Zinc	DETSC 2301#	1	mg/kg	420	300	410	400	510
<b>Inorganics</b>								
pH	DETSC 2008#		pH	11.1	11.2	10.7	11.0	11.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	38	12	17	38	42
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.1	0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.4	0.7	0.8	1.3	1.4
Organic matter	DETSC 2002#	0.1	%	1.9	1.2	1.9	1.5	1.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	320	150	270	210	320
Sulphur (free)	DETSC 3049#	0.75	mg/kg	1.4	< 0.75	47	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.10	0.08	0.06	0.15	0.16



# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Lab No	1762692	1762693	1762694	1762695	1762696
Sample ID	PRA-SP004-1	PRA-SP004-2	PRA-SP004-3	PRA-SP004-4	PRA-SP004-5
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	10/11/2020	10/11/2020	10/11/2020	10/11/2020	10/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	< 0.03	0.03	0.05
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.06	0.06	0.06	0.08	0.10
Fluorene	DETSC 3303	0.03	mg/kg	0.05	0.05	0.05	0.07	0.08
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.62	0.68	0.58	0.95	1.2
Anthracene	DETSC 3303	0.03	mg/kg	0.16	0.19	0.15	0.20	0.28
Fluoranthene	DETSC 3303#	0.03	mg/kg	2.3	2.3	2.4	2.8	4.2
Pyrene	DETSC 3303#	0.03	mg/kg	2.2	2.1	2.1	2.4	3.7
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.92	0.90	0.95	1.0	1.8
Chrysene	DETSC 3303	0.03	mg/kg	0.85	0.83	0.91	0.95	1.6
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	1.2	1.1	1.2	1.2	2.2
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.39	0.32	0.49	0.37	0.87
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.77	0.77	0.94	0.86	1.5
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.30	0.27	0.34	0.30	0.55
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.09	0.09	0.10	0.09	0.19
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.32	0.31	0.39	0.35	0.62
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	10	10	11	12	19
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3



# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Test	Method	LOD	Units	Lab No				
				1762697	1762698	1762699	1762700	1762701
				PRA-SP004-6	PRA-SP004-7	PRA-SP004-8	PRA-SP004-9	PRA-SP005-1
				SOIL	SOIL	SOIL	SOIL	SOIL
				10/11/2020	10/11/2020	10/11/2020	10/11/2020	10/11/2020
				n/s	n/s	n/s	n/s	n/s
Asbestos Quantification	DETSC 1102	0.001	%			0.023		
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	27	18	16	22	25
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	4.2	4.7	3.1	3.9	4.4
Cadmium	DETSC 2301#	0.1	mg/kg	1.1	2.5	1.5	1.0	1.5
Chromium	DETSC 2301#	0.15	mg/kg	160	250	210	230	150
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	110	140	72	94	92
Lead	DETSC 2301#	0.3	mg/kg	210	240	200	180	170
Mercury	DETSC 2325#	0.05	mg/kg	1.1	1.5	1.1	1.3	3.5
Nickel	DETSC 2301#	1	mg/kg	35	29	22	26	29
Vanadium	DETSC 2301#	0.8	mg/kg	400	310	280	340	300
Zinc	DETSC 2301#	1	mg/kg	410	740	280	410	540
<b>Inorganics</b>								
pH	DETSC 2008#		pH	10.2	12.1	11.3	11.3	11.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	15	27	13	23	66
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	0.1	< 0.1	< 0.1	0.3
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.9	1.2	0.7	1.1	2.2
Organic matter	DETSC 2002#	0.1	%	1.2	1.3	2.0	1.9	1.7
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	260	310	150	240	400
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	2.1
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	14
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	92
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	110
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	110
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.27	0.11	0.10	0.13	0.46



# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Lab No	1762697	1762698	1762699	1762700	1762701
Sample ID	PRA-SP004-6	PRA-SP004-7	PRA-SP004-8	PRA-SP004-9	PRA-SP005-1
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	10/11/2020	10/11/2020	10/11/2020	10/11/2020	10/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.03	0.05	0.05	0.03	0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.15	0.10	0.09	0.08	0.29
Fluorene	DETSC 3303	0.03	mg/kg	0.10	0.09	0.07	0.06	0.25
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.3	1.4	0.93	1.0	1.7
Anthracene	DETSC 3303	0.03	mg/kg	0.34	0.30	0.25	0.24	0.39
Fluoranthene	DETSC 3303#	0.03	mg/kg	3.7	3.7	3.8	3.0	3.0
Pyrene	DETSC 3303#	0.03	mg/kg	3.1	3.1	3.4	2.7	2.5
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	1.4	1.5	1.6	1.2	1.0
Chrysene	DETSC 3303	0.03	mg/kg	1.2	1.4	1.5	1.1	0.98
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	1.5	1.8	2.0	1.5	1.1
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.53	0.63	0.69	0.50	0.47
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	1.2	1.3	1.5	1.0	0.79
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.42	0.46	0.53	0.37	0.27
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.12	0.16	0.18	0.10	0.08
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.50	0.53	0.60	0.43	0.32
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	16	17	17	13	14
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3







# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Lab No	1762702	1762703	1762704	1762705	1762706
Sample ID	PRA-SP005-2	PRA-SP005-3	PRA-SP005-4	PRA-SP005-5	PRA-SP005-6
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	10/11/2020	10/11/2020	10/11/2020	10/11/2020	10/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.03	0.05	0.05	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.09	0.13	0.25	0.16	0.06
Fluorene	DETSC 3303	0.03	mg/kg	0.06	0.09	0.21	0.17	0.05
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.63	0.88	1.7	1.1	0.55
Anthracene	DETSC 3303	0.03	mg/kg	0.14	0.20	0.42	0.24	0.14
Fluoranthene	DETSC 3303#	0.03	mg/kg	2.1	3.0	3.9	2.8	1.9
Pyrene	DETSC 3303#	0.03	mg/kg	1.9	2.6	3.5	2.4	1.7
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.78	1.2	1.6	0.89	0.61
Chrysene	DETSC 3303	0.03	mg/kg	0.79	1.2	1.5	0.89	0.58
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.98	1.4	1.9	1.1	0.69
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.35	0.66	0.68	0.37	0.21
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.69	1.1	1.4	0.74	0.46
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.25	0.42	0.45	0.26	0.15
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.07	0.15	0.16	0.08	0.05
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.30	0.50	0.51	0.30	0.18
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	9.3	14	19	12	7.4
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Lab No	1762707	1762708	1762709	1762710	1762711
Sample ID	PRA-SP005-7	PRA-SP005-8	PRA-SP005-9	PRA-SP005-10	PRA-SP005-11
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	10/11/2020	10/11/2020	10/11/2020	10/11/2020	10/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETSC 1102	0.001	%	0.006		0.002		
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	26	28	24	21	33
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	4.5	3.5	4.0	4.9	5.3
Cadmium	DETSC 2301#	0.1	mg/kg	1.0	1.5	1.5	1.3	1.4
Chromium	DETSC 2301#	0.15	mg/kg	160	150	120	260	180
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	110	94	82	210	110
Lead	DETSC 2301#	0.3	mg/kg	130	190	200	140	160
Mercury	DETSC 2325#	0.05	mg/kg	2.3	0.92	1.4	2.7	2.0
Nickel	DETSC 2301#	1	mg/kg	33	38	29	28	44
Vanadium	DETSC 2301#	0.8	mg/kg	310	230	240	450	320
Zinc	DETSC 2301#	1	mg/kg	350	440	420	440	500
<b>Inorganics</b>								
pH	DETSC 2008#		pH	11.1	10.2	10.1	11.1	11.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	18	17	16	35	30
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.4	1.3	1.0	1.8	1.5
Organic matter	DETSC 2002#	0.1	%	1.2	1.6	1.9	1.9	1.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	250	360	440	170	320
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	2.4	1.7	3.9	< 0.75
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.08	0.13	0.15	0.33	0.38



# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Lab No	1762707	1762708	1762709	1762710	1762711
Sample ID	PRA-SP005-7	PRA-SP005-8	PRA-SP005-9	PRA-SP005-10	PRA-SP005-11
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	10/11/2020	10/11/2020	10/11/2020	10/11/2020	10/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	< 0.03	0.03	0.05
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.11	0.18	0.12	0.14	0.12
Fluorene	DETSC 3303	0.03	mg/kg	0.07	0.19	0.07	0.08	0.08
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.75	0.82	0.67	1.0	0.96
Anthracene	DETSC 3303	0.03	mg/kg	0.18	0.16	0.15	0.22	0.21
Fluoranthene	DETSC 3303#	0.03	mg/kg	2.1	1.4	4.0	2.7	2.1
Pyrene	DETSC 3303#	0.03	mg/kg	1.8	1.1	2.8	2.4	1.8
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.66	0.35	0.70	0.99	0.71
Chrysene	DETSC 3303	0.03	mg/kg	0.63	0.34	0.66	1.0	0.73
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.68	0.33	0.60	1.2	0.82
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.85	0.13	0.26	0.46	0.29
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.47	0.23	0.40	0.83	0.55
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.15	0.09	0.13	0.30	0.20
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03	0.04	0.08	0.06
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.18	0.11	0.15	0.36	0.23
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	8.8	5.5	11	12	9.4
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3



# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Lab No	1762712	1762713	1762714	1762715	1762716
Sample ID	PRA-BA-21	PRA-AY-21	PRA-AY-23	PRA-AW-17	PRA-AY-17
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	10/11/2020	10/11/2020	10/11/2020	10/11/2020	10/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETSC 1102	0.001	%					
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	8.2	14	23	7.7	7.0
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.6	0.6	6.0	1.1	1.9
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.3	0.7	0.3	0.2
Chromium	DETSC 2301#	0.15	mg/kg	26	30	140	23	270
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	16	31	100	24	25
Lead	DETSC 2301#	0.3	mg/kg	35	37	84	34	13
Mercury	DETSC 2325#	0.05	mg/kg	0.11	0.08	1.3	< 0.05	0.07
Nickel	DETSC 2301#	1	mg/kg	16	42	41	31	6.2
Vanadium	DETSC 2301#	0.8	mg/kg	35	36	360	29	360
Zinc	DETSC 2301#	1	mg/kg	80	110	230	110	44
<b>Inorganics</b>								
pH	DETSC 2008#		pH	8.4	9.3	11.7	8.6	11.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	1.2	1.2	17	0.4	5.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	1.1	< 0.6	0.8
Organic matter	DETSC 2002#	0.1	%	0.8	1.2	1.6	1.3	0.7
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	140	300	250	73	300
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.05	< 0.03	< 0.03



# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Lab No	1762712	1762713	1762714	1762715	1762716
Sample ID	PRA-BA-21	PRA-AY-21	PRA-AY-23	PRA-AW-17	PRA-AY-17
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	10/11/2020	10/11/2020	10/11/2020	10/11/2020	10/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.04	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.04	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.45	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.07	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.98	0.04	0.05
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.78	0.04	0.05
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.27	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.32	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.26	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.12	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.11	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.08	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 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	0.07	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	3.6	< 0.10	0.10
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Lab No	1762717	1762718	1762719	1762720	1762721
Sample ID	PRA-SP006-1	PRA-SP006-2	PRA-SP006-3	PRA-SP006-4	PRA-SP006-5
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETSC 1102	0.001	%	0.002				
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	25	24	22	25	24
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	5.5	5.0	3.2	3.6	3.9
Cadmium	DETSC 2301#	0.1	mg/kg	0.9	0.8	1.1	1.1	1.2
Chromium	DETSC 2301#	0.15	mg/kg	220	210	110	150	110
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	920	110	130	110	100
Lead	DETSC 2301#	0.3	mg/kg	250	160	430	450	280
Mercury	DETSC 2325#	0.05	mg/kg	0.61	0.73	0.57	1.7	1.3
Nickel	DETSC 2301#	1	mg/kg	30	34	35	33	30
Vanadium	DETSC 2301#	0.8	mg/kg	420	460	240	290	260
Zinc	DETSC 2301#	1	mg/kg	300	340	410	390	450
<b>Inorganics</b>								
pH	DETSC 2008#		pH	11.0	11.4	11.0	10.7	10.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	19	21	35	13	16
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.6	0.7	0.8	0.7	0.9
Organic matter	DETSC 2002#	0.1	%	0.7	1.6	1.1	1.2	1.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	320	280	240	320	460
Sulphur (free)	DETSC 3049#	0.75	mg/kg	4.3	13	< 0.75	< 0.75	0.90
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	2.9	2.5	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	27	26	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	210	130	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	250	160	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	1.9	1.9	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	32	32	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	150	130	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	180	160	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	430	330	< 10	< 10	< 10
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.10	0.08	0.12	< 0.03	0.10





# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23397-1  
 Client Ref  
 Contract Title Redcar

Lab No	1762717	1762718	1762719	1762720	1762721
Sample ID	PRA-SP006-1	PRA-SP006-2	PRA-SP006-3	PRA-SP006-4	PRA-SP006-5
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units	1762717	1762718	1762719	1762720	1762721
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	0.05	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.10	0.07	0.10	< 0.03	0.08
Fluorene	DETSC 3303	0.03	mg/kg	0.08	0.04	0.10	< 0.03	0.09
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.1	0.73	0.98	0.08	0.70
Anthracene	DETSC 3303	0.03	mg/kg	0.24	0.15	0.26	< 0.03	0.16
Fluoranthene	DETSC 3303#	0.03	mg/kg	4.1	2.7	3.2	0.07	2.1
Pyrene	DETSC 3303#	0.03	mg/kg	4.2	2.9	3.1	0.06	1.9
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	1.9	1.1	1.4	< 0.03	0.79
Chrysene	DETSC 3303	0.03	mg/kg	1.8	1.1	1.3	< 0.03	0.79
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	2.2	1.3	1.7	< 0.03	0.82
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.87	0.45	0.59	< 0.03	0.34
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	1.4	0.83	1.1	< 0.03	0.64
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.56	0.34	0.43	< 0.03	0.23
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.13	0.08	0.10	< 0.03	0.07
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.62	0.38	0.45	< 0.03	0.28
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	19	12	15	0.21	9.2
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3





# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Lab No	1762722	1762723	1762724	1762725	1762726
Sample ID	PRA-SP006-6	PRA-SP006-7	PRA-SP006-8	PRA-SP006-9	PRA-SP006-10
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.03	0.04
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.07	0.05	0.08	0.10	0.08
Fluorene	DETSC 3303	0.03	mg/kg	0.06	0.05	0.08	0.08	0.08
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.65	0.45	0.68	0.78	0.82
Anthracene	DETSC 3303	0.03	mg/kg	0.16	0.13	0.16	0.19	0.19
Fluoranthene	DETSC 3303#	0.03	mg/kg	2.3	1.5	2.1	3.2	3.3
Pyrene	DETSC 3303#	0.03	mg/kg	2.2	1.4	1.9	3.0	3.1
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.85	0.56	0.76	1.1	1.3
Chrysene	DETSC 3303	0.03	mg/kg	0.88	0.61	0.80	1.1	1.2
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.99	0.66	0.87	1.1	1.3
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.38	0.27	0.35	0.44	0.58
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.74	0.36	0.64	0.85	1.1
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.27	0.16	0.23	0.26	0.41
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.08	0.05	0.07	0.08	0.10
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.34	0.19	0.28	0.34	0.46
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	10	6.5	9.0	13	14
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3



# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Lab No	1762727	1762728	1762729	1762730	1762731
Sample ID	PRA-SP006-11	PRA-SP007-1	PRA-SP007-2	PRA-SP007-3	PRA-SP007-4
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETSC 1102	0.001	%		0.016			
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	24	25	24	86	38
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	4.1	2.7	4.8	3.5	4.3
Cadmium	DETSC 2301#	0.1	mg/kg	1.3	1.5	2.1	1.1	1.5
Chromium	DETSC 2301#	0.15	mg/kg	170	230	170	160	240
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	110	55	61	63	72
Lead	DETSC 2301#	0.3	mg/kg	280	200	170	110	190
Mercury	DETSC 2325#	0.05	mg/kg	1.6	2.3	1.8	1.3	4.0
Nickel	DETSC 2301#	1	mg/kg	37	27	31	54	46
Vanadium	DETSC 2301#	0.8	mg/kg	310	280	220	210	270
Zinc	DETSC 2301#	1	mg/kg	450	550	420	750	500
<b>Inorganics</b>								
pH	DETSC 2008#		pH	11.6	12.2	10.9	11.9	11.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	30	44	34	38	46
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	0.1	0.2	0.2	0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.1	1.5	1.3	1.3	2.2
Organic matter	DETSC 2002#	0.1	%	2.8	2.9	1.5	1.5	1.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	220	67	460	610	710
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	1.4	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	12	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	69	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	84	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	1.3	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	4.9	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	23	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	160	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	190	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	270	< 10	< 10	< 10
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.11	0.07	0.06	0.09	0.07



# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Lab No	1762727	1762728	1762729	1762730	1762731
Sample ID	PRA-SP006-11	PRA-SP007-1	PRA-SP007-2	PRA-SP007-3	PRA-SP007-4
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.08	0.05	0.06	0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.08	0.15	0.08	0.10	0.07
Fluorene	DETSC 3303	0.03	mg/kg	0.07	0.14	0.07	0.09	0.05
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.75	1.4	0.91	1.2	0.63
Anthracene	DETSC 3303	0.03	mg/kg	0.17	0.39	0.26	0.26	0.15
Fluoranthene	DETSC 3303#	0.03	mg/kg	2.7	5.5	3.9	4.8	2.6
Pyrene	DETSC 3303#	0.03	mg/kg	2.5	5.1	3.8	4.3	2.5
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.93	3.0	2.2	2.5	1.3
Chrysene	DETSC 3303	0.03	mg/kg	0.97	2.8	2.0	2.5	1.3
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.98	3.9	2.7	3.4	1.6
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.47	1.7	1.1	1.4	0.68
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.68	3.4	2.3	2.9	1.4
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.25	1.3	0.91	1.1	0.51
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.07	0.33	0.22	0.28	0.13
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.30	1.6	1.0	1.3	0.57
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	11	31	21	26	13
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Lab No	1762732	1762733	1762734	1762735	1762736
Sample ID	PRA-SP007-5	PRA-SP007-6	PRA-SP007-7	PRA-SP007-8	PRA-SP007-9
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%	0.098					
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	39	22	37	18	20	
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	4.1	5.1	5.2	3.9	3.1	
Cadmium	DETSC 2301#	0.1	mg/kg	1.7	6.9	1.6	1.6	1.0	
Chromium	DETSC 2301#	0.15	mg/kg	170	160	210	330	240	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	83	65	69	130	65	
Lead	DETSC 2301#	0.3	mg/kg	150	150	220	180	140	
Mercury	DETSC 2325#	0.05	mg/kg	3.6	1.5	2.4	1.6	0.85	
Nickel	DETSC 2301#	1	mg/kg	41	24	40	21	20	
Vanadium	DETSC 2301#	0.8	mg/kg	240	220	320	440	280	
Zinc	DETSC 2301#	1	mg/kg	430	400	420	510	320	
<b>Inorganics</b>									
pH	DETSC 2008#		pH	11.6	12.1	11.8	12.1	12.0	
Cyanide, Total	DETSC 2130#	0.1	mg/kg	30	36	22	33	6.5	
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.2	0.2	0.2	0.2	0.1	
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.8	1.6	1.3	1.1	1.2	
Organic matter	DETSC 2002#	0.1	%	2.0	1.9	2.9	2.2	2.3	
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	680	330	490	150	160	
Sulphur (free)	DETSC 3049#	0.75	mg/kg	4.9	3.5	< 0.75	< 0.75	< 0.75	
<b>Petroleum Hydrocarbons</b>									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.15	0.12	0.12	0.09	0.03	





# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Lab No	1762732	1762733	1762734	1762735	1762736
Sample ID	PRA-SP007-5	PRA-SP007-6	PRA-SP007-7	PRA-SP007-8	PRA-SP007-9
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.05	0.04	0.05	0.06	0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.15	0.11	0.15	0.28	0.09
Fluorene	DETSC 3303	0.03	mg/kg	0.10	0.07	0.09	0.06	0.06
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.4	1.0	1.2	1.1	1.0
Anthracene	DETSC 3303	0.03	mg/kg	0.37	0.22	0.27	0.27	0.24
Fluoranthene	DETSC 3303#	0.03	mg/kg	6.1	2.7	3.2	2.8	3.6
Pyrene	DETSC 3303#	0.03	mg/kg	5.4	2.4	2.9	2.6	3.2
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	2.8	1.4	1.6	1.4	1.4
Chrysene	DETSC 3303	0.03	mg/kg	2.5	1.4	1.6	1.4	1.4
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	3.2	2.0	2.3	1.9	1.9
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	1.2	0.74	0.97	0.66	0.67
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	2.6	1.5	1.7	1.2	1.4
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.88	0.57	0.69	0.45	0.57
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.30	0.19	0.24	0.16	0.18
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	1.0	0.65	0.78	0.49	0.67
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	28	15	18	15	17
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Lab No	1762737	1762738	1762739	1762740	1762741
Sample ID	PRA-SP007-10	PRA-SP007-11	PRA-SP007-12	PRA-SP007-13	PRA-SP007-14
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETSC 1102	0.001	%	0.006			0.005	
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	35	25	27	25	28
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	3.6	3.7	6.4	5.9	4.0
Cadmium	DETSC 2301#	0.1	mg/kg	1.9	1.4	1.5	1.6	1.3
Chromium	DETSC 2301#	0.15	mg/kg	220	170	130	170	180
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	270	56	64	65	58
Lead	DETSC 2301#	0.3	mg/kg	180	150	180	160	150
Mercury	DETSC 2325#	0.05	mg/kg	2.0	1.8	1.9	2.0	2.0
Nickel	DETSC 2301#	1	mg/kg	36	27	28	29	26
Vanadium	DETSC 2301#	0.8	mg/kg	380	250	200	230	240
Zinc	DETSC 2301#	1	mg/kg	510	450	450	480	370
<b>Inorganics</b>								
pH	DETSC 2008#		pH	11.9	11.9	11.0	11.5	11.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	21	27	31	38	30
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.2	0.2	0.2	0.2	0.3
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.8	1.7	2.1	2.2	1.9
Organic matter	DETSC 2002#	0.1	%	2.4	2.6	2.0	2.2	2.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	550	320	630	460	440
Sulphur (free)	DETSC 3049#	0.75	mg/kg	2.6	7.5	11	6.9	4.0
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.08	0.13	0.10	0.09	0.11



# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23397-1  
 Client Ref  
 Contract Title Redcar

Lab No	1762737	1762738	1762739	1762740	1762741
Sample ID	PRA-SP007-10	PRA-SP007-11	PRA-SP007-12	PRA-SP007-13	PRA-SP007-14
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	11/11/2020	11/11/2020	11/11/2020	11/11/2020	11/11/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.03	0.03	0.04	0.04	0.04
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.11	0.10	0.14	0.14	0.15
Fluorene	DETSC 3303	0.03	mg/kg	0.08	0.07	0.12	0.10	0.10
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.0	0.98	2.5	1.8	1.4
Anthracene	DETSC 3303	0.03	mg/kg	0.23	0.23	0.48	0.45	0.34
Fluoranthene	DETSC 3303#	0.03	mg/kg	3.3	3.1	5.7	6.2	4.6
Pyrene	DETSC 3303#	0.03	mg/kg	3.0	2.8	4.8	5.4	4.1
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	1.5	1.6	2.6	2.6	2.4
Chrysene	DETSC 3303	0.03	mg/kg	1.5	1.5	2.4	2.4	2.3
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	2.1	2.1	3.3	3.3	3.3
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.73	0.76	1.2	1.1	1.2
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	1.6	1.6	2.6	2.5	2.6
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.58	0.60	1.0	0.91	1.0
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.19	0.20	0.34	0.32	0.34
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.69	0.70	1.1	1.0	1.1
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	17	17	28	28	25
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3



## Summary of Chemical Analysis Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Lab No	1762742	1762743
Sample ID	PRA-SP007-15	PRA-SP007-16
Depth		
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	11/11/2020	11/11/2020
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Asbestos Quantification	DETSC 1102	0.001	%	0.004	
<b>Metals</b>					
Arsenic	DETSC 2301#	0.2	mg/kg	31	25
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	3.8	4.5
Cadmium	DETSC 2301#	0.1	mg/kg	1.8	1.5
Chromium	DETSC 2301#	0.15	mg/kg	190	270
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	77	57
Lead	DETSC 2301#	0.3	mg/kg	180	140
Mercury	DETSC 2325#	0.05	mg/kg	2.4	2.2
Nickel	DETSC 2301#	1	mg/kg	32	24
Vanadium	DETSC 2301#	0.8	mg/kg	250	390
Zinc	DETSC 2301#	1	mg/kg	470	460
<b>Inorganics</b>					
pH	DETSC 2008#		pH	11.9	12.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	46	26
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.1	0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.5	1.6
Organic matter	DETSC 2002#	0.1	%	2.5	1.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	300	110
Sulphur (free)	DETSC 3049#	0.75	mg/kg	3.8	4.7
<b>Petroleum Hydrocarbons</b>					
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	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
<b>PAHs</b>					
Naphthalene	DETSC 3303#	0.03	mg/kg	0.13	0.16



# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

<b>Lab No</b>	1762742	1762743
<b>Sample ID</b>	PRA-SP007-15	PRA-SP007-16
<b>Depth</b>		
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	11/11/2020	11/11/2020
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.06	0.05
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.13	0.16
Fluorene	DETSC 3303	0.03	mg/kg	0.10	0.11
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.3	1.3
Anthracene	DETSC 3303	0.03	mg/kg	0.33	0.34
Fluoranthene	DETSC 3303#	0.03	mg/kg	4.8	4.7
Pyrene	DETSC 3303#	0.03	mg/kg	4.2	4.3
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	2.3	2.4
Chrysene	DETSC 3303	0.03	mg/kg	2.1	2.2
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	3.0	3.2
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	1.1	1.3
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	2.4	2.5
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.92	0.94
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.32	0.34
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	1.0	1.1
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	24	25
<b>Phenols</b>					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1762692	PRA-SP004-1	SOIL	Chrysotile	Large bundles of Chrysotile present	Jordan Eadington
1762693	PRA-SP004-2	SOIL	Chrysotile	Small Bundles of Chrysotile Present	Jordan Eadington
1762694	PRA-SP004-3	SOIL	Chrysotile	Chrysotile present within visible cement fragments	Jordan Eadington
1762695	PRA-SP004-4	SOIL	NAD	none	Jordan Eadington
1762696	PRA-SP004-5	SOIL	NAD	none	Jordan Eadington
1762697	PRA-SP004-6	SOIL	NAD	none	Jordan Eadington
1762698	PRA-SP004-7	SOIL	Chrysotile	Large bundles of Chrysotile present	Jordan Eadington
1762699	PRA-SP004-8	SOIL	Chrysotile	Large bundles/clumps of Chrysotile present	Jordan Eadington
1762700	PRA-SP004-9	SOIL	Chrysotile	Bundles of Chrysotile Present	Jordan Eadington
1762701	PRA-SP005-1	SOIL	NAD	none	Jordan Eadington
1762702	PRA-SP005-2	SOIL	Chrysotile	Small Bundles of Chrysotile Present	Jordan Eadington
1762703	PRA-SP005-3	SOIL	Chrysotile Amosite	Large bundles/clumps of Chrysotile present along with smaller Amosite bundles	Jordan Eadington
1762704	PRA-SP005-4	SOIL	Amosite	Bundles of Amosite present	Jordan Eadington
1762705	PRA-SP005-5	SOIL	Chrysotile Amosite	Large bundles of Amosite and Chrysotile present	Jordan Eadington
1762706	PRA-SP005-6	SOIL	Chrysotile	Large bundles of Chrysotile present	Jordan Eadington
1762707	PRA-SP005-7	SOIL	Amosite Chrysotile	Bundles of Amosite and Chrysotile present	Jordan Eadington
1762708	PRA-SP005-8	SOIL	NAD	none	Jordan Eadington
1762709	PRA-SP005-9	SOIL	Chrysotile	Bundles of Chrysotile present	Jordan Eadington
1762710	PRA-SP005-10	SOIL	NAD	none	Jordan Eadington
1762711	PRA-SP005-11	SOIL	NAD	none	Jordan Eadington
1762712	PRA-BA-21	SOIL	NAD	none	Jordan Eadington
1762713	PRA-AY-21	SOIL	NAD	none	Jordan Eadington
1762714	PRA-AY-23	SOIL	Chrysotile	Bundles of Chrysotile present	Jordan Eadington
1762715	PRA-AW-17	SOIL	NAD	none	Jordan Eadington
1762716	PRA-AY-17	SOIL	NAD	none	Jordan Eadington
1762717	PRA-SP006-1	SOIL	Chrysotile	Bundles of Chrysotile Present	Jordan Eadington
1762718	PRA-SP006-2	SOIL	NAD	none	Jordan Eadington
1762719	PRA-SP006-3	SOIL	Chrysotile	Bundles of Chrysotile Present	Jordan Eadington
1762720	PRA-SP006-4	SOIL	NAD	none	Jordan Eadington
1762721	PRA-SP006-5	SOIL	NAD	none	Jordan Eadington
1762722	PRA-SP006-6	SOIL	NAD	none	Jordan Eadington
1762723	PRA-SP006-7	SOIL	NAD	none	Jordan Eadington
1762724	PRA-SP006-8	SOIL	NAD	none	Jordan Eadington
1762725	PRA-SP006-9	SOIL	NAD	none	Jordan Eadington
1762726	PRA-SP006-10	SOIL	NAD	none	Jordan Eadington



## Summary of Asbestos Analysis

### Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1762727	PRA-SP006-11	SOIL	NAD	none	Jordan Eadington
1762728	PRA-SP007-1	SOIL	Chrysotile	Chrysotile present as visible insulation bundles	Jordan Eadington
1762729	PRA-SP007-2	SOIL	Chrysotile	Bundles of Chrysotile Present	Jordan Eadington
1762730	PRA-SP007-3	SOIL	Chrysotile	Bundles of Chrysotile Present	Jordan Eadington
1762731	PRA-SP007-4	SOIL	Chrysotile Amosite	Large bundles/clumps of Chrysotile present along with smaller Amosite bundles	Jordan Eadington
1762732	PRA-SP007-5	SOIL	Chrysotile Amosite	Large bundles/clumps of Chrysotile present along with smaller Amosite bundles	Jordan Eadington
1762733	PRA-SP007-6	SOIL	Chrysotile	Bundles of Chrysotile present	Jordan Eadington
1762734	PRA-SP007-7	SOIL	Chrysotile Crocidolite	Large bundles/clumps of Chrysotile present along with smaller Crocidolite bundles	Jordan Eadington
1762735	PRA-SP007-8	SOIL	NAD	none	Jordan Eadington
1762736	PRA-SP007-9	SOIL	NAD	none	Jordan Eadington
1762737	PRA-SP007-10	SOIL	Chrysotile	Bundles of Chrysotile Present	Jordan Eadington
1762738	PRA-SP007-11	SOIL	Chrysotile	Bundles of Chrysotile Present	Jordan Eadington
1762739	PRA-SP007-12	SOIL	Chrysotile Amosite	Large bundles/clumps of Chrysotile present along with smaller Amosite bundles	Jordan Eadington
1762740	PRA-SP007-13	SOIL	Chrysotile	Large bundles/clumps of Chrysotile present	Jordan Eadington
1762741	PRA-SP007-14	SOIL	NAD	none	Jordan Eadington
1762742	PRA-SP007-15	SOIL	Chrysotile	Bundles of Chrysotile Present	Jordan Eadington
1762743	PRA-SP007-16	SOIL	Chrysotile	Bundles of Chrysotile Present	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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Lab No	1762692	1762694	1762699	1762703
Sample ID	PRA-SP004-1	PRA-SP004-3	PRA-SP004-8	PRA-SP005-3
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	10/11/2020	10/11/2020	10/11/2020	10/11/2020
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.005	0.005	0.023	0.021
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	0.005	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.005	na	0.023	0.021
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1240.23	1308.40	1342.45	1420.58
ACMs present*		type		Cement		
Mass of ACM in sample		g		0.46		
% ACM by mass		%		0.04		
% asbestos in ACM		%		15		
% asbestos in sample		%		0.005		

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na	na	0.006
% Chrysotile bundles in sample		Mass %	0.005	na	0.023	0.015

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Lab No	1762707	1762709	1762717	1762728
Sample ID	PRA-SP005-7	PRA-SP005-9	PRA-SP006-1	PRA-SP007-1
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	10/11/2020	10/11/2020	11/11/2020	11/11/2020
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.006	0.002	0.002	0.016
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	0.016
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.006	0.002	0.002	na
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na

### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1270.91	1060.39	1046.00	1535.03
ACMs present*		type				Insulation
Mass of ACM in sample		g				0.29
% ACM by mass		%				0.02
% asbestos in ACM		%				85
% asbestos in sample		%				0.016

### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	0.002	na	na	na
% Chrysotile bundles in sample		Mass %	0.004	0.002	0.002	na

### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na

### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 20-23397-1

Client Ref

Contract Title Redcar

Lab No	1762732	1762737	1762740	1762742
Sample ID	PRA-SP007-5	PRA-SP007-10	PRA-SP007-13	PRA-SP007-15
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	11/11/2020	11/11/2020	11/11/2020	11/11/2020
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.098</b>	<b>0.006</b>	<b>0.005</b>	<b>0.004</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.098	0.006	0.005	0.004
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na

### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1231.93	1204.05	1287.49	1571.18
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				

### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	0.016	na	na	na
% Chrysotile bundles in sample		Mass %	0.082	0.006	0.005	0.004

### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na

### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample



## Information in Support of the Analytical Results

Our Ref 20-23397-1  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1762692	PRA-SP004-1 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762693	PRA-SP004-2 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762694	PRA-SP004-3 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762695	PRA-SP004-4 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762696	PRA-SP004-5 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762697	PRA-SP004-6 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762698	PRA-SP004-7 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762699	PRA-SP004-8 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762700	PRA-SP004-9 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762701	PRA-SP005-1 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762702	PRA-SP005-2 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762703	PRA-SP005-3 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762704	PRA-SP005-4 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762705	PRA-SP005-5 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762706	PRA-SP005-6 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762707	PRA-SP005-7 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762708	PRA-SP005-8 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762709	PRA-SP005-9 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762710	PRA-SP005-10 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762711	PRA-SP005-11 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762712	PRA-BA-21 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762713	PRA-AY-21 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762714	PRA-AY-23 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762715	PRA-AW-17 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	
1762716	PRA-AY-17 SOIL	10/11/20	GJ 250ml, GJ 60ml x2, PT 1L	Sulphur (free) (7 days), pH + Conductivity (7 days)	

## Information in Support of the Analytical Results

Our Ref 20-23397-1

Client Ref

Contract Redcar

Lab No	Sample ID	Date		Containers Received	Holding time exceeded for tests	Inappropriate container for tests
		Sampled				
1762717	PRA-SP006-1 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762718	PRA-SP006-2 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762719	PRA-SP006-3 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762720	PRA-SP006-4 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762721	PRA-SP006-5 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762722	PRA-SP006-6 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762723	PRA-SP006-7 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762724	PRA-SP006-8 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762725	PRA-SP006-9 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762726	PRA-SP006-10 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762727	PRA-SP006-11 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762728	PRA-SP007-1 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762729	PRA-SP007-2 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762730	PRA-SP007-3 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762731	PRA-SP007-4 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762732	PRA-SP007-5 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762733	PRA-SP007-6 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762734	PRA-SP007-7 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762735	PRA-SP007-8 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762736	PRA-SP007-9 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762737	PRA-SP007-10 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762738	PRA-SP007-11 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762739	PRA-SP007-12 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762740	PRA-SP007-13 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762741	PRA-SP007-14 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762742	PRA-SP007-15 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		
1762743	PRA-SP007-16 SOIL	11/11/20		GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 20-25253

*Issued:* 18-Dec-20

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 20-25253

*Client Reference* (not supplied)

*Order No* (not supplied)

*Contract Title* Arcadis

*Description* 16 Soil samples.

*Date Received* 09-Dec-20

*Date Started* 09-Dec-20

*Date Completed* 18-Dec-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



2139

# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-25253

Client Ref

Contract Title Arcadis

Lab No	1774631	1774632	1774633	1774634	1774635	1774636	1774637
Sample ID	PRA-SP012-1	PRA-SP012-2	PRA-SP012-3	PRA-SP012-4	PRA-SP012-5	PRA-SP012-6	PRA-SP012-7
Depth							
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	07/12/2020	07/12/2020	07/12/2020	07/12/2020	07/12/2020	07/12/2020	07/12/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
<b>Metals</b>										
Arsenic	DETSC 2301#	0.2	mg/kg	12	16	14	13	17	41	13
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	3.8	4.0	6.2	6.1	6.1	12	4.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	0.8	0.9	0.8	1.1	1.6	0.8
Chromium	DETSC 2301#	0.15	mg/kg	160	150	250	180	200	68	93
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	41	82	80	100	74	68	60
Lead	DETSC 2301#	0.3	mg/kg	67	79	93	81	97	130	86
Mercury	DETSC 2325#	0.05	mg/kg	0.85	1.4	2.0	1.1	2.6	1.5	1.5
Nickel	DETSC 2301#	1	mg/kg	14	23	19	19	17	23	15
Vanadium	DETSC 2301#	0.8	mg/kg	270	300	500	370	1100	110	160
Zinc	DETSC 2301#	1	mg/kg	190	220	270	310	330	400	310
<b>Inorganics</b>										
pH	DETSC 2008#		pH	11.4	11.0	11.1	11.4	11.1	10.9	11.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	23	15	19	64	25	30	26
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.1	0.2	0.1	0.1	0.1	0.2	0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	2.3	1.7	1.6	1.9	2.0	3.6	1.7
Organic matter	DETSC 2002#	0.1	%	2.0	2.4	2.1	1.8	2.0	2.0	2.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	120	450	360	260	270	570	360
Sulphur (free)	DETSC 3049#	0.75	mg/kg	1.6	6.6	2.1	3.5	4.7	8.7	3.4
<b>Petroleum Hydrocarbons</b>										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10





# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-25253  
 Client Ref  
 Contract Title Arcadis

<b>Lab No</b>	1774631	1774632	1774633	1774634	1774635	1774636	1774637
<b>Sample ID</b>	PRA-SP012-1	PRA-SP012-2	PRA-SP012-3	PRA-SP012-4	PRA-SP012-5	PRA-SP012-6	PRA-SP012-7
<b>Depth</b>							
<b>Other ID</b>							
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	07/12/2020	07/12/2020	07/12/2020	07/12/2020	07/12/2020	07/12/2020	07/12/2020
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
<b>PAHs</b>										
Naphthalene	DETSC 3303#	0.03	mg/kg	0.12	0.09	0.05	0.07	0.06	0.25	0.08
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.08	0.15	0.12	0.15	0.07	0.08	0.06
Fluorene	DETSC 3303	0.03	mg/kg	0.05	0.09	0.06	0.11	0.03	0.05	0.05
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.65	0.79	0.68	1.4	0.36	0.37	0.32
Anthracene	DETSC 3303	0.03	mg/kg	0.12	0.19	0.12	0.20	0.08	0.09	0.08
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.5	2.0	1.4	2.4	1.1	0.98	0.84
Pyrene	DETSC 3303#	0.03	mg/kg	1.3	1.7	1.2	2.2	0.95	0.85	0.74
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.59	0.72	0.51	0.89	0.42	0.36	0.31
Chrysene	DETSC 3303	0.03	mg/kg	0.54	0.62	0.46	0.82	0.38	0.32	0.27
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.66	0.77	0.57	1.1	0.50	0.38	0.32
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.23	0.26	0.19	0.34	0.17	0.15	0.12
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.43	0.45	0.37	0.62	0.33	0.26	0.21
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.17	0.17	0.14	0.25	0.14	0.09	0.09
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.05	0.06	0.05	0.07	0.05	0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.18	0.20	0.15	0.28	0.15	0.10	0.09
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	6.7	8.3	6.1	11	4.8	4.4	3.6
<b>Phenols</b>										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-25253

Client Ref

Contract Title Arcadis

Lab No	1774638	1774639	1774640	1774641	1774642	1774643	1774644
Sample ID	PRA-SP012-8	PRA-SP012-9	PRA-SP012-10	PRA-SP012-11	PRA-SP012-12	PRA-SP012-13	PRA-SP012-14
Depth							
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	07/12/2020	07/12/2020	07/12/2020	07/12/2020	07/12/2020	07/12/2020	07/12/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
<b>Metals</b>										
Arsenic	DETSC 2301#	0.2	mg/kg	13	14	17	15	17	20	13
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	4.5	5.9	5.9	4.8	4.7	6.0	5.1
Cadmium	DETSC 2301#	0.1	mg/kg	0.9	0.8	0.9	0.8	0.6	1.0	0.8
Chromium	DETSC 2301#	0.15	mg/kg	210	120	110	95	150	240	220
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	59	59	76	71	80	100	71
Lead	DETSC 2301#	0.3	mg/kg	87	92	91	82	73	130	85
Mercury	DETSC 2325#	0.05	mg/kg	1.7	2.1	1.4	0.68	0.90	1.2	0.79
Nickel	DETSC 2301#	1	mg/kg	17	17	19	21	25	32	22
Vanadium	DETSC 2301#	0.8	mg/kg	360	200	240	180	170	430	370
Zinc	DETSC 2301#	1	mg/kg	280	300	290	210	210	320	290
<b>Inorganics</b>										
pH	DETSC 2008#		pH	11.0	11.1	11.1	10.9	10.6	11.3	11.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg	29	31	19	19	13	23	20
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.2	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.6	1.7	2.2	1.9	1.2	2.0	1.0
Organic matter	DETSC 2002#	0.1	%	2.2	2.0	2.0	1.8	2.0	2.1	1.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	390	290	370	370	240	210	170
Sulphur (free)	DETSC 3049#	0.75	mg/kg	1.9	2.4	< 0.75	3.2	< 0.75	2.6	4.0
<b>Petroleum Hydrocarbons</b>										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	1.7	< 1.2	2.7	1.7	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	28	< 1.5	55	35	21
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	100	< 3.4	230	190	150
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	130	< 10	280	230	170
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	4.5	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	6.9	< 0.5	11	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	38	< 0.6	61	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	84	< 1.4	220	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	130	< 10	300	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	260	< 10	580	230	170



## Summary of Chemical Analysis

### Soil Samples

Our Ref 20-25253

Client Ref

Contract Title Arcadis

Lab No	1774638	1774639	1774640	1774641	1774642	1774643	1774644
Sample ID	PRA-SP012-8	PRA-SP012-9	PRA-SP012-10	PRA-SP012-11	PRA-SP012-12	PRA-SP012-13	PRA-SP012-14
Depth							
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	07/12/2020	07/12/2020	07/12/2020	07/12/2020	07/12/2020	07/12/2020	07/12/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
<b>PAHs</b>										
Naphthalene	DETSC 3303#	0.03	mg/kg	0.07	0.06	0.10	0.07	0.12	0.08	0.05
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.09	0.08	0.20	0.11	0.17	0.10	0.08
Fluorene	DETSC 3303	0.03	mg/kg	0.05	0.04	0.09	0.07	0.09	0.06	0.05
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.50	0.34	0.48	0.55	0.42	0.53	0.54
Anthracene	DETSC 3303	0.03	mg/kg	0.11	0.06	0.10	0.10	0.10	0.10	0.09
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.4	1.2	1.3	1.4	1.1	1.3	1.3
Pyrene	DETSC 3303#	0.03	mg/kg	1.2	1.0	1.2	1.1	0.98	1.2	1.1
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.57	0.46	0.55	0.52	0.47	0.58	0.53
Chrysene	DETSC 3303	0.03	mg/kg	0.49	0.36	0.43	0.39	0.37	0.44	0.40
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.63	0.44	0.49	0.48	0.50	0.60	0.59
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.21	0.18	0.20	0.17	0.18	0.22	0.18
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.43	0.32	0.40	0.37	0.36	0.45	0.40
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.17	0.12	0.14	0.12	0.12	0.14	0.14
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.05	0.04	0.05	0.05	0.03	0.05	0.05
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.18	0.12	0.13	0.12	0.11	0.15	0.14
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	6.2	4.8	5.9	5.6	5.1	6.0	5.6
<b>Phenols</b>										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	0.6	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Chemical Analysis

### Soil Samples

Our Ref 20-25253

Client Ref

Contract Title Arcadis

<b>Lab No</b>	1774645	1774646
<b>Sample ID</b>	PRA-SP012-15	PRA-SP012-16
<b>Depth</b>		
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	07/12/2020	07/12/2020
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
<b>Metals</b>					
Arsenic	DETSC 2301#	0.2	mg/kg	17	20
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	4.7	3.5
Cadmium	DETSC 2301#	0.1	mg/kg	1.1	0.9
Chromium	DETSC 2301#	0.15	mg/kg	220	260
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	97	84
Lead	DETSC 2301#	0.3	mg/kg	130	96
Mercury	DETSC 2325#	0.05	mg/kg	0.90	1.7
Nickel	DETSC 2301#	1	mg/kg	23	24
Vanadium	DETSC 2301#	0.8	mg/kg	400	470
Zinc	DETSC 2301#	1	mg/kg	330	300
<b>Inorganics</b>					
pH	DETSC 2008#		pH	11.5	11.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	18	23
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.7	1.1
Organic matter	DETSC 2002#	0.1	%	1.8	2.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	150	150
Sulphur (free)	DETSC 3049#	0.75	mg/kg	4.9	4.1
<b>Petroleum Hydrocarbons</b>					
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	1.5	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	24	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	160	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	190	< 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	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	190	< 10



## Summary of Chemical Analysis

### Soil Samples

Our Ref 20-25253

Client Ref

Contract Title Arcadis

<b>Lab No</b>	1774645	1774646
<b>Sample ID</b>	PRA-SP012-15	PRA-SP012-16
<b>Depth</b>		
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	07/12/2020	07/12/2020
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
<b>PAHs</b>					
Naphthalene	DETSC 3303#	0.03	mg/kg	0.07	0.09
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.09	0.08
Fluorene	DETSC 3303	0.03	mg/kg	0.07	0.08
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.62	0.69
Anthracene	DETSC 3303	0.03	mg/kg	0.11	0.15
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.2	1.5
Pyrene	DETSC 3303#	0.03	mg/kg	1.1	1.4
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.55	0.68
Chrysene	DETSC 3303	0.03	mg/kg	0.43	0.48
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.59	0.74
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.21	0.26
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.43	0.54
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.14	0.16
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.05	0.06
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.14	0.18
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	5.8	7.2
<b>Phenols</b>					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 20-25253

Client Ref

Contract Title Arcadis

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1774631	PRA-SP012-1	SOIL	NAD	none	Lee Kerridge
1774632	PRA-SP012-2	SOIL	Chrysotile	Chrysotile present in bundle	Lee Kerridge
1774633	PRA-SP012-3	SOIL	Chrysotile	Chrysotile present as bundle	Lee Kerridge
1774634	PRA-SP012-4	SOIL	Chrysotile	Chrysotile present as bundles	Lee Kerridge
1774635	PRA-SP012-5	SOIL	Chrysotile	Chrysotile present in bundle	Lee Kerridge
1774636	PRA-SP012-6	SOIL	Chrysotile	Chrysotile present as bundles	Lee Kerridge
1774637	PRA-SP012-7	SOIL	Chrysotile	Chrysotile present as bundle	Lee Kerridge
1774638	PRA-SP012-8	SOIL	Chrysotile	Chrysotile present as bundles	Lee Kerridge
1774639	PRA-SP012-9	SOIL	Chrysotile	Chrysotile present as bundles	Lee Kerridge
1774640	PRA-SP012-10	SOIL	Chrysotile	Chrysotile present as bundles	Lee Kerridge
1774641	PRA-SP012-11	SOIL	Chrysotile	Chrysotile present as bundles	Lee Kerridge
1774642	PRA-SP012-12	SOIL	Chrysotile	Chrysotile present in bundles	Lee Kerridge
1774643	PRA-SP012-13	SOIL	Chrysotile	Chrysotile present in bundle	Lee Kerridge
1774644	PRA-SP012-14	SOIL	NAD	none	Lee Kerridge
1774645	PRA-SP012-15	SOIL	Chrysotile	Chrysotile present in bundles	Lee Kerridge
1774646	PRA-SP012-16	SOIL	Chrysotile	Chrysotile present as bundles	Lee Kerridge

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 20-25253  
 Client Ref  
 Contract Arcadis

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1774631	PRA-SP012-1 SOIL	07/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1774632	PRA-SP012-2 SOIL	07/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1774633	PRA-SP012-3 SOIL	07/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1774634	PRA-SP012-4 SOIL	07/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1774635	PRA-SP012-5 SOIL	07/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1774636	PRA-SP012-6 SOIL	07/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1774637	PRA-SP012-7 SOIL	07/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1774638	PRA-SP012-8 SOIL	07/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1774639	PRA-SP012-9 SOIL	07/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1774640	PRA-SP012-10 SOIL	07/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1774641	PRA-SP012-11 SOIL	07/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1774642	PRA-SP012-12 SOIL	07/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1774643	PRA-SP012-13 SOIL	07/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1774644	PRA-SP012-14 SOIL	07/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1774645	PRA-SP012-15 SOIL	07/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1774646	PRA-SP012-16 SOIL	07/12/20	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



## Certificate of Analysis

*Certificate Number* 20-25401

*Issued:* 18-Dec-20

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 20-25401

*Client Reference* (not supplied)

*Order No* (not supplied)

*Contract Title* PRAIRIE PHASE 1, REDCAR

*Description* 16 Soil samples.

*Date Received* 10-Dec-20

*Date Started* 10-Dec-20

*Date Completed* 18-Dec-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*

A handwritten signature in black ink, appearing to read "A. Fenwick".

Adam Fenwick  
Contracts Manager







# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-25401

Client Ref

Contract Title PRAIRIE PHASE 1, REDCAR

Lab No	1775487	1775488	1775489	1775490	1775491
Sample ID	PRA-SP014-1	PRA-SP014-2	PRA-SP014-3	PRA-SP014-4	PRA-SP014-5
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	49	45	60	24	26	
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.8	3.6	1.3	1.2	1.5	
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.6	0.1	0.6	0.3	
Chromium	DETSC 2301#	0.15	mg/kg	38	56	76	20	92	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	59	64	46	30	38	
Lead	DETSC 2301#	0.3	mg/kg	65	64	34	92	53	
Mercury	DETSC 2325#	0.05	mg/kg	0.23	0.34	0.12	0.08	0.23	
Nickel	DETSC 2301#	1	mg/kg	34	39	37	19	21	
Vanadium	DETSC 2301#	0.8	mg/kg	88	170	140	51	180	
Zinc	DETSC 2301#	1	mg/kg	210	300	140	360	170	
<b>Inorganics</b>									
pH	DETSC 2008#		pH	8.1	9.3	10.5	9.9	9.8	
Cyanide, Total	DETSC 2130#	0.1	mg/kg	21	24	9.4	3.0	30	
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.3	0.3	0.2	0.1	0.2	
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.3	1.8	< 0.6	< 0.6	1.8	
Organic matter	DETSC 2002#	0.1	%	5.3	8.9	4.9	8.7	5.6	
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	130	260	230	210	130	
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	5.6	1.2	< 0.75	
<b>Petroleum Hydrocarbons</b>									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.20	0.08	0.07	0.09	0.09	
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.06	0.05	< 0.03	0.05	0.05	
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.15	0.07	0.04	0.07	0.07	
Fluorene	DETSC 3303	0.03	mg/kg	0.08	0.04	0.03	0.05	0.05	



# Summary of Chemical Analysis Soil Samples

Our Ref 20-25401

Client Ref

Contract Title PRAIRIE PHASE 1, REDCAR

Lab No	1775487	1775488	1775489	1775490	1775491
Sample ID	PRA-SP014-1	PRA-SP014-2	PRA-SP014-3	PRA-SP014-4	PRA-SP014-5
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.21	0.17	0.19	0.27	0.28
Anthracene	DETSC 3303	0.03	mg/kg	0.05	0.05	0.04	0.09	0.07
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.30	0.30	0.30	0.46	0.44
Pyrene	DETSC 3303#	0.03	mg/kg	0.25	0.25	0.25	0.37	0.36
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.08	0.11	0.10	0.16	0.14
Chrysene	DETSC 3303	0.03	mg/kg	0.10	0.12	0.11	0.16	0.14
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.08	0.12	0.10	0.20	0.15
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.04	0.05	0.04	0.07	0.06
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.04	0.07	0.06	0.12	0.08
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.05	0.03	0.07	0.05
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.05	0.03	0.06	0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	1.6	1.6	1.4	2.3	2.0
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.5	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-25401

Client Ref

Contract Title PRAIRIE PHASE 1, REDCAR

Lab No	1775492	1775493	1775494	1775495	1775496
Sample ID	PRA-SP014-6	PRA-SP014-7	PRA-SP014-8	PRA-SP015-1	PRA-SP015-2
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	36	37	35	25	21
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.9	1.9	1.6	3.2	5.6
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	1.2	0.5	0.4	0.4
Chromium	DETSC 2301#	0.15	mg/kg	110	34	42	220	220
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	62	56	51	55	45
Lead	DETSC 2301#	0.3	mg/kg	67	97	68	63	70
Mercury	DETSC 2325#	0.05	mg/kg	0.44	0.14	0.09	0.46	0.25
Nickel	DETSC 2301#	1	mg/kg	32	30	28	22	20
Vanadium	DETSC 2301#	0.8	mg/kg	240	73	100	300	420
Zinc	DETSC 2301#	1	mg/kg	250	270	190	200	220
<b>Inorganics</b>								
pH	DETSC 2008#		pH	9.7	8.5	8.3	11.7	11.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	7.7	2.5	1.1	21	11
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.1	0.2	0.1	0.2	0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	0.9	0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	6.2	11	5.8	6.6	4.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	120	230	160	130	78
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	1.6	2.5	< 0.75
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.07	< 0.03	0.08	0.33	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.13	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	0.47	1.2	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.20	0.74	0.07



# Summary of Chemical Analysis Soil Samples

Our Ref 20-25401

Client Ref

Contract Title PRAIRIE PHASE 1, REDCAR

Lab No	1775492	1775493	1775494	1775495	1775496
Sample ID	PRA-SP014-6	PRA-SP014-7	PRA-SP014-8	PRA-SP015-1	PRA-SP015-2
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.17	0.06	0.24	0.82	0.19
Anthracene	DETSC 3303	0.03	mg/kg	0.03	< 0.03	0.05	0.24	0.09
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.27	0.09	0.18	0.67	0.11
Pyrene	DETSC 3303#	0.03	mg/kg	0.22	0.08	0.13	0.50	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.10	0.04	0.05	0.15	0.11
Chrysene	DETSC 3303	0.03	mg/kg	0.11	0.05	0.06	0.18	0.10
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.10	0.04	0.05	0.15	0.81
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	< 0.03	0.07	0.60
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03	< 0.03	0.08	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	< 0.03	0.06	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 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	0.04	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	1.3	0.36	1.5	5.4	2.1
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	0.3





# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-25401

Client Ref

Contract Title PRAIRIE PHASE 1, REDCAR

Lab No	1775497	1775498	1775499	1775500	1775501
Sample ID	PRA-SP015-3	PRA-SP015-4	PRA-SP015-5	PRA-SP015-6	PRA-SP015-7
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	17	30	17	27	18
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	4.0	4.8	3.2	6.0	4.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.4	0.3	0.4	0.3
Chromium	DETSC 2301#	0.15	mg/kg	130	210	200	190	94
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	32	37	38	45	38
Lead	DETSC 2301#	0.3	mg/kg	47	42	42	71	47
Mercury	DETSC 2325#	0.05	mg/kg	0.21	< 0.05	< 0.05	0.14	0.24
Nickel	DETSC 2301#	1	mg/kg	15	28	15	23	15
Vanadium	DETSC 2301#	0.8	mg/kg	210	300	240	250	170
Zinc	DETSC 2301#	1	mg/kg	170	170	150	300	150
<b>Inorganics</b>								
pH	DETSC 2008#		pH	11.5	11.3	11.6	11.3	11.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	14	0.9	1.1	10	14
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.2	< 0.1	< 0.1	0.2	0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.0	1.0	3.3	1.3	1.9
Organic matter	DETSC 2002#	0.1	%	6.4	4.6	6.5	3.7	7.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	22	61	35	54	200
Sulphur (free)	DETSC 3049#	0.75	mg/kg	1.9	< 0.75	< 0.75	3.5	3.7
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.69	0.09	0.21	0.14	0.24
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.16	< 0.03	0.05	0.06	0.11
Acenaphthene	DETSC 3303#	0.03	mg/kg	2.4	0.12	0.78	0.22	0.51
Fluorene	DETSC 3303	0.03	mg/kg	1.1	0.07	0.40	0.15	0.32



# Summary of Chemical Analysis Soil Samples

Our Ref 20-25401

Client Ref

Contract Title PRAIRIE PHASE 1, REDCAR

<b>Lab No</b>	1775497	1775498	1775499	1775500	1775501
<b>Sample ID</b>	PRA-SP015-3	PRA-SP015-4	PRA-SP015-5	PRA-SP015-6	PRA-SP015-7
<b>Depth</b>					
<b>Other ID</b>					
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	08/12/2020	08/12/2020	08/12/2020	08/12/2020	08/12/2020
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.1	0.29	0.43	0.52	0.50
Anthracene	DETSC 3303	0.03	mg/kg	0.32	0.07	0.12	0.13	0.18
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.81	0.41	0.41	0.82	0.91
Pyrene	DETSC 3303#	0.03	mg/kg	0.59	0.34	0.30	0.64	0.76
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.29	0.16	0.14	0.34	0.30
Chrysene	DETSC 3303	0.03	mg/kg	0.24	0.15	0.13	0.27	0.25
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.24	0.15	0.13	0.32	0.33
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.10	0.06	0.05	0.13	0.11
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.17	0.10	0.09	0.23	0.21
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.06	< 0.03	0.04	0.07	0.07
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.06	0.05	< 0.03	0.07	0.07
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	8.3	2.0	3.3	4.1	4.9
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-25401

Client Ref

Contract Title PRAIRIE PHASE 1, REDCAR

Lab No	1775502
Sample ID	PRA-SP015-8
Depth	
Other ID	
Sample Type	SOIL
Sampling Date	08/12/2020
Sampling Time	n/s

Test	Method	LOD	Units	
<b>Metals</b>				
Arsenic	DETSC 2301#	0.2	mg/kg	27
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.4
Chromium	DETSC 2301#	0.15	mg/kg	110
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	42
Lead	DETSC 2301#	0.3	mg/kg	51
Mercury	DETSC 2325#	0.05	mg/kg	0.31
Nickel	DETSC 2301#	1	mg/kg	21
Vanadium	DETSC 2301#	0.8	mg/kg	200
Zinc	DETSC 2301#	1	mg/kg	180
<b>Inorganics</b>				
pH	DETSC 2008#		pH	10.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	16
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.4
Organic matter	DETSC 2002#	0.1	%	4.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	130
Sulphur (free)	DETSC 3049#	0.75	mg/kg	2.6
<b>Petroleum Hydrocarbons</b>				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10
<b>PAHs</b>				
Naphthalene	DETSC 3303#	0.03	mg/kg	0.29
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.12
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.66
Fluorene	DETSC 3303	0.03	mg/kg	0.48

## Summary of Chemical Analysis Soil Samples

Our Ref 20-25401

Client Ref

Contract Title PRAIRIE PHASE 1, REDCAR

Lab No	1775502
Sample ID	PRA-SP015-8
Depth	
Other ID	
Sample Type	SOIL
Sampling Date	08/12/2020
Sampling Time	n/s

Test	Method	LOD	Units	
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.84
Anthracene	DETSC 3303	0.03	mg/kg	0.32
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.2
Pyrene	DETSC 3303#	0.03	mg/kg	0.90
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.41
Chrysene	DETSC 3303	0.03	mg/kg	0.36
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.45
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.17
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.31
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.11
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.11
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	6.7
<b>Phenols</b>				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3



## Summary of Asbestos Analysis Soil Samples

Our Ref 20-25401

Client Ref

Contract Title PRAIRIE PHASE 1, REDCAR

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1775487	PRA-SP014-1	SOIL	NAD	none	Steven Lambert
1775488	PRA-SP014-2	SOIL	NAD	none	Steven Lambert
1775489	PRA-SP014-3	SOIL	NAD	none	Steven Lambert
1775490	PRA-SP014-4	SOIL	NAD	none	Steven Lambert
1775491	PRA-SP014-5	SOIL	NAD	none	Steven Lambert
1775492	PRA-SP014-6	SOIL	NAD	none	Steven Lambert
1775493	PRA-SP014-7	SOIL	NAD	none	Steven Lambert
1775494	PRA-SP014-8	SOIL	NAD	none	Steven Lambert
1775495	PRA-SP015-1	SOIL	NAD	none	Steven Lambert
1775496	PRA-SP015-2	SOIL	Chrysotile	Bundle of Chrysotile	Steven Lambert
1775497	PRA-SP015-3	SOIL	NAD	none	Steven Lambert
1775498	PRA-SP015-4	SOIL	NAD	none	Steven Lambert
1775499	PRA-SP015-5	SOIL	NAD	none	Steven Lambert
1775500	PRA-SP015-6	SOIL	NAD	none	Steven Lambert
1775501	PRA-SP015-7	SOIL	NAD	none	Steven Lambert
1775502	PRA-SP015-8	SOIL	NAD	none	Steven Lambert

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 20-25401

Client Ref

Contract PRAIRIE PHASE 1, REDCAR

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
1775487	PRA-SP014-1 SOIL	08/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1775488	PRA-SP014-2 SOIL	08/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1775489	PRA-SP014-3 SOIL	08/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1775490	PRA-SP014-4 SOIL	08/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1775491	PRA-SP014-5 SOIL	08/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1775492	PRA-SP014-6 SOIL	08/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1775493	PRA-SP014-7 SOIL	08/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1775494	PRA-SP014-8 SOIL	08/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1775495	PRA-SP015-1 SOIL	08/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1775496	PRA-SP015-2 SOIL	08/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1775497	PRA-SP015-3 SOIL	08/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1775498	PRA-SP015-4 SOIL	08/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1775499	PRA-SP015-5 SOIL	08/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1775500	PRA-SP015-6 SOIL	08/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1775501	PRA-SP015-7 SOIL	08/12/20	GJ 250ml, GJ 60ml x2, PT 1L		
1775502	PRA-SP015-8 SOIL	08/12/20	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



## Certificate of Analysis

*Certificate Number* 20-26082

*Issued:* 18-Jan-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 20-26082

*Client Reference* (not supplied)

*Order No* C1096/MA/0040

*Contract Title* Redcar (Prairie PI)

*Description* 5 Soil samples.

*Date Received* 18-Dec-20

*Date Started* 18-Dec-20

*Date Completed* 18-Jan-21

*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*

A handwritten signature in black ink, appearing to read "A. Fenwick".

Adam Fenwick  
Contracts Manager



# Summary of Chemical Analysis

## Soil Samples

Our Ref 20-26082

Client Ref

Contract Title Redcar (Prairie PI)

Lab No	1779710	1779711	1779712	1779713	1779714
Sample ID	PRA-SP016-S1	PRA-SP016-S2	PRA-SP017-S1	PRA-SP018-S1	PRA-SP019-S1
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	22	24	41	13	6.4
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	4.2	5.3	2.9	2.7	1.7
Cadmium	DETSC 2301#	0.1	mg/kg	1.9	3.7	0.8	1.1	0.1
Chromium	DETSC 2301#	0.15	mg/kg	270	170	57	40	9.4
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	120	240	90	34	13
Lead	DETSC 2301#	0.3	mg/kg	190	240	110	130	12
Mercury	DETSC 2325#	0.05	mg/kg	1.6	0.71	2.3	0.31	0.17
Nickel	DETSC 2301#	1	mg/kg	33	66	36	15	3.4
Vanadium	DETSC 2301#	0.8	mg/kg	1100	250	160	110	33
Zinc	DETSC 2301#	1	mg/kg	520	750	460	430	33
<b>Inorganics</b>								
pH	DETSC 2008#		pH	11.0	11.3	9.0	10.5	12.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	61	18	470	6.4	3.0
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.7	0.2	2.1	0.4	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	3.3	1.4	7.3	0.9	1.8
Organic matter	DETSC 2002#	0.1	%	0.2	< 0.1	5.9	2.1	< 0.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	500	690	490	1100	990
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	9.0	38	120
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	13	19	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	140	160	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	150	180	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	5.2	5.6	9.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	7.1	9.5	45	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	31	37	36	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	140	160	26	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	180	220	120	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	330	400	120	< 10	< 10
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.13	0.14	2.2	< 0.03	0.07
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	2.2	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.22	0.21	55	0.06	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.22	0.18	19	0.04	< 0.03



# Summary of Chemical Analysis Soil Samples

Our Ref 20-26082

Client Ref

Contract Title Redcar (Prairie PI)

Lab No	1779710	1779711	1779712	1779713	1779714
Sample ID	PRA-SP016-S1	PRA-SP016-S2	PRA-SP017-S1	PRA-SP018-S1	PRA-SP019-S1
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	16/12/2020	16/12/2020	16/12/2020	16/12/2020	16/12/2020
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.4	1.1	4.1	0.07	0.21
Anthracene	DETSC 3303	0.03	mg/kg	0.25	0.32	3.3	0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	3.6	4.0	7.3	0.18	0.17
Pyrene	DETSC 3303#	0.03	mg/kg	3.9	4.3	4.5	0.13	0.13
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	1.5	1.6	0.65	0.04	0.03
Chrysene	DETSC 3303	0.03	mg/kg	1.4	1.4	0.63	0.06	0.05
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	1.4	1.4	0.39	0.05	0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.67	0.64	0.15	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	1.0	1.1	0.22	0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.36	0.38	0.10	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.10	0.11	0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.40	0.46	0.10	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	16	17	100	0.59	0.71
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	0.5	0.8	0.4	0.4

## Summary of Asbestos Analysis Soil Samples

*Our Ref* 20-26082

*Client Ref*

*Contract Title* Redcar (Prairie Pl)

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1779710	PRA-SP016-S1	SOIL	NAD	none	Keith Wilson
1779711	PRA-SP016-S2	SOIL	NAD	none	Keith Wilson
1779712	PRA-SP017-S1	SOIL	Chrysotile Crocidolite	Bundles of Chrysotile & Crocidolite fibres	Keith Wilson
1779713	PRA-SP018-S1	SOIL	NAD	none	Keith Wilson
1779714	PRA-SP019-S1	SOIL	NAD	none	Keith Wilson

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 20-26082

Client Ref

Contract Redcar (Prairie PI)

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
1779710	PRA-SP016-S1 SOIL	16/12/20	GJ 250ml, GJ 60ml, PT 1L		
1779711	PRA-SP016-S2 SOIL	16/12/20	GJ 250ml, GJ 60ml, PT 1L		
1779712	PRA-SP017-S1 SOIL	16/12/20	GJ 250ml, GJ 60ml, PT 1L		
1779713	PRA-SP018-S1 SOIL	16/12/20	PT 1L		Aliphatics/Aromatics, BTEX, Naphthalene, PAH MS
1779714	PRA-SP019-S1 SOIL	16/12/20	No containers logged		Cannot evaluate

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-02820

*Issued:* 24-Feb-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-02820

*Client Reference* (not supplied)

*Order No* C1096/MA/0040

*Contract Title* Redcar

*Description* 10 Soil samples.

*Date Received* 11-Feb-21

*Date Started* 11-Feb-21

*Date Completed* 24-Feb-21

*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



2139



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-02820

Client Ref

Contract Title Redcar

Lab No	1799732	1799733	1799734	1799735	1799736	1799737
Sample ID	PRA-SP011-S1	PRA-SP011-S2	PRA-SP011-S3	PRA-SP011-S4	PRA-SP011-S5	PRA-SP013-S1
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	08/02/2021	08/02/2021	08/02/2021	08/02/2021	08/02/2021	08/02/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%			< 0.001	0.001		
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	15	15	19	15	16	9.1
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	3.6	4.3	4.1	4.9	4.6	2.0
Cadmium	DETSC 2301#	0.1	mg/kg	0.8	1.1	1.4	1.1	2.3	0.4
Chromium	DETSC 2301#	0.15	mg/kg	60	110	140	60	73	15
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	58	53	55	44	54	37
Lead	DETSC 2301#	0.3	mg/kg	170	120	140	100	130	41
Mercury	DETSC 2325#	0.05	mg/kg	0.97	1.7	4.8	2.3	3.2	0.48
Nickel	DETSC 2301#	1	mg/kg	18	16	15	13	15	9.6
Vanadium	DETSC 2301#	0.8	mg/kg	120	190	260	120	110	34
Zinc	DETSC 2301#	1	mg/kg	250	300	420	340	490	110
<b>Inorganics</b>									
pH	DETSC 2008#		pH	11.0	10.2	11.2	10.1	10.5	12.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	14	23	93	60	150	14
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.1	0.2	0.3	0.3	0.3	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	2.1	1.5	3.4	3.3	4.3	2.0
Organic matter	DETSC 2002#	0.1	%	2.4	1.2	2.2	1.7	2.6	1.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	310	290	250	560	600	260
Sulphur (free)	DETSC 3049#	0.75	mg/kg	4.7	7.8	7.9	12	5.3	26
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
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	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.15	0.20	0.23	0.25	0.22	0.27



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-02820

Client Ref

Contract Title Redcar

Lab No	1799732	1799733	1799734	1799735	1799736	1799737
Sample ID	PRA-SP011-S1	PRA-SP011-S2	PRA-SP011-S3	PRA-SP011-S4	PRA-SP011-S5	PRA-SP013-S1
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	08/02/2021	08/02/2021	08/02/2021	08/02/2021	08/02/2021	08/02/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.07	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.19	0.25	0.18	0.33	0.12	0.13
Fluorene	DETSC 3303	0.03	mg/kg	0.13	0.35	0.07	0.25	0.06	0.11
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.79	1.4	0.60	2.3	0.41	0.66
Anthracene	DETSC 3303	0.03	mg/kg	0.20	0.37	0.14	0.39	0.09	0.13
Fluoranthene	DETSC 3303#	0.03	mg/kg	2.4	2.6	1.7	3.3	1.3	1.0
Pyrene	DETSC 3303#	0.03	mg/kg	2.2	2.3	1.5	2.8	1.2	0.88
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.67	0.65	0.42	0.79	0.33	0.25
Chrysene	DETSC 3303	0.03	mg/kg	0.68	0.68	0.48	0.79	0.35	0.27
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.78	0.72	0.52	0.86	0.38	0.28
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.28	0.25	0.19	0.31	0.13	0.11
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.59	0.54	0.38	0.64	0.28	0.21
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.21	0.19	0.15	0.22	0.10	0.08
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.07	0.06	0.04	0.07	< 0.03	0.04
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.22	0.20	0.15	0.23	0.10	0.08
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	9.5	11	6.8	13	5.0	4.5
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	0.3	< 0.3

## Summary of Chemical Analysis Soil Samples

Our Ref 21-02820

Client Ref

Contract Title Redcar

Lab No	1799738	1799739	1799740	1799741
Sample ID	PRA-SP013-S2	PRA-SP013-S3	PRA-SP013-S4	PRA-SP013-S5
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	08/02/2021	08/02/2021	08/02/2021	08/02/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Asbestos Quantification	DETSC 1102	0.001	%	< 0.001			
<b>Metals</b>							
Arsenic	DETSC 2301#	0.2	mg/kg	14	8.3	7.9	8.9
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.8	2.6	1.8	1.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	0.5	0.3	0.3
Chromium	DETSC 2301#	0.15	mg/kg	87	61	30	28
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	84	35	30	31
Lead	DETSC 2301#	0.3	mg/kg	73	40	31	34
Mercury	DETSC 2325#	0.05	mg/kg	0.86	0.46	0.34	0.22
Nickel	DETSC 2301#	1	mg/kg	17	11	9.2	12
Vanadium	DETSC 2301#	0.8	mg/kg	140	120	81	61
Zinc	DETSC 2301#	1	mg/kg	160	140	89	170
<b>Inorganics</b>							
pH	DETSC 2008#		pH	11.2	11.6	11.8	12.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	17	18	4.7	4.5
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.5	1.7	1.0	1.0
Organic matter	DETSC 2002#	0.1	%	1.7	1.2	1.2	0.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	450	320	360	160
Sulphur (free)	DETSC 3049#	0.75	mg/kg	11	10	30	15
<b>Petroleum Hydrocarbons</b>							
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	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	2.6	< 1.2	3.4	7.1
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	18	< 1.5	22	100
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	95	< 3.4	100	440
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	120	< 10	130	550
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	3.8
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	10
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	120
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	600
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	730
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	120	< 10	130	1300
<b>PAHs</b>							
Naphthalene	DETSC 3303#	0.03	mg/kg	0.10	0.21	0.13	0.08

## Summary of Chemical Analysis Soil Samples

Our Ref 21-02820

Client Ref

Contract Title Redcar

Lab No	1799738	1799739	1799740	1799741
Sample ID	PRA-SP013-S2	PRA-SP013-S3	PRA-SP013-S4	PRA-SP013-S5
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	08/02/2021	08/02/2021	08/02/2021	08/02/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.25	0.24	0.21	0.09
Fluorene	DETSC 3303	0.03	mg/kg	0.24	0.17	0.12	0.07
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.1	0.92	0.74	0.64
Anthracene	DETSC 3303	0.03	mg/kg	0.16	0.18	0.21	0.13
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.3	1.7	1.9	1.5
Pyrene	DETSC 3303#	0.03	mg/kg	1.1	1.5	1.6	1.3
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.28	0.45	0.48	0.40
Chrysene	DETSC 3303	0.03	mg/kg	0.30	0.44	0.49	0.43
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.31	0.50	0.56	0.49
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.11	0.18	0.20	0.18
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.23	0.38	0.41	0.38
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.09	0.13	0.14	0.14
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.03	0.04	0.05	0.04
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.10	0.14	0.15	0.15
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	5.6	7.2	7.3	6.1
<b>Phenols</b>							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3



## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-02820

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1799732	PRA-SP011-S1	SOIL	NAD	none	Darryl Fletcher
1799733	PRA-SP011-S2	SOIL	NAD	none	Darryl Fletcher
1799734	PRA-SP011-S3	SOIL	Chrysotile	Bundle of Chrysotile Fibres	Darryl Fletcher
1799735	PRA-SP011-S4	SOIL	Chrysotile	Bundles of Chrysotile Fibres	Darryl Fletcher
1799736	PRA-SP011-S5	SOIL	NAD	none	Darryl Fletcher
1799737	PRA-SP013-S1	SOIL	NAD	none	Darryl Fletcher
1799738	PRA-SP013-S2	SOIL	Chrysotile	Bundle of Chrysotile Fibres	Darryl Fletcher
1799739	PRA-SP013-S3	SOIL	NAD	none	Darryl Fletcher
1799740	PRA-SP013-S4	SOIL	NAD	none	Darryl Fletcher
1799741	PRA-SP013-S5	SOIL	NAD	none	Darryl Fletcher

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-02820

Client Ref

Contract Title Redcar

<b>Lab No</b>	1799734	1799735	1799738
<b>Sample ID</b>	PRA-SP011-S3	PRA-SP011-S4	PRA-SP013-S2
<b>Depth</b>			
<b>Other ID</b>			
<b>Sample Type</b>	SOIL	SOIL	SOIL
<b>Sampling Date</b>	08/02/2021	08/02/2021	08/02/2021
<b>Sampling Time</b>			

Test	Method	Units			
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	0.001	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1491.60	1159.02	1177.62
ACMs present*		type			
Mass of ACM in sample		g			
% ACM by mass		%			
% asbestos in ACM		%			
% asbestos in sample		%			

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na	na
% Chrysotile bundles in sample		Mass %	<0.001	0.001	<0.001

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na
Chrysotile fibres		Fibres/g	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-02820  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1799732	PRA-SP011-S1 SOIL	08/02/21	GJ 250ml, GJ 60ml, PT 1L		
1799733	PRA-SP011-S2 SOIL	08/02/21	GJ 250ml, GJ 60ml, PT 1L		
1799734	PRA-SP011-S3 SOIL	08/02/21	GJ 250ml, GJ 60ml, PT 1L		
1799735	PRA-SP011-S4 SOIL	08/02/21	GJ 250ml, GJ 60ml, PT 1L		
1799736	PRA-SP011-S5 SOIL	08/02/21	GJ 250ml, GJ 60ml, PT 1L		
1799737	PRA-SP013-S1 SOIL	08/02/21	GJ 250ml, GJ 60ml, PT 1L		
1799738	PRA-SP013-S2 SOIL	08/02/21	GJ 250ml, GJ 60ml, PT 1L		
1799739	PRA-SP013-S3 SOIL	08/02/21	GJ 250ml, GJ 60ml, PT 1L		
1799740	PRA-SP013-S4 SOIL	08/02/21	GJ 250ml, GJ 60ml, PT 1L		
1799741	PRA-SP013-S5 SOIL	08/02/21	GJ 250ml, GJ 60ml, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-03750

*Issued:* 02-Mar-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-03750

*Client Reference* (not supplied)

*Order No* (not supplied)

*Contract Title* Redcar

*Description* 7 Soil samples.

*Date Received* 23-Feb-21

*Date Started* 23-Feb-21

*Date Completed* 02-Mar-21

*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



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## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-03750

Client Ref

Contract Title Redcar

Lab No	1805658	1805659	1805660	1805661	1805662	1805663	1805664
Sample ID	PRA-SP020-S1	PRA-SP020-S2	PRA-SP020-S3	PRA-SP020-S4	PRA-SP020-S5	PRA-SP021-S1	PRA-SP021-S2
Depth							
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
<b>Metals</b>										
Arsenic	DETSC 2301#	0.2	mg/kg	16	7.2	8.1	11	4.0	22	22
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	3.8	2.6	2.8	5.6	12	3.5	5.7
Cadmium	DETSC 2301#	0.1	mg/kg	1.2	0.4	0.6	0.8	0.1	0.5	0.5
Chromium	DETSC 2301#	0.15	mg/kg	270	240	310	260	40	29	28
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	39	37	25	36	11	43	52
Lead	DETSC 2301#	0.3	mg/kg	180	36	55	74	8.7	58	84
Mercury	DETSC 2325#	0.05	mg/kg	0.35	0.21	0.18	0.52	0.09	0.74	0.80
Nickel	DETSC 2301#	1	mg/kg	17	16	12	17	4.1	18	25
Vanadium	DETSC 2301#	0.8	mg/kg	970	610	1100	1100	210	87	80
Zinc	DETSC 2301#	1	mg/kg	400	220	140	260	23	290	250
<b>Inorganics</b>										
pH	DETSC 2008#		pH	10.9	10.6	11.6	11.0	11.2	9.4	10.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	3.5	2.3	1.5	3.4	0.8	0.5	34
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	0.8	1.4	1.1	1.4
Organic matter	DETSC 2002#	0.1	%	1.7	3.7	2.2	1.9	1.6	6.5	4.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	580	260	360	430	750	700	490
Sulphur (free)	DETSC 3049#	0.75	mg/kg	3.9	1.2	1.7	19	33	480	140
<b>Petroleum Hydrocarbons</b>										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	4.5	2.9
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	19	7.6
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	53	17
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	140	48
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	210	76
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	5.4	490	23
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	10	2100	270
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	24	740	160
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	47	600	200
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	86	4000	650
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	86	4200	720

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-03750

Client Ref

Contract Title Redcar

Lab No	1805658	1805659	1805660	1805661	1805662	1805663	1805664
Sample ID	PRA-SP020-S1	PRA-SP020-S2	PRA-SP020-S3	PRA-SP020-S4	PRA-SP020-S5	PRA-SP021-S1	PRA-SP021-S2
Depth							
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021	19/02/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units	1805658	1805659	1805660	1805661	1805662	1805663	1805664
<b>PAHs</b>										
Naphthalene	DETSC 3303#	0.03	mg/kg	0.07	0.14	0.09	0.16	0.18	16	4.7
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.07	< 0.03	0.12	0.27	2.2	1.7
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.07	0.10	0.06	0.18	0.25	130	84
Fluorene	DETSC 3303	0.03	mg/kg	0.05	0.12	0.08	0.24	0.63	95	58
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.37	0.81	0.58	1.3	4.4	73	44
Anthracene	DETSC 3303	0.03	mg/kg	0.11	0.46	0.22	0.49	2.5	20	7.4
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.73	1.3	0.93	2.8	5.3	9.7	6.4
Pyrene	DETSC 3303#	0.03	mg/kg	0.69	1.1	0.78	2.4	4.3	6.9	4.5
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.21	0.33	0.22	1.2	2.2	1.7	0.87
Chrysene	DETSC 3303	0.03	mg/kg	0.34	0.42	0.36	1.2	1.9	2.9	1.1
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.29	0.33	0.30	1.5	2.2	1.9	0.64
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.10	0.16	0.11	0.59	0.95	0.86	0.27
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.16	0.24	0.16	1.2	1.9	1.2	0.44
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.07	0.10	0.09	0.55	0.72	0.67	0.15
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.03	0.03	< 0.03	0.15	0.26	< 0.30	0.05
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.10	0.11	0.10	0.66	0.91	0.81	0.21
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	3.4	5.8	4.1	15	29	360	220
<b>Phenols</b>										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	2.0	0.5

## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-03750

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1805658	PRA-SP020-S1	SOIL	NAD	none	Lee Kerridge
1805659	PRA-SP020-S2	SOIL	NAD	none	Lee Kerridge
1805660	PRA-SP020-S3	SOIL	NAD	none	Lee Kerridge
1805661	PRA-SP020-S4	SOIL	NAD	none	Lee Kerridge
1805662	PRA-SP020-S5	SOIL	NAD	none	Lee Kerridge
1805663	PRA-SP021-S1	SOIL	NAD	none	Lee Kerridge
1805664	PRA-SP021-S2	SOIL	NAD	none	Lee Kerridge

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 21-03750  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1805658	PRA-SP020-S1 SOIL	19/02/21	GJ 250ml, GJ 60ml x2, PT 1L		
1805659	PRA-SP020-S2 SOIL	19/02/21	GJ 250ml, GJ 60ml x2, PT 1L		
1805660	PRA-SP020-S3 SOIL	19/02/21	GJ 250ml, GJ 60ml x2, PT 1L		
1805661	PRA-SP020-S4 SOIL	19/02/21	GJ 250ml, GJ 60ml x2, PT 1L		
1805662	PRA-SP020-S5 SOIL	19/02/21	GJ 250ml, GJ 60ml x2, PT 1L		
1805663	PRA-SP021-S1 SOIL	19/02/21	GJ 250ml, GJ 60ml x2, PT 1L		
1805664	PRA-SP021-S2 SOIL	19/02/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report





# DETS

## Certificate of Analysis

*Certificate Number* 21-03751

*Issued:* 02-Mar-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-03751

*Client Reference* SR4082

*Order No* MA0040

*Contract Title* Redcar

*Description* 7 Soil samples.

*Date Received* 23-Feb-21

*Date Started* 23-Feb-21

*Date Completed* 02-Mar-21

*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



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## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-03751

Client Ref SR4082

Contract Title Redcar

Lab No	1805665	1805666	1805667	1805668	1805669	1805670	1805671
Sample ID	PRA-BC-27-S2	PRA-BC-27-S3	PRA-BC-27-S4	PRA-BC-27-S5	PRA-BC-27-S6	PRA-BC-27-S7	PRA-BC-27-S8
Depth							
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units	1805665	1805666	1805667	1805668	1805669	1805670	1805671
<b>Metals</b>										
Arsenic	DETSC 2301#	0.2	mg/kg	7.1	6.6	12	6.1	8.5	8.1	6.3
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.0	1.0	2.3	0.8	1.9	1.1	0.9
Cadmium	DETSC 2301#	0.1	mg/kg	0.1	< 0.1	0.6	0.1	0.2	0.2	0.2
Chromium	DETSC 2301#	0.15	mg/kg	27	22	19	29	22	22	22
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	24	20	24	21	28	26	21
Lead	DETSC 2301#	0.3	mg/kg	21	17	110	17	39	28	18
Mercury	DETSC 2325#	0.05	mg/kg	0.07	< 0.05	0.08	< 0.05	0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	32	27	21	32	33	33	26
Vanadium	DETSC 2301#	0.8	mg/kg	30	26	31	32	26	25	25
Zinc	DETSC 2301#	1	mg/kg	65	54	280	61	97	84	59
<b>Inorganics</b>										
pH	DETSC 2008#		pH	8.0	8.3	7.7	8.1	7.6	8.0	8.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	0.3	0.6	< 0.1	0.3	0.2	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	0.9	< 0.6	< 0.6	1.0	< 0.6
Organic matter	DETSC 2002#	0.1	%	2.0	1.9	3.6	2.2	2.8	2.5	2.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	< 10	290	640	120	1700	1200	180
Sulphur (free)	DETSC 3049#	0.75	mg/kg	6.5	< 0.75	70	3.6	< 0.75	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
<b>PAHs</b>										
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	< 0.03



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-03751

Client Ref SR4082

Contract Title Redcar

<b>Lab No</b>	1805665	1805666	1805667	1805668	1805669	1805670	1805671
<b>.Sample ID</b>	PRA-BC-27-S2	PRA-BC-27-S3	PRA-BC-27-S4	PRA-BC-27-S5	PRA-BC-27-S6	PRA-BC-27-S7	PRA-BC-27-S8
<b>Depth</b>							
<b>Other ID</b>							
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021	18/02/2021
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units	1805665	1805666	1805667	1805668	1805669	1805670	1805671
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.04	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.04	< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.04	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 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	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
<b>Phenols</b>										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-03751

*Client Ref* SR4082

*Contract Title* Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1805665	PRA-BC-27-S2	SOIL	NAD	none	Lee Kerridge
1805666	PRA-BC-27-S3	SOIL	NAD	none	Lee Kerridge
1805667	PRA-BC-27-S4	SOIL	NAD	none	Lee Kerridge
1805668	PRA-BC-27-S5	SOIL	NAD	none	Lee Kerridge
1805669	PRA-BC-27-S6	SOIL	NAD	none	Lee Kerridge
1805670	PRA-BC-27-S7	SOIL	NAD	none	Lee Kerridge
1805671	PRA-BC-27-S8	SOIL	NAD	none	Lee Kerridge

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 21-03751

Client Ref SR4082

Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1805665	PRA-BC-27-S2 SOIL	18/02/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1805666	PRA-BC-27-S3 SOIL	18/02/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1805667	PRA-BC-27-S4 SOIL	18/02/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1805668	PRA-BC-27-S5 SOIL	18/02/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1805669	PRA-BC-27-S6 SOIL	18/02/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1805670	PRA-BC-27-S7 SOIL	18/02/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1805671	PRA-BC-27-S8 SOIL	18/02/21	GJ 250ml, GJ 60ml x2, PT 500ml		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-04305

*Issued:* 04-Mar-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-04305

*Client Reference* (not supplied)

*Order No* C1096/MA/0034

*Contract Title* Redcar Prairie Phase 1

*Description* 17 Soil samples.

*Date Received* 17-Nov-20

*Date Started* 02-Mar-21

*Date Completed* 04-Mar-21

*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



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## Summary of Asbestos Analysis

### Samples

*Our Ref* 21-04305

*Client Ref*

*Contract Title* Redcar Prairie Phase 1

Lab No	Sample ID	Sample Location	Material Type	Result	Comment*	Analyst
<p>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.</p>						

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-04305

Client Ref

Contract Title Redcar Prairie Phase 1

Lab No	1809601	1809602	1809603	1809604
Sample ID	PRA-SP009-1	PRA-SP009-2	PRA-SP009-3	PRA-SP009-4
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/11/2020	12/11/2020	12/11/2020	12/11/2020
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.015	0.004	0.006	0.004
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.015	0.004	0.006	0.004
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	35.72	35.21	31.00	39.39
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	0.004	na	na
% Chrysotile bundles in sample		Mass %	0.015	na	0.006	0.004

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample



# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 21-04305

Client Ref

Contract Title Redcar Prairie Phase 1

Lab No	1809605	1809606	1809607	1809608
Sample ID	PRA-SP009-5	PRA-SP009-6	PRA-SP009-11	PRA-SP009-12
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/11/2020	12/11/2020	12/11/2020	12/11/2020
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.002	< 0.001	0.001	0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.002	<0.001	0.001	0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	41.54	87.61	43.16	37.20
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	na	na	0.001
% Chrysotile bundles in sample		Mass %	0.002	<0.001	0.001	na
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 21-04305

Client Ref

Contract Title Redcar Prairie Phase 1

Lab No	1809609	1809610	1809611	1809612
Sample ID	PRA-SP010-1	PRA-SP010-3	PRA-SP010-4	PRA-SP010-5
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/11/2020	12/11/2020	12/11/2020	12/11/2020
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.255</b>	<b>&lt; 0.001</b>	<b>0.002</b>	<b>0.007</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	0.255	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	na	<0.001	0.002	0.007
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na

### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	16.67	37.44	32.63	29.05
ACMs present*		type	Insulation			
Mass of ACM in sample		g	0.05			
% ACM by mass		%	0.30			
% asbestos in ACM		%	85			
% asbestos in sample		%	0.255			

### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na	na	na
% Chrysotile bundles in sample		Mass %	na	<0.001	0.002	0.007

### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na

### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 21-04305

Client Ref

Contract Title Redcar Prairie Phase 1

Lab No	1809613	1809614	1809615	1809616
Sample ID	PRA-SP010-6	PRA-SP010-7	PRA-SP010-9	PRA-SP010-11
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/11/2020	12/11/2020	12/11/2020	12/11/2020
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.004	0.090	0.008	0.004
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	0.090	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.004	na	0.008	0.004
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na

### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	30.21	37.74	26.31	38.59
ACMs present*		type		Insulation		
Mass of ACM in sample		g		0.04		
% ACM by mass		%		0.11		
% asbestos in ACM		%		85		
% asbestos in sample		%		0.090		

### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na	na	na
% Chrysotile bundles in sample		Mass %	0.004	na	0.008	0.004

### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na

### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 21-04305

Client Ref

Contract Title Redcar Prairie Phase 1

Lab No	1809617
Sample ID	PRA-BA-25
Depth	
Other ID	
Sample Type	SOIL
Sampling Date	12/11/2020
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.003</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.003
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na

### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	30.65
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	

### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	0.003
% Chrysotile bundles in sample		Mass %	na

### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na
% Chrysotile fibres in sample		Mass %	na

### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample



## Information in Support of the Analytical Results

Our Ref 21-04305  
 Client Ref  
 Contract Redcar Prairie Phase 1

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1809601	PRA-SP009-1 SOIL	12/11/20	No containers logged		Cannot evaluate
1809602	PRA-SP009-2 SOIL	12/11/20	No containers logged		Cannot evaluate
1809603	PRA-SP009-3 SOIL	12/11/20	No containers logged		Cannot evaluate
1809604	PRA-SP009-4 SOIL	12/11/20	No containers logged		Cannot evaluate
1809605	PRA-SP009-5 SOIL	12/11/20	No containers logged		Cannot evaluate
1809606	PRA-SP009-6 SOIL	12/11/20	No containers logged		Cannot evaluate
1809607	PRA-SP009-11 SOIL	12/11/20	No containers logged		Cannot evaluate
1809608	PRA-SP009-12 SOIL	12/11/20	No containers logged		Cannot evaluate
1809609	PRA-SP010-1 SOIL	12/11/20	No containers logged		Cannot evaluate
1809610	PRA-SP010-3 SOIL	12/11/20	No containers logged		Cannot evaluate
1809611	PRA-SP010-4 SOIL	12/11/20	No containers logged		Cannot evaluate
1809612	PRA-SP010-5 SOIL	12/11/20	No containers logged		Cannot evaluate
1809613	PRA-SP010-6 SOIL	12/11/20	No containers logged		Cannot evaluate
1809614	PRA-SP010-7 SOIL	12/11/20	No containers logged		Cannot evaluate
1809615	PRA-SP010-9 SOIL	12/11/20	No containers logged		Cannot evaluate
1809616	PRA-SP010-11 SOIL	12/11/20	No containers logged		Cannot evaluate
1809617	PRA-BA-25 SOIL	12/11/20	No containers logged		Cannot evaluate

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.

### 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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-04307

*Issued:* 04-Mar-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-04307

*Client Reference* (not supplied)

*Order No* C1096/MA/0034

*Contract Title* Redcar

*Description* 29 Soil samples.

*Date Received* 18-Nov-20

*Date Started* 02-Mar-21

*Date Completed* 04-Mar-21

*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



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## Summary of Asbestos Analysis

### Samples

*Our Ref* 21-04307

*Client Ref*

*Contract Title* Redcar

<b>Lab No</b>	<b>Sample ID</b>	<b>Sample Location</b>	<b>Material Type</b>	<b>Result</b>	<b>Comment*</b>	<b>Analyst</b>
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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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-04307

Client Ref

Contract Title Redcar

Lab No	1809628	1809629	1809630	1809631
Sample ID	PRA-SP004-1	PRA-SP004-2	PRA-SP004-3	PRA-SP004-7
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	10/11/2020	10/11/2020	10/11/2020	10/11/2020
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.007	< 0.001	0.218	0.012
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	0.218	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.007	<0.001	na	0.012
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	32.26	41.24	31.72	24.23
ACMs present*		type			Cement	
Mass of ACM in sample		g			0.46	
% ACM by mass		%			1.45	
% asbestos in ACM		%			15	
% asbestos in sample		%			0.218	
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	na	na	na
% Chrysotile bundles in sample		Mass %	0.007	<0.001	na	0.012
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample



## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-04307

Client Ref

Contract Title Redcar

Lab No	1809632	1809633	1809634	1809635
Sample ID	PRA-SP004-8	PRA-SP004-9	PRA-SP005-2	PRA-SP005-3
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	10/11/2020	10/11/2020	10/11/2020	10/11/2020
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.036</b>	<b>0.003</b>	<b>0.002</b>	<b>0.039</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.036	0.003	0.002	0.039
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	24.44	31.44	30.36	30.36
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	na	na	0.012
% Chrysotile bundles in sample		Mass %	0.036	0.003	0.002	0.027
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-04307

Client Ref

Contract Title Redcar

Lab No	1809636	1809637	1809638	1809639
Sample ID	PRA-SP005-4	PRA-SP005-5	PRA-SP005-6	PRA-SP005-7
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	10/11/2020	10/11/2020	10/11/2020	10/11/2020
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.002</b>	<b>0.029</b>	<b>0.010</b>	<b>0.011</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.002	0.029	0.010	0.011
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	29.99	28.23	27.87	33.16
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	0.002	0.010	na	0.003
% Chrysotile bundles in sample		Mass %	na	0.019	0.010	0.007
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-04307

Client Ref

Contract Title Redcar

Lab No	1809640	1809641	1809642	1809643
Sample ID	PRA-SP005-9	PRA-AY-23	PRA-SP006-1	PRA-SP006-3
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	10/11/2020	10/11/2020	11/11/2020	11/11/2020
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.004	0.002	0.004	0.003
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.004	0.002	0.004	0.003
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	35.07	40.23	33.07	41.72
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	na	na	na
% Chrysotile bundles in sample		Mass %	0.004	0.002	0.004	0.003
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-04307

Client Ref

Contract Title Redcar

Lab No	1809644	1809645	1809646	1809647
Sample ID	PRA-SP007-1	PRA-SP007-2	PRA-SP007-3	PRA-SP007-4
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	11/11/2020	11/11/2020	11/11/2020	11/11/2020
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.778</b>	<b>0.004</b>	<b>0.004</b>	<b>0.059</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	0.778	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	na	0.004	0.004	0.059
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	31.70	34.57	26.29	28.14
ACMs present*		type	Insulation			
Mass of ACM in sample		g	0.29			
% ACM by mass		%	0.91			
% asbestos in ACM		%	85			
% asbestos in sample		%	0.778			

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na	na	0.007
% Chrysotile bundles in sample		Mass %	na	0.004	0.004	0.052

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample



## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-04307

Client Ref

Contract Title Redcar

Lab No	1809648	1809649	1809650	1809651
Sample ID	PRA-SP007-5	PRA-SP007-6	PRA-SP007-7	PRA-SP007-10
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	11/11/2020	11/11/2020	11/11/2020	11/11/2020
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.185</b>	<b>0.010</b>	<b>0.040</b>	<b>0.010</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.185	0.010	0.040	0.010
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	28.12	27.83	28.17	29.93
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	0.030	na	0.004	na
% Chrysotile bundles in sample		Mass %	0.155	0.010	0.036	0.010
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-04307

Client Ref

Contract Title Redcar

Lab No	1809652	1809653	1809654	1809655
Sample ID	PRA-SP007-11	PRA-SP007-12	PRA-SP007-13	PRA-SP007-15
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	11/11/2020	11/11/2020	11/11/2020	11/11/2020
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.003	0.020	0.008	0.009
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.003	0.020	0.008	0.009
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	36.23	28.38	39.25	30.92
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	0.004	na	na
% Chrysotile bundles in sample		Mass %	0.003	0.016	0.008	0.009

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-04307

Client Ref

Contract Title Redcar

Lab No	1809656
Sample ID	PRA-SP007-16
Depth	
Other ID	
Sample Type	SOIL
Sampling Date	11/11/2020
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.003</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.003
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	40.74
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na
% Chrysotile bundles in sample		Mass %	0.003

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na
% Chrysotile fibres in sample		Mass %	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-04307

Client Ref

Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1809628	PRA-SP004-1 SOIL	10/11/20	No containers logged		Cannot evaluate
1809629	PRA-SP004-2 SOIL	10/11/20	No containers logged		Cannot evaluate
1809630	PRA-SP004-3 SOIL	10/11/20	No containers logged		Cannot evaluate
1809631	PRA-SP004-7 SOIL	10/11/20	No containers logged		Cannot evaluate
1809632	PRA-SP004-8 SOIL	10/11/20	No containers logged		Cannot evaluate
1809633	PRA-SP004-9 SOIL	10/11/20	No containers logged		Cannot evaluate
1809634	PRA-SP005-2 SOIL	10/11/20	No containers logged		Cannot evaluate
1809635	PRA-SP005-3 SOIL	10/11/20	No containers logged		Cannot evaluate
1809636	PRA-SP005-4 SOIL	10/11/20	No containers logged		Cannot evaluate
1809637	PRA-SP005-5 SOIL	10/11/20	No containers logged		Cannot evaluate
1809638	PRA-SP005-6 SOIL	10/11/20	No containers logged		Cannot evaluate
1809639	PRA-SP005-7 SOIL	10/11/20	No containers logged		Cannot evaluate
1809640	PRA-SP005-9 SOIL	10/11/20	No containers logged		Cannot evaluate
1809641	PRA-AY-23 SOIL	10/11/20	No containers logged		Cannot evaluate
1809642	PRA-SP006-1 SOIL	11/11/20	No containers logged		Cannot evaluate
1809643	PRA-SP006-3 SOIL	11/11/20	No containers logged		Cannot evaluate
1809644	PRA-SP007-1 SOIL	11/11/20	No containers logged		Cannot evaluate
1809645	PRA-SP007-2 SOIL	11/11/20	No containers logged		Cannot evaluate
1809646	PRA-SP007-3 SOIL	11/11/20	No containers logged		Cannot evaluate
1809647	PRA-SP007-4 SOIL	11/11/20	No containers logged		Cannot evaluate
1809648	PRA-SP007-5 SOIL	11/11/20	No containers logged		Cannot evaluate
1809649	PRA-SP007-6 SOIL	11/11/20	No containers logged		Cannot evaluate
1809650	PRA-SP007-7 SOIL	11/11/20	No containers logged		Cannot evaluate
1809651	PRA-SP007-10 SOIL	11/11/20	No containers logged		Cannot evaluate
1809652	PRA-SP007-11 SOIL	11/11/20	No containers logged		Cannot evaluate
1809653	PRA-SP007-12 SOIL	11/11/20	No containers logged		Cannot evaluate
1809654	PRA-SP007-13 SOIL	11/11/20	No containers logged		Cannot evaluate
1809655	PRA-SP007-15 SOIL	11/11/20	No containers logged		Cannot evaluate
1809656	PRA-SP007-16 SOIL	11/11/20	No containers logged		Cannot evaluate

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.

### 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

End of Report





## Certificate of Analysis

*Certificate Number* 21-04309

*Issued:* 03-Mar-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-04309

*Client Reference* (not supplied)

*Order No* C1096/MA/0034

*Contract Title* Redcar Praire Phase 1

*Description* 3 Soil samples.

*Date Received* 17-Nov-20

*Date Started* 02-Mar-21

*Date Completed* 03-Mar-21

*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*

A handwritten signature in black ink, appearing to read "A. Fenwick".

Adam Fenwick  
Contracts Manager



## Summary of Asbestos Analysis

### Samples

*Our Ref* 21-04309

*Client Ref*

*Contract Title* Redcar Praire Phase 1

<b>Lab No</b>	<b>Sample ID</b>	<b>Sample Location</b>	<b>Material Type</b>	<b>Result</b>	<b>Comment*</b>	<b>Analyst</b>
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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.

## Summary of Asbestos Quantification Analysis Soil Samples

Our Ref 21-04309

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	1809670	1809671	1809672		
Sample ID	PRA - SP008-5	PRA - SP008-9	PRA - SP008-10		
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL		
Sampling Date	13/11/2020	13/11/2020	13/11/2020		
Sampling Time					
Test	Method	Units			
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	< 0.001	0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	0.000	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	na	<0.001	0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na
Breakdown of Gravimetric Analysis (a)					
Mass of Sample		g	30.36	35.14	35.20
ACMs present*		type	Cement		
Mass of ACM in sample		g	0.00		
% ACM by mass		%	0.00		
% asbestos in ACM		%	15.00		
% asbestos in sample		%	0.000		
Breakdown of Detailed Gravimetric Analysis (b)					
% Amphibole bundles in sample		Mass %	na	na	na
% Chrysotile bundles in sample		Mass %	na	<0.001	0.001
Breakdown of PCOM Analysis (c)					
% Amphibole fibres in sample		Mass %	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)					
Amphibole fibres		Fibres/g	na	na	na
Chrysotile fibres		Fibres/g	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-04309

Client Ref

Contract Redcar Praire Phase 1

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
1809670	PRA - SP008-5 SOIL	13/11/20	No containers logged		Cannot evaluate
1809671	PRA - SP008-9 SOIL	13/11/20	No containers logged		Cannot evaluate
1809672	PRA - SP008-10 SOIL	13/11/20	No containers logged		Cannot evaluate

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.

### 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

End of Report





# DETS

## Certificate of Analysis

*Certificate Number* 21-04310

*Issued:* 04-Mar-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-04310

*Client Reference* (not supplied)

*Order No* C1096/MA/0034

*Contract Title* Redcar Praire Phase 1

*Description* 10 Soil samples.

*Date Received* 12-Nov-20

*Date Started* 02-Mar-21

*Date Completed* 04-Mar-21

*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



2139

## Summary of Asbestos Analysis

### Samples

*Our Ref* 21-04310

*Client Ref*

*Contract Title* Redcar Praire Phase 1

<b>Lab No</b>	<b>Sample ID</b>	<b>Sample Location</b>	<b>Material Type</b>	<b>Result</b>	<b>Comment*</b>	<b>Analyst</b>
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<p>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.</p>						
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## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-04310

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	1809673	1809674	1809675	1809676
Sample ID	PRA-SP003-4	PRA-SP002-1	PRA-SP002-3	PRA-SP002-5
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	09/11/2020	09/11/2020	09/11/2020	09/11/2020
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.004</b>	<b>0.050</b>	<b>0.028</b>	<b>0.049</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	0.050	0.028	0.049
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.004	na	na	na
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	23.84	20.92	30.60	29.69
ACMs present*		type		LFAD	LFAD	LFAD
Mass of ACM in sample		g		0.01	0.01	0.02
% ACM by mass		%		0.06	0.03	0.06
% asbestos in ACM		%		85	85	85
% asbestos in sample		%		0.050	0.028	0.049

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na	na	na
% Chrysotile bundles in sample		Mass %	0.004	na	na	na

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 21-04310

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	1809677	1809678	1809679	1809680
Sample ID	PRA-SP002-6	PRA-SP002-7	PRA-SP001-1	PRA-SP001-2
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	09/11/2020	09/11/2020	09/11/2020	09/11/2020
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.027</b>	<b>0.070</b>	<b>0.002</b>	<b>0.004</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	0.027	0.067	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	na	0.003	0.002	0.004
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	24.26	23.49	31.66	36.31
ACMs present*		type	LFAD	LFAD		
Mass of ACM in sample		g	0.01	0.02		
% ACM by mass		%	0.03	0.08		
% asbestos in ACM		%	85	85		
% asbestos in sample		%	0.027	0.067		
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	0.003	na	na
% Chrysotile bundles in sample		Mass %	na	na	0.002	0.004
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-04310

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	1809681	1809682
Sample ID	PRA-SP001-3	PRA-SP001-5
Depth		
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	09/11/2020	09/11/2020
Sampling Time		

Test	Method	Units		
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.008	0.004
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.008	0.004
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	29.44	25.07
ACMs present*		type		
Mass of ACM in sample		g		
% ACM by mass		%		
% asbestos in ACM		%		
% asbestos in sample		%		

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na
% Chrysotile bundles in sample		Mass %	0.008	0.004

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na
% Chrysotile fibres in sample		Mass %	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na
Chrysotile fibres		Fibres/g	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample



## Information in Support of the Analytical Results

Our Ref 21-04310

Client Ref

Contract Redcar Praire Phase 1

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1809673	PRA-SP003-4 SOIL	09/11/20	PT 1L (1kg)		
1809674	PRA-SP002-1 SOIL	09/11/20	PT 1L (1kg)		
1809675	PRA-SP002-3 SOIL	09/11/20	PT 1L (1kg)		
1809676	PRA-SP002-5 SOIL	09/11/20	PT 1L (1kg)		
1809677	PRA-SP002-6 SOIL	09/11/20	PT 1L (1kg)		
1809678	PRA-SP002-7 SOIL	09/11/20	PT 1L (1kg)		
1809679	PRA-SP001-1 SOIL	09/11/20	PT 1L (1kg)		
1809680	PRA-SP001-2 SOIL	09/11/20	PT 1L (1kg)		
1809681	PRA-SP001-3 SOIL	09/11/20	PT 1L (1kg)		
1809682	PRA-SP001-5 SOIL	09/11/20	PT 1L (1kg)		

Key: P-Plastic 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.

### 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

End of Report



## Certificate of Analysis

*Certificate Number* 21-05005

*Issued:* 17-Mar-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-05005

*Client Reference* (not supplied)

*Order No* (not supplied)

*Contract Title* Redcar

*Description* 2 Soil samples.

*Date Received* 10-Mar-21

*Date Started* 10-Mar-21

*Date Completed* 17-Mar-21

*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*

A handwritten signature in black ink, appearing to read "A. Fenwick".

Adam Fenwick  
Contracts Manager



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-05005

Client Ref

Contract Title Redcar

Lab No	1814680	1814681
Sample ID	PRE-AB-26-S2	PRE-AB-27-S2
Depth	5.78	5.70
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	04/03/2021	04/03/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
<b>Metals</b>					
Arsenic	DETSC 2301#	0.2	mg/kg	7.5	7.2
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.7	0.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.2
Chromium	DETSC 2301#	0.15	mg/kg	23	24
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	26	26
Lead	DETSC 2301#	0.3	mg/kg	21	23
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	33	33
Vanadium	DETSC 2301#	0.8	mg/kg	27	28
Zinc	DETSC 2301#	1	mg/kg	82	74
<b>Inorganics</b>					
pH	DETSC 2008#		pH	8.8	8.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	0.3
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	2.6	2.7
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	76	81
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>					
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	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
<b>PAHs</b>					
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



# Summary of Chemical Analysis Soil Samples

Our Ref 21-05005

Client Ref

Contract Title Redcar

Lab No	1814680	1814681
Sample ID	PRE-AB-26-S2	PRE-AB-27-S2
Depth	5.78	5.70
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	04/03/2021	04/03/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.09	0.08
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.05	0.04
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.14	0.12
<b>Phenols</b>					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-05005

Client Ref

Contract Title Redcar

<b>Lab No</b>	1814680	1814681
<b>Sample ID</b>	PRE-AB-26-S2	PRE-AB-27-S2
<b>Depth</b>	5.78	5.70
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	04/03/2021	04/03/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
<b>VOCs</b>					
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	



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-05005

Client Ref

Contract Title Redcar

Lab No	1814680	1814681
Sample ID	PRE-AB-26-S2	PRE-AB-27-S2
Depth	5.78	5.70
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	04/03/2021	04/03/2021
Sampling Time	n/s	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	
<b>SVOCs</b>					
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
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg		< 0.1

## Summary of Chemical Analysis Soil Samples

Our Ref 21-05005

Client Ref

Contract Title Redcar

<b>Lab No</b>	1814680	1814681
<b>Sample ID</b>	PRE-AB-26-S2	PRE-AB-27-S2
<b>Depth</b>	5.78	5.70
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	04/03/2021	04/03/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
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

## Summary of Asbestos Analysis Soil Samples

*Our Ref* 21-05005

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1814680	PRE-AB-26-S2 5.78	SOIL	NAD	none	Darryl Fletcher
1814681	PRE-AB-27-S2 5.70	SOIL	NAD	none	Darryl Fletcher

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 21-05005

Client Ref

Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
1814680	PRE-AB-26-S2 5.78 SOIL	04/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1814681	PRE-AB-27-S2 5.70 SOIL	04/03/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



## Certificate of Analysis

*Certificate Number* 21-05943

*Issued:* 29-Mar-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-05943

*Client Reference* (not supplied)

*Order No* C1096/MA/0040

*Contract Title* Redcar

*Description* 14 Soil samples.

*Date Received* 19-Mar-21

*Date Started* 19-Mar-21

*Date Completed* 29-Mar-21

*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*

A handwritten signature in black ink, appearing to read "A. Fenwick".

Adam Fenwick  
Contracts Manager







# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-05943

Client Ref

Contract Title Redcar

Lab No	1819866	1819867	1819868	1819869	1819870	1819871
Sample ID	PRA-SP011-S11	PRA-SP011-S12	PRA-SP011-S13	PRA-SP011-S14	PRA-SP011-S15	PRA-SP011-S16
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	15/03/2021	15/03/2021	15/03/2021	15/03/2021	15/03/2021	15/03/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units	1819866	1819867	1819868	1819869	1819870	1819871
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	21	23	29	13	15	22
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	3.6	3.8	3.0	3.9	2.8	3.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.9	1.3	0.7	1.5	2.1	1.2
Chromium	DETSC 2301#	0.15	mg/kg	110	100	100	140	110	91
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	75	69	660	130	94	69
Lead	DETSC 2301#	0.3	mg/kg	96	160	81	260	130	130
Mercury	DETSC 2325#	0.05	mg/kg	0.78	< 0.05	1.1	0.87	1.8	3.0
Nickel	DETSC 2301#	1	mg/kg	25	27	33	18	16	22
Vanadium	DETSC 2301#	0.8	mg/kg	210	180	200	170	290	180
Zinc	DETSC 2301#	1	mg/kg	250	470	230	460	410	420
<b>Inorganics</b>									
pH	DETSC 2008#		pH	10.8	10.2	11.2	11.0	12.1	10.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	12	40	14	14	180	45
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	0.4	< 0.1	0.2	0.6	0.4
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.3	2.3	1.7	1.6	3.9	3.9
Organic matter	DETSC 2002#	0.1	%	2.2	2.0	1.8	2.5	2.6	1.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	440	400	290	360	360	700
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	1.9	< 0.75	8.1	1.8	7.8
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	5.9	3.3	1.6	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	24	22	17	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	58	73	63	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	88	98	82	< 10
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	3.3	4.9	5.6	3.6	2.8
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	22	24	29	27	13
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	72	75	100	83	36
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	98	100	140	110	52
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	98	190	230	200	52
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.08	0.34	0.16	0.46	0.28	0.74
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.05	< 0.03	0.05	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.06	0.50	0.10	0.43	0.17	0.26
Fluorene	DETSC 3303	0.03	mg/kg	0.03	0.39	0.07	0.34	0.10	0.15

## Summary of Chemical Analysis Soil Samples

Our Ref 21-05943

Client Ref

Contract Title Redcar

Lab No	1819866	1819867	1819868	1819869	1819870	1819871
Sample ID	PRA-SP011-S11	PRA-SP011-S12	PRA-SP011-S13	PRA-SP011-S14	PRA-SP011-S15	PRA-SP011-S16
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	15/03/2021	15/03/2021	15/03/2021	15/03/2021	15/03/2021	15/03/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.39	3.5	0.83	2.4	0.95	1.5
Anthracene	DETSC 3303	0.03	mg/kg	0.09	0.77	0.18	0.44	0.22	0.32
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.3	9.2	2.3	4.3	3.2	4.2
Pyrene	DETSC 3303#	0.03	mg/kg	1.2	7.4	2.5	3.6	2.7	3.7
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.49	3.3	1.0	1.7	1.1	1.4
Chrysene	DETSC 3303	0.03	mg/kg	0.49	2.9	1.0	1.6	1.1	1.4
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.59	3.3	1.1	1.9	1.3	1.5
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.20	1.1	0.40	0.68	0.43	0.52
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.43	2.5	0.77	1.4	0.89	1.1
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.19	0.91	0.30	0.58	0.35	0.40
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.06	0.32	0.10	0.20	0.13	0.14
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.20	1.0	0.34	0.65	0.39	0.45
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	5.8	38	11	21	13	18
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-05943

Client Ref

Contract Title Redcar

Lab No	1819872	1819873	1819874	1819875	1819876	1819877
Sample ID	PRA-SP011-S17	PRA-SP011-S18	PRA-SP011-S19	PRA-SP011-S20	PRA-BE-27-S1	PRA-SP011-S22
Depth					7.0	
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	15/03/2021	15/03/2021	15/03/2021	15/03/2021	15/03/2021	15/03/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	18	12	18	15	6.8	14
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	3.6	3.3	3.6	3.1	0.7	3.9
Cadmium	DETSC 2301#	0.1	mg/kg	1.0	1.3	1.7	1.5	0.3	1.1
Chromium	DETSC 2301#	0.15	mg/kg	85	97	83	180	29	270
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	2.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	58	49	130	56	30	62
Lead	DETSC 2301#	0.3	mg/kg	83	76	110	130	26	250
Mercury	DETSC 2325#	0.05	mg/kg	1.9	1.2	1.9	2.2	0.10	1.5
Nickel	DETSC 2301#	1	mg/kg	21	15	21	15	35	18
Vanadium	DETSC 2301#	0.8	mg/kg	140	220	160	250	35	430
Zinc	DETSC 2301#	1	mg/kg	250	230	350	400	78	300
<b>Inorganics</b>									
pH	DETSC 2008#		pH	10.8	11.8	11.2	11.9	8.4	10.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	39	88	55	66	1.0	32
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.3	0.5	0.2	0.6	< 0.1	0.4
Thiocyanate	DETSC 2130#	0.6	mg/kg	2.9	3.3	3.2	2.5	< 0.6	1.3
Organic matter	DETSC 2002#	0.1	%	2.2	1.3	2.3	2.0	2.2	1.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1300	410	580	110	100	370
Sulphur (free)	DETSC 3049#	0.75	mg/kg	8.7	4.4	7.6	1.6	1.0	54
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	2.1	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	35	21	24	12	7.0	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	200	78	92	55	37	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	240	100	120	67	44	< 10
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	1.2	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	0.6	5.1	3.4	3.4	1.8	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	50	29	40	26	13	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	420	100	150	100	69	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	470	140	190	130	84	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	710	240	310	200	130	< 10
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.46	0.27	0.48	0.43	0.18	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.06	0.05	0.10	0.06	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.90	0.28	0.42	0.24	0.16	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.61	0.17	0.30	0.17	0.11	< 0.03



# Summary of Chemical Analysis Soil Samples

Our Ref 21-05943

Client Ref

Contract Title Redcar

<b>Lab No</b>	1819872	1819873	1819874	1819875	1819876	1819877
<b>Sample ID</b>	PRA-SP011-S17	PRA-SP011-S18	PRA-SP011-S19	PRA-SP011-S20	PRA-BE-27-S1	PRA-SP011-S22
<b>Depth</b>					7.0	
<b>Other ID</b>						
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	15/03/2021	15/03/2021	15/03/2021	15/03/2021	15/03/2021	15/03/2021
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Phenanthrene	DETSC 3303#	0.03	mg/kg	3.5	2.4	2.3	2.0	0.96	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	0.67	0.51	0.78	0.51	0.21	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	6.7	5.6	7.4	7.3	2.8	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	5.4	4.5	6.3	6.4	2.4	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	2.3	2.0	3.5	3.1	0.90	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	2.1	1.8	3.4	2.8	0.88	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	2.2	2.1	4.3	3.3	0.87	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.78	0.75	1.6	1.2	0.32	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	1.6	1.5	3.4	2.5	0.59	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.58	0.61	1.5	0.98	0.24	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.20	0.22	0.54	0.35	0.09	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.65	0.69	1.7	1.1	0.27	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	29	23	38	32	11	< 0.10
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-05943

Client Ref

Contract Title Redcar

Lab No	1819878	1819879
Sample ID	PRA-SP011-S23	PRA-SP011-S24
Depth		
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	15/03/2021	15/03/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
<b>Metals</b>					
Arsenic	DETSC 2301#	0.2	mg/kg	16	14
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	3.4	3.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.9	0.9
Chromium	DETSC 2301#	0.15	mg/kg	210	120
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	66	76
Lead	DETSC 2301#	0.3	mg/kg	100	110
Mercury	DETSC 2325#	0.05	mg/kg	1.7	1.3
Nickel	DETSC 2301#	1	mg/kg	21	16
Vanadium	DETSC 2301#	0.8	mg/kg	380	230
Zinc	DETSC 2301#	1	mg/kg	320	260
<b>Inorganics</b>					
pH	DETSC 2008#		pH	11.7	11.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	28	21
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.3	0.3
Thiocyanate	DETSC 2130#	0.6	mg/kg	2.2	1.3
Organic matter	DETSC 2002#	0.1	%	1.8	3.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	310	320
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	1.2
<b>Petroleum Hydrocarbons</b>					
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	3.3
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	4.6	12
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	62	61
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	67	77
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	0.9	2.9
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	9.7	16
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	60	75
Aromatic C5-C35	DETSC 3072*	10	mg/kg	70	95
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	140	170
<b>PAHs</b>					
Naphthalene	DETSC 3303#	0.03	mg/kg	0.08	0.18
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.08	0.17
Fluorene	DETSC 3303	0.03	mg/kg	0.05	0.13



## Summary of Chemical Analysis Soil Samples

Our Ref 21-05943

Client Ref

Contract Title Redcar

<b>Lab No</b>	1819878	1819879
<b>Sample ID</b>	PRA-SP011-S23	PRA-SP011-S24
<b>Depth</b>		
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	15/03/2021	15/03/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.48	0.97
Anthracene	DETSC 3303	0.03	mg/kg	0.10	0.21
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.7	2.6
Pyrene	DETSC 3303#	0.03	mg/kg	1.5	2.3
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.57	0.92
Chrysene	DETSC 3303	0.03	mg/kg	0.56	0.94
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.59	1.0
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.23	0.37
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.44	0.70
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.19	0.29
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.06	0.10
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.20	0.33
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	6.8	11
<b>Phenols</b>					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-05943

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1819866	PRA-SP011-S11	SOIL	NAD	none	Darryl Fletcher
1819867	PRA-SP011-S12	SOIL	Chrysotile	Bundles of Chrysotile Fibres	Darryl Fletcher
1819868	PRA-SP011-S13	SOIL	Chrysotile	Bundles of Chrysotile Fibres	Darryl Fletcher
1819869	PRA-SP011-S14	SOIL	Chrysotile	Chrysotile present in microscopic Loose Fibrous Asbestos Debris & Bundles of Chrysotile Fibres	Darryl Fletcher
1819870	PRA-SP011-S15	SOIL	Chrysotile	Chrysotile present in microscopic Loose Fibrous Asbestos Debris & Bundles of Chrysotile Fibres	Darryl Fletcher
1819871	PRA-SP011-S16	SOIL	Chrysotile	Bundles of Chrysotile Fibres	Darryl Fletcher
1819872	PRA-SP011-S17	SOIL	Chrysotile	Bundles of Chrysotile Fibres	Darryl Fletcher
1819873	PRA-SP011-S18	SOIL	Chrysotile	Bundles of Chrysotile Fibres	Darryl Fletcher
1819874	PRA-SP011-S19	SOIL	NAD	none	Darryl Fletcher
1819875	PRA-SP011-S20	SOIL	Chrysotile	Bundles of Chrysotile Fibres	Darryl Fletcher
1819876	PRA-BE-27-S1 7.0	SOIL	NAD	none	Darryl Fletcher
1819877	PRA-SP011-S22	SOIL	NAD	none	Darryl Fletcher
1819878	PRA-SP011-S23	SOIL	Chrysotile	Bundles of Chrysotile Fibres	Darryl Fletcher
1819879	PRA-SP011-S24	SOIL	NAD	none	Darryl Fletcher

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 21-05943  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
1819866	PRA-SP011-S11 SOIL	15/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1819867	PRA-SP011-S12 SOIL	15/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1819868	PRA-SP011-S13 SOIL	15/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1819869	PRA-SP011-S14 SOIL	15/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1819870	PRA-SP011-S15 SOIL	15/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1819871	PRA-SP011-S16 SOIL	15/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1819872	PRA-SP011-S17 SOIL	15/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1819873	PRA-SP011-S18 SOIL	15/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1819874	PRA-SP011-S19 SOIL	15/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1819875	PRA-SP011-S20 SOIL	15/03/21	GJ 250ml, GJ 60ml x2, PT 500ml x2		
1819876	PRA-BE-27-S1 7.0 SOIL	15/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1819877	PRA-SP011-S22 SOIL	15/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1819878	PRA-SP011-S23 SOIL	15/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1819879	PRA-SP011-S24 SOIL	15/03/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



## Certificate of Analysis

*Certificate Number* 21-06210

*Issued:* 31-Mar-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-06210

*Client Reference* (not supplied)

*Order No* C1096/MA/0040

*Contract Title* Redcar Praire Phase 1

*Description* 6 Soil samples.

*Date Received* 24-Mar-21

*Date Started* 24-Mar-21

*Date Completed* 31-Mar-21

*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*

A handwritten signature in black ink, appearing to read "A. Fenwick".

Adam Fenwick  
Contracts Manager



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-06210

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	1821747	1821748	1821749	1821750	1821751	1821752
Sample ID	PRA-SP024-S1	PRA-SP024-S2	PRA-SP024-S3	PRA-AY-29-S2	PRA-AY-29-S3	PRA-AY-29-S4
Depth				6.59	6.38	6.43
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	18/03/2021	18/03/2021	18/03/2021	18/03/2021	18/03/2021	18/03/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units	1821747	1821748	1821749	1821750	1821751	1821752
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	13	12	15	6.1	4.6	5.0
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.1	2.2	2.0	0.9	0.9	1.1
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.4	0.5	0.2	0.1	0.1
Chromium	DETSC 2301#	0.15	mg/kg	20	23	35	16	21	21
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	25	37	53	21	19	26
Lead	DETSC 2301#	0.3	mg/kg	100	84	150	20	15	16
Mercury	DETSC 2325#	0.05	mg/kg	0.09	0.09	0.14	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	21	27	28	27	26	24
Vanadium	DETSC 2301#	0.8	mg/kg	35	39	57	21	23	23
Zinc	DETSC 2301#	1	mg/kg	140	160	190	62	49	51
<b>Inorganics</b>									
pH	DETSC 2008#		pH	8.5	8.5	9.5	8.4	8.1	8.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	5.2	12	3.7	0.5	0.1	0.5
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.2	0.3	0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.6	0.6	< 0.6	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	2.2	3.2	3.4	2.5	2.6	2.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	230	300	310	140	120	91
Sulphur (free)	DETSC 3049#	0.75	mg/kg	16	< 0.75	4.5	< 0.75	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
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	5.6	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	5.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	41	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	53	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	53	< 10	< 10	< 10	< 10	< 10
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.06	0.13	0.05	< 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	0.62	1.0	0.08	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.26	0.44	< 0.03	< 0.03	< 0.03	< 0.03



# Summary of Chemical Analysis Soil Samples

Our Ref 21-06210

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	1821747	1821748	1821749	1821750	1821751	1821752
Sample ID	PRA-SP024-S1	PRA-SP024-S2	PRA-SP024-S3	PRA-AY-29-S2	PRA-AY-29-S3	PRA-AY-29-S4
Depth				6.59	6.38	6.43
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	18/03/2021	18/03/2021	18/03/2021	18/03/2021	18/03/2021	18/03/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units	1821747	1821748	1821749	1821750	1821751	1821752
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.09	0.19	< 0.03	< 0.03	0.04	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	0.04	0.05	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.13	0.12	< 0.03	< 0.03	0.10	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.10	0.09	< 0.03	< 0.03	0.10	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	< 0.03	< 0.03	0.05	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.04	< 0.03	< 0.03	< 0.03	0.08	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.07	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.06	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.04	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
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	0.04	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	1.5	2.0	0.13	< 0.10	0.52	< 0.10
<b>PCBs</b>									
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
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-06210

Client Ref

Contract Title Redcar Praire Phase 1

<b>Lab No</b>	1821750	1821751
<b>Sample ID</b>	PRA-AY-29-S2	PRA-AY-29-S3
<b>Depth</b>	6.59	6.38
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	18/03/2021	18/03/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
<b>VOCs</b>					
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	0.02	
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	
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	

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-06210

Client Ref

Contract Title Redcar Praire Phase 1

Lab No	1821750	1821751
Sample ID	PRA-AY-29-S2	PRA-AY-29-S3
Depth	6.59	6.38
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	18/03/2021	18/03/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
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	
<b>SVOCs</b>					
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
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

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-06210

Client Ref

Contract Title Redcar Praire Phase 1

<b>Lab No</b>	1821750	1821751
<b>Sample ID</b>	PRA-AY-29-S2	PRA-AY-29-S3
<b>Depth</b>	6.59	6.38
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	18/03/2021	18/03/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
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

## Summary of Asbestos Analysis Soil Samples

*Our Ref* 21-06210

*Client Ref*

*Contract Title* Redcar Praire Phase 1

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1821747	PRA-SP024-S1	SOIL	NAD	none	Darryl Fletcher
1821748	PRA-SP024-S2	SOIL	NAD	none	Darryl Fletcher
1821749	PRA-SP024-S3	SOIL	NAD	none	Darryl Fletcher
1821750	PRA-AY-29-S2 6.59	SOIL	NAD	none	Darryl Fletcher
1821751	PRA-AY-29-S3 6.38	SOIL	NAD	none	Darryl Fletcher
1821752	PRA-AY-29-S4 6.43	SOIL	NAD	none	Darryl Fletcher

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 21-06210

Client Ref

Contract Redcar Praire Phase 1

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holdng time exceeded for tests	Inappropriate container for tests
1821747	PRA-SP024-S1 SOIL	18/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1821748	PRA-SP024-S2 SOIL	18/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1821749	PRA-SP024-S3 SOIL	18/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1821750	PRA-AY-29-S2 6.59 SOIL	18/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1821751	PRA-AY-29-S3 6.38 SOIL	18/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1821752	PRA-AY-29-S4 6.43 SOIL	18/03/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-06279

*Issued:* 01-Apr-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-06279

*Client Reference* (not supplied)

*Order No* (not supplied)

*Contract Title* Redcar

*Description* 3 Soil samples.

*Date Received* 25-Mar-21

*Date Started* 25-Mar-21

*Date Completed* 01-Apr-21

*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



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-06279

Client Ref

Contract Title Redcar

Lab No	1822263	1822264	1822265
Sample ID	PRA-AY-33-S1	PRA-AY-35-S1	PRA-AY-37-S1
Depth			
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	22/03/2021	22/03/2021	22/03/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>Metals</b>						
Arsenic	DETSC 2301#	0.2	mg/kg	22	21	45
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.5	1.1	1.8
Cadmium	DETSC 2301#	0.1	mg/kg	0.7	0.4	0.5
Chromium	DETSC 2301#	0.15	mg/kg	140	270	78
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	71	63	82
Lead	DETSC 2301#	0.3	mg/kg	62	85	71
Mercury	DETSC 2325#	0.05	mg/kg	0.06	0.07	< 0.05
Nickel	DETSC 2301#	1	mg/kg	29	30	66
Vanadium	DETSC 2301#	0.8	mg/kg	490	960	260
Zinc	DETSC 2301#	1	mg/kg	1200	3600	2800
<b>Inorganics</b>						
Loss on Ignition at 440oC	DETSC 2003#	0.01	%	3.2	4.2	5.6
pH	DETSC 2008#		pH	10.4	10.7	9.2
Calorific Value	DETSC 5008	1	MJ/kg	< 1.0	< 1.0	8.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	5.3	12	5.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.0	1.3	< 0.6
Organic matter	DETSC 2002#	0.1	%	2.2	2.7	3.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	540	470	310
Sulphur (free)	DETSC 3049#	0.75	mg/kg	2.9	5.7	5.4
<b>Petroleum Hydrocarbons</b>						
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	6.8	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	11	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	18	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	18	< 10
<b>PAHs</b>						
Naphthalene	DETSC 3303#	0.03	mg/kg	0.05	0.05	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	< 0.03

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-06279  
 Client Ref  
 Contract Title Redcar

Lab No	1822263	1822264	1822265
Sample ID	PRA-AY-33-S1	PRA-AY-35-S1	PRA-AY-37-S1
Depth			
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	22/03/2021	22/03/2021	22/03/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.06	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.04	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	3.3	0.91	0.49
Anthracene	DETSC 3303	0.03	mg/kg	0.17	0.14	0.12
Fluoranthene	DETSC 3303#	0.03	mg/kg	4.8	2.4	1.2
Pyrene	DETSC 3303#	0.03	mg/kg	3.3	1.9	0.97
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	1.5	0.99	0.40
Chrysene	DETSC 3303	0.03	mg/kg	1.8	1.0	0.43
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	2.0	1.2	0.45
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.75	0.51	0.19
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.94	1.0	0.35
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.67	0.44	0.17
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.25	0.15	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.65	0.45	0.17
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	20	11	5.0
<b>Phenols</b>						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3

## Summary of Asbestos Analysis Soil Samples

*Our Ref* 21-06279

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1822263	PRA-AY-33-S1	SOIL	NAD	none	Keith Wilson
1822264	PRA-AY-35-S1	SOIL	NAD	none	Keith Wilson
1822265	PRA-AY-37-S1	SOIL	NAD	none	Keith Wilson

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 21-06279

Client Ref

Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
1822263	PRA-AY-33-S1 SOIL	22/03/21	GJ 250ml, GJ 60ml x3, PT 1L		
1822264	PRA-AY-35-S1 SOIL	22/03/21	GJ 250ml, GJ 60ml, PT 1L		
1822265	PRA-AY-37-S1 SOIL	22/03/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



## Certificate of Analysis

*Certificate Number* 21-06438

*Issued:* 01-Apr-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-06438

*Client Reference* (not supplied)

*Order No* C1096/MA/0040

*Contract Title* Redcar

*Description* 2 Soil samples.

*Date Received* 10-Mar-21

*Date Started* 26-Mar-21

*Date Completed* 01-Apr-21

*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*

A handwritten signature in black ink, appearing to read "A. Fenwick".

Adam Fenwick  
Contracts Manager



## Summary of Chemical Analysis Soil Samples

Our Ref 21-06438

Client Ref

Contract Title Redcar

<b>Lab No</b>	1823159	1823160
<b>Sample ID</b>	PRA-AB-26-S2	PRA-AB-27-S2
<b>Depth</b>	5.78	5.70
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	04/03/2021	04/03/2021
<b>Sampling Time</b>	n/s	n/s

<b>Test</b>	<b>Method</b>	<b>LOD</b>	<b>Units</b>
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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-06438

Client Ref

Contract Title Redcar

Lab No	1823159	1823160
Sample ID	PRA-AB-26-S2	PRA-AB-27-S2
Depth	5.78	5.70
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	04/03/2021	04/03/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
<b>VOCs</b>					
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	
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	

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-06438

Client Ref

Contract Title Redcar

Lab No	1823159	1823160
Sample ID	PRA-AB-26-S2	PRA-AB-27-S2
Depth	5.78	5.70
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	04/03/2021	04/03/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
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	
Naphthalene	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	
<b>SVOCs</b>					
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
Naphthalene	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
Acenaphthylene	DETSC 3433	0.1	mg/kg		< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg		< 0.1
Acenaphthene	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



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-06438

Client Ref

Contract Title Redcar

Lab No	1823159	1823160
Sample ID	PRA-AB-26-S2	PRA-AB-27-S2
Depth	5.78	5.70
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	04/03/2021	04/03/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg		< 0.1
Fluorene	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
Phenanthrene	DETSC 3433	0.1	mg/kg		< 0.1
Anthracene	DETSC 3433	0.1	mg/kg		< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg		< 0.1
Fluoranthene	DETSC 3433	0.1	mg/kg		< 0.1
Pyrene	DETSC 3433	0.1	mg/kg		< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg		< 0.1
Benzo(a)anthracene	DETSC 3433	0.1	mg/kg		< 0.1
Chrysene	DETSC 3433	0.1	mg/kg		< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg		0.2
Di-n-octylphthalate	DETSC 3433	0.1	mg/kg		< 0.1
Benzo(b)fluoranthene	DETSC 3433	0.1	mg/kg		< 0.1
Benzo(k)fluoranthene	DETSC 3433	0.1	mg/kg		< 0.1
Benzo(a)pyrene	DETSC 3433	0.1	mg/kg		< 0.1
Indeno(123cd)pyrene	DETSC 3433	0.1	mg/kg		< 0.1
Dibenzo(ah)anthracene	DETSC 3433	0.1	mg/kg		< 0.1
Benzo(ghi)perylene	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

## Information in Support of the Analytical Results

Our Ref 21-06438

Client Ref

Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
1823159	PRA-AB-26-S2 5.78 SOIL	04/03/21	No containers logged		Cannot evaluate
1823160	PRA-AB-27-S2 5.70 SOIL	04/03/21	No containers logged		Cannot evaluate

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

End of Report



## Certificate of Analysis

*Certificate Number* 21-06518

*Issued:* 01-Apr-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-06518

*Client Reference* (not supplied)

*Order No* C1096/MA/0040

*Contract Title* Redcar

*Description* 9 Soil samples.

*Date Received* 19-Mar-21

*Date Started* 29-Mar-21

*Date Completed* 01-Apr-21

*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*

A handwritten signature in black ink, appearing to read "A. Fenwick".

Adam Fenwick  
Contracts Manager



## Summary of Asbestos Analysis

### Samples

*Our Ref* 21-06518

*Client Ref*

*Contract Title* Redcar

<b>Lab No</b>	<b>Sample ID</b>	<b>Sample Location</b>	<b>Material Type</b>	<b>Result</b>	<b>Comment*</b>	<b>Analyst</b>
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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.

# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 21-06518

Client Ref

Contract Title Redcar

	Lab No	1823561	1823562	1823563	1823564	
<b>Sample ID</b>		PRA-SP011-S12	PRA-SP011-S13	PRA-SP011-S14	PRA-SP011-S15	
<b>Depth</b>						
<b>Other ID</b>						
<b>Sample Type</b>		SOIL	SOIL	SOIL	SOIL	
<b>Sampling Date</b>		15/03/2021	15/03/2021	15/03/2021	15/03/2021	
<b>Sampling Time</b>						
<b>Test</b>	<b>Method</b>	<b>Units</b>				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.008</b>	<b>0.005</b>	<b>0.003</b>	<b>0.008</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	0.003	0.003
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.008	0.005	<0.001	0.005
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
<b>Breakdown of Gravimetric Analysis (a)</b>						
Mass of Sample		g	57.54	1169.12	1107.09	1201.50
ACMs present*		type			LFAD	LFAD
Mass of ACM in sample		g			0.04	0.05
% ACM by mass		%			0.00	0.00
% asbestos in ACM		%			85	85
% asbestos in sample		%			0.003	0.003
<b>Breakdown of Detailed Gravimetric Analysis (b)</b>						
% Amphibole bundles in sample		Mass %	na	na	na	na
% Chrysotile bundles in sample		Mass %	0.008	0.005	<0.001	0.005
<b>Breakdown of PCOM Analysis (c)</b>						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
<b>Breakdown of Potentially Respirable Fibre Analysis (d)</b>						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample



# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 21-06518

Client Ref

Contract Title Redcar

	Lab No	1823565	1823566	1823567	1823568	
<b>Sample ID</b>		PRA-SP011-S16	PRA-SP011-S17	PRA-SP011-S18	PRA-SP011-S20	
<b>Depth</b>						
<b>Other ID</b>						
<b>Sample Type</b>		SOIL	SOIL	SOIL	SOIL	
<b>Sampling Date</b>		15/03/2021	15/03/2021	15/03/2021	15/03/2021	
<b>Sampling Time</b>						
<b>Test</b>	<b>Method</b>	<b>Units</b>				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.008</b>	<b>&lt; 0.001</b>	<b>0.015</b>	<b>0.002</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.008	<0.001	0.015	0.002
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
<b>Breakdown of Gravimetric Analysis (a)</b>						
Mass of Sample		g	1087.76	1139.85	1217.06	338.20
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				
<b>Breakdown of Detailed Gravimetric Analysis (b)</b>						
% Amphibole bundles in sample		Mass %	na	na	na	na
% Chrysotile bundles in sample		Mass %	0.008	<0.001	0.015	0.002
<b>Breakdown of PCOM Analysis (c)</b>						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
<b>Breakdown of Potentially Respirable Fibre Analysis (d)</b>						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Summary of Asbestos Quantification Analysis Soil Samples

Our Ref 21-06518

Client Ref

Contract Title Redcar

Lab No	1823569
Sample ID	PRA-SP011-S23
Depth	
Other ID	
Sample Type	SOIL
Sampling Date	15/03/2021
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.024</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.024
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na
Breakdown of Gravimetric Analysis (a)			
Mass of Sample		g	1418.33
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	
Breakdown of Detailed Gravimetric Analysis (b)			
% Amphibole bundles in sample		Mass %	na
% Chrysotile bundles in sample		Mass %	0.024
Breakdown of PCOM Analysis (c)			
% Amphibole fibres in sample		Mass %	na
% Chrysotile fibres in sample		Mass %	na
Breakdown of Potentially Respirable Fibre Analysis (d)			
Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-06518  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
1823561	PRA-SP011-S12 SOIL	15/03/21	PT 1L (1kg)		
1823562	PRA-SP011-S13 SOIL	15/03/21	PT 1L (1kg)		
1823563	PRA-SP011-S14 SOIL	15/03/21	PT 1L (1kg)		
1823564	PRA-SP011-S15 SOIL	15/03/21	PT 1L (1kg)		
1823565	PRA-SP011-S16 SOIL	15/03/21	PT 1L (1kg)		
1823566	PRA-SP011-S17 SOIL	15/03/21	PT 1L (1kg)		
1823567	PRA-SP011-S18 SOIL	15/03/21	PT 1L (1kg)		
1823568	PRA-SP011-S20 SOIL	15/03/21	PT 1L (1kg)		
1823569	PRA-SP011-S23 SOIL	15/03/21	PT 1L (1kg)		

Key: P-Plastic 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.

### 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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-06571

*Issued:* 07-Apr-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-06571

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 9 Soil samples.

*Date Received* 29-Mar-21

*Date Started* 29-Mar-21

*Date Completed* 07-Apr-21

*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



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## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-06571

Client Ref

Contract Title Redcar

Lab No	1824058	1824059	1824060	1824061	1824062	1824063	1824064
Sample ID	PRA-AY-25-S5	PRA-AY-26-S2	PRA-AY-25-S4	PRA-AY-25-S2	PRA-AY-26-S7	PRA-AY-27-S6	PRA-AY-27-S7
Depth							
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
<b>Metals</b>										
Arsenic	DETSC 2301#	0.2	mg/kg	7.5	7.5	5.7	7.8	15	7.9	8.9
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.5	0.5	1.1	0.6	1.3	1.0	1.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.2	0.1	0.1	0.3	0.2	0.3
Chromium	DETSC 2301#	0.15	mg/kg	25	32	25	29	30	25	32
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	28	27	20	24	32	26	30
Lead	DETSC 2301#	0.3	mg/kg	19	21	12	18	33	23	34
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.22
Nickel	DETSC 2301#	1	mg/kg	33	41	27	37	42	34	34
Vanadium	DETSC 2301#	0.8	mg/kg	29	36	33	35	36	29	41
Zinc	DETSC 2301#	1	mg/kg	67	72	44	62	100	75	100
<b>Inorganics</b>										
pH	DETSC 2008#		pH	8.2	8.3	11.0	8.3	8.0	7.8	9.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	< 0.1	0.4	< 0.1	0.3	< 0.1	3.0
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	0.6	< 0.6	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	2.2	2.2	0.1	1.4	1.9	2.1	2.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	98	47	330	110	230	110	250
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	< 0.75	5.3	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-06571

Client Ref

Contract Title Redcar

Lab No	1824058	1824059	1824060	1824061	1824062	1824063	1824064
Sample ID	PRA-AY-25-S5	PRA-AY-26-S2	PRA-AY-25-S4	PRA-AY-25-S2	PRA-AY-26-S7	PRA-AY-27-S6	PRA-AY-27-S7
Depth							
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units								
<b>PAHs</b>											
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	< 0.03	
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	< 0.03	
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 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	< 0.03	< 0.03	< 0.03	< 0.03	
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	< 0.03	< 0.03	
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
<b>PCBs</b>											
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg			< 0.01				< 0.01	
PCB 52	DETSC 3401#	0.01	mg/kg			< 0.01				< 0.01	
PCB 101	DETSC 3401#	0.01	mg/kg			< 0.01				< 0.01	
PCB 118	DETSC 3401#	0.01	mg/kg			< 0.01				< 0.01	
PCB 153	DETSC 3401#	0.01	mg/kg			< 0.01				< 0.01	
PCB 138	DETSC 3401#	0.01	mg/kg			< 0.01				< 0.01	
PCB 180	DETSC 3401#	0.01	mg/kg			< 0.01				< 0.01	
PCB 7 Total	DETSC 3401#	0.01	mg/kg			< 0.01				< 0.01	
<b>Phenols</b>											
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.4	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-06571

Client Ref

Contract Title Redcar

<b>Lab No</b>	1824065	1824066
<b>Sample ID</b>	PRA-AY-25-S6	PRA-AY-26-S3
<b>Depth</b>		
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	24/03/2021	24/03/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
<b>Metals</b>					
Arsenic	DETSC 2301#	0.2	mg/kg	7.7	8.6
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	< 0.2	0.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.2
Chromium	DETSC 2301#	0.15	mg/kg	25	29
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	26	29
Lead	DETSC 2301#	0.3	mg/kg	21	25
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	34	40
Vanadium	DETSC 2301#	0.8	mg/kg	28	32
Zinc	DETSC 2301#	1	mg/kg	72	91
<b>Inorganics</b>					
pH	DETSC 2008#		pH	8.0	8.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	0.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	2.7	4.7
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	130	170
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	210
<b>Petroleum Hydrocarbons</b>					
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	0.25
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	0.02
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	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-06571

Client Ref

Contract Title Redcar

<b>Lab No</b>	1824065	1824066
<b>Sample ID</b>	PRA-AY-25-S6	PRA-AY-26-S3
<b>Depth</b>		
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	24/03/2021	24/03/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
<b>PAHs</b>					
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.05
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	< 0.03	0.07
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	0.12
<b>PCBs</b>					
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg		
PCB 52	DETSC 3401#	0.01	mg/kg		
PCB 101	DETSC 3401#	0.01	mg/kg		
PCB 118	DETSC 3401#	0.01	mg/kg		
PCB 153	DETSC 3401#	0.01	mg/kg		
PCB 138	DETSC 3401#	0.01	mg/kg		
PCB 180	DETSC 3401#	0.01	mg/kg		
PCB 7 Total	DETSC 3401#	0.01	mg/kg		
<b>Phenols</b>					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-06571

Client Ref

Contract Title Redcar

Lab No	1824058	1824060	1824062	1824064	1824066
Sample ID	PRA-AY-25-S5	PRA-AY-25-S4	PRA-AY-26-S7	PRA-AY-27-S7	PRA-AY-26-S3
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

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

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-06571

Client Ref

Contract Title Redcar

Lab No	1824058	1824060	1824062	1824064	1824066
Sample ID	PRA-AY-25-S5	PRA-AY-25-S4	PRA-AY-26-S7	PRA-AY-27-S7	PRA-AY-26-S3
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

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



## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-06571

Client Ref

Contract Title Redcar

Lab No	1824058	1824060	1824062	1824064	1824066
Sample ID	PRA-AY-25-S5	PRA-AY-25-S4	PRA-AY-26-S7	PRA-AY-27-S7	PRA-AY-26-S3
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	24/03/2021	24/03/2021	24/03/2021	24/03/2021	24/03/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

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

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-06571

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1824058	PRA-AY-25-S5	SOIL	NAD	none	Jordan Farley
1824059	PRA-AY-26-S2	SOIL	NAD	none	Jordan Farley
1824060	PRA-AY-25-S4	SOIL	NAD	none	Jordan Farley
1824061	PRA-AY-25-S2	SOIL	NAD	none	Jordan Farley
1824062	PRA-AY-26-S7	SOIL	NAD	none	Jordan Farley
1824063	PRA-AY-27-S6	SOIL	NAD	none	Jordan Farley
1824064	PRA-AY-27-S7	SOIL	NAD	none	Jordan Farley
1824065	PRA-AY-25-S6	SOIL	NAD	none	Jordan Farley
1824066	PRA-AY-26-S3	SOIL	NAD	none	Jordan Farley

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 21-06571

Client Ref

Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1824058	PRA-AY-25-S5 SOIL	24/03/21	GJ 250ml, GJ 60ml, PT 1L		
1824059	PRA-AY-26-S2 SOIL	24/03/21	GJ 250ml, GJ 60ml, PT 1L		
1824060	PRA-AY-25-S4 SOIL	24/03/21	GJ 250ml, GJ 60ml, PT 1L		
1824061	PRA-AY-25-S2 SOIL	24/03/21	GJ 250ml, GJ 60ml, PT 1L		
1824062	PRA-AY-26-S7 SOIL	24/03/21	GJ 250ml, GJ 60ml, PT 1L		
1824063	PRA-AY-27-S6 SOIL	24/03/21	GJ 250ml, GJ 60ml, PT 1L		
1824064	PRA-AY-27-S7 SOIL	24/03/21	GJ 250ml, GJ 60ml, PT 1L		
1824065	PRA-AY-25-S6 SOIL	24/03/21	GJ 250ml, GJ 60ml, PT 1L		
1824066	PRA-AY-26-S3 SOIL	24/03/21	GJ 250ml, GJ 60ml, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-06888-1

*Issued:* 16-Apr-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-06888-1

*Client Reference* (not supplied)

*Order No* C1096/MA/0040

*Contract Title* (not supplied)

*Description* 12 Soil samples.

*Date Received* 01-Apr-21

*Date Started* 01-Apr-21

*Date Completed* 16-Apr-21

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

*Notes* **This report supersedes 21-06888, extra testing added.**

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



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-06888-1

Client Ref

Contract Title

Lab No	1826021	1826022	1826023	1826024	1826025	1826026			
	PRA-SP027-S1	PRA-SP027-S2	PRA-SP027-S3	PRA-SP027-S4	PRA-SP027-S5	PRA-SP027-S6			
<b>Sample ID</b>									
<b>Depth</b>									
<b>Other ID</b>									
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
<b>Sampling Date</b>	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021			
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s	n/s			
<b>Test</b>	<b>Method</b>	<b>LOD</b>	<b>Units</b>						
Asbestos Quantification	DETSC 1102	0.001	%		0.003	0.017	< 0.001	0.095	0.008
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	8.6	14	18	10	13	17
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.4	1.7	4.2	2.5	4.9	3.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.5	0.8	1.4	0.9	0.9
Chromium	DETSC 2301#	0.15	mg/kg	62	270	140	83	180	210
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	47	31	60	62	41	65
Lead	DETSC 2301#	0.3	mg/kg	45	48	110	110	80	120
Mercury	DETSC 2325#	0.05	mg/kg	0.32	0.70	1.1	2.4	1.4	1.6
Nickel	DETSC 2301#	1	mg/kg	30	15	20	13	14	20
Vanadium	DETSC 2301#	0.8	mg/kg	99	410	330	160	290	400
Zinc	DETSC 2301#	1	mg/kg	91	140	260	270	210	270
<b>Inorganics</b>									
pH	DETSC 2008#		pH	10.8	12.1	10.8	11.7	11.3	11.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	6.7	9.6	32	22	61	32
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	0.2	0.2	0.9	0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.0	1.3	2.8	2.4	3.5	2.6
Organic matter	DETSC 2002#	0.1	%	2.0	1.5	2.4	2.4	1.7	2.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	190	100	550	220	280	260
Sulphur (free)	DETSC 3049#	0.75	mg/kg	6.0	3.6	21	9.7	5.2	10
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	3.1	< 1.2	2.7	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	27	26	26	42	6.8	13
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	73	90	100	130	53	75
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	100	120	130	180	60	89
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	2.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	2.6	3.8	4.9	3.9	2.4	8.1
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	36	44	44	44	24	45
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	100	150	160	160	100	160
Aromatic C5-C35	DETSC 3072*	10	mg/kg	140	200	210	210	130	210
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	240	320	340	390	190	300



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-06888-1

Client Ref

Contract Title

Lab No	1826021	1826022	1826023	1826024	1826025	1826026
Sample ID	PRA-SP027-S1	PRA-SP027-S2	PRA-SP027-S3	PRA-SP027-S4	PRA-SP027-S5	PRA-SP027-S6
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.20	0.29	0.71	0.32	0.16	0.29
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.05	0.08	0.17	0.14	0.08	0.14
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.19	0.35	0.51	0.44	0.21	0.46
Fluorene	DETSC 3303	0.03	mg/kg	0.18	0.31	0.59	0.51	0.22	0.37
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.7	2.8	3.4	3.5	1.5	3.0
Anthracene	DETSC 3303	0.03	mg/kg	0.48	0.69	0.87	0.91	0.49	0.87
Fluoranthene	DETSC 3303#	0.03	mg/kg	3.1	4.9	5.6	7.2	3.3	6.8
Pyrene	DETSC 3303#	0.03	mg/kg	2.6	4.1	4.6	6.1	2.8	5.7
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	1.3	2.0	2.5	3.2	1.4	3.0
Chrysene	DETSC 3303	0.03	mg/kg	1.3	2.0	2.4	3.0	1.4	3.1
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	1.7	2.6	3.7	4.2	1.9	4.3
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.64	0.94	1.1	1.3	0.59	1.6
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.94	1.5	2.1	2.5	1.1	2.5
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.54	0.72	1.1	1.3	0.55	1.5
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.14	0.21	0.35	0.39	0.17	0.43
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.64	0.90	1.5	1.6	0.65	1.7
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	16	24	31	37	16	36
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-06888-1

Client Ref

Contract Title

Test	Method	LOD	Units	Lab No	1826027	1826028	1826029	1826030	1826031	1826032
				Sample ID	PRA-SP027-S7	PRA-SP027-S8	PRA-SP027-S9	PRA-SP027-S10	PRA-SP027-S11	PRA-SP027-S12
				Depth						
				Other ID						
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
				Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Asbestos Quantification	DETSC 1102	0.001	%		0.003	0.002	0.007	0.002	0.005	0.010
<b>Metals</b>										
Arsenic	DETSC 2301#	0.2	mg/kg		13	24	14	12	9.0	13
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg		3.4	2.7	3.0	2.1	2.4	2.0
Cadmium	DETSC 2301#	0.1	mg/kg		0.9	1.1	0.8	0.8	0.7	1.0
Chromium	DETSC 2301#	0.15	mg/kg		210	220	260	370	140	240
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		57	67	46	58	61	100
Lead	DETSC 2301#	0.3	mg/kg		110	120	91	100	76	120
Mercury	DETSC 2325#	0.05	mg/kg		2.0	1.9	1.3	1.3	0.75	1.7
Nickel	DETSC 2301#	1	mg/kg		16	26	15	16	17	20
Vanadium	DETSC 2301#	0.8	mg/kg		260	340	690	370	270	410
Zinc	DETSC 2301#	1	mg/kg		280	300	250	250	320	260
<b>Inorganics</b>										
pH	DETSC 2008#		pH		11.3	11.7	11.7	12.0	11.5	11.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg		37	25	83	30	21	22
Cyanide, Free	DETSC 2130#	0.1	mg/kg		0.3	0.3	0.2	0.2	0.1	0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg		3.2	4.4	3.2	2.9	3.0	4.7
Organic matter	DETSC 2002#	0.1	%		2.0	2.7	2.4	2.4	1.8	2.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l		270	230	200	140	220	110
Sulphur (free)	DETSC 3049#	0.75	mg/kg		7.8	8.0	7.4	5.3	9.0	8.5
<b>Petroleum Hydrocarbons</b>										
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		< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg		< 1.2	3.1	3.7	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg		14	33	47	7.9	16	29
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg		71	140	110	46	62	100
Aliphatic C5-C35	DETSC 3072*	10	mg/kg		85	170	160	53	78	130
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	1.5	5.1	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg		3.2	7.1	11	6.0	2.7	5.2
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg		30	43	110	30	36	42
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg		110	150	220	97	110	150
Aromatic C5-C35	DETSC 3072*	10	mg/kg		140	200	340	140	150	190
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg		220	370	500	190	230	330

## Summary of Chemical Analysis Soil Samples

Our Ref 21-06888-1

Client Ref

Contract Title

Lab No	1826027	1826028	1826029	1826030	1826031	1826032
Sample ID	PRA-SP027-S7	PRA-SP027-S8	PRA-SP027-S9	PRA-SP027-S10	PRA-SP027-S11	PRA-SP027-S12
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021	29/03/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.22	0.26	0.27	0.55	0.45	0.56
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.21	0.17	0.15	0.52	0.11	0.17
Acenaphthene	DETSC 3303#	0.03	mg/kg	1.1	0.42	0.50	1.0	0.37	0.64
Fluorene	DETSC 3303	0.03	mg/kg	0.98	0.43	0.56	2.2	0.38	1.4
Phenanthrene	DETSC 3303#	0.03	mg/kg	17	3.6	3.2	7.6	2.5	4.8
Anthracene	DETSC 3303	0.03	mg/kg	3.3	0.85	1.0	1.7	0.84	1.5
Fluoranthene	DETSC 3303#	0.03	mg/kg	29	7.2	5.4	7.9	5.7	8.3
Pyrene	DETSC 3303#	0.03	mg/kg	24	5.9	4.6	6.5	4.8	7.0
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	9.7	3.2	2.3	3.1	2.5	3.6
Chrysene	DETSC 3303	0.03	mg/kg	8.3	3.1	2.3	3.0	2.4	3.5
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	10	4.5	3.1	3.7	3.1	4.6
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	3.5	1.3	1.1	1.2	1.2	1.6
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	6.2	2.4	1.8	2.3	1.9	2.7
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	2.9	1.4	0.98	1.1	0.96	1.5
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.76	0.44	0.27	0.34	0.27	0.39
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	3.0	1.6	1.1	1.3	1.2	1.7
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	120	37	29	44	29	44
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-06888-1

Client Ref

Contract Title

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1826021	PRA-SP027-S1	SOIL	NAD	none	Darryl Fletcher
1826022	PRA-SP027-S2	SOIL	Chrysotile	Bundles of Chrysotile Fibres	Darryl Fletcher
1826023	PRA-SP027-S3	SOIL	Chrysotile	Bundles of Chrysotile Fibres	Darryl Fletcher
1826024	PRA-SP027-S4	SOIL	Chrysotile	Bundles of Chrysotile Fibres	Darryl Fletcher
1826025	PRA-SP027-S5	SOIL	Chrysotile	Chrysotile present in Visible Insulation debris & Bundles of Chrysotile	Darryl Fletcher
1826026	PRA-SP027-S6	SOIL	Chrysotile	Chrysotile present in microscopic Loose Fibrous Asbestos Debris.	Darryl Fletcher
1826027	PRA-SP027-S7	SOIL	Chrysotile	Bundles of Chrysotile Fibres	Darryl Fletcher
1826028	PRA-SP027-S8	SOIL	Chrysotile	Bundles of Chrysotile Fibres	Darryl Fletcher
1826029	PRA-SP027-S9	SOIL	Chrysotile	Bundles of Chrysotile Fibres	Darryl Fletcher
1826030	PRA-SP027-S10	SOIL	Chrysotile	Bundles of Chrysotile Fibres	Darryl Fletcher
1826031	PRA-SP027-S11	SOIL	Chrysotile	Bundles of Chrysotile Fibres	Darryl Fletcher
1826032	PRA-SP027-S12	SOIL	Chrysotile	Bundles of Chrysotile Fibres	Darryl Fletcher

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-06888-1

Client Ref

Contract Title

Lab No	1826022	1826023	1826024	1826025
Sample ID	PRA-SP027-S2	PRA-SP027-S3	PRA-SP027-S4	PRA-SP027-S5
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	29/03/2021	29/03/2021	29/03/2021	29/03/2021
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.003	0.017	< 0.001	0.095
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	0.084
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.003	0.017	<0.001	0.010
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1320.80	1164.92	1325.01	1277.79
ACMs present*		type				Insulation
Mass of ACM in sample		g				1.27
% ACM by mass		%				0.10
% asbestos in ACM		%				85
% asbestos in sample		%				0.084

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na	na	na
% Chrysotile bundles in sample		Mass %	0.003	0.017	<0.001	0.010

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample



# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 21-06888-1

Client Ref

Contract Title

Lab No	1826026	1826027	1826028	1826029
Sample ID	PRA-SP027-S6	PRA-SP027-S7	PRA-SP027-S8	PRA-SP027-S9
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	29/03/2021	29/03/2021	29/03/2021	29/03/2021
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.008	0.003	0.002	0.007
Gravimetric Quantification (a)	DETSC 1102	Mass %	0.008	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	na	0.003	0.002	0.007
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na

### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1176.85	983.48	1147.47	1250.76
ACMs present*		type	LFAD			
Mass of ACM in sample		g	0.11			
% ACM by mass		%	0.01			
% asbestos in ACM		%	85			
% asbestos in sample		%	0.008			

### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na	na	na
% Chrysotile bundles in sample		Mass %	na	0.003	0.002	0.007

### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na

### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 21-06888-1

Client Ref

Contract Title

Lab No	1826030	1826031	1826032
Sample ID	PRA-SP027-S10	PRA-SP027-S11	PRA-SP027-S12
Depth			
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	29/03/2021	29/03/2021	29/03/2021
Sampling Time			

Test	Method	Units			
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.002	0.005	0.010
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.002	0.005	0.010
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na

### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	975.58	1054.60	1261.94
ACMs present*		type			
Mass of ACM in sample		g			
% ACM by mass		%			
% asbestos in ACM		%			
% asbestos in sample		%			

### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na	na
% Chrysotile bundles in sample		Mass %	0.002	0.005	0.010

### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na

### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na
Chrysotile fibres		Fibres/g	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-06888-1  
 Client Ref  
 Contract

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1826021	PRA-SP027-S1 SOIL	29/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1826022	PRA-SP027-S2 SOIL	29/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1826023	PRA-SP027-S3 SOIL	29/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1826024	PRA-SP027-S4 SOIL	29/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1826025	PRA-SP027-S5 SOIL	29/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1826026	PRA-SP027-S6 SOIL	29/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1826027	PRA-SP027-S7 SOIL	29/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1826028	PRA-SP027-S8 SOIL	29/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1826029	PRA-SP027-S9 SOIL	29/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1826030	PRA-SP027-S10 SOIL	29/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1826031	PRA-SP027-S11 SOIL	29/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1826032	PRA-SP027-S12 SOIL	29/03/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-07047

*Issued:* 13-Apr-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-07047

*Client Reference* (not supplied)

*Order No* C1096/MA/0040

*Contract Title* Redcar Steelworks

*Description* 2 Soil samples.

*Date Received* 06-Apr-21

*Date Started* 06-Apr-21

*Date Completed* 13-Apr-21

*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



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## Summary of Chemical Analysis Soil Samples

Our Ref 21-07047

Client Ref

Contract Title Redcar Steelworks

Lab No	1827058	1827059
Sample ID	PRA-BC-23-S1	PRA-BC-23-S2
Depth	5.97	7.41
Other ID		
Sample Type	ES	ES
Sampling Date	30/03/2021	30/03/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
<b>Metals</b>					
Arsenic	DETSC 2301#	0.2	mg/kg	8.0	20
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.5	3.1
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.8
Chromium	DETSC 2301#	0.15	mg/kg	33	35
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	29	110
Lead	DETSC 2301#	0.3	mg/kg	21	180
Mercury	DETSC 2325#	0.05	mg/kg	0.05	2.4
Nickel	DETSC 2301#	1	mg/kg	41	28
Vanadium	DETSC 2301#	0.8	mg/kg	36	85
Zinc	DETSC 2301#	1	mg/kg	80	450
<b>Inorganics</b>					
pH	DETSC 2008#		pH	7.9	8.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	1.5
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	0.7
Organic matter	DETSC 2002#	0.1	%	2.3	2.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	70	260
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	5.8
<b>Petroleum Hydrocarbons</b>					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	0.17
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	0.17	0.17
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	22
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	35
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	59
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	0.13	0.08
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	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	59



## Summary of Chemical Analysis Soil Samples

Our Ref 21-07047

Client Ref

Contract Title Redcar Steelworks

Lab No	1827058	1827059
Sample ID	PRA-BC-23-S1	PRA-BC-23-S2
Depth	5.97	7.41
Other ID		
Sample Type	ES	ES
Sampling Date	30/03/2021	30/03/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
<b>PAHs</b>					
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.05
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	< 0.03	0.12
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.20
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.15
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.07
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	0.08
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.08
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04
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	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	0.84
<b>Phenols</b>					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-07047

*Client Ref*

*Contract Title* Redcar Steelworks

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1827058	PRA-BC-23-S1 5.97	SOIL	NAD	none	Keith Wilson
1827059	PRA-BC-23-S2 7.41	SOIL	NAD	none	Keith Wilson

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 21-07047

Client Ref

Contract Redcar Steelworks

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1827058	PRA-BC-23-S1 5.97 SOIL	30/03/21	GJ 250ml, GJ 60ml x2, PT 1L		
1827059	PRA-BC-23-S2 7.41 SOIL	30/03/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



## Certificate of Analysis

*Certificate Number* 21-07482

*Issued:* 20-Apr-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-07482

*Client Reference* (not supplied)

*Order No* C1096/MA/0040

*Contract Title* (not supplied)

*Description* 15 Soil samples.

*Date Received* 12-Apr-21

*Date Started* 12-Apr-21

*Date Completed* 20-Apr-21

*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*

A handwritten signature in black ink, appearing to read "A. Fenwick".

Adam Fenwick  
Contracts Manager





# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-07482

Client Ref

Contract Title

Lab No	1829825	1829826	1829827	1829828	1829829	1829830
Sample ID	PRA-SP022-S1	PRA-SP022-S2	PRA-SP022-S3	PRA-SP023-S1	PRA-SP023-S2	PRA-SP023-S3
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units	1829825	1829826	1829827	1829828	1829829	1829830
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	13	14	15	10	5.8	4.1
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.8	2.1	2.0	4.2	1.6	1.7
Cadmium	DETSC 2301#	0.1	mg/kg	1.3	0.6	0.8	0.7	0.5	0.2
Chromium	DETSC 2301#	0.15	mg/kg	52	46	50	63	32	27
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	52	56	87	37	28	18
Lead	DETSC 2301#	0.3	mg/kg	95	95	95	76	23	18
Mercury	DETSC 2325#	0.05	mg/kg	0.75	< 0.05	< 0.05	0.75	1.3	< 0.05
Nickel	DETSC 2301#	1	mg/kg	27	30	30	11	9.7	5.1
Vanadium	DETSC 2301#	0.8	mg/kg	85	75	100	180	66	63
Zinc	DETSC 2301#	1	mg/kg	360	170	180	170	85	48
<b>Inorganics</b>									
pH	DETSC 2008#		pH	9.8	9.2	9.4	9.8	11.4	11.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	7.0	6.1	6.7	18	5.7	3.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.2	0.3	0.2	0.2	< 0.1	0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	1.3	1.4	< 0.6
Organic matter	DETSC 2002#	0.1	%	2.2	1.9	2.2	0.8	0.5	1.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1800	320	530	790	670	460
Sulphur (free)	DETSC 3049#	0.75	mg/kg	120	31	74	8.5	25	28
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	1.2	< 1.2	< 1.2	1.8	1.3
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	11	< 1.5	< 1.5	21	14
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	33	< 3.4	< 3.4	98	52
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	45	< 10	< 10	120	68
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	2.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	3.0	< 0.5	< 0.5	3.3	6.4
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	27	< 0.6	< 0.6	23	17
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	78	< 1.4	< 1.4	96	76
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	110	< 10	< 10	120	100
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	150	< 10	< 10	240	170
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.14	0.16	0.07	0.09	0.13	0.11
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.03	0.05	0.04
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.18	0.16	0.14	0.07	0.10	0.10
Fluorene	DETSC 3303	0.03	mg/kg	0.18	0.13	0.12	0.07	0.14	0.09





# Summary of Chemical Analysis Soil Samples

Our Ref 21-07482

Client Ref

Contract Title

<b>Lab No</b>	1829825	1829826	1829827	1829828	1829829	1829830
<b>Sample ID</b>	PRA-SP022-S1	PRA-SP022-S2	PRA-SP022-S3	PRA-SP023-S1	PRA-SP023-S2	PRA-SP023-S3
<b>Depth</b>						
<b>Other ID</b>						
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.96	0.82	1.3	0.71	1.4	1.1
Anthracene	DETSC 3303	0.03	mg/kg	0.17	0.21	0.31	0.15	0.37	0.25
Fluoranthene	DETSC 3303#	0.03	mg/kg	3.3	2.0	4.0	2.0	4.1	3.3
Pyrene	DETSC 3303#	0.03	mg/kg	2.3	1.6	2.8	1.6	3.6	3.0
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	1.0	0.87	1.5	1.1	2.3	1.9
Chrysene	DETSC 3303	0.03	mg/kg	0.92	0.86	1.2	0.93	1.6	1.3
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	1.0	1.2	1.7	1.3	2.4	2.0
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.41	0.47	0.64	0.59	1.0	0.74
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.59	0.68	0.89	0.71	1.4	1.1
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.37	0.43	0.53	0.40	0.81	0.62
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.10	0.11	0.16	0.14	0.22	0.16
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.42	0.50	0.58	0.52	0.86	0.66
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	12	10	16	10	20	16
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-07482

Client Ref

Contract Title

Lab No	1829831	1829832	1829833	1829834	1829835	1829836
Sample ID	PRA-SP023-S4	PRA-SP023-S5	PRA-SP023-S6	PRA-SP029-S1	PRA-SP029-S2	PRA-SP029-S3
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	8.2	6.8	14	21	17	15
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.8	2.5	2.8	4.6	3.3	4.0
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.4	1.0	1.0	1.3	0.9
Chromium	DETSC 2301#	0.15	mg/kg	37	140	110	91	190	150
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	24	29	45	53	63	49
Lead	DETSC 2301#	0.3	mg/kg	20	39	77	120	150	110
Mercury	DETSC 2325#	0.05	mg/kg	0.37	0.52	< 0.05	2.3	2.0	1.6
Nickel	DETSC 2301#	1	mg/kg	10	9.7	14	18	18	16
Vanadium	DETSC 2301#	0.8	mg/kg	92	220	210	180	270	290
Zinc	DETSC 2301#	1	mg/kg	63	120	200	330	280	220
<b>Inorganics</b>									
pH	DETSC 2008#		pH	11.9	11.0	11.0	10.4	11.4	10.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	3.6	11	34	61	34	15
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	0.2	0.3	0.8	0.4	0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.8	1.0	1.3	2.1	2.0	0.9
Organic matter	DETSC 2002#	0.1	%	1.0	1.0	1.9	2.6	2.0	0.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	320	580	680	370	270	230
Sulphur (free)	DETSC 3049#	0.75	mg/kg	47	18	63	2.0	1.7	5.6
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	1.8	1.8	1.5	6.9	3.7	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	11	15	23	19	16	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	40	100	99	42	40	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	53	120	120	68	60	< 10
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	2.4	2.2	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	4.3	6.9	7.3	< 0.5	< 0.5	2.1
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	19	49	30	11	< 0.6	17
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	61	120	120	32	< 1.4	37
Aromatic C5-C35	DETSC 3072*	10	mg/kg	85	180	150	42	< 10	57
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	140	300	280	110	60	57
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.18	0.08	0.42	0.17	0.17	0.18
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.12	0.03	0.14	0.04	0.03	0.06
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.47	0.06	0.40	0.29	0.28	0.29
Fluorene	DETSC 3303	0.03	mg/kg	0.27	0.06	0.34	0.30	0.26	0.32



# Summary of Chemical Analysis Soil Samples

Our Ref 21-07482  
Client Ref  
Contract Title

Lab No	1829831	1829832	1829833	1829834	1829835	1829836
Sample ID	PRA-SP023-S4	PRA-SP023-S5	PRA-SP023-S6	PRA-SP029-S1	PRA-SP029-S2	PRA-SP029-S3
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021	08/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.5	0.57	2.4	1.7	2.2	2.7
Anthracene	DETSC 3303	0.03	mg/kg	0.26	0.13	0.63	0.40	0.41	0.55
Fluoranthene	DETSC 3303#	0.03	mg/kg	3.7	1.5	6.4	3.5	3.6	6.0
Pyrene	DETSC 3303#	0.03	mg/kg	3.3	1.2	5.5	3.0	3.0	5.0
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	2.0	0.66	3.1	1.2	1.2	2.3
Chrysene	DETSC 3303	0.03	mg/kg	1.6	0.66	2.3	1.0	1.2	1.8
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	2.6	0.92	3.0	0.99	1.0	2.1
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.96	0.34	1.3	0.39	0.47	0.84
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	1.7	0.50	2.0	0.50	0.55	1.2
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.88	0.32	1.1	0.26	0.30	0.62
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.25	0.09	0.26	0.07	0.08	0.19
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.96	0.35	1.1	0.29	0.33	0.74
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	21	7.5	30	14	15	25
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-07482

Client Ref

Contract Title

Lab No	1829837	1829838	1829839
Sample ID	PRA-SP029-S4	PRA-SP029-S5	PRA-BC-21-S1
Depth			5.90
Other ID			BASE
Sample Type	SOIL	SOIL	SOIL
Sampling Date	08/04/2021	08/04/2021	06/04/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>Metals</b>						
Arsenic	DETSC 2301#	0.2	mg/kg	21	20	6.3
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.7	2.7	0.9
Cadmium	DETSC 2301#	0.1	mg/kg	0.7	1.0	0.3
Chromium	DETSC 2301#	0.15	mg/kg	160	67	21
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	74	68	27
Lead	DETSC 2301#	0.3	mg/kg	210	130	28
Mercury	DETSC 2325#	0.05	mg/kg	1.2	1.9	0.98
Nickel	DETSC 2301#	1	mg/kg	23	25	17
Vanadium	DETSC 2301#	0.8	mg/kg	310	160	28
Zinc	DETSC 2301#	1	mg/kg	200	290	71
<b>Inorganics</b>						
pH	DETSC 2008#		pH	10.9	11.2	7.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	16	31	0.6
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.2	0.2	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.2	0.9	< 0.6
Organic matter	DETSC 2002#	0.1	%	2.2	1.3	1.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	490	370	83
Sulphur (free)	DETSC 3049#	0.75	mg/kg	57	100	< 0.75
<b>Petroleum Hydrocarbons</b>						
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	9.1	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	51	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	230	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	290	< 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	2.1	12	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	21	35	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	34	160	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	56	210	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	56	500	< 10
<b>PAHs</b>						
Naphthalene	DETSC 3303#	0.03	mg/kg	0.09	0.14	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.04	0.07	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.12	0.28	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.14	0.34	< 0.03

## Summary of Chemical Analysis Soil Samples

Our Ref 21-07482

Client Ref

Contract Title

Lab No	1829837	1829838	1829839
Sample ID	PRA-SP029-S4	PRA-SP029-S5	PRA-BC-21-S1
Depth			5.90
Other ID			BASE
Sample Type	SOIL	SOIL	SOIL
Sampling Date	08/04/2021	08/04/2021	06/04/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.61	1.7	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	0.18	0.42	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.4	2.7	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	1.2	2.1	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.69	1.1	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.62	1.2	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.82	1.4	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.32	0.57	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.45	0.85	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.31	0.51	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.08	0.17	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.33	0.60	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	7.5	14	< 0.10
<b>Phenols</b>						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3



## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-07482

Client Ref

Contract Title

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1829825	PRA-SP022-S1	SOIL	Chrysotile	Bundle of Chrysotile fibres	Keith Wilson
1829826	PRA-SP022-S2	SOIL	Chrysotile	Bundles of Chrysotile fibres	Keith Wilson
1829827	PRA-SP022-S3	SOIL	NAD	none	Keith Wilson
1829828	PRA-SP023-S1	SOIL	NAD	none	Keith Wilson
1829829	PRA-SP023-S2	SOIL	NAD	none	Keith Wilson
1829830	PRA-SP023-S3	SOIL	NAD	none	Keith Wilson
1829831	PRA-SP023-S4	SOIL	Chrysotile	Bundle of Chrysotile fibres	Keith Wilson
1829832	PRA-SP023-S5	SOIL	NAD	none	Keith Wilson
1829833	PRA-SP023-S6	SOIL	NAD	none	Keith Wilson
1829834	PRA-SP029-S1	SOIL	Amosite	Bundles of Amosite fibres	Keith Wilson
1829835	PRA-SP029-S2	SOIL	Chrysotile	Bundle of Chrysotile fibres	Keith Wilson
1829836	PRA-SP029-S3	SOIL	Chrysotile	Bundle of Chrysotile fibres	Keith Wilson
1829837	PRA-SP029-S4	SOIL	Chrysotile	Bundle of Chrysotile fibres	Keith Wilson
1829838	PRA-SP029-S5	SOIL	Chrysotile	Bundles of Chrysotile fibres	Keith Wilson
1829839	PRA-BC-21-S1 BASE 5.90	SOIL	NAD	none	Keith Wilson

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 21-07482  
 Client Ref  
 Contract

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
1829825	PRA-SP022-S1 SOIL	08/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1829826	PRA-SP022-S2 SOIL	08/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1829827	PRA-SP022-S3 SOIL	08/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1829828	PRA-SP023-S1 SOIL	08/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1829829	PRA-SP023-S2 SOIL	08/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1829830	PRA-SP023-S3 SOIL	08/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1829831	PRA-SP023-S4 SOIL	08/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1829832	PRA-SP023-S5 SOIL	08/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1829833	PRA-SP023-S6 SOIL	08/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1829834	PRA-SP029-S1 SOIL	08/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1829835	PRA-SP029-S2 SOIL	08/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1829836	PRA-SP029-S3 SOIL	08/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1829837	PRA-SP029-S4 SOIL	08/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1829838	PRA-SP029-S5 SOIL	08/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1829839	PRA-BC-21-S1 5.90 SOIL	06/04/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



## Certificate of Analysis

*Certificate Number* 21-07965

*Issued:* 22-Apr-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-07965

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 6 Soil samples.

*Date Received* 16-Apr-21

*Date Started* 16-Apr-21

*Date Completed* 22-Apr-21

*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*

A handwritten signature in black ink, appearing to read 'A Fenwick'.

Adam Fenwick  
Contracts Manager



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-07965

Client Ref

Contract Title Redcar

Lab No	1833166	1833167	1833168	1833169	1833170	1833171
Sample ID	PRA-AZ-20-S1	PRA-AZ-20-S2	PRA-AZ-20-S3	PRA-BA-20-S1	PRA-BB-21-S2	PRA-BC-25-S3
Depth	1.46	1.80	1.80	1.80	5.80	6.85
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units	1833166	1833167	1833168	1833169	1833170	1833171
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	8.2	5.4	5.3	8.4	8.3	8.3
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.4	0.9	1.1	1.2	1.1	1.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	< 0.1	< 0.1	0.2	0.1	0.2
Chromium	DETSC 2301#	0.15	mg/kg	29	25	25	31	29	29
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	34	34	19	34	24	30
Lead	DETSC 2301#	0.3	mg/kg	24	11	10	22	30	27
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	38	29	28	40	27	37
Vanadium	DETSC 2301#	0.8	mg/kg	33	30	30	35	35	33
Zinc	DETSC 2301#	1	mg/kg	77	45	45	70	78	70
<b>Inorganics</b>									
pH	DETSC 2008#		pH	8.2	8.4	8.4	8.3	7.5	7.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2
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	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	3.5	1.1	1.5	3.2	1.7	1.7
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	97	59	56	71	130	76
Sulphur (free)	DETSC 3049#	0.75	mg/kg	56	3.1	< 0.75	< 0.75	1.3	< 0.75
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
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	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
<b>PAHs</b>									
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



# Summary of Chemical Analysis Soil Samples

Our Ref 21-07965

Client Ref

Contract Title Redcar

Lab No	1833166	1833167	1833168	1833169	1833170	1833171
Sample ID	PRA-AZ-20-S1	PRA-AZ-20-S2	PRA-AZ-20-S3	PRA-BA-20-S1	PRA-BB-21-S2	PRA-BC-25-S3
Depth	1.46	1.80	1.80	1.80	5.80	6.85
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
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	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 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	< 0.03	< 0.03	< 0.03
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	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
<b>PCBs</b>									
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					
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3





# Summary of Chemical Analysis Soil Samples

Our Ref 21-07965  
Client Ref  
Contract Title Redcar

Lab No	1833166	1833167	1833168	1833169	1833170	1833171
Sample ID	PRA-AZ-20-S1	PRA-AZ-20-S2	PRA-AZ-20-S3	PRA-BA-20-S1	PRA-BB-21-S2	PRA-BC-25-S3
Depth	1.46	1.80	1.80	1.80	5.80	6.85
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>VOCs</b>									
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	
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	



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-07965

Client Ref

Contract Title Redcar

Lab No	1833166	1833167	1833168	1833169	1833170	1833171
Sample ID	PRA-AZ-20-S1	PRA-AZ-20-S2	PRA-AZ-20-S3	PRA-BA-20-S1	PRA-BB-21-S2	PRA-BC-25-S3
Depth	1.46	1.80	1.80	1.80	5.80	6.85
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
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
<b>SVOCs</b>								
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	
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg		< 0.1		< 0.1	

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-07965  
 Client Ref  
 Contract Title Redcar

Lab No	1833166	1833167	1833168	1833169	1833170	1833171
Sample ID	PRA-AZ-20-S1	PRA-AZ-20-S2	PRA-AZ-20-S3	PRA-BA-20-S1	PRA-BB-21-S2	PRA-BC-25-S3
Depth	1.46	1.80	1.80	1.80	5.80	6.85
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021	12/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
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	

## Summary of Asbestos Analysis Soil Samples

Our Ref 21-07965

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1833166	PRA-AZ-20-S1 1.46	SOIL	NAD	none	Keith Wilson
1833167	PRA-AZ-20-S2 1.80	SOIL	NAD	none	Keith Wilson
1833168	PRA-AZ-20-S3 1.80	SOIL	NAD	none	Keith Wilson
1833169	PRA-BA-20-S1 1.80	SOIL	NAD	none	Keith Wilson
1833170	PRA-BB-21-S2 5.80	SOIL	NAD	none	Keith Wilson
1833171	PRA-BC-25-S3 6.85	SOIL	NAD	none	Keith Wilson

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 21-07965  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
1833166	PRA-AZ-20-S1 1.46 SOIL	12/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1833167	PRA-AZ-20-S2 1.80 SOIL	12/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1833168	PRA-AZ-20-S3 1.80 SOIL	12/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1833169	PRA-BA-20-S1 1.80 SOIL	12/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1833170	PRA-BB-21-S2 5.80 SOIL	12/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1833171	PRA-BC-25-S3 6.85 SOIL	12/04/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report





## Certificate of Analysis

*Certificate Number* 21-08116

*Issued:* 26-Apr-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-08116

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 9 Soil samples.

*Date Received* 19-Apr-21

*Date Started* 19-Apr-21

*Date Completed* 26-Apr-21

*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*

A handwritten signature in black ink, appearing to read "A. Fenwick".

Adam Fenwick  
Contracts Manager



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-08116

Client Ref

Contract Title Redcar

Lab No	1834112	1834113	1834114	1834115	1834116	1834117
Sample ID	PRA-SP013-S11	PRA-SP013-S12	PRA-SP013-S13	PRA-SP013-S14	PRA-SP013-S15	PRA-BM-21-S1
Depth						7.30
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	15/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021	14/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	7.4	7.8	7.9	10	6.9	6.6
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.6	1.5	1.7	2.5	1.4	0.8
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	0.3	0.3	0.4	0.2	0.2
Chromium	DETSC 2301#	0.15	mg/kg	80	46	72	97	37	22
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	48	34	29	37	34	23
Lead	DETSC 2301#	0.3	mg/kg	54	54	38	43	28	23
Mercury	DETSC 2325#	0.05	mg/kg	0.22	0.15	0.16	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	12	10	9.9	13	13	29
Vanadium	DETSC 2301#	0.8	mg/kg	180	110	210	200	90	25
Zinc	DETSC 2301#	1	mg/kg	130	110	110	120	67	68
<b>Inorganics</b>									
pH	DETSC 2008#		pH	12.0	12.1	11.9	11.8	12.0	9.4
Cyanide, Total	DETSC 2130#	0.1	mg/kg	5.2	5.0	4.6	6.1	4.6	0.3
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.1	0.1	0.2	0.2	0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.6	1.1	0.8	1.9	0.8	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.0	0.9	0.8	0.9	2.1	2.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	260	340	400	410	240	260
Sulphur (free)	DETSC 3049#	0.75	mg/kg	7.4	15	14	8.8	9.2	< 0.75
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	5.5	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	12	30	19	11	16	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	65	120	77	49	91	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	77	160	97	60	110	< 10
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	2.2	5.9	3.0	5.7	2.2	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	22	63	31	55	28	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	110	200	140	230	120	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	130	260	170	290	150	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	210	420	270	350	250	< 10
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.13	0.21	0.17	0.22	0.18	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.03	0.03	0.04	0.04	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.10	0.14	0.12	0.16	0.15	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.08	0.11	0.09	0.12	0.10	< 0.03

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-08116

Client Ref

Contract Title Redcar

<b>Lab No</b>	1834112	1834113	1834114	1834115	1834116	1834117
<b>Sample ID</b>	PRA-SP013-S11	PRA-SP013-S12	PRA-SP013-S13	PRA-SP013-S14	PRA-SP013-S15	PRA-BM-21-S1
<b>Depth</b>						7.30
<b>Other ID</b>						
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	15/04/2021	13/04/2021	13/04/2021	13/04/2021	13/04/2021	14/04/2021
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.76	0.97	0.93	1.2	1.5	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	0.17	0.23	0.23	0.28	0.34	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	2.2	2.8	2.8	3.3	4.6	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	1.9	2.4	2.5	3.0	3.8	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.86	1.2	1.2	1.4	1.6	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.85	1.1	1.2	1.3	1.5	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	1.0	1.4	1.4	1.6	1.7	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.37	0.52	0.51	0.59	0.62	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.59	0.83	0.84	0.95	0.99	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.34	0.48	0.48	0.54	0.54	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.09	0.15	0.13	0.16	0.15	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.40	0.58	0.57	0.63	0.61	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	9.9	13	13	16	18	< 0.10
<b>PCBs</b>									
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
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-08116

Client Ref

Contract Title Redcar

Lab No	1834118	1834119	1834120
Sample ID	PRA-BA-18-S1	PRA-AY-22-S1	PRA-AY-20-S1
Depth	4.87	2.78	6.00
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	14/04/2021	15/04/2021	15/04/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>Metals</b>						
Arsenic	DETSC 2301#	0.2	mg/kg	5.9	7.4	4.3
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.8	0.7	0.6
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	< 0.1	0.2
Chromium	DETSC 2301#	0.15	mg/kg	16	28	12
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	22	26	17
Lead	DETSC 2301#	0.3	mg/kg	22	19	19
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	19	34	18
Vanadium	DETSC 2301#	0.8	mg/kg	24	33	15
Zinc	DETSC 2301#	1	mg/kg	80	62	64
<b>Inorganics</b>						
pH	DETSC 2008#		pH	10.7	9.2	8.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.5	8.6	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	%	1.0	1.8	0.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	160	410	89
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>						
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 C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
<b>PAHs</b>						
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

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-08116

Client Ref

Contract Title Redcar

<b>Lab No</b>	1834118	1834119	1834120
<b>Sample ID</b>	PRA-BA-18-S1	PRA-AY-22-S1	PRA-AY-20-S1
<b>Depth</b>	4.87	2.78	6.00
<b>Other ID</b>			
<b>Sample Type</b>	SOIL	SOIL	SOIL
<b>Sampling Date</b>	14/04/2021	15/04/2021	15/04/2021
<b>Sampling Time</b>	n/s	n/s	n/s

Test	Method	LOD	Units			
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 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	< 0.10	< 0.10	< 0.10
<b>PCBs</b>						
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg			
PCB 52	DETSC 3401#	0.01	mg/kg			
PCB 101	DETSC 3401#	0.01	mg/kg			
PCB 118	DETSC 3401#	0.01	mg/kg			
PCB 153	DETSC 3401#	0.01	mg/kg			
PCB 138	DETSC 3401#	0.01	mg/kg			
PCB 180	DETSC 3401#	0.01	mg/kg			
PCB 7 Total	DETSC 3401#	0.01	mg/kg			
<b>Phenols</b>						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3



# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-08116

Client Ref

Contract Title Redcar

Lab No	1834117	1834118	1834119	1834120
Sample ID	PRA-BM-21-S1	PRA-BA-18-S1	PRA-AY-22-S1	PRA-AY-20-S1
Depth	7.30	4.87	2.78	6.00
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	14/04/2021	14/04/2021	15/04/2021	15/04/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
<b>VOCs</b>							
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		
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		

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-08116

Client Ref

Contract Title Redcar

Lab No	1834117	1834118	1834119	1834120
Sample ID	PRA-BM-21-S1	PRA-BA-18-S1	PRA-AY-22-S1	PRA-AY-20-S1
Depth	7.30	4.87	2.78	6.00
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	14/04/2021	14/04/2021	15/04/2021	15/04/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
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		
<b>SVOCs</b>							
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	
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	

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-08116

Client Ref

Contract Title Redcar

Lab No	1834117	1834118	1834119	1834120
Sample ID	PRA-BM-21-S1	PRA-BA-18-S1	PRA-AY-22-S1	PRA-AY-20-S1
Depth	7.30	4.87	2.78	6.00
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	14/04/2021	14/04/2021	15/04/2021	15/04/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
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

## Summary of Asbestos Analysis Soil Samples

Our Ref 21-08116

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1834112	PRA-SP013-S11	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1834113	PRA-SP013-S12	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1834114	PRA-SP013-S13	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1834115	PRA-SP013-S14	SOIL	Chrysotile	Chrysotile present in microscopic loose fibrous asbestos debris	D Wilkinson
1834116	PRA-SP013-S15	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1834117	PRA-BM-21-S1 7.30	SOIL	NAD	none	D Wilkinson
1834118	PRA-BA-18-S1 4.87	SOIL	NAD	none	D Wilkinson
1834119	PRA-AY-22-S1 2.78	SOIL	NAD	none	D Wilkinson
1834120	PRA-AY-20-S1 6.00	SOIL	NAD	none	D Wilkinson

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 21-08116

Client Ref

Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
1834112	PRA-SP013-S11 SOIL	15/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1834113	PRA-SP013-S12 SOIL	13/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1834114	PRA-SP013-S13 SOIL	13/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1834115	PRA-SP013-S14 SOIL	13/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1834116	PRA-SP013-S15 SOIL	13/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1834117	PRA-BM-21-S1 7.30 SOIL	14/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1834118	PRA-BA-18-S1 4.87 SOIL	14/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1834119	PRA-AY-22-S1 2.78 SOIL	15/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1834120	PRA-AY-20-S1 6.00 SOIL	15/04/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report





# DETS

## Certificate of Analysis

*Certificate Number* 21-08228

*Issued:* 27-Apr-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-08228

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 12 Soil samples.

*Date Received* 21-Apr-21

*Date Started* 21-Apr-21

*Date Completed* 27-Apr-21

*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



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-08228

Client Ref

Contract Title Redcar

Lab No	1834868	1834869	1834870	1834871	1834872
Sample ID	PRA-AZ-23-S1	PRA-AZ-22-S2	PRA-AY-23-S2	PRA-AZ-21-S2	PRA-AZ-21-S3
Depth	3.33	1.21	3.42	1.76	1.21
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	17/04/2021	17/04/2021	17/04/2021	17/04/2021	17/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	7.5	11	8.6	6.4	9.8
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.8	2.0	1.0	1.5	1.6
Cadmium	DETSC 2301#	0.1	mg/kg	0.1	0.3	0.2	0.1	0.2
Chromium	DETSC 2301#	0.15	mg/kg	23	27	26	19	20
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	23	27	32	21	25
Lead	DETSC 2301#	0.3	mg/kg	19	31	21	14	22
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	29	30	35	23	23
Vanadium	DETSC 2301#	0.8	mg/kg	40	31	31	27	28
Zinc	DETSC 2301#	1	mg/kg	59	66	69	47	52
<b>Inorganics</b>								
pH	DETSC 2008#		pH	8.3	8.7	8.3	8.3	8.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.7	1.8	3.5	1.7	1.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	150	130	320	88	94
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-08228

Client Ref

Contract Title Redcar

Lab No	1834868	1834869	1834870	1834871	1834872
Sample ID	PRA-AZ-23-S1	PRA-AZ-22-S2	PRA-AY-23-S2	PRA-AZ-21-S2	PRA-AZ-21-S3
Depth	3.33	1.21	3.42	1.76	1.21
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	17/04/2021	17/04/2021	17/04/2021	17/04/2021	17/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	< 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
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 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
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 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	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 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
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
<b>PCBs</b>								
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	
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-08228

Client Ref

Contract Title Redcar

Lab No	1834873	1834874	1834875	1834876	1834877
Sample ID	PRA-AZ-22-S3	PRA-SP013-S16	PRA-SP013-S17	PRA-SP013-S18	PRA-SP013-S19
Depth	1.30				
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	17/04/2021	19/04/2021	19/04/2021	19/04/2021	19/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	7.1	8.2	14	14	16
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.6	1.8	3.1	2.6	2.1
Cadmium	DETSC 2301#	0.1	mg/kg	0.1	15	0.6	0.8	0.5
Chromium	DETSC 2301#	0.15	mg/kg	19	91	180	110	190
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	22	31	37	66	55
Lead	DETSC 2301#	0.3	mg/kg	14	29	63	110	52
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.40	0.33	0.39	0.23
Nickel	DETSC 2301#	1	mg/kg	24	9.2	14	18	16
Vanadium	DETSC 2301#	0.8	mg/kg	29	210	320	510	410
Zinc	DETSC 2301#	1	mg/kg	44	86	130	190	100
<b>Inorganics</b>								
pH	DETSC 2008#		pH	8.3	11.9	11.6	11.4	11.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	3.5	4.2	6.7	3.9
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	1.7	0.7	1.6	1.9
Organic matter	DETSC 2002#	0.1	%	1.9	1.3	2.5	1.2	1.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	77	270	290	460	260
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	65	28	4.2	42
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	1.8	< 1.2	< 1.2	8.5
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	15	2.3	15	46
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	55	93	150	240
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	72	95	160	290
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	2.0	< 0.5	4.8
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	72	11	49
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	300	35	180
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	370	47	230
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	72	470	210	530



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-08228

Client Ref

Contract Title Redcar

Lab No	1834873	1834874	1834875	1834876	1834877
Sample ID	PRA-AZ-22-S3	PRA-SP013-S16	PRA-SP013-S17	PRA-SP013-S18	PRA-SP013-S19
Depth	1.30				
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	17/04/2021	19/04/2021	19/04/2021	19/04/2021	19/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.22	0.12	0.10	0.25
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.08	0.04	0.06
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.17	0.30	0.07	0.19
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.14	0.25	0.05	0.18
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.88	4.9	0.40	1.6
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.19	0.97	0.11	0.37
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	2.2	14	1.9	5.3
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	1.9	13	2.0	4.9
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	1.1	8.5	1.5	3.2
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	0.72	6.2	0.86	1.8
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	1.1	10	1.8	3.3
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.45	3.6	0.67	1.4
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.69	7.6	1.0	2.4
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.37	2.8	0.51	0.97
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.09	0.64	0.11	0.20
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.38	3.0	0.57	1.0
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	11	76	12	27
<b>PCBs</b>								
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg					
PCB 52	DETSC 3401#	0.01	mg/kg					
PCB 101	DETSC 3401#	0.01	mg/kg					
PCB 118	DETSC 3401#	0.01	mg/kg					
PCB 153	DETSC 3401#	0.01	mg/kg					
PCB 138	DETSC 3401#	0.01	mg/kg					
PCB 180	DETSC 3401#	0.01	mg/kg					
PCB 7 Total	DETSC 3401#	0.01	mg/kg					
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-08228

Client Ref

Contract Title Redcar

<b>Lab No</b>	1834878	1834879
<b>Sample ID</b>	PRA-AZ-19-S1	PRA-AY-19-S2
<b>Depth</b>	5.00	5.00
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	17/04/2021	19/04/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
<b>Metals</b>					
Arsenic	DETSC 2301#	0.2	mg/kg	8.8	8.3
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.4	1.0
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.3
Chromium	DETSC 2301#	0.15	mg/kg	28	25
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	32	28
Lead	DETSC 2301#	0.3	mg/kg	28	31
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	34	33
Vanadium	DETSC 2301#	0.8	mg/kg	41	36
Zinc	DETSC 2301#	1	mg/kg	79	99
<b>Inorganics</b>					
pH	DETSC 2008#		pH	9.3	9.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	0.3
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	3.0	2.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	140	160
Sulphur (free)	DETSC 3049#	0.75	mg/kg	0.77	< 0.75
<b>Petroleum Hydrocarbons</b>					
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	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-08228

Client Ref

Contract Title Redcar

Lab No	1834878	1834879
Sample ID	PRA-AZ-19-S1	PRA-AY-19-S2
Depth	5.00	5.00
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	17/04/2021	19/04/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
<b>PAHs</b>					
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	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10
<b>PCBs</b>					
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
<b>Phenols</b>					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-08228

Client Ref

Contract Title Redcar

Lab No	1834869	1834871	1834872
Sample ID	PRA-AZ-22-S2	PRA-AZ-21-S2	PRA-AZ-21-S3
Depth	1.21	1.76	1.21
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	17/04/2021	17/04/2021	17/04/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>VOCs</b>						
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

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-08228

Client Ref

Contract Title Redcar

Lab No	1834869	1834871	1834872
Sample ID	PRA-AZ-22-S2	PRA-AZ-21-S2	PRA-AZ-21-S3
Depth	1.21	1.76	1.21
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	17/04/2021	17/04/2021	17/04/2021
Sampling Time	n/s	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
<b>SVOCs</b>						
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	

## Summary of Chemical Analysis

### Soil VOC/SVOC Samples

Our Ref 21-08228

Client Ref

Contract Title Redcar

<b>Lab No</b>	1834869	1834871	1834872
<b>Sample ID</b>	PRA-AZ-22-S2	PRA-AZ-21-S2	PRA-AZ-21-S3
<b>Depth</b>	1.21	1.76	1.21
<b>Other ID</b>			
<b>Sample Type</b>	SOIL	SOIL	SOIL
<b>Sampling Date</b>	17/04/2021	17/04/2021	17/04/2021
<b>Sampling Time</b>	n/s	n/s	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	



# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-08228

Client Ref

Contract Title Redcar

Lab No	1834873	1834878	1834879
Sample ID	PRA-AZ-22-S3	PRA-AZ-19-S1	PRA-AY-19-S2
Depth	1.30	5.00	5.00
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	17/04/2021	17/04/2021	19/04/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>VOCs</b>						
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	

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-08228

Client Ref

Contract Title Redcar

Lab No	1834873	1834878	1834879
Sample ID	PRA-AZ-22-S3	PRA-AZ-19-S1	PRA-AY-19-S2
Depth	1.30	5.00	5.00
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	17/04/2021	17/04/2021	19/04/2021
Sampling Time	n/s	n/s	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	
<b>SVOCs</b>						
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

## Summary of Chemical Analysis

### Soil VOC/SVOC Samples

Our Ref 21-08228

Client Ref

Contract Title Redcar

Lab No	1834873	1834878	1834879
Sample ID	PRA-AZ-22-S3	PRA-AZ-19-S1	PRA-AY-19-S2
Depth	1.30	5.00	5.00
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	17/04/2021	17/04/2021	19/04/2021
Sampling Time	n/s	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

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-08228

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1834868	PRA-AZ-23-S1 3.33	SOIL	NAD	none	Darryl Fletcher
1834869	PRA-AZ-22-S2 1.21	SOIL	NAD	none	Darryl Fletcher
1834870	PRA-AY-23-S2 3.42	SOIL	NAD	none	Darryl Fletcher
1834871	PRA-AZ-21-S2 1.76	SOIL	NAD	none	Darryl Fletcher
1834872	PRA-AZ-21-S3 1.21	SOIL	NAD	none	Darryl Fletcher
1834873	PRA-AZ-22-S3 1.30	SOIL	NAD	none	Darryl Fletcher
1834874	PRA-SP013-S16	SOIL	Chrysotile	Bundles of Chrysotile Fibres	Darryl Fletcher
1834875	PRA-SP013-S17	SOIL	Chrysotile	Chrysotile present in Microscopic Loose Fibrous Asbestos Debris and Bundles of Chrysotile Fibres	Darryl Fletcher
1834876	PRA-SP013-S18	SOIL	Chrysotile	Chrysotile present in Microscopic Loose Fibrous Asbestos Debris	Darryl Fletcher
1834877	PRA-SP013-S19	SOIL	NAD	none	Darryl Fletcher
1834878	PRA-AZ-19-S1 5.00	SOIL	NAD	none	Darryl Fletcher
1834879	PRA-AY-19-S2 5.00	SOIL	NAD	none	Darryl Fletcher

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 21-08228  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1834868	PRA-AZ-23-S1 3.33 SOIL	17/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1834869	PRA-AZ-22-S2 1.21 SOIL	17/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1834870	PRA-AY-23-S2 3.42 SOIL	17/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1834871	PRA-AZ-21-S2 1.76 SOIL	17/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1834872	PRA-AZ-21-S3 1.21 SOIL	17/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1834873	PRA-AZ-22-S3 1.30 SOIL	17/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1834874	PRA-SP013-S16 SOIL	19/04/21	GJ 60ml x2, PT 1L		
1834875	PRA-SP013-S17 SOIL	19/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1834876	PRA-SP013-S18 SOIL	19/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1834877	PRA-SP013-S19 SOIL	19/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1834878	PRA-AZ-19-S1 5.00 SOIL	17/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1834879	PRA-AY-19-S2 5.00 SOIL	19/04/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report





# DETS

## Certificate of Analysis

*Certificate Number* 21-08628-1

*Issued:* 12-May-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-08628-1

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 8 Soil samples.

*Date Received* 26-Apr-21

*Date Started* 26-Apr-21

*Date Completed* 12-May-21

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

*Notes* **This report supersedes 21-08628, extra testing added.**

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



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-08628-1

Client Ref

Contract Title Redcar

Test	Method	LOD	Units	Lab No					
				1837280	1837281	1837282	1837283	1837284	1837285
				PRA-SP025-S1	PRA-SP025-S2	PRA-SP025-S3	PRA-SP025-S4	PRA-SP013-S20	PRA-SP013-S21
				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				21/04/2021	21/04/2021	21/04/2021	21/04/2021	22/04/2021	22/04/2021
				n/s	n/s	n/s	n/s	n/s	n/s
Asbestos Quantification	DETSC 1102	0.001	%	0.002				< 0.001	< 0.001
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	12	9.4	7.6	8.6	7.6	11
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.5	1.5	1.6	2.0	1.9	2.8
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.2	0.2	0.2	0.4	0.6
Chromium	DETSC 2301#	0.15	mg/kg	28	20	23	20	73	91
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	57	39	30	35	35	52
Lead	DETSC 2301#	0.3	mg/kg	54	36	42	36	47	62
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.14	< 0.05	0.06	0.10	0.36
Nickel	DETSC 2301#	1	mg/kg	26	20	23	18	11	15
Vanadium	DETSC 2301#	0.8	mg/kg	42	32	30	29	120	200
Zinc	DETSC 2301#	1	mg/kg	150	100	100	110	110	170
<b>Inorganics</b>									
pH	DETSC 2008#		pH	9.0	8.2	8.0	7.8	11.6	11.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	5.9	3.8	3.8	3.1	6.8	5.7
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	0.3	< 0.1	0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	0.7	< 0.6	0.9	2.3	1.3
Organic matter	DETSC 2002#	0.1	%	2.2	2.2	2.1	1.9	1.8	1.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	310	270	460	190	410	330
Sulphur (free)	DETSC 3049#	0.75	mg/kg	15	< 0.75	< 0.75	9.6	1.6	3.5
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	3.6
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	5.8	< 1.2	< 1.2	< 1.2	7.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	23	15	< 1.5	17	28
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	99	76	< 3.4	82	130
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	130	91	< 10	100	170
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	< 0.5	1.9	2.6
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	11	5.1	< 0.6	28	27
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	61	41	< 1.4	90	120
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	72	47	< 10	120	150
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	200	140	< 10	220	320

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-08628-1

Client Ref

Contract Title Redcar

Lab No	1837280	1837281	1837282	1837283	1837284	1837285
Sample ID	PRA-SP025-S1	PRA-SP025-S2	PRA-SP025-S3	PRA-SP025-S4	PRA-SP013-S20	PRA-SP013-S21
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	21/04/2021	21/04/2021	21/04/2021	21/04/2021	22/04/2021	22/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.09	0.05	< 0.03	< 0.03	0.08	0.16
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	0.05	0.06	< 0.03	< 0.03	0.07	0.23
Fluorene	DETSC 3303	0.03	mg/kg	0.04	0.04	< 0.03	< 0.03	0.06	0.22
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.24	0.26	0.08	< 0.03	0.58	1.9
Anthracene	DETSC 3303	0.03	mg/kg	0.06	0.05	< 0.03	< 0.03	0.14	0.41
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.95	0.52	0.15	< 0.03	2.0	4.3
Pyrene	DETSC 3303#	0.03	mg/kg	0.87	0.46	0.13	< 0.03	2.0	4.0
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.45	0.25	0.09	< 0.03	1.1	2.2
Chrysene	DETSC 3303	0.03	mg/kg	0.35	0.16	0.06	< 0.03	0.72	1.2
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.43	0.22	0.08	< 0.03	0.98	1.6
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.15	0.07	< 0.03	< 0.03	0.38	0.65
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.29	0.14	0.05	< 0.03	0.77	1.1
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.12	0.05	< 0.03	< 0.03	0.24	0.35
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	< 0.03	< 0.03	0.06	0.09
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.14	0.06	< 0.03	< 0.03	0.28	0.42
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	4.2	2.4	0.63	< 0.10	9.5	19
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Chemical Analysis Soil Samples

Our Ref 21-08628-1

Client Ref

Contract Title Redcar

<b>Lab No</b>	1837286	1837287
	PRA-AZ-19-S2	PRA-AZ-19-S3
<b>Sample ID</b>		
<b>Depth</b>	2.00	3.10
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	22/04/2021	22/04/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
Asbestos Quantification	DETSC 1102	0.001	%		
<b>Metals</b>					
Arsenic	DETSC 2301#	0.2	mg/kg	7.7	8.3
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.2	1.0
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.2
Chromium	DETSC 2301#	0.15	mg/kg	27	23
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	27	26
Lead	DETSC 2301#	0.3	mg/kg	22	23
Mercury	DETSC 2325#	0.05	mg/kg	0.68	< 0.05
Nickel	DETSC 2301#	1	mg/kg	35	32
Vanadium	DETSC 2301#	0.8	mg/kg	31	26
Zinc	DETSC 2301#	1	mg/kg	73	73
<b>Inorganics</b>					
pH	DETSC 2008#		pH	8.2	8.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	2.9	3.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	130	190
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	3.8
<b>Petroleum Hydrocarbons</b>					
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	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-08628-1

Client Ref

Contract Title Redcar

<b>Lab No</b>	1837286	1837287
<b>Sample ID</b>	PRA-AZ-19-S2	PRA-AZ-19-S3
<b>Depth</b>	2.00	3.10
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	22/04/2021	22/04/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
<b>PAHs</b>					
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	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10
<b>Phenols</b>					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3



## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-08628-1

Client Ref

Contract Title Redcar

Lab No	1837286	1837287
Sample ID	PRA-AZ-19-S2	PRA-AZ-19-S3
Depth	2.00	3.10
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	22/04/2021	22/04/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
<b>VOCs</b>					
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	
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-08628-1

Client Ref

Contract Title Redcar

Lab No	1837286	1837287
Sample ID	PRA-AZ-19-S2	PRA-AZ-19-S3
Depth	2.00	3.10
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	22/04/2021	22/04/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
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	
<b>SVOCs</b>					
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
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

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-08628-1

Client Ref

Contract Title Redcar

<b>Lab No</b>	1837286	1837287
<b>Sample ID</b>	PRA-AZ-19-S2	PRA-AZ-19-S3
<b>Depth</b>	2.00	3.10
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	22/04/2021	22/04/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
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

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-08628-1

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1837280	PRA-SP025-S1	SOIL	Chrysotile	Bundles of Chrysotile fibres	Rebecca Burgess
1837281	PRA-SP025-S2	SOIL	NAD	none	Rebecca Burgess
1837282	PRA-SP025-S3	SOIL	NAD	none	Rebecca Burgess
1837283	PRA-SP025-S4	SOIL	NAD	none	Rebecca Burgess
1837284	PRA-SP013-S20	SOIL	Chrysotile	Bundle of Chrysotile fibres	Rebecca Burgess
1837285	PRA-SP013-S21	SOIL	Chrysotile	Bundles of Chrysotile fibres	Rebecca Burgess
1837286	PRA-AZ-19-S2 2.00	SOIL	NAD	none	Rebecca Burgess
1837287	PRA-AZ-19-S3 3.10	SOIL	NAD	none	Rebecca Burgess

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-08628-1

Client Ref

Contract Title Redcar

Lab No	1837280	1837284	1837285
Sample ID	PRA-SP025-S1	PRA-SP013-S20	PRA-SP013-S21
Depth			
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	21/04/2021	22/04/2021	22/04/2021
Sampling Time			

Test	Method	Units			
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.002	< 0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.002	<0.001	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	879.33	1355.53	1439.19
ACMs present*		type			
Mass of ACM in sample		g			
% ACM by mass		%			
% asbestos in ACM		%			
% asbestos in sample		%			

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na	na
% Chrysotile bundles in sample		Mass %	0.002	<0.001	<0.001

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na
Chrysotile fibres		Fibres/g	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample



## Information in Support of the Analytical Results

Our Ref 21-08628-1

Client Ref

Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1837280	PRA-SP025-S1 SOIL	21/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1837281	PRA-SP025-S2 SOIL	21/04/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1837282	PRA-SP025-S3 SOIL	21/04/21	GJ 250ml x2, GJ 60ml x2, PT 500ml		
1837283	PRA-SP025-S4 SOIL	21/04/21	GJ 60ml, PT 1L		
1837284	PRA-SP013-S20 SOIL	22/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1837285	PRA-SP013-S21 SOIL	22/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1837286	PRA-AZ-19-S2 2.00 SOIL	22/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1837287	PRA-AZ-19-S3 3.10 SOIL	22/04/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-08682

*Issued:* 28-Apr-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-08682

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 5 Soil samples.

*Date Received* 19-Apr-21

*Date Started* 27-Apr-21

*Date Completed* 28-Apr-21

*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



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## Summary of Asbestos Analysis

### Samples

*Our Ref* 21-08682

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Sample Location	Material Type	Result	Comment*	Analyst
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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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-08682

Client Ref

Contract Title Redcar

Lab No	1837736	1837737	1837738	1837739
Sample ID	PRA-SP013-S11	PRA-SP013-S12	PRA-SP013-S13	PRA-SP013-S14
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	15/04/2021	13/04/2021	13/04/2021	13/04/2021
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	< 0.001	< 0.001	0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	0.001
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	<0.001	<0.001	na
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	1113.30	1413.35	1078.69	1026.36
ACMs present*		type				LFAD
Mass of ACM in sample		g				0.02
% ACM by mass		%				0.00
% asbestos in ACM		%				85
% asbestos in sample		%				0.001
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	na	na	na
% Chrysotile bundles in sample		Mass %	<0.001	<0.001	<0.001	na
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 21-08682

Client Ref

Contract Title Redcar

Lab No	1837740
Sample ID	PRA-SP013-S15
Depth	
Other ID	
Sample Type	SOIL
Sampling Date	13/04/2021
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na

### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1231.69
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	

### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na
% Chrysotile bundles in sample		Mass %	<0.001

### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na
% Chrysotile fibres in sample		Mass %	na

### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-08682  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1837736	PRA-SP013-S11 SOIL	15/04/21	No containers logged		Cannot evaluate
1837737	PRA-SP013-S12 SOIL	13/04/21	No containers logged		Cannot evaluate
1837738	PRA-SP013-S13 SOIL	13/04/21	No containers logged		Cannot evaluate
1837739	PRA-SP013-S14 SOIL	13/04/21	No containers logged		Cannot evaluate
1837740	PRA-SP013-S15 SOIL	13/04/21	No containers logged		Cannot evaluate

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.

### 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

End of Report





# DETS

## Certificate of Analysis

*Certificate Number* 21-08695-1

*Issued:* 12-May-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-08695-1

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 14 Soil samples.

*Date Received* 27-Apr-21

*Date Started* 27-Apr-21

*Date Completed* 12-May-21

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

*Notes* **This report supersedes 21-08695, extra testing added.**

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*Approved By*



Adam Fenwick  
Contracts Manager



2139

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-08695-1

Client Ref

Contract Title Redcar

Lab No	1837850	1837851	1837852	1837853	1837854	1837855
Sample ID	PRA-AU-19-S1	PRA-AU-20-S1	PRA-AT-18-S1	PRA-AT-17-S1	PRA-AY-21-S2	PRA-SP029-S14
Depth	3.15	3.10	3.00	2.90	6.00	
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	23/04/2021	23/04/2021	23/04/2021	23/04/2021	23/04/2021	23/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%						< 0.001
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	4.2	6.4	5.8	5.7	5.9	14
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.9	1.7	0.4	0.9	1.0	3.1
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.2	0.2	0.2	0.1	0.9
Chromium	DETSC 2301#	0.15	mg/kg	14	19	15	15	17	150
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	19	22	20	19	18	54
Lead	DETSC 2301#	0.3	mg/kg	20	25	20	20	16	63
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	0.15	0.46
Nickel	DETSC 2301#	1	mg/kg	19	27	21	23	23	18
Vanadium	DETSC 2301#	0.8	mg/kg	17	21	19	17	20	440
Zinc	DETSC 2301#	1	mg/kg	61	78	70	60	52	130
<b>Inorganics</b>									
pH	DETSC 2008#		pH	8.3	8.0	8.3	8.0	8.5	12.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	14
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	< 0.6	< 0.6	0.8	< 0.6	0.8	2.4
Organic matter	DETSC 2002#	0.1	%	2.3	3.4	2.1	4.2	2.9	2.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	310	720	160	240	210	260
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	< 0.75	5.2	17
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	8.1
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	48
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	160
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	210
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	2.6
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	23
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	77
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	180
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	290
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	500

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-08695-1

Client Ref

Contract Title Redcar

Lab No	1837850	1837851	1837852	1837853	1837854	1837855
Sample ID	PRA-AU-19-S1	PRA-AU-20-S1	PRA-AT-18-S1	PRA-AT-17-S1	PRA-AY-21-S2	PRA-SP029-S14
Depth	3.15	3.10	3.00	2.90	6.00	
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	23/04/2021	23/04/2021	23/04/2021	23/04/2021	23/04/2021	23/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.56	0.43
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.05
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.18	0.60
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.09	0.46
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.30	2.5
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.06	0.45
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.74	5.6
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.59	4.7
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.26	2.4
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.26	1.3
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.32	2.5
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.12	0.92
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.13	1.2
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.09	0.63
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.15
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.10	0.76
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	3.8	25
<b>PCBs</b>									
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				
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-08695-1

Client Ref

Contract Title Redcar

Lab No	1837856	1837857	1837858	1837859	1837860	1837861
	PRA-SP029-S15	PRA-SP029-S16	PRA-SP029-S17	PRA-AY-22-S2	PRA-AU-18-S1	PRA-AX-21-S1
Sample ID						
Depth				6.00	6.00	6.00
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	23/04/2021	23/04/2021	23/04/2021	24/04/2021	24/04/2021	24/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%	< 0.001	0.002	0.005			
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	31	19	20	10	6.9	6.8
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	4.0	3.6	3.2	1.4	0.8	1.0
Cadmium	DETSC 2301#	0.1	mg/kg	1.1	2.4	0.4	0.4	0.3	0.1
Chromium	DETSC 2301#	0.15	mg/kg	110	230	84	28	17	22
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	120	880	220	40	26	25
Lead	DETSC 2301#	0.3	mg/kg	120	300	68	28	24	19
Mercury	DETSC 2325#	0.05	mg/kg	0.79	0.39	1.5	0.16	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	36	29	24	25	24	30
Vanadium	DETSC 2301#	0.8	mg/kg	210	540	210	49	27	25
Zinc	DETSC 2301#	1	mg/kg	310	38000	850	500	82	72
<b>Inorganics</b>									
pH	DETSC 2008#		pH	11.4	12.2	10.9	9.3	9.0	8.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	25	25	9.9	1.8	0.4	0.1
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	2.5	2.1	1.8	0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	3.3	2.1	1.6	2.5	2.4	2.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	570	120	530	800	290	180
Sulphur (free)	DETSC 3049#	0.75	mg/kg	17	10	8.2	< 0.75	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	6.8	9.7	3.6	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	84	90	27	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	310	220	99	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	400	320	130	< 10	< 10	< 10
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	14	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	8.7	27	8.4	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	99	130	51	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	270	240	92	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	380	420	150	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	780	730	280	< 10	< 10	< 10

## Summary of Chemical Analysis Soil Samples

Our Ref 21-08695-1

Client Ref

Contract Title Redcar

Lab No	1837856	1837857	1837858	1837859	1837860	1837861
Sample ID	PRA-SP029-S15	PRA-SP029-S16	PRA-SP029-S17	PRA-AY-22-S2	PRA-AU-18-S1	PRA-AX-21-S1
Depth				6.00	6.00	6.00
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	23/04/2021	23/04/2021	23/04/2021	24/04/2021	24/04/2021	24/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.48	0.60	0.39	0.04	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.05	0.12	0.05	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.53	1.1	0.75	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.46	0.77	0.88	< 0.03	0.04	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	2.4	3.2	5.2	0.07	0.16	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	0.43	0.76	0.79	< 0.03	0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	5.7	7.5	7.5	0.09	0.22	0.03
Pyrene	DETSC 3303#	0.03	mg/kg	4.5	6.2	6.0	0.07	0.16	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	2.7	4.0	3.1	0.06	0.08	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	1.2	2.5	1.4	< 0.03	0.05	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	2.7	6.6	2.4	0.06	0.06	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	1.0	4.4	0.84	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	1.6	2.8	1.4	0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.71	1.0	0.54	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.14	0.20	0.12	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.77	1.1	0.55	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	25	43	32	0.38	0.77	< 0.10
<b>PCBs</b>									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg						
PCB 52	DETSC 3401#	0.01	mg/kg						
PCB 101	DETSC 3401#	0.01	mg/kg						
PCB 118	DETSC 3401#	0.01	mg/kg						
PCB 153	DETSC 3401#	0.01	mg/kg						
PCB 138	DETSC 3401#	0.01	mg/kg						
PCB 180	DETSC 3401#	0.01	mg/kg						
PCB 7 Total	DETSC 3401#	0.01	mg/kg						
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Chemical Analysis Soil Samples

Our Ref 21-08695-1

Client Ref

Contract Title Redcar

<b>Lab No</b>	1837862	1837863
	PRA-AY-20-S2	PRA-AW-23-S1
<b>Sample ID</b>		
<b>Depth</b>	6.00	6.00
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	24/04/2021	24/04/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
Asbestos Quantification	DETSC 1102	0.001	%		
<b>Metals</b>					
Arsenic	DETSC 2301#	0.2	mg/kg	17	6.7
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.7	3.3
Cadmium	DETSC 2301#	0.1	mg/kg	1.0	0.2
Chromium	DETSC 2301#	0.15	mg/kg	24	26
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	27	24
Lead	DETSC 2301#	0.3	mg/kg	50	26
Mercury	DETSC 2325#	0.05	mg/kg	1.9	0.21
Nickel	DETSC 2301#	1	mg/kg	30	24
Vanadium	DETSC 2301#	0.8	mg/kg	35	35
Zinc	DETSC 2301#	1	mg/kg	160	77
<b>Inorganics</b>					
pH	DETSC 2008#		pH	8.6	9.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	14	3.6
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.6	2.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1700	420
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>					
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	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10



## Summary of Chemical Analysis Soil Samples

Our Ref 21-08695-1

Client Ref

Contract Title Redcar

<b>Lab No</b>	1837862	1837863
<b>Sample ID</b>	PRA-AY-20-S2	PRA-AW-23-S1
<b>Depth</b>	6.00	6.00
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	24/04/2021	24/04/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
<b>PAHs</b>					
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	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10
<b>PCBs</b>					
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
<b>Phenols</b>					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-08695-1

Client Ref

Contract Title Redcar

Lab No	1837850	1837851	1837852	1837853	1837854	1837859
Sample ID	PRA-AU-19-S1	PRA-AU-20-S1	PRA-AT-18-S1	PRA-AT-17-S1	PRA-AY-21-S2	PRA-AY-22-S2
Depth	3.15	3.10	3.00	2.90	6.00	6.00
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	23/04/2021	23/04/2021	23/04/2021	23/04/2021	23/04/2021	24/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
<b>VOCs</b>							
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
Tert-butylbenzene	DETSC 3431	0.01	mg/kg		< 0.01		< 0.01

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-08695-1

Client Ref

Contract Title Redcar

Lab No	1837850	1837851	1837852	1837853	1837854	1837859
Sample ID	PRA-AU-19-S1	PRA-AU-20-S1	PRA-AT-18-S1	PRA-AT-17-S1	PRA-AY-21-S2	PRA-AY-22-S2
Depth	3.15	3.10	3.00	2.90	6.00	6.00
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	23/04/2021	23/04/2021	23/04/2021	23/04/2021	23/04/2021	24/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
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
<b>SVOCs</b>								
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
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

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-08695-1

Client Ref

Contract Title Redcar

Lab No	1837850	1837851	1837852	1837853	1837854	1837859
Sample ID	PRA-AU-19-S1	PRA-AU-20-S1	PRA-AT-18-S1	PRA-AT-17-S1	PRA-AY-21-S2	PRA-AY-22-S2
Depth	3.15	3.10	3.00	2.90	6.00	6.00
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	23/04/2021	23/04/2021	23/04/2021	23/04/2021	23/04/2021	24/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
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

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-08695-1

Client Ref

Contract Title Redcar

Lab No	1837860	1837861	1837862	1837863
Sample ID	PRA-AU-18-S1	PRA-AX-21-S1	PRA-AY-20-S2	PRA-AW-23-S1
Depth	6.00	6.00	6.00	6.00
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	24/04/2021	24/04/2021	24/04/2021	24/04/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
<b>VOCs</b>							
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
Tert-butylbenzene	DETSC 3431	0.01	mg/kg		< 0.01		< 0.01

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-08695-1

Client Ref

Contract Title Redcar

Lab No	1837860	1837861	1837862	1837863
Sample ID	PRA-AU-18-S1	PRA-AX-21-S1	PRA-AY-20-S2	PRA-AW-23-S1
Depth	6.00	6.00	6.00	6.00
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	24/04/2021	24/04/2021	24/04/2021	24/04/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
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
<b>SVOCs</b>							
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	
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	



## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-08695-1

Client Ref

Contract Title Redcar

Lab No	1837860	1837861	1837862	1837863
Sample ID	PRA-AU-18-S1	PRA-AX-21-S1	PRA-AY-20-S2	PRA-AW-23-S1
Depth	6.00	6.00	6.00	6.00
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	24/04/2021	24/04/2021	24/04/2021	24/04/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
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	

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-08695-1

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1837850	PRA-AU-19-S1 3.15	SOIL	NAD	none	Michael Kay
1837851	PRA-AU-20-S1 3.10	SOIL	NAD	none	Michael Kay
1837852	PRA-AT-18-S1 3.00	SOIL	NAD	none	Michael Kay
1837853	PRA-AT-17-S1 2.90	SOIL	NAD	none	Michael Kay
1837854	PRA-AY-21-S2 6.00	SOIL	NAD	none	Michael Kay
1837855	PRA-SP029-S14	SOIL	Chrysotile	Small bundle of Chrysotile	Michael Kay
1837856	PRA-SP029-S15	SOIL	Chrysotile	Small bundles of Chrysotile	Michael Kay
1837857	PRA-SP029-S16	SOIL	Chrysotile	Bundles of Chrysotile	Michael Kay
1837858	PRA-SP029-S17	SOIL	Chrysotile	Bundles of Chrysotile	Michael Kay
1837859	PRA-AY-22-S2 6.00	SOIL	NAD	none	Michael Kay
1837860	PRA-AU-18-S1 6.00	SOIL	NAD	none	Michael Kay
1837861	PRA-AX-21-S1 6.00	SOIL	NAD	none	Michael Kay
1837862	PRA-AY-20-S2 6.00	SOIL	NAD	none	Michael Kay
1837863	PRA-AW-23-S1 6.00	SOIL	NAD	none	Michael Kay

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-08695-1

Client Ref

Contract Title Redcar

Lab No	1837855	1837856	1837857	1837858
Sample ID	PRA-SP029-S14	PRA-SP029-S15	PRA-SP029-S16	PRA-SP029-S17
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	23/04/2021	23/04/2021	23/04/2021	23/04/2021
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	< 0.001	0.002	0.005
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	<0.001	0.002	0.005
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1043.23	1136.33	1198.20	1057.97
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na	na	na
% Chrysotile bundles in sample		Mass %	<0.001	<0.001	0.002	0.005

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-08695-1  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1837850	PRA-AU-19-S1 3.15 SOIL	23/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1837851	PRA-AU-20-S1 3.10 SOIL	23/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1837852	PRA-AT-18-S1 3.00 SOIL	23/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1837853	PRA-AT-17-S1 2.90 SOIL	23/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1837854	PRA-AY-21-S2 6.00 SOIL	23/04/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1837855	PRA-SP029-S14 SOIL	23/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1837856	PRA-SP029-S15 SOIL	23/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1837857	PRA-SP029-S16 SOIL	23/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1837858	PRA-SP029-S17 SOIL	23/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1837859	PRA-AY-22-S2 6.00 SOIL	24/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1837860	PRA-AU-18-S1 6.00 SOIL	24/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1837861	PRA-AX-21-S1 6.00 SOIL	24/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1837862	PRA-AY-20-S2 6.00 SOIL	24/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1837863	PRA-AW-23-S1 6.00 SOIL	24/04/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-08852

*Issued:* 29-Apr-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-08852

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 3 Soil samples.

*Date Received* 21-Apr-21

*Date Started* 28-Apr-21

*Date Completed* 29-Apr-21

*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



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## Summary of Asbestos Analysis

### Samples

*Our Ref* 21-08852

*Client Ref*

*Contract Title* Redcar

<b>Lab No</b>	<b>Sample ID</b>	<b>Sample Location</b>	<b>Material Type</b>	<b>Result</b>	<b>Comment*</b>	<b>Analyst</b>
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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.



## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-08852

Client Ref

Contract Title Redcar

Lab No	1838801	1838802	1838803
Sample ID	PRA-SP013-S16	PRA-SP013-S17	PRA-SP013-S18
Depth			
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	19/04/2021	19/04/2021	19/04/2021
Sampling Time			

Test	Method	Units			
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.002	0.048	0.002
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	0.047	0.002
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.002	0.001	na
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1171.60	1402.20	1165.10
ACMs present*		type		LFAD	LFAD
Mass of ACM in sample		g		0.78	0.03
% ACM by mass		%		0.06	0.00
% asbestos in ACM		%		85	85
% asbestos in sample		%		0.047	0.002

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na	na
% Chrysotile bundles in sample		Mass %	0.002	0.001	na

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na
Chrysotile fibres		Fibres/g	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-08852

Client Ref

Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1838801	PRA-SP013-S16 SOIL	19/04/21	No containers logged		Cannot evaluate
1838802	PRA-SP013-S17 SOIL	19/04/21	No containers logged		Cannot evaluate
1838803	PRA-SP013-S18 SOIL	19/04/21	No containers logged		Cannot evaluate

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.

### 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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-08943

*Issued:* 10-May-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-08943

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 10 Soil samples.

*Date Received* 29-Apr-21

*Date Started* 29-Apr-21

*Date Completed* 10-May-21

*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



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-08943

Client Ref

Contract Title Redcar

Lab No	1839391	1839392	1839393	1839394	1839395
Sample ID	PRA-AX-20-S1	PRA-AU-17-S1	PRA-AV-18-S1	PRA-AV-17-S1	PRA-SP029-S18
Depth	5.00	3.5	3.5	3.5	
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	26/04/2021	26/04/2021	26/04/2021	26/04/2021	26/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	9.0	8.5	8.7	8.0	14
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.5	1.6	2.6	3.2	3.9
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.3	0.3	0.3	0.6
Chromium	DETSC 2301#	0.15	mg/kg	27	25	27	26	120
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	29	27	10	24	89
Lead	DETSC 2301#	0.3	mg/kg	25	32	25	27	69
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	0.71
Nickel	DETSC 2301#	1	mg/kg	37	38	37	38	23
Vanadium	DETSC 2301#	0.8	mg/kg	32	29	35	30	240
Zinc	DETSC 2301#	1	mg/kg	77	99	75	86	170
<b>Inorganics</b>								
pH	DETSC 2008#		pH	7.8	7.9	7.9	8.2	11.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	45
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	2.3
Organic matter	DETSC 2002#	0.1	%	2.4	2.2	< 0.1	2.1	0.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	220	2400	2400	2100	660
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	1.1	< 0.75	15
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	2.6
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	43
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	170
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	220
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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	2.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	11
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	50
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	140
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	200
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	420

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-08943

Client Ref

Contract Title Redcar

Lab No	1839391	1839392	1839393	1839394	1839395
Sample ID	PRA-AX-20-S1	PRA-AU-17-S1	PRA-AV-18-S1	PRA-AV-17-S1	PRA-SP029-S18
Depth	5.00	3.5	3.5	3.5	
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	26/04/2021	26/04/2021	26/04/2021	26/04/2021	26/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.18
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.06
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.32
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.45
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	< 0.03	< 0.03	2.6
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.50
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	6.7
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	5.2
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	2.2
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	1.2
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	1.7
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.67
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	1.1
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.47
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.11
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.51
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	24
<b>PCBs</b>								
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		
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-08943

Client Ref

Contract Title Redcar

Lab No	1839396	1839397	1839398	1839399	1839400
Sample ID	PRA-SP029-S19	PRA-SP029-S20	PRA-SP029-S21	PRA-SP029-S22	PRA-SP029-S23
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	26/04/2021	26/04/2021	26/04/2021	26/04/2021	26/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	18	17	12	10	27
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	4.3	4.4	3.1	3.1	4.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.7	1.5	0.5	0.4	0.7
Chromium	DETSC 2301#	0.15	mg/kg	270	120	120	130	160
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	160	92	70	68	130
Lead	DETSC 2301#	0.3	mg/kg	76	160	48	39	83
Mercury	DETSC 2325#	0.05	mg/kg	1.6	1.3	1.3	0.48	1.3
Nickel	DETSC 2301#	1	mg/kg	28	21	13	15	29
Vanadium	DETSC 2301#	0.8	mg/kg	530	220	260	280	310
Zinc	DETSC 2301#	1	mg/kg	210	290	140	100	280
<b>Inorganics</b>								
pH	DETSC 2008#		pH	11.1	11.2	11.5	11.5	11.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	76	20	20	22	70
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	6.6	1.5	2.1	1.8	2.5
Organic matter	DETSC 2002#	0.1	%	1.2	2.8	0.9	1.5	1.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	670	290	250	210	700
Sulphur (free)	DETSC 3049#	0.75	mg/kg	12	4.9	5.9	27	27
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	2.2	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	17	< 1.2	4.4	13	7.6
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	71	6.7	31	95	73
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	240	67	110	660	270
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	330	74	150	770	350
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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	1.3
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	8.7	6.3	6.4	13	15
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	83	22	57	70	61
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	210	73	140	400	150
Aromatic C5-C35	DETSC 3072*	10	mg/kg	300	100	210	480	230
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	630	170	350	1300	580



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-08943

Client Ref

Contract Title Redcar

Lab No	1839396	1839397	1839398	1839399	1839400
Sample ID	PRA-SP029-S19	PRA-SP029-S20	PRA-SP029-S21	PRA-SP029-S22	PRA-SP029-S23
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	26/04/2021	26/04/2021	26/04/2021	26/04/2021	26/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.28	0.10	0.16	0.13	0.26
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.06	0.03	< 0.03	0.03	0.11
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.36	0.13	0.18	0.19	0.34
Fluorene	DETSC 3303	0.03	mg/kg	0.41	0.15	0.18	0.23	0.49
Phenanthrene	DETSC 3303#	0.03	mg/kg	2.7	1.2	1.2	1.5	2.8
Anthracene	DETSC 3303	0.03	mg/kg	0.60	0.23	0.29	0.24	0.63
Fluoranthene	DETSC 3303#	0.03	mg/kg	5.1	2.5	3.1	2.9	7.9
Pyrene	DETSC 3303#	0.03	mg/kg	4.2	2.0	2.7	2.4	7.3
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	2.2	1.0	1.4	1.5	5.0
Chrysene	DETSC 3303	0.03	mg/kg	1.3	0.66	0.76	0.63	2.2
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	2.3	1.2	1.4	1.3	5.5
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.90	0.38	0.58	0.57	1.9
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	1.1	0.67	0.77	0.68	4.0
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.59	0.32	0.41	0.39	1.5
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.14	0.08	0.09	0.08	0.33
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.70	0.35	0.44	0.43	1.5
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	23	11	14	13	42
<b>PCBs</b>								
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg					
PCB 52	DETSC 3401#	0.01	mg/kg					
PCB 101	DETSC 3401#	0.01	mg/kg					
PCB 118	DETSC 3401#	0.01	mg/kg					
PCB 153	DETSC 3401#	0.01	mg/kg					
PCB 138	DETSC 3401#	0.01	mg/kg					
PCB 180	DETSC 3401#	0.01	mg/kg					
PCB 7 Total	DETSC 3401#	0.01	mg/kg					
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-08943

Client Ref

Contract Title Redcar

Lab No	1839391	1839392	1839393	1839394
Sample ID	PRA-AX-20-S1	PRA-AU-17-S1	PRA-AV-18-S1	PRA-AV-17-S1
Depth	5.00	3.5	3.5	3.5
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	26/04/2021	26/04/2021	26/04/2021	26/04/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
<b>VOCs</b>							
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	0.03		0.04	
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	
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01	

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-08943

Client Ref

Contract Title Redcar

Lab No	1839391	1839392	1839393	1839394
Sample ID	PRA-AX-20-S1	PRA-AU-17-S1	PRA-AV-18-S1	PRA-AV-17-S1
Depth	5.00	3.5	3.5	3.5
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	26/04/2021	26/04/2021	26/04/2021	26/04/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
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	
<b>SVOCs</b>							
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
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg		< 0.1		< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg		< 0.1		< 0.1

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-08943

Client Ref

Contract Title Redcar

Lab No	1839391	1839392	1839393	1839394
Sample ID	PRA-AX-20-S1	PRA-AU-17-S1	PRA-AV-18-S1	PRA-AV-17-S1
Depth	5.00	3.5	3.5	3.5
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	26/04/2021	26/04/2021	26/04/2021	26/04/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
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

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-08943

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1839391	PRA-AX-20-S1 5.00	SOIL	NAD	none	Darryl Fletcher
1839392	PRA-AU-17-S1 3.5	SOIL	NAD	none	Darryl Fletcher
1839393	PRA-AV-18-S1 3.5	SOIL	NAD	none	Darryl Fletcher
1839394	PRA-AV-17-S1 3.5	SOIL	NAD	none	Darryl Fletcher
1839395	PRA-SP029-S18	SOIL	Chrysotile	Bundles of Chrysotile fibres	Darryl Fletcher
1839396	PRA-SP029-S19	SOIL	Chrysotile	Bundles of Chrysotile fibres	Darryl Fletcher
1839397	PRA-SP029-S20	SOIL	NAD	none	Darryl Fletcher
1839398	PRA-SP029-S21	SOIL	Amosite Chrysotile	Clumps of Amosite fibres & bundles of Chrysotile fibres	Darryl Fletcher
1839399	PRA-SP029-S22	SOIL	Chrysotile Amosite	Bundles of Chrysotile fibres & bundles of Amosite fibres	Darryl Fletcher
1839400	PRA-SP029-S23	SOIL	Chrysotile	Bundles of Chrysotile fibres	Darryl Fletcher

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 21-08943  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1839391	PRA-AX-20-S1 5.00 SOIL	26/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1839392	PRA-AU-17-S1 3.5 SOIL	26/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1839393	PRA-AV-18-S1 3.5 SOIL	26/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1839394	PRA-AV-17-S1 3.5 SOIL	26/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1839395	PRA-SP029-S18 SOIL	26/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1839396	PRA-SP029-S19 SOIL	26/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1839397	PRA-SP029-S20 SOIL	26/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1839398	PRA-SP029-S21 SOIL	26/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1839399	PRA-SP029-S22 SOIL	26/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1839400	PRA-SP029-S23 SOIL	26/04/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report





# DETS

## Certificate of Analysis

*Certificate Number* 21-09159

*Issued:* 13-May-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-09159

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 5 Soil samples.

*Date Received* 04-May-21

*Date Started* 04-May-21

*Date Completed* 13-May-21

*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



2139

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-09159

Client Ref

Contract Title Redcar

Lab No	1841073	1841074	1841075	1841076	1841077
Sample ID	PRA-AV-23-S1	PRA-AV-21-S1	PRA-AV-22-S1	PRA-AT-18-S2	PRA-AZ-16-S1
Depth	3.20	3.30	3.20	2.00	5.00
Other ID	Base	Base	Base	Napi Side	Base
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	28/04/2021	28/04/2021	28/04/2021	28/04/2021	29/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	6.6	6.1	7.5	7.3	7.0
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.1	1.2	2.6	0.9	0.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.2	0.2	0.3	0.4
Chromium	DETSC 2301#	0.15	mg/kg	24	29	20	21	17
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	24	22	24	24	26
Lead	DETSC 2301#	0.3	mg/kg	21	18	22	26	35
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	33	35	29	31	26
Vanadium	DETSC 2301#	0.8	mg/kg	25	31	23	24	22
Zinc	DETSC 2301#	1	mg/kg	67	58	71	96	140
<b>Inorganics</b>								
pH	DETSC 2008#		pH	8.4	8.5	8.6	8.1	8.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.4	1.2	0.3	< 0.1	0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	27	< 0.6	0.9	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	3.2	3.2	2.3	2.6	1.7
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	540	290	510	220	66
Sulphur (free)	DETSC 3049#	0.75	mg/kg	2.0	< 0.75	< 0.75	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-09159

Client Ref

Contract Title Redcar

Lab No	1841073	1841074	1841075	1841076	1841077
Sample ID	PRA-AV-23-S1	PRA-AV-21-S1	PRA-AV-22-S1	PRA-AT-18-S2	PRA-AZ-16-S1
Depth	3.20	3.30	3.20	2.00	5.00
Other ID	Base	Base	Base	Napi Side	Base
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	28/04/2021	28/04/2021	28/04/2021	28/04/2021	29/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	< 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
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 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
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 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	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 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
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
<b>PCBs</b>								
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		
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-09159

Client Ref

Contract Title Redcar

Lab No	1841073	1841074	1841075	1841076	1841077
Sample ID	PRA-AV-23-S1	PRA-AV-21-S1	PRA-AV-22-S1	PRA-AT-18-S2	PRA-AZ-16-S1
Depth	3.20	3.30	3.20	2.00	5.00
Other ID	Base	Base	Base	Napi Side	Base
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	28/04/2021	28/04/2021	28/04/2021	28/04/2021	29/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
<b>VOCs</b>							
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
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

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-09159

Client Ref

Contract Title Redcar

Lab No	1841073	1841074	1841075	1841076	1841077
Sample ID	PRA-AV-23-S1	PRA-AV-21-S1	PRA-AV-22-S1	PRA-AT-18-S2	PRA-AZ-16-S1
Depth	3.20	3.30	3.20	2.00	5.00
Other ID	Base	Base	Base	Napi Side	Base
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	28/04/2021	28/04/2021	28/04/2021	28/04/2021	29/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
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
<b>SVOCs</b>							
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
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

## Summary of Chemical Analysis Soil Samples

Our Ref 21-09159

Client Ref

Contract Title Redcar

Lab No	1841073	1841074	1841075	1841076	1841077
Sample ID	PRA-AV-23-S1	PRA-AV-21-S1	PRA-AV-22-S1	PRA-AT-18-S2	PRA-AZ-16-S1
Depth	3.20	3.30	3.20	2.00	5.00
Other ID	Base	Base	Base	Napi Side	Base
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	28/04/2021	28/04/2021	28/04/2021	28/04/2021	29/04/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
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



## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-09159

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1841073	PRA-AV-23-S1 Base 3.20	SOIL	NAD	none	Michael Kay
1841074	PRA-AV-21-S1 Base 3.30	SOIL	NAD	none	Michael Kay
1841075	PRA-AV-22-S1 Base 3.20	SOIL	NAD	none	Michael Kay
1841076	PRA-AT-18-S2 Napi Side 2.00	SOIL	NAD	none	Michael Kay
1841077	PRA-AZ-16-S1 Base 5.00	SOIL	NAD	none	Michael Kay

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 21-09159  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1841073	PRA-AV-23-S1 3.20 SOIL	28/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1841074	PRA-AV-21-S1 3.30 SOIL	28/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1841075	PRA-AV-22-S1 3.20 SOIL	28/04/21	GJ 60ml x2, PT 1L		
1841076	PRA-AT-18-S2 2.00 SOIL	28/04/21	GJ 250ml, GJ 60ml x2, PT 1L		
1841077	PRA-AZ-16-S1 5.00 SOIL	29/04/21	GJ 250ml, GJ 60ml x2, PT 500ml		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-09412-1

*Issued:* 20-May-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-09412-1

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 7 Soil samples.

*Date Received* 06-May-21

*Date Started* 06-May-21

*Date Completed* 20-May-21

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

**Notes This report supersedes 21-09412, extra testing added,**

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



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-09412-1

Client Ref

Contract Title Redcar

Lab No	1842652	1842653	1842654	1842655	1842656	1842657	1842658			
Sample ID	PRA-SP013-S22	PRA-SP013-S23	PRA-SP013-S24	PRA-SP013-S25	PRA-SP013-S26	PRA-SP013-S27	PRA-SP013-S28			
Depth										
Other ID										
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL			
Sampling Date	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021			
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s			
Test	Method	LOD	Units							
Asbestos Quantification %	DETSC 1102	0.001	%			< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
<b>Metals</b>										
Arsenic mg/kg	DETSC 2301#	0.2	mg/kg	14	14	5.9	13	21	15	13
Boron, Water Soluble mg/kg	DETSC 2311#	0.2	mg/kg	2.3	3.2	1.7	2.8	2.0	3.4	1.9
Cadmium mg/kg	DETSC 2301#	0.1	mg/kg	0.4	0.7	0.2	0.5	0.5	0.7	1.2
Chromium mg/kg	DETSC 2301#	0.15	mg/kg	66	64	23	54	95	140	76
Chromium, Hexavalent mg/kg	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper mg/kg	DETSC 2301#	0.2	mg/kg	55	67	20	72	36	54	74
Lead mg/kg	DETSC 2301#	0.3	mg/kg	37	82	22	62	52	79	82
Mercury mg/kg	DETSC 2325#	0.05	mg/kg	0.23	0.31	0.16	0.27	0.36	< 0.05	< 0.05
Nickel mg/kg	DETSC 2301#	1	mg/kg	17	19	7.2	18	11	17	17
Vanadium mg/kg	DETSC 2301#	0.8	mg/kg	190	170	56	110	250	420	140
Zinc mg/kg	DETSC 2301#	1	mg/kg	140	210	64	180	140	220	500
<b>Inorganics</b>										
pH pH	DETSC 2008#		pH	11.8	10.8	11.9	11.3	11.8	11.2	11.6
Cyanide, Total mg/kg	DETSC 2130#	0.1	mg/kg	9.5	12	4.0	11	5.1	9.7	11
Cyanide, Free mg/kg	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate mg/kg	DETSC 2130#	0.6	mg/kg	1.7	1.9	4.0	2.1	1.2	1.7	1.7
Organic matter %	DETSC 2002#	0.1	%	1.3	1.8	0.6	1.4	1.6	1.2	1.3
Sulphate Aqueous Extract as SO4 mg/l	DETSC 2076#	10	mg/l	250	610	410	520	490	500	320
Sulphur (free) mg/kg	DETSC 3049#	0.75	mg/kg	5.8	7.0	6.8	4.7	15	4.7	4.7
<b>Petroleum Hydrocarbons</b>										
Aliphatic C5-C6 mg/kg	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8 mg/kg	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10 mg/kg	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12 mg/kg	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16 mg/kg	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	4.5	< 1.2
Aliphatic C16-C21 mg/kg	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	31	14	37	21
Aliphatic C21-C35 mg/kg	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	170	79	140	73
Aliphatic C5-C35 mg/kg	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	200	94	180	95
Aromatic C5-C7 mg/kg	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8 mg/kg	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10 mg/kg	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12 mg/kg	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16 mg/kg	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	3.1	< 0.5
Aromatic C16-C21 mg/kg	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	31	< 0.6
Aromatic C21-C35 mg/kg	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	59	< 1.4
Aromatic C5-C35 mg/kg	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	93	< 10
TPH Ali/Aro Total C5-C35 mg/kg	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	200	94	280	95



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-09412-1

Client Ref

Contract Title Redcar

Lab No	1842652	1842653	1842654	1842655	1842656	1842657	1842658
	PRA-SP013-S22	PRA-SP013-S23	PRA-SP013-S24	PRA-SP013-S25	PRA-SP013-S26	PRA-SP013-S27	PRA-SP013-S28
Sample ID							
Depth							
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units								
<b>PAHs</b>											
Naphthalene mg/kg	DETSC 3303#	0.03	mg/kg	0.12	0.09	0.13	0.18	0.12	0.10	0.10	
Acenaphthylene mg/kg	DETSC 3303#	0.03	mg/kg	0.10	0.09	0.10	0.19	0.09	0.11	0.10	
Acenaphthene mg/kg	DETSC 3303#	0.03	mg/kg	0.09	0.08	0.09	0.16	0.08	0.11	0.10	
Fluorene mg/kg	DETSC 3303	0.03	mg/kg	0.07	0.05	0.08	0.13	0.06	0.06	0.06	
Phenanthrene mg/kg	DETSC 3303#	0.03	mg/kg	0.59	0.53	0.53	0.89	0.57	0.61	0.56	
Anthracene mg/kg	DETSC 3303	0.03	mg/kg	0.08	0.08	0.09	0.16	0.07	0.11	0.10	
Fluoranthene mg/kg	DETSC 3303#	0.03	mg/kg	1.3	1.7	1.5	2.7	2.3	2.9	2.6	
Pyrene mg/kg	DETSC 3303#	0.03	mg/kg	1.0	1.6	1.3	2.3	2.4	3.0	2.4	
Benzo(a)anthracene mg/kg	DETSC 3303#	0.03	mg/kg	0.47	0.82	0.71	1.4	1.5	1.8	1.4	
Chrysene mg/kg	DETSC 3303	0.03	mg/kg	0.33	0.42	0.36	0.48	0.48	0.55	0.49	
Benzo(b)fluoranthene mg/kg	DETSC 3303#	0.03	mg/kg	0.40	0.70	0.55	0.86	1.2	1.2	0.83	
Benzo(k)fluoranthene mg/kg	DETSC 3303#	0.03	mg/kg	0.14	0.25	0.13	0.29	0.28	0.35	0.29	
Benzo(a)pyrene mg/kg	DETSC 3303#	0.03	mg/kg	0.21	0.46	0.29	0.59	0.62	0.66	0.47	
Indeno(1,2,3-c,d)pyrene mg/kg	DETSC 3303#	0.03	mg/kg	0.10	0.16	0.11	0.14	0.20	0.23	0.14	
Dibenzo(a,h)anthracene mg/kg	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	< 0.03	0.04	0.05	0.05	0.04	
Benzo(g,h,i)perylene mg/kg	DETSC 3303#	0.03	mg/kg	0.09	0.16	0.10	0.15	0.23	0.23	0.16	
PAH - USEPA 16, Total mg/kg	DETSC 3303	0.1	mg/kg	5.1	7.3	6.1	11	10	12	9.8	
<b>Phenols</b>											
Phenol - Monohydric mg/kg	DETSC 2130#	0.3	mg/kg	< 0.3	0.6	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-09412-1

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1842652	PRA-SP013-S22	SOIL	NAD	none	Lee Kerridge
1842653	PRA-SP013-S23	SOIL	NAD	none	Lee Kerridge
1842654	PRA-SP013-S24	SOIL	Chrysotile	Chrysotile present as bundle	Lee Kerridge
1842655	PRA-SP013-S25	SOIL	Chrysotile	Chrysotile present as bundle	Lee Kerridge
1842656	PRA-SP013-S26	SOIL	Chrysotile	Chrysotile present as bundle	Lee Kerridge
1842657	PRA-SP013-S27	SOIL	Chrysotile	Chrysotile present as bundle	Lee Kerridge
1842658	PRA-SP013-S28	SOIL	Chrysotile	Chrysotile present as bundle	Lee Kerridge

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.



## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-09412-1

Client Ref

Contract Title Redcar

Lab No	1842654	1842655	1842656	1842657
Sample ID	PRA-SP013-S24	PRA-SP013-S25	PRA-SP013-S26	PRA-SP013-S27
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	04/05/2021	04/05/2021	04/05/2021	04/05/2021
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	< 0.001	< 0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	<0.001	<0.001	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	1225.67	1030.48	1173.12	1217.73
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	na	na	na
% Chrysotile bundles in sample		Mass %	<0.001	<0.001	<0.001	<0.001
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Summary of Asbestos Quantification Analysis Soil Samples

Our Ref 21-09412-1

Client Ref

Contract Title Redcar

Lab No	1842658
Sample ID	PRA-SP013-S28
Depth	
Other ID	
Sample Type	SOIL
Sampling Date	04/05/2021
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na
Breakdown of Gravimetric Analysis (a)			
Mass of Sample		g	1087.87
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	
Breakdown of Detailed Gravimetric Analysis (b)			
% Amphibole bundles in sample		Mass %	na
% Chrysotile bundles in sample		Mass %	<0.001
Breakdown of PCOM Analysis (c)			
% Amphibole fibres in sample		Mass %	na
% Chrysotile fibres in sample		Mass %	na
Breakdown of Potentially Respirable Fibre Analysis (d)			
Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-09412-1  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1842652	PRA-SP013-S22 SOIL	04/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1842653	PRA-SP013-S23 SOIL	04/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1842654	PRA-SP013-S24 SOIL	04/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1842655	PRA-SP013-S25 SOIL	04/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1842656	PRA-SP013-S26 SOIL	04/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1842657	PRA-SP013-S27 SOIL	04/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1842658	PRA-SP013-S28 SOIL	04/05/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



## Certificate of Analysis

*Certificate Number* 21-09542-1

*Issued:* 24-May-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-09542-1

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 17 Soil samples.

*Date Received* 07-May-21

*Date Started* 07-May-21

*Date Completed* 24-May-21

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

*Notes* **This report supersedes 21-09542, extra testing added**

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*

A handwritten signature in black ink, appearing to read "A Fenwick".

Adam Fenwick  
Contracts Manager



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-09542-1

Client Ref

Contract Title Redcar

Lab No	1843283	1843284	1843285	1843286	1843287	1843288
Sample ID	PRA-SP011-S35	PRA-SP011-S36	PRA-SP011-S37	PRA-SP011-S38	PRA-SP011-S39	PRA-SP011-S40
Depth						
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	05/05/2021	05/05/2021	05/05/2021	05/05/2021	05/05/2021	05/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%	0.008	0.005	0.003	0.002	0.002	0.002
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	23	17	26	29	29	17
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	4.2	3.7	4.1	2.8	3.5	4.0
Cadmium	DETSC 2301#	0.1	mg/kg	3.3	2.2	1.8	1.6	1.6	2.1
Chromium	DETSC 2301#	0.15	mg/kg	82	130	82	70	100	180
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	76	60	94	65	73	56
Lead	DETSC 2301#	0.3	mg/kg	260	170	180	170	240	120
Mercury	DETSC 2325#	0.05	mg/kg	2.9	2.3	3.5	3.6	4.1	1.5
Nickel	DETSC 2301#	1	mg/kg	21	18	29	20	26	17
Vanadium	DETSC 2301#	0.8	mg/kg	130	210	150	120	160	340
Zinc	DETSC 2301#	1	mg/kg	880	530	560	530	560	670
<b>Inorganics</b>									
pH	DETSC 2008#		pH	9.6	11.0	9.3	10.4	9.8	11.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	250	97	64	58	72	62
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.7	0.5	0.6	< 0.1	0.4	0.6
Thiocyanate	DETSC 2130#	0.6	mg/kg	3.2	2.1	1.7	1.9	1.5	1.9
Organic matter	DETSC 2002#	0.1	%	1.4	1.4	1.8	1.4	1.1	1.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	450	380	600	530	590	360
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	6.3	< 0.75	< 0.75	9.4	< 0.75
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	2.2	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	5.4	3.9	< 1.5	< 1.5	4.7	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	36	33	< 3.4	< 3.4	36	23
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	41	37	< 10	< 10	44	23
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	1.0	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	3.9	1.7	2.0	5.5	0.8
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	29	17	21	28	11
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	79	47	51	69	48
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	110	66	75	100	60
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	41	150	66	75	150	83
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.22	0.21	0.11	0.15	0.21	0.07
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.21	0.26	0.06	0.11	0.13	0.06
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.18	0.22	0.05	0.10	0.12	0.05



# Summary of Chemical Analysis Soil Samples

Our Ref 21-09542-1

Client Ref

Contract Title Redcar

Lab No	1843283	1843284	1843285	1843286	1843287	1843288
Sample ID	PRA-SP011-S35	PRA-SP011-S36	PRA-SP011-S37	PRA-SP011-S38	PRA-SP011-S39	PRA-SP011-S40
Depth						
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	05/05/2021	05/05/2021	05/05/2021	05/05/2021	05/05/2021	05/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Fluorene	DETSC 3303	0.03	mg/kg	0.12	0.10	0.04	0.07	0.12	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.69	1.6	0.44	0.78	0.80	0.51
Anthracene	DETSC 3303	0.03	mg/kg	0.12	0.24	0.10	0.19	0.21	0.11
Fluoranthene	DETSC 3303#	0.03	mg/kg	2.2	4.2	1.8	4.0	3.1	2.7
Pyrene	DETSC 3303#	0.03	mg/kg	1.9	3.5	1.8	4.1	3.1	3.8
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.74	1.5	0.79	1.7	1.2	1.7
Chrysene	DETSC 3303	0.03	mg/kg	0.59	1.2	0.60	1.3	0.88	1.1
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.65	1.4	0.70	1.5	0.98	1.6
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.26	0.55	0.24	0.52	0.33	0.59
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.38	0.85	0.38	0.83	0.53	0.85
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.20	0.44	0.19	0.40	0.27	0.48
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.06	0.12	0.06	0.11	0.07	0.09
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.22	0.49	0.21	0.46	0.30	0.54
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	8.7	17	7.6	16	12	14
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-09542-1

Client Ref

Contract Title Redcar

Lab No	1843289	1843290	1843291	1843292	1843293	1843294
Sample ID	PRA-SP011-S41	PRA-SP011-S42	PRA-SP011-S43	PRA-SP011-S44	PRA-SP011-S45	PRA-SP011-S46
Depth						
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	05/05/2021	05/05/2021	05/05/2021	05/05/2021	05/05/2021	05/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%	0.006	0.007	0.002	0.001	0.003	0.008
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	22	22	22	15	18	18
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	4.4	3.5	4.4	3.6	3.6	3.9
Cadmium	DETSC 2301#	0.1	mg/kg	2.1	2.9	2.1	1.3	1.0	1.0
Chromium	DETSC 2301#	0.15	mg/kg	120	150	73	110	99	150
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	81	50	71	42	51	67
Lead	DETSC 2301#	0.3	mg/kg	210	170	420	96	130	120
Mercury	DETSC 2325#	0.05	mg/kg	3.2	3.3	4.5	1.5	1.7	2.5
Nickel	DETSC 2301#	1	mg/kg	23	20	21	16	21	21
Vanadium	DETSC 2301#	0.8	mg/kg	210	190	120	190	220	310
Zinc	DETSC 2301#	1	mg/kg	710	590	650	390	290	330
<b>Inorganics</b>									
pH	DETSC 2008#		pH	10.4	11.3	9.9	11.1	10.4	10.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	67	96	71	42	5.3	28
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.3	0.5	1.0	0.7	0.2	0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.6	2.0	2.0	2.0	1.2	1.7
Organic matter	DETSC 2002#	0.1	%	1.4	1.6	1.9	1.3	1.2	1.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	410	300	430	360	780	690
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	5.8	< 0.75	< 0.75	< 0.75	4.0
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	2.4	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	2.4	3.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	6.0	11	20	< 1.5	9.0	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	51	59	89	< 3.4	54	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	57	75	110	< 10	64	< 10
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	2.2	3.7	< 0.5	1.6	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	24	27	< 0.6	29	26
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	73	90	< 1.4	100	37
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	100	120	< 10	130	63
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	57	170	230	< 10	200	63
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.14	0.13	0.15	0.11	0.11	0.19
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.09	0.08	0.11	0.08	0.09	0.18
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.08	0.07	0.10	0.07	0.08	0.16



# Summary of Chemical Analysis Soil Samples

Our Ref 21-09542-1

Client Ref

Contract Title Redcar

Lab No	1843289	1843290	1843291	1843292	1843293	1843294
Sample ID	PRA-SP011-S41	PRA-SP011-S42	PRA-SP011-S43	PRA-SP011-S44	PRA-SP011-S45	PRA-SP011-S46
Depth						
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	05/05/2021	05/05/2021	05/05/2021	05/05/2021	05/05/2021	05/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Fluorene	DETSC 3303	0.03	mg/kg	0.05	0.05	0.07	0.05	0.06	0.12
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.47	0.49	0.60	0.45	0.76	1.8
Anthracene	DETSC 3303	0.03	mg/kg	0.10	0.10	0.13	0.09	0.18	0.29
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.9	2.2	2.3	1.9	4.0	5.6
Pyrene	DETSC 3303#	0.03	mg/kg	1.8	2.0	2.0	1.8	4.0	5.9
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.78	0.88	0.80	0.70	1.9	2.3
Chrysene	DETSC 3303	0.03	mg/kg	0.54	0.59	0.56	0.52	1.3	1.6
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.59	0.67	0.66	0.63	1.9	2.0
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.21	0.24	0.23	0.22	0.65	0.70
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.33	0.39	0.36	0.32	1.1	1.0
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.17	0.20	0.18	0.16	0.59	0.58
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.04	0.06	0.05	0.04	0.14	0.16
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.18	0.22	0.20	0.16	0.66	0.65
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	7.5	8.4	8.5	7.3	18	23
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-09542-1

Client Ref

Contract Title Redcar

Lab No	1843295	1843296	1843872	1843873	1843874
Sample ID	PRA-SP011-S47	PRA-SP011-S48	PRA-AV-19-S1	PRA-SP033-S1	PRA-SP033-S2
Depth					
Other ID					
Sample Type	ES	ES	SOIL	SOIL	SOIL
Sampling Date	05/05/2021	05/05/2021	05/05/2021	05/05/2021	05/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETSC 1102	0.001	%	0.005	0.002		0.004	0.001
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	20	17	8.4	11	11
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	3.9	3.8	0.9	2.3	1.7
Cadmium	DETSC 2301#	0.1	mg/kg	1.1	1.4	0.2	0.9	0.7
Chromium	DETSC 2301#	0.15	mg/kg	110	130	31	69	55
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	74	52	20	37	66
Lead	DETSC 2301#	0.3	mg/kg	130	120	22	70	110
Mercury	DETSC 2325#	0.05	mg/kg	2.3	3.6	< 0.05	1.1	0.79
Nickel	DETSC 2301#	1	mg/kg	24	17	38	14	17
Vanadium	DETSC 2301#	0.8	mg/kg	220	310	38	110	120
Zinc	DETSC 2301#	1	mg/kg	360	480	73	220	290
<b>Inorganics</b>								
pH	DETSC 2008#		pH	10.0	11.1	8.7	10.9	11.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	29	130	0.8	16	18
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.2	0.2	0.3	< 0.1	0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.1	2.8	< 0.6	1.1	1.3
Organic matter	DETSC 2002#	0.1	%	2.0	1.2	1.3	0.8	0.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	630	450	2000	600	370
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	5.4	< 0.75	18	9.0
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	2.9	< 1.2	1.7	1.6
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	11	< 1.5	18	27
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	43	< 3.4	85	160
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	57	< 10	110	190
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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	1.2	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	2.2	4.1	< 0.5	4.2	6.6
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	28	27	< 0.6	35	39
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	62	62	< 1.4	84	270
Aromatic C5-C35	DETSC 3072*	10	mg/kg	92	93	< 10	120	320
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	92	150	< 10	230	510
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.13	0.36	< 0.03	0.35	0.13
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.11	0.50	< 0.03	0.76	0.24
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.10	0.43	< 0.03	0.66	0.21



# Summary of Chemical Analysis Soil Samples

Our Ref 21-09542-1

Client Ref

Contract Title Redcar

Lab No	1843295	1843296	1843872	1843873	1843874
Sample ID	PRA-SP011-S47	PRA-SP011-S48	PRA-AV-19-S1	PRA-SP033-S1	PRA-SP033-S2
Depth					
Other ID					
Sample Type	ES	ES	SOIL	SOIL	SOIL
Sampling Date	05/05/2021	05/05/2021	05/05/2021	05/05/2021	05/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Fluorene	DETSC 3303	0.03	mg/kg	0.07	0.31	< 0.03	0.67	0.14
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.69	2.9	< 0.03	2.4	0.88
Anthracene	DETSC 3303	0.03	mg/kg	0.15	0.52	< 0.03	0.83	0.18
Fluoranthene	DETSC 3303#	0.03	mg/kg	6.7	8.3	< 0.03	6.3	2.2
Pyrene	DETSC 3303#	0.03	mg/kg	5.6	7.4	< 0.03	5.5	2.0
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	2.2	2.9	< 0.03	2.4	0.81
Chrysene	DETSC 3303	0.03	mg/kg	1.4	1.9	< 0.03	1.8	0.61
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	2.1	2.6	< 0.03	2.2	0.70
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.65	0.85	< 0.03	0.87	0.23
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.70	1.4	< 0.03	1.2	0.38
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.41	0.71	< 0.03	0.65	0.22
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.12	0.20	< 0.03	0.17	0.05
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.45	0.82	< 0.03	0.75	0.24
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	21	32	< 0.10	27	9.2
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Asbestos Analysis Soil Samples

Our Ref 21-09542-1

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1843283	PRA-SP011-S35	SOIL	Chrysotile	Bundles of Chrysotile fibres	Darryl Fletcher
1843284	PRA-SP011-S36	SOIL	Chrysotile	Bundles of Chrysotile fibres	Darryl Fletcher
1843285	PRA-SP011-S37	SOIL	Amosite	Bundles of Amosite fibres	Darryl Fletcher
1843286	PRA-SP011-S38	SOIL	Chrysotile	Bundles of Chrysotile fibres	Darryl Fletcher
1843287	PRA-SP011-S39	SOIL	Chrysotile	Bundles of Chrysotile fibres	Darryl Fletcher
1843288	PRA-SP011-S40	SOIL	Chrysotile	Bundles of Chrysotile fibres	Darryl Fletcher
1843289	PRA-SP011-S41	SOIL	Amosite	Amosite fibres present in visible board & bundles of Amosite fibres	Darryl Fletcher
1843290	PRA-SP011-S42	SOIL	Chrysotile	Bundles of Chrysotile fibres	Darryl Fletcher
1843291	PRA-SP011-S43	SOIL	Chrysotile	Chrysotile present in microscopic Loose Fibrous Asbestos Debris & bundles of Chrysotile fibres	Darryl Fletcher
1843292	PRA-SP011-S44	SOIL	Chrysotile	Bundles of Chrysotile fibres	Darryl Fletcher
1843293	PRA-SP011-S45	SOIL	Chrysotile	Bundles of Chrysotile fibres	Darryl Fletcher
1843294	PRA-SP011-S46	SOIL	Chrysotile Amosite	Bundles of Chrysotile fibres & bundles of Amosite fibres	Darryl Fletcher
1843295	PRA-SP011-S47	SOIL	Chrysotile	Bundles of Chrysotile fibres	Darryl Fletcher
1843296	PRA-SP011-S48	SOIL	Chrysotile	Bundles of Chrysotile fibres	Darryl Fletcher
1843872	PRA-AV-19-S1	SOIL	NAD	none	Darryl Fletcher
1843873	PRA-SP033-S1	SOIL	Chrysotile	Bundles of Chrysotile fibres	Darryl Fletcher
1843874	PRA-SP033-S2	SOIL	Crocidolite	Bundles of Crocidolite fibres	Darryl Fletcher

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-09542-1

Client Ref

Contract Title Redcar

Lab No	1843283	1843284	1843285	1843286
Sample ID	PRA-SP011-S35	PRA-SP011-S36	PRA-SP011-S37	PRA-SP011-S38
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	05/05/2021	05/05/2021	05/05/2021	05/05/2021
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.008	0.005	0.003	0.002
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.008	0.005	0.003	0.002
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	924.03	909.11	1049.02	1222.37
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	na	0.003	na
% Chrysotile bundles in sample		Mass %	0.008	0.005	na	0.002
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample



# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 21-09542-1

Client Ref

Contract Title Redcar

Lab No	1843287	1843288	1843289	1843290		
Sample ID	PRA-SP011-S39	PRA-SP011-S40	PRA-SP011-S41	PRA-SP011-S42		
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL		
Sampling Date	05/05/2021	05/05/2021	05/05/2021	05/05/2021		
Sampling Time						
Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.002</b>	<b>0.002</b>	<b>0.006</b>	<b>0.007</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	0.006	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.002	0.002	<0.001	0.007
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	1382.43	1109.94	1185.57	978.29
ACMs present*		type			Board	
Mass of ACM in sample		g			0.17	
% ACM by mass		%			0.01	
% asbestos in ACM		%			40	
% asbestos in sample		%			0.006	
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	na	<0.001	na
% Chrysotile bundles in sample		Mass %	0.002	0.002	na	0.007
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 21-09542-1

Client Ref

Contract Title Redcar

	Lab No	1843291	1843292	1843293	1843294	
<b>Sample ID</b>		PRA-SP011-S43	PRA-SP011-S44	PRA-SP011-S45	PRA-SP011-S46	
<b>Depth</b>						
<b>Other ID</b>						
<b>Sample Type</b>		SOIL	SOIL	SOIL	SOIL	
<b>Sampling Date</b>		05/05/2021	05/05/2021	05/05/2021	05/05/2021	
<b>Sampling Time</b>						
<b>Test</b>	<b>Method</b>	<b>Units</b>				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.002</b>	<b>0.001</b>	<b>0.003</b>	<b>0.008</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	0.001	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	0.001	0.003	0.008
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
<b>Breakdown of Gravimetric Analysis (a)</b>						
Mass of Sample		g	1028.90	444.88	414.49	306.42
ACMs present*		type	LFAD			
Mass of ACM in sample		g	0.02			
% ACM by mass		%	0.00			
% asbestos in ACM		%	85			
% asbestos in sample		%	0.001			
<b>Breakdown of Detailed Gravimetric Analysis (b)</b>						
% Amphibole bundles in sample		Mass %	na	na	na	0.004
% Chrysotile bundles in sample		Mass %	<0.001	0.001	0.003	0.004
<b>Breakdown of PCOM Analysis (c)</b>						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
<b>Breakdown of Potentially Respirable Fibre Analysis (d)</b>						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 21-09542-1

Client Ref

Contract Title Redcar

Lab No	1843295	1843296	1843873	1843874		
Sample ID	PRA-SP011-S47	PRA-SP011-S48	PRA-SP033-S1	PRA-SP033-S2		
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL		
Sampling Date	05/05/2021	05/05/2021	05/05/2021	05/05/2021		
Sampling Time						
Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.005</b>	<b>0.002</b>	<b>0.004</b>	<b>0.001</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.005	0.002	0.004	0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	342.27	506.41	973.88	1017.33
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	na	na	0.001
% Chrysotile bundles in sample		Mass %	0.005	0.002	0.004	na
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-09542-1  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
1843283	PRA-SP011-S35 SOIL	05/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1843284	PRA-SP011-S36 SOIL	05/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1843285	PRA-SP011-S37 SOIL	05/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1843286	PRA-SP011-S38 SOIL	05/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1843287	PRA-SP011-S39 SOIL	05/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1843288	PRA-SP011-S40 SOIL	05/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1843289	PRA-SP011-S41 SOIL	05/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1843290	PRA-SP011-S42 SOIL	05/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1843291	PRA-SP011-S43 SOIL	05/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1843292	PRA-SP011-S44 SOIL	05/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1843293	PRA-SP011-S45 SOIL	05/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1843294	PRA-SP011-S46 SOIL	05/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1843295	PRA-SP011-S47 SOIL	05/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1843296	PRA-SP011-S48 SOIL	05/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1843872	PRA-AV-19-S1 SOIL	05/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1843873	PRA-SP033-S1 SOIL	05/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1843874	PRA-SP033-S2 SOIL	05/05/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-09652-1

*Issued:* 21-May-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-09652-1

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 6 Soil samples.

*Date Received* 10-May-21

*Date Started* 10-May-21

*Date Completed* 21-May-21

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

*Notes* **This report supersedes 21-09652, extra testing added.**

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



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-09652-1

Client Ref

Contract Title Redcar

Lab No	1843937	1843938	1843939	1843940	1843941	1843942
Sample ID	PRA-SP033-S3	PRA-SP033-S4	PRA-SP033-S5	PRA-AZ-17-S1	PRA-AU-19-S2	PRA-AX-22-S1
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	06/05/2021	06/05/2021	06/05/2021	06/05/2021	06/05/2021	06/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%	0.006	0.001	< 0.001			
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	4.5	4.1	4.2	7.3	8.0	6.8
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.6	1.2	1.3	0.8	0.8	0.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.3	0.2	0.2	0.2	0.3
Chromium	DETSC 2301#	0.15	mg/kg	11	10	160	26	25	18
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	21	18	19	27	26	24
Lead	DETSC 2301#	0.3	mg/kg	15	25	25	26	24	25
Mercury	DETSC 2325#	0.05	mg/kg	0.16	< 0.05	0.25	0.17	0.41	0.33
Nickel	DETSC 2301#	1	mg/kg	13	5.8	4.9	37	35	27
Vanadium	DETSC 2301#	0.8	mg/kg	20	24	290	29	27	22
Zinc	DETSC 2301#	1	mg/kg	50	67	52	82	73	89
<b>Inorganics</b>									
pH	DETSC 2008#		pH	10.7	11.6	11.7	9.1	9.4	8.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	3.5	3.5	5.2	< 0.1	0.2	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.2	0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.9	10	0.8	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	0.5	1.1	1.0	0.6	1.2	1.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	340	380	160	370	340	140
Sulphur (free)	DETSC 3049#	0.75	mg/kg	7.3	14	18	< 0.75	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	1.9	2.6	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	21	21	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	52	60	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	76	84	< 10	< 10	< 10
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	2.4	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	23	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	68	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	94	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	76	180	< 10	< 10	< 10





# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-09652-1

Client Ref

Contract Title Redcar

<b>Lab No</b>	1843937	1843938	1843939	1843940	1843941	1843942
<b>Sample ID</b>	PRA-SP033-S3	PRA-SP033-S4	PRA-SP033-S5	PRA-AZ-17-S1	PRA-AU-19-S2	PRA-AX-22-S1
<b>Depth</b>						
<b>Other ID</b>						
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	06/05/2021	06/05/2021	06/05/2021	06/05/2021	06/05/2021	06/05/2021
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.14	0.09	0.12	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.36	0.26	0.18	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.30	0.22	0.15	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.24	0.12	0.09	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.8	0.82	0.52	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	0.35	0.15	0.11	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	3.7	2.1	1.2	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	3.1	1.7	0.95	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	1.1	0.68	0.44	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.94	0.54	0.34	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.94	0.62	0.47	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.34	0.24	0.18	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.55	0.37	0.30	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.26	0.19	0.17	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.08	0.05	0.05	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.31	0.20	0.18	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	15	8.3	5.4	< 0.10	< 0.10	< 0.10
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil VOC Samples

Our Ref 21-09652-1  
 Client Ref  
 Contract Title Redcar

Lab No	1843941
Sample ID	PRA-AU-19-S2
Depth	
Other ID	
Sample Type	SOIL
Sampling Date	06/05/2021
Sampling Time	n/s

Test	Method	LOD	Units	
<b>VOCs</b>				
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
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01

## Summary of Chemical Analysis

### Soil VOC Samples

Our Ref 21-09652-1

Client Ref

Contract Title Redcar

Lab No	1843941
Sample ID	PRA-AU-19-S2
Depth	
Other ID	
Sample Type	SOIL
Sampling Date	06/05/2021
Sampling Time	n/s

Test	Method	LOD	Units	
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

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-09652-1

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1843937	PRA-SP033-S3	SOIL	Chrysotile	Chrysotile present in microscopic loose fibrous asbestos debris	D Wilkinson
1843938	PRA-SP033-S4	SOIL	Amosite	Amosite present as fibre bundles	D Wilkinson
1843939	PRA-SP033-S5	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1843940	PRA-AZ-17-S1	SOIL	NAD	none	D Wilkinson
1843941	PRA-AU-19-S2	SOIL	NAD	none	D Wilkinson
1843942	PRA-AX-22-S1	SOIL	NAD	none	D Wilkinson

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-09652-1

Client Ref

Contract Title Redcar

Lab No	1843937	1843938	1843939
Sample ID	PRA-SP033-S3	PRA-SP033-S4	PRA-SP033-S5
Depth			
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	06/05/2021	06/05/2021	06/05/2021
Sampling Time			

Test	Method	Units			
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.006	0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	0.006	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	na	0.001	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1296.81	1072.08	1090.75
ACMs present*		type	LFAD		
Mass of ACM in sample		g	0.10		
% ACM by mass		%	0.01		
% asbestos in ACM		%	85.00		
% asbestos in sample		%	0.006		

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	0.001	na
% Chrysotile bundles in sample		Mass %	na	na	<0.001

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na
Chrysotile fibres		Fibres/g	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-09652-1  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1843937	PRA-SP033-S3 SOIL	06/05/21	GJ 250ml, GJ 60ml, PT 1L		
1843938	PRA-SP033-S4 SOIL	06/05/21	GJ 250ml, GJ 60ml, PT 1L		
1843939	PRA-SP033-S5 SOIL	06/05/21	GJ 250ml, GJ 60ml, PT 1L		
1843940	PRA-AZ-17-S1 SOIL	06/05/21	GJ 250ml, GJ 60ml, PT 1L		
1843941	PRA-AU-19-S2 SOIL	06/05/21	GJ 250ml, GJ 60ml, PT 1L		
1843942	PRA-AX-22-S1 SOIL	06/05/21	GJ 250ml, GJ 60ml, PT 1L		

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

End of Report





# DETS

## Certificate of Analysis

*Certificate Number* 21-09823-1

*Issued:* 20-May-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-09823-1

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 6 Soil samples.

*Date Received* 11-May-21

*Date Started* 11-May-21

*Date Completed* 20-May-21

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

*Notes* **This report supersedes 21-09823, extra testing added.**

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



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-09823-1

Client Ref

Contract Title Redcar

Test	Method	LOD	Units	Lab No	1844774	1844775	1844776	1844777	1844778	1844794
				Sample ID	PRA-SP029-S24	PRA-SP029-S25	PRA-SP029-S26	PRA-SP029-S27	PRA-SP029-S28	PRA-AZ-17-S2
				Depth						
				Other ID						
				Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date	10/05/2021	10/05/2021	10/05/2021	10/05/2021	10/05/2021	10/05/2021
				Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s
Asbestos Quantification	DETSC 1102	0.001	%		< 0.001	< 0.001	0.001	0.003	0.002	
<b>Metals</b>										
Arsenic	DETSC 2301#	0.2	mg/kg		22	19	21	19	15	5.5
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg		3.4	3.8	3.1	4.6	3.8	1.1
Cadmium	DETSC 2301#	0.1	mg/kg		0.6	0.7	0.7	0.9	0.7	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg		120	200	180	170	110	27
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		130	120	190	94	77	23
Lead	DETSC 2301#	0.3	mg/kg		83	91	90	88	63	12
Mercury	DETSC 2325#	0.05	mg/kg		1.2	0.69	1.6	2.0	1.0	< 0.05
Nickel	DETSC 2301#	1	mg/kg		32	34	48	27	21	28
Vanadium	DETSC 2301#	0.8	mg/kg		280	440	360	320	230	35
Zinc	DETSC 2301#	1	mg/kg		270	210	240	280	190	48
<b>Inorganics</b>										
pH	DETSC 2008#		pH		11.1	11.0	11.5	10.5	11.3	9.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg		12	4.6	76	31	22	< 0.1
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		1.5	2.1	1.6	0.9	1.9	0.7
Organic matter	DETSC 2002#	0.1	%		2.3	2.1	2.0	1.4	1.6	1.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l		920	540	860	770	720	100
Sulphur (free)	DETSC 3049#	0.75	mg/kg		8.3	10	11	11	19	< 0.75
<b>Petroleum Hydrocarbons</b>										
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		3.1	1.8	2.8	2.0	2.0	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg		6.7	11	6.1	11	2.1	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg		52	160	48	57	35	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg		210	400	190	170	160	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg		280	570	250	240	190	< 10
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		1.9	2.8	1.8	3.6	2.2	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg		1.3	30	9.9	15	7.9	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg		70	320	97	95	83	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg		240	760	310	260	240	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg		320	1100	410	370	340	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg		590	1700	670	610	530	< 10



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-09823-1

Client Ref

Contract Title Redcar

<b>Lab No</b>	1844774	1844775	1844776	1844777	1844778	1844794
<b>Sample ID</b>	PRA-SP029-S24	PRA-SP029-S25	PRA-SP029-S26	PRA-SP029-S27	PRA-SP029-S28	PRA-AZ-17-S2
<b>Depth</b>						
<b>Other ID</b>						
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	10/05/2021	10/05/2021	10/05/2021	10/05/2021	10/05/2021	10/05/2021
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.27	0.33	0.18	0.16	0.26	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.07	0.04	0.04	< 0.03	0.07	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.42	0.38	0.41	0.15	0.30	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.60	0.39	0.50	0.13	0.37	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	5.2	2.5	4.0	1.3	3.7	0.07
Anthracene	DETSC 3303	0.03	mg/kg	0.52	0.35	0.53	0.29	0.55	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	6.8	4.9	5.2	4.1	8.6	0.05
Pyrene	DETSC 3303#	0.03	mg/kg	5.1	3.9	4.2	3.3	6.9	0.10
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	2.0	1.8	1.8	1.1	3.2	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	2.4	1.9	2.0	1.4	3.3	0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	2.3	2.1	2.3	1.3	3.8	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	1.0	0.90	1.0	0.57	1.7	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	1.1	1.2	1.4	0.61	2.1	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.84	0.84	0.89	0.43	1.3	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.21	0.16	0.20	0.11	0.27	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.97	0.85	0.95	0.48	1.5	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	30	23	26	15	38	0.22
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-09823-1

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1844774	PRA-SP029-S24	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1844775	PRA-SP029-S25	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1844776	PRA-SP029-S26	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1844777	PRA-SP029-S27	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1844778	PRA-SP029-S28	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1844794	PRA-AZ-17-S2	SOIL	NAD	none	D Wilkinson

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-09823-1

Client Ref

Contract Title Redcar

Lab No	1844774	1844775	1844776	1844777
Sample ID	PRA-SP029-S24	PRA-SP029-S25	PRA-SP029-S26	PRA-SP029-S27
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	10/05/2021	10/05/2021	10/05/2021	10/05/2021
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	< 0.001	0.001	0.003
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	<0.001	0.001	0.003
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	1154.41	1250.55	1257.93	1281.84
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	na	na	na
% Chrysotile bundles in sample		Mass %	<0.001	<0.001	0.001	0.003
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Summary of Asbestos Quantification Analysis Soil Samples

Our Ref 21-09823-1

Client Ref

Contract Title Redcar

Lab No	1844778
Sample ID	PRA-SP029-S28
Depth	
Other ID	
Sample Type	SOIL
Sampling Date	10/05/2021
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.002</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.002
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na

### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	923.38
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	

### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na
% Chrysotile bundles in sample		Mass %	0.002

### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na
% Chrysotile fibres in sample		Mass %	na

### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

\* Denotes test or material description outside of UKAS accreditation.  
% asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
Recommended sample size for quantification is approximately 1kg  
# denotes deviating sample



## Information in Support of the Analytical Results

Our Ref 21-09823-1  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1844774	PRA-SP029-S24 SOIL	10/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1844775	PRA-SP029-S25 SOIL	10/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1844776	PRA-SP029-S26 SOIL	10/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1844777	PRA-SP029-S27 SOIL	10/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1844778	PRA-SP029-S28 SOIL	10/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1844794	PRA-AZ-17-S2 SOIL	10/05/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-09913-1

*Issued:* 24-May-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-09913-1

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* (not supplied)

*Description* 7 Soil samples.

*Date Received* 12-May-21

*Date Started* 12-May-21

*Date Completed* 24-May-21

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

*Notes* This test supersedes 21-09913, Additional testing.

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*Approved By*



Adam Fenwick  
Contracts Manager



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-09913-1

Client Ref

Contract Title

Lab No	1845256	1845257	1845258	1845259	1845260	1845261	1845262
Sample ID	PRA-AV-19-S2	PRA-AV-19-S3	PRA-AY-17-S2	PRA-SP034-S1	PRA-SP034-S2	PRA-SP034-S3	PRA-AV-20-S1
Depth	2.5	2.5	5				2
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	08/05/2021	08/05/2021	08/05/2021	10/05/2021	10/05/2021	10/05/2021	10/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Asbestos Quantification	DETSC 1102	0.001	%						< 0.001	
<b>Metals</b>										
Arsenic	DETSC 2301#	0.2	mg/kg	9.6	6.4	7.1	19	30	52	11
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	3.7	4.6	1.1	1.5	1.6	1.8	4.5
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	< 0.1	0.2	0.5	0.9	0.8	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	25	23	19	42	32	32	38
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	9.6	32	21	59	82	62	6.5
Lead	DETSC 2301#	0.3	mg/kg	13	14	19	190	640	560	43
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	0.46	0.14	< 0.05
Nickel	DETSC 2301#	1	mg/kg	28	28	25	10	22	27	30
Vanadium	DETSC 2301#	0.8	mg/kg	33	27	23	270	240	250	50
Zinc	DETSC 2301#	1	mg/kg	53	59	65	100	260	240	50
<b>Inorganics</b>										
pH	DETSC 2008#		pH	8.3	8.7	9.3	9.2	8.9	8.2	8.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	0.2	22	4.3	29	11	1.4
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	2.2	< 0.6	0.8	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	0.1	0.8	2.4	0.8	0.6	1.0	1.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1700	2100	580	640	950	46	1600
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	1.2	24	4.5	0.82	0.89	< 0.75
<b>Petroleum Hydrocarbons</b>										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
<b>PAHs</b>										
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.06	0.03	0.03	< 0.03



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-09913-1

Client Ref

Contract Title

Lab No	1845256	1845257	1845258	1845259	1845260	1845261	1845262
Sample ID	PRA-AV-19-S2	PRA-AV-19-S3	PRA-AY-17-S2	PRA-SP034-S1	PRA-SP034-S2	PRA-SP034-S3	PRA-AV-20-S1
Depth	2.5	2.5	5				2
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	08/05/2021	08/05/2021	08/05/2021	10/05/2021	10/05/2021	10/05/2021	10/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	0.04	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	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.04	0.17	0.24	0.17	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.03	0.04	0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.24	0.40	0.27	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.19	0.33	0.23	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.11	0.18	0.12	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.10	0.19	0.12	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.14	0.24	0.15	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.06	0.10	0.07	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.08	0.12	0.09	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.05	0.08	0.07	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	0.05	0.09	0.07	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	1.3	2.1	1.5	< 0.10
<b>PCBs</b>										
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				
<b>Phenols</b>										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	0.8	< 0.3	< 0.3	< 0.3	< 0.3



# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-09913-1

Client Ref

Contract Title

Lab No	1845256	1845257	1845258	1845262
Sample ID	PRA-AV-19-S2	PRA-AV-19-S3	PRA-AV-17-S2	PRA-AV-20-S1
Depth	2.5	2.5	5	2
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	08/05/2021	08/05/2021	08/05/2021	10/05/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
<b>VOCs</b>							
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	
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01	

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-09913-1

Client Ref

Contract Title

Lab No	1845256	1845257	1845258	1845262
Sample ID	PRA-AV-19-S2	PRA-AV-19-S3	PRA-AV-17-S2	PRA-AV-20-S1
Depth	2.5	2.5	5	2
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	08/05/2021	08/05/2021	08/05/2021	10/05/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
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	
<b>SVOCs</b>							
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
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



# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-09913-1

Client Ref

Contract Title

Lab No	1845256	1845257	1845258	1845262
Sample ID	PRA-AV-19-S2	PRA-AV-19-S3	PRA-AY-17-S2	PRA-AV-20-S1
Depth	2.5	2.5	5	2
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	08/05/2021	08/05/2021	08/05/2021	10/05/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
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

## Summary of Asbestos Analysis Soil Samples

*Our Ref* 21-09913-1

*Client Ref*

*Contract Title*

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1845256	PRA-AV-19-S2 2.5	SOIL	NAD	none	Keith Wilson
1845257	PRA-AV-19-S3 2.5	SOIL	NAD	none	Keith Wilson
1845258	PRA-AY-17-S2 5	SOIL	NAD	none	Keith Wilson
1845259	PRA-SP034-S1	SOIL	NAD	none	Keith Wilson
1845260	PRA-SP034-S2	SOIL	NAD	none	Keith Wilson
1845261	PRA-SP034-S3	SOIL	Amosite	Bundle of Amosite fibres	Keith Wilson
1845262	PRA-AV-20-S1 2	SOIL	NAD	none	Keith Wilson

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-09913-1

Client Ref

Contract Title

Lab No	1845261
.Sample ID	PRA-SP034-S3
Depth	
Other ID	
Sample Type	SOIL
Sampling Date	10/05/2021
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1462.48
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	<0.001
% Chrysotile bundles in sample		Mass %	na

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na
% Chrysotile fibres in sample		Mass %	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-09913-1  
 Client Ref  
 Contract

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1845256	PRA-AV-19-S2 2.5 SOIL	08/05/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1845257	PRA-AV-19-S3 2.5 SOIL	08/05/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1845258	PRA-AY-17-S2 5 SOIL	08/05/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1845259	PRA-SP034-S1 SOIL	10/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1845260	PRA-SP034-S2 SOIL	10/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1845261	PRA-SP034-S3 SOIL	10/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1845262	PRA-AV-20-S1 2 SOIL	10/05/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-10186

*Issued:* 01-Jun-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-10186

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 4 Soil samples, 1 Water sample.

*Date Received* 14-May-21

*Date Started* 14-May-21

*Date Completed* 01-Jun-21

*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



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-10186

Client Ref

Contract Title Redcar

Lab No	1847014	1847015	1847016	1847017
Sample ID	PRA-BA-17-S1	PRA-AW-20-S1	PRA-AY-16-S1	PRA-AU-21-S1
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/05/2021	12/05/2021	12/05/2021	12/05/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
<b>Metals</b>							
Arsenic	DETSC 2301#	0.2	mg/kg	8.2	7.2	6.3	7.3
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.9	0.6	0.4	0.6
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.2	0.3	0.2
Chromium	DETSC 2301#	0.15	mg/kg	24	23	16	22
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	26	24	21	25
Lead	DETSC 2301#	0.3	mg/kg	25	22	23	22
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	33	33	23	30
Vanadium	DETSC 2301#	0.8	mg/kg	28	26	19	25
Zinc	DETSC 2301#	1	mg/kg	76	70	87	75
<b>Inorganics</b>							
pH	DETSC 2008#		pH	8.2	8.2	8.5	8.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	0.6	0.1	0.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	2.4	< 0.6
Organic matter	DETSC 2002#	0.1	%	2.6	3.2	1.9	3.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	160	240	96	210
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	1.1	< 0.75
<b>Petroleum Hydrocarbons</b>							
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	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
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	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
<b>PAHs</b>							
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-10186

Client Ref

Contract Title Redcar

Lab No	1847014	1847015	1847016	1847017
Sample ID	PRA-BA-17-S1	PRA-AW-20-S1	PRA-AY-16-S1	PRA-AU-21-S1
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/05/2021	12/05/2021	12/05/2021	12/05/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.04	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 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
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
<b>PCBs</b>							
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			
<b>Phenols</b>							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-10186

Client Ref

Contract Title Redcar

Lab No	1847014	1847015	1847016	1847017
Sample ID	PRA-BA-17-S1	PRA-AW-20-S1	PRA-AY-16-S1	PRA-AU-21-S1
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/05/2021	12/05/2021	12/05/2021	12/05/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
<b>VOCs</b>							
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	
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01	

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-10186

Client Ref

Contract Title Redcar

Lab No	1847014	1847015	1847016	1847017
Sample ID	PRA-BA-17-S1	PRA-AW-20-S1	PRA-AY-16-S1	PRA-AU-21-S1
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/05/2021	12/05/2021	12/05/2021	12/05/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
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	
<b>SVOCs</b>							
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
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

## Summary of Chemical Analysis Soil Samples

Our Ref 21-10186

Client Ref

Contract Title Redcar

Lab No	1847014	1847015	1847016	1847017
Sample ID	PRA-BA-17-S1	PRA-AW-20-S1	PRA-AY-16-S1	PRA-AU-21-S1
Depth				
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	12/05/2021	12/05/2021	12/05/2021	12/05/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
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

## Summary of Chemical Analysis

### Water Samples

Our Ref 21-10186

Client Ref

Contract Title Redcar

Lab No	1847018
Sample ID	DISCHARGE
Depth	
Other ID	
Sample Type	WATER
Sampling Date	12/05/2021
Sampling Time	0930

Test	Method	LOD	Units	
<b>Metals</b>				
Phosphorus as P, Dissolved	DETSC 2306	0.018	mg/l	0.038
<b>Inorganics</b>				
pH	DETSC 2008		pH	10.2
Biochemical Oxygen Demand, Total	DETSC 2031	1	mg/l	2.4
Chemical Oxygen Demand, Total	DETSC 2032	10	mg/l	< 10
Chemical Oxygen Demand, Settled	DETSC 2032	10	mg/l	< 10
Solids, Settleable	DETSC 2034*	5	mg/l	< 5.0
Suspended Solids	DETSC 2034	5	mg/l	6.0
Solids, Non Volatile Suspended	DETSC 2034	10	mg/l	< 10
Ammoniacal Nitrogen as NH4	DETSC 2207	0.015	mg/l	0.40
Chloride	DETSC 2055	0.1	mg/l	320
Sulphate as SO4	DETSC 2055	0.1	mg/l	470
Sulphide	DETSC 2208	10	ug/l	21

## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-10186

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1847014	PRA-BA-17-S1	SOIL	NAD	none	D Wilkinson
1847015	PRA-AW-20-S1	SOIL	NAD	none	D Wilkinson
1847016	PRA-AY-16-S1	SOIL	NAD	none	D Wilkinson
1847017	PRA-AU-21-S1	SOIL	NAD	none	D Wilkinson

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 21-10186  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1847014	PRA-BA-17-S1 SOIL	12/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1847015	PRA-AW-20-S1 SOIL	12/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1847016	PRA-AY-16-S1 SOIL	12/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1847017	PRA-AU-21-S1 SOIL	12/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1847018	DISCHARGE WATER	12/05/21	GB 1L, GV x2, PB 1L	pH/Cond/TDS (1 days)	

Key: G-Glass P-Plastic J-Jar T-Tub B-Bottle V-Vial

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-10292

*Issued:* 20-May-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-10292

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 5 Soil samples.

*Date Received* 29-Apr-21

*Date Started* 17-May-21

*Date Completed* 20-May-21

*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



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## Summary of Asbestos Analysis

### Samples

*Our Ref* 21-10292

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Sample Location	Material Type	Result	Comment*	Analyst
<p>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.</p>						

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-10292

Client Ref

Contract Title Redcar

<b>Lab No</b>	1847792	1847793	1847794	1847795
<b>Sample ID</b>	PRA-SP029-S18	PRA-SP029-S19	PRA-SP029-S21	PRA-SP029-S22
<b>Depth</b>				
<b>Other ID</b>				
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	26/04/2021	26/04/2021	26/04/2021	26/04/2021
<b>Sampling Time</b>				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.003	0.021	0.021	0.007
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	0.020	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.003	<0.001	0.021	0.007
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1194.34	988.13	1026.29	1018.45
ACMs present*		type		Board		
Mass of ACM in sample		g		0.50		
% ACM by mass		%		0.05		
% asbestos in ACM		%		40		
% asbestos in sample		%		0.020		

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na	0.020	0.003
% Chrysotile bundles in sample		Mass %	0.003	<0.001	<0.001	0.004

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Summary of Asbestos Quantification Analysis Soil Samples

Our Ref 21-10292

Client Ref

Contract Title Redcar

Lab No	1847796
Sample ID	PRA-SP029-S23
Depth	
Other ID	
Sample Type	SOIL
Sampling Date	26/04/2021
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.026</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.026
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na

### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1206.34
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	

### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na
% Chrysotile bundles in sample		Mass %	0.026

### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na
% Chrysotile fibres in sample		Mass %	na

### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-10292  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1847792	PRA-SP029-S18 SOIL	26/04/21	No containers logged		Cannot evaluate
1847793	PRA-SP029-S19 SOIL	26/04/21	No containers logged		Cannot evaluate
1847794	PRA-SP029-S21 SOIL	26/04/21	No containers logged		Cannot evaluate
1847795	PRA-SP029-S22 SOIL	26/04/21	No containers logged		Cannot evaluate
1847796	PRA-SP029-S23 SOIL	26/04/21	No containers logged		Cannot evaluate

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.

### 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

End of Report





# DETS

## Certificate of Analysis

*Certificate Number* 21-10480

*Issued:* 25-May-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-10480

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 8 Soil samples.

*Date Received* 18-May-21

*Date Started* 18-May-21

*Date Completed* 25-May-21

*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



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## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-10480

Client Ref

Contract Title Redcar

Lab No	1848870	1848871	1848872	1848873	1848874	1848875
.Sample ID	PRA-AU-22-S1	PRA-SPO35-S1	PRA-SPO35-S3	PRA-SPO34-S4	PRA-SPO34-S5	PRA-AW-21-S1
Depth	4.50					1.50
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	13/05/2021	13/05/2021	13/05/2021	13/05/2021	13/05/2021	13/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	8.9	36	31	50	34	12
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.5	2.4	3.6	2.4	2.2	2.6
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.5	0.4	0.8	0.5	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	24	110	91	72	110	37
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	30	62	64	95	56	13
Lead	DETSC 2301#	0.3	mg/kg	29	78	66	330	120	35
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.08	0.17	0.27	0.41	< 0.05
Nickel	DETSC 2301#	1	mg/kg	36	27	17	32	30	47
Vanadium	DETSC 2301#	0.8	mg/kg	26	340	300	260	370	45
Zinc	DETSC 2301#	1	mg/kg	100	270	300	470	340	91
<b>Inorganics</b>									
pH	DETSC 2008#		pH	10.0	9.5	10.1	9.7	9.4	8.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	9.3	10	25	11	0.7
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	0.4	0.3	0.1	0.3	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	1.2	1.2	0.6	0.7
Organic matter	DETSC 2002#	0.1	%	3.7	0.9	1.8	2.3	2.7	2.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	330	900	760	1100	930	1900
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	2.6	6.0	< 0.75
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
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	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	41	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	120	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	160	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	160	< 10	< 10	< 10
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.44	0.32	0.18	0.51	< 0.03

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-10480

Client Ref

Contract Title Redcar

Lab No	1848870	1848871	1848872	1848873	1848874	1848875
Sample ID	PRA-AU-22-S1	PRA-SP035-S1	PRA-SP035-S3	PRA-SP034-S4	PRA-SP034-S5	PRA-AW-21-S1
Depth	4.50					1.50
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	13/05/2021	13/05/2021	13/05/2021	13/05/2021	13/05/2021	13/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.08	0.18	0.04	0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.09	0.19	0.05	0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.06	0.15	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.03	1.4	2.2	2.0	1.9	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.27	0.81	0.20	0.17	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	4.9	26	3.2	2.9	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	4.5	26	2.5	2.2	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	2.3	6.6	1.2	1.1	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	2.0	7.5	1.0	1.0	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	3.2	16	1.2	1.2	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	1.1	11	0.45	0.37	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	1.8	6.6	0.49	0.43	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.88	3.5	0.24	0.29	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.33	1.3	0.13	0.12	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	1.2	3.9	0.36	0.37	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	25	110	13	13	< 0.10
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-10480

Client Ref

Contract Title Redcar

Lab No	1848876	1848877
.Sample ID	PRA-AS-17-S1	PRA-AU-17-S2
Depth	4.50	3.00
Other ID		
Sample Type	ES	ES
Sampling Date	13/05/2021	13/05/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
<b>Metals</b>					
Arsenic	DETSC 2301#	0.2	mg/kg	28	21
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.2	1.1
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	0.4
Chromium	DETSC 2301#	0.15	mg/kg	120	290
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	130	76
Lead	DETSC 2301#	0.3	mg/kg	69	49
Mercury	DETSC 2325#	0.05	mg/kg	0.75	0.06
Nickel	DETSC 2301#	1	mg/kg	55	31
Vanadium	DETSC 2301#	0.8	mg/kg	340	790
Zinc	DETSC 2301#	1	mg/kg	230	110
<b>Inorganics</b>					
pH	DETSC 2008#		pH	10.0	10.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	14	2.4
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.9	0.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	290	190
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>					
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	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
<b>PAHs</b>					
Naphthalene	DETSC 3303#	0.03	mg/kg	0.10	< 0.03

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-10480

Client Ref

Contract Title Redcar

<b>Lab No</b>	1848876	1848877
<b>Sample ID</b>	PRA-AS-17-S1	PRA-AU-17-S2
<b>Depth</b>	4.50	3.00
<b>Other ID</b>		
<b>Sample Type</b>	ES	ES
<b>Sampling Date</b>	13/05/2021	13/05/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.06	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.04	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.80	0.06
Anthracene	DETSC 3303	0.03	mg/kg	0.20	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	2.7	0.12
Pyrene	DETSC 3303#	0.03	mg/kg	2.7	0.08
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	1.8	0.11
Chrysene	DETSC 3303	0.03	mg/kg	1.2	0.07
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	2.1	0.10
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.65	0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.92	0.04
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.53	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.19	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.71	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	15	0.58
<b>Phenols</b>					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

## Summary of Chemical Analysis

### Soil VOC/SVOC Samples

Our Ref 21-10480  
 Client Ref  
 Contract Title Redcar

Lab No	1848870	1848875
.Sample ID	PRA-AU-22-S1	PRA-AW-21-S1
Depth	4.50	1.50
Other ID		
Sample Type	ES	ES
Sampling Date	13/05/2021	13/05/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
<b>VOCs</b>					
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	



## Summary of Chemical Analysis

### Soil VOC/SVOC Samples

Our Ref 21-10480

Client Ref

Contract Title Redcar

Lab No	1848870	1848875
.Sample ID	PRA-AU-22-S1	PRA-AW-21-S1
Depth	4.50	1.50
Other ID		
Sample Type	ES	ES
Sampling Date	13/05/2021	13/05/2021
Sampling Time	n/s	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	
<b>SVOCs</b>					
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		1.1
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

## Summary of Chemical Analysis

### Soil VOC/SVOC Samples

Our Ref 21-10480

Client Ref

Contract Title Redcar

<b>Lab No</b>	1848870	1848875
<b>Sample ID</b>	PRA-AU-22-S1	PRA-AW-21-S1
<b>Depth</b>	4.50	1.50
<b>Other ID</b>		
<b>Sample Type</b>	ES	ES
<b>Sampling Date</b>	13/05/2021	13/05/2021
<b>Sampling Time</b>	n/s	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

## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-10480

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1848870	PRA-AU-22-S1 4.50	SOIL	NAD	none	Darryl Fletcher
1848871	PRA-SP035-S1	SOIL	NAD	none	Darryl Fletcher
1848872	PRA-SP035-S3	SOIL	NAD	none	Darryl Fletcher
1848873	PRA-SP034-S4	SOIL	NAD	none	Darryl Fletcher
1848874	PRA-SP034-S5	SOIL	Chrysotile	Bundles of Chrysotile fibres	Darryl Fletcher
1848875	PRA-AW-21-S1 1.50	SOIL	NAD	none	Darryl Fletcher
1848876	PRA-AS-17-S1 4.50	SOIL	NAD	none	Darryl Fletcher
1848877	PRA-AU-17-S2 3.00	SOIL	NAD	none	Darryl Fletcher

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 21-10480

Client Ref

Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time	Inappropriate
				exceeded for tests	container for tests
1848870	PRA-AU-22-S1 4.50 SOIL	13/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1848871	PRA-SP035-S1 SOIL	13/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1848872	PRA-SP035-S3 SOIL	13/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1848873	PRA-SP034-S4 SOIL	13/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1848874	PRA-SP034-S5 SOIL	13/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1848875	PRA-AW-21-S1 1.50 SOIL	13/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1848876	PRA-AS-17-S1 4.50 SOIL	13/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1848877	PRA-AU-17-S2 3.00 SOIL	13/05/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-10482

*Issued:* 26-May-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-10482

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 12 Soil samples.

*Date Received* 18-May-21

*Date Started* 18-May-21

*Date Completed* 26-May-21

*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



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-10482

Client Ref

Contract Title Redcar

Lab No	1848881	1848882	1848883	1848884	1848885	1848886
Sample ID	PRA-AY-16-S2	PRA-AY-16-S3	PRA-AY-16-S4	PRA-AY-16-S5	PRA-AW-19-S1	PRA-AW-19-S2
Depth		1.60	2.00	1.60	0.30	0.80
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	14/05/2021	14/05/2021	14/05/2021	14/05/2021	14/05/2021	14/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units	1848881	1848882	1848883	1848884	1848885	1848886
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	29	8.1	6.7	7.4	7.4	7.1
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.8	0.7	1.0	0.8	1.1	1.0
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.2	0.2	0.2	0.2	0.2
Chromium	DETSC 2301#	0.15	mg/kg	32	30	24	20	28	23
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	28	28	25	23	27	26
Lead	DETSC 2301#	0.3	mg/kg	20	27	20	23	21	21
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	39	40	33	30	36	34
Vanadium	DETSC 2301#	0.8	mg/kg	37	32	25	22	29	25
Zinc	DETSC 2301#	1	mg/kg	77	80	70	82	67	68
<b>Inorganics</b>									
pH	DETSC 2008#		pH	8.6	8.4	8.4	8.9	8.5	8.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
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	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	2.3	3.4	4.6	3.7	3.7	3.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	64	97	160	790	120	160
Sulphur (free)	DETSC 3049#	0.75	mg/kg	2.4	< 0.75	1.3	140	2.4	< 0.75
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	1.0	< 0.01	< 0.01	0.51	< 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	0.09	< 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	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-10482

Client Ref

Contract Title Redcar

Lab No	1848881	1848882	1848883	1848884	1848885	1848886
Sample ID	PRA-AY-16-S2	PRA-AY-16-S3	PRA-AY-16-S4	PRA-AY-16-S5	PRA-AW-19-S1	PRA-AW-19-S2
Depth		1.60	2.00	1.60	0.30	0.80
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	14/05/2021	14/05/2021	14/05/2021	14/05/2021	14/05/2021	14/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.05	21	5.7	0.14	0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.12	0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.12	0.04	< 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	< 0.03	< 0.03	< 0.03	0.04	0.04	< 0.03
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	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 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	< 0.03	< 0.03	< 0.03
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	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	22	5.7	0.18	< 0.10
<b>PCBs</b>									
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			
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-10482

Client Ref

Contract Title Redcar

Lab No	1848881	1848882	1848883	1848884	1848885	1848886
Sample ID	PRA-AY-16-S2	PRA-AY-16-S3	PRA-AY-16-S4	PRA-AY-16-S5	PRA-AW-19-S1	PRA-AW-19-S2
Depth		1.60	2.00	1.60	0.30	0.80
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	14/05/2021	14/05/2021	14/05/2021	14/05/2021	14/05/2021	14/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>VOCs</b>									
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		0.80		< 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	
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	

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-10482  
 Client Ref  
 Contract Title Redcar

Lab No	1848881	1848882	1848883	1848884	1848885	1848886
Sample ID	PRA-AY-16-S2	PRA-AY-16-S3	PRA-AY-16-S4	PRA-AY-16-S5	PRA-AW-19-S1	PRA-AW-19-S2
Depth		1.60	2.00	1.60	0.30	0.80
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	14/05/2021	14/05/2021	14/05/2021	14/05/2021	14/05/2021	14/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
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	
<b>SVOCs</b>									
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
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

## Summary of Chemical Analysis Soil Samples

Our Ref 21-10482

Client Ref

Contract Title Redcar

Lab No	1848881	1848882	1848883	1848884	1848885	1848886
Sample ID	PRA-AY-16-S2	PRA-AY-16-S3	PRA-AY-16-S4	PRA-AY-16-S5	PRA-AW-19-S1	PRA-AW-19-S2
Depth		1.60	2.00	1.60	0.30	0.80
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	14/05/2021	14/05/2021	14/05/2021	14/05/2021	14/05/2021	14/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
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

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-10482

Client Ref

Contract Title Redcar

Lab No	1848887	1848888	1848889	1848890	1848891	1848892
Sample ID	PRA-AW-19-S3	PRA-AW-19-S4	PRA-AW-19-S5	PRA-AW-19-S6	PRA-AX-19-S1	PRA-AW-18-S1
Depth	0.80	1.50	1.50	1.30	1.50	3.00
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	14/05/2021	15/05/2021	15/05/2021	15/05/2021	15/05/2021	15/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	9.3	8.3	8.6	8.2	9.6	7.0
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.6	0.3	0.9	0.6	0.4	0.6
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.3	0.2	0.2	0.2	0.2
Chromium	DETSC 2301#	0.15	mg/kg	27	25	30	26	27	32
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	31	30	29	30	32	26
Lead	DETSC 2301#	0.3	mg/kg	29	28	24	25	27	19
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	41	36	41	38	39	39
Vanadium	DETSC 2301#	0.8	mg/kg	29	27	30	29	29	38
Zinc	DETSC 2301#	1	mg/kg	86	94	76	82	86	74
<b>Inorganics</b>									
pH	DETSC 2008#		pH	8.1	8.2	8.4	8.3	8.0	8.4
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
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	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	3.8	2.7	4.5	3.3	3.0	2.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	190	150	120	87	220	130
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
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	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-10482

Client Ref

Contract Title Redcar

Lab No	1848887	1848888	1848889	1848890	1848891	1848892
Sample ID	PRA-AW-19-S3	PRA-AW-19-S4	PRA-AW-19-S5	PRA-AW-19-S6	PRA-AX-19-S1	PRA-AW-18-S1
Depth	0.80	1.50	1.50	1.30	1.50	3.00
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	14/05/2021	15/05/2021	15/05/2021	15/05/2021	15/05/2021	15/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>PAHs</b>									
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	0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
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	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.03	0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 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	< 0.03	< 0.03	< 0.03
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	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
<b>PCBs</b>									
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		
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-10482

Client Ref

Contract Title Redcar

Lab No	1848887	1848888	1848889	1848890	1848891	1848892
Sample ID	PRA-AW-19-S3	PRA-AW-19-S4	PRA-AW-19-S5	PRA-AW-19-S6	PRA-AX-19-S1	PRA-AW-18-S1
Depth	0.80	1.50	1.50	1.30	1.50	3.00
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	14/05/2021	15/05/2021	15/05/2021	15/05/2021	15/05/2021	15/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

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

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-10482

Client Ref

Contract Title Redcar

Lab No	1848887	1848888	1848889	1848890	1848891	1848892
Sample ID	PRA-AW-19-S3	PRA-AW-19-S4	PRA-AW-19-S5	PRA-AW-19-S6	PRA-AX-19-S1	PRA-AW-18-S1
Depth	0.80	1.50	1.50	1.30	1.50	3.00
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	14/05/2021	15/05/2021	15/05/2021	15/05/2021	15/05/2021	15/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
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	
<b>SVOCs</b>									
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
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

## Summary of Chemical Analysis Soil Samples

Our Ref 21-10482

Client Ref

Contract Title Redcar

Lab No	1848887	1848888	1848889	1848890	1848891	1848892
Sample ID	PRA-AW-19-S3	PRA-AW-19-S4	PRA-AW-19-S5	PRA-AW-19-S6	PRA-AX-19-S1	PRA-AW-18-S1
Depth	0.80	1.50	1.50	1.30	1.50	3.00
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	14/05/2021	15/05/2021	15/05/2021	15/05/2021	15/05/2021	15/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
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

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-10482

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1848881	PRA-AY-16-S2	SOIL	NAD	none	Steven Lambert
1848882	PRA-AY-16-S3 1.60	SOIL	NAD	none	Steven Lambert
1848883	PRA-AY-16-S4 2.00	SOIL	NAD	none	Steven Lambert
1848884	PRA-AY-16-S5 1.60	SOIL	NAD	none	Steven Lambert
1848885	PRA-AW-19-S1 0.30	SOIL	NAD	none	Steven Lambert
1848886	PRA-AW-19-S2 0.80	SOIL	NAD	none	Steven Lambert
1848887	PRA-AW-19-S3 0.80	SOIL	NAD	none	Steven Lambert
1848888	PRA-AW-19-S4 1.50	SOIL	NAD	none	Steven Lambert
1848889	PRA-AW-19-S5 1.50	SOIL	NAD	none	Steven Lambert
1848890	PRA-AW-19-S6 1.30	SOIL	NAD	none	Steven Lambert
1848891	PRA-AX-19-S1 1.50	SOIL	NAD	none	Steven Lambert
1848892	PRA-AW-18-S1 3.00	SOIL	NAD	none	Steven Lambert

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 21-10482  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1848881	PRA-AY-16-S2 SOIL	14/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1848882	PRA-AY-16-S3 1.60 SOIL	14/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1848883	PRA-AY-16-S4 2.00 SOIL	14/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1848884	PRA-AY-16-S5 1.60 SOIL	14/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1848885	PRA-AW-19-S1 0.30 SOIL	14/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1848886	PRA-AW-19-S2 0.80 SOIL	14/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1848887	PRA-AW-19-S3 0.80 SOIL	14/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1848888	PRA-AW-19-S4 1.50 SOIL	15/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1848889	PRA-AW-19-S5 1.50 SOIL	15/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1848890	PRA-AW-19-S6 1.30 SOIL	15/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1848891	PRA-AX-19-S1 1.50 SOIL	15/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1848892	PRA-AW-18-S1 3.00 SOIL	15/05/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-10594

*Issued:* 26-May-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-10594

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 7 Soil samples.

*Date Received* 19-May-21

*Date Started* 19-May-21

*Date Completed* 26-May-21

*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



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## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-10594

Client Ref

Contract Title Redcar

Lab No	1849504	1849505	1849506	1849507	1849508	1849509	1849510
Sample ID	PRA-AW-22-S1	PRA-AV-18-S2	PRA-AV-18-S3	PRA-AV-18-S4	PRA-AV-17-S1	PRA-AX-16-S1	PRA-AX-17-S1
Depth	1.00	0.30	1.30			3.00	3.00
Other ID							
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	15/05/2021	15/05/2021	15/05/2021	17/05/2021	17/05/2021	17/05/2021	17/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
<b>Metals</b>										
Arsenic	DETSC 2301#	0.2	mg/kg	7.4	7.3	7.3	7.4	9.6	6.9	7.2
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.0	0.6	0.5	< 0.2	0.3	< 0.2	< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.2	0.2	0.1	0.3	0.2	0.3
Chromium	DETSC 2301#	0.15	mg/kg	24	24	24	22	27	21	24
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	10	25	25	26	24	23	25
Lead	DETSC 2301#	0.3	mg/kg	35	22	22	20	25	22	29
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	33	29	29	27	38	25	30
Vanadium	DETSC 2301#	0.8	mg/kg	27	26	25	24	30	22	25
Zinc	DETSC 2301#	1	mg/kg	99	73	73	65	81	72	88
<b>Inorganics</b>										
pH	DETSC 2008#		pH	8.3	8.2	8.2	8.5	8.5	8.1	8.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.5	0.4	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	< 0.1	2.8	2.9	2.0	2.2	2.6	3.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	920	160	160	450	600	160	150
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-10594

Client Ref

Contract Title Redcar

Lab No	1849504	1849505	1849506	1849507	1849508	1849509	1849510
Sample ID	PRA-AW-22-S1	PRA-AV-18-S2	PRA-AV-18-S3	PRA-AV-18-S4	PRA-AV-17-S1	PRA-AX-16-S1	PRA-AX-17-S1
Depth	1.00	0.30	1.30			3.00	3.00
Other ID							
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	15/05/2021	15/05/2021	15/05/2021	17/05/2021	17/05/2021	17/05/2021	17/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units								
<b>PAHs</b>											
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.03	< 0.03	0.03	< 0.03	< 0.03	0.04	
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	< 0.03	
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.04	
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.08	0.08	0.07	0.06	0.04	0.05	0.05	
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	0.06	< 0.03	0.04	0.03	< 0.03	0.05	
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.04	0.04	0.04	0.04	0.03	< 0.03	0.03	
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.12	0.11	0.11	0.11	0.10	0.10	0.09	
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.24	0.28	0.22	0.24	0.14	0.15	0.23	
<b>PCBs</b>											
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg		< 0.01					< 0.01	
PCB 52	DETSC 3401#	0.01	mg/kg		< 0.01					< 0.01	
PCB 101	DETSC 3401#	0.01	mg/kg		< 0.01					< 0.01	
PCB 118	DETSC 3401#	0.01	mg/kg		< 0.01					< 0.01	
PCB 153	DETSC 3401#	0.01	mg/kg		< 0.01					< 0.01	
PCB 138	DETSC 3401#	0.01	mg/kg		< 0.01					< 0.01	
PCB 180	DETSC 3401#	0.01	mg/kg		< 0.01					< 0.01	
PCB 7 Total	DETSC 3401#	0.01	mg/kg		< 0.01					< 0.01	
<b>Phenols</b>											
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-10594

Client Ref

Contract Title Redcar

Lab No	1849504	1849505	1849506	1849507	1849508	1849509	1849510
Sample ID	PRA-AW-22-S1	PRA-AV-18-S2	PRA-AV-18-S3	PRA-AV-18-S4	PRA-AV-17-S1	PRA-AX-16-S1	PRA-AX-17-S1
Depth	1.00	0.30	1.30			3.00	3.00
Other ID							
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	15/05/2021	15/05/2021	15/05/2021	17/05/2021	17/05/2021	17/05/2021	17/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

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

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-10594

Client Ref

Contract Title Redcar

Lab No	1849504	1849505	1849506	1849507	1849508	1849509	1849510
Sample ID	PRA-AW-22-S1	PRA-AV-18-S2	PRA-AV-18-S3	PRA-AV-18-S4	PRA-AV-17-S1	PRA-AX-16-S1	PRA-AX-17-S1
Depth	1.00	0.30	1.30			3.00	3.00
Other ID							
Sample Type	ES	ES	ES	ES	ES	ES	ES
Sampling Date	15/05/2021	15/05/2021	15/05/2021	17/05/2021	17/05/2021	17/05/2021	17/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units	1849504	1849505	1849506	1849507	1849508	1849509	1849510
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01		< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01		< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01		< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01		< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01		< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01		< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01		< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01		< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01		< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01		< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01		< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01		< 0.01		< 0.01		< 0.01

SVOCs										
Test	Method	LOD	Units	1849504	1849505	1849506	1849507	1849508	1849509	1849510
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	
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	

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-10594

Client Ref

Contract Title Redcar

<b>Lab No</b>	1849504	1849505	1849506	1849507	1849508	1849509	1849510
<b>Sample ID</b>	PRA-AW-22-S1	PRA-AV-18-S2	PRA-AV-18-S3	PRA-AV-18-S4	PRA-AV-17-S1	PRA-AX-16-S1	PRA-AX-17-S1
<b>Depth</b>	1.00	0.30	1.30			3.00	3.00
<b>Other ID</b>							
<b>Sample Type</b>	ES	ES	ES	ES	ES	ES	ES
<b>Sampling Date</b>	15/05/2021	15/05/2021	15/05/2021	17/05/2021	17/05/2021	17/05/2021	17/05/2021
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
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

## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-10594

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1849504	PRA-AW-22-S1 1.00	SOIL	NAD	none	D Wilkinson
1849505	PRA-AV-18-S2 0.30	SOIL	NAD	none	D Wilkinson
1849506	PRA-AV-18-S3 1.30	SOIL	NAD	none	D Wilkinson
1849507	PRA-AV-18-S4	SOIL	NAD	none	D Wilkinson
1849508	PRA-AV-17-S1	SOIL	NAD	none	D Wilkinson
1849509	PRA-AX-16-S1 3.00	SOIL	NAD	none	D Wilkinson
1849510	PRA-AX-17-S1 3.00	SOIL	NAD	none	D Wilkinson

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 21-10594  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1849504	PRA-AW-22-S1 1.00 SOIL	15/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1849505	PRA-AV-18-S2 0.30 SOIL	15/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1849506	PRA-AV-18-S3 1.30 SOIL	15/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1849507	PRA-AV-18-S4 SOIL	17/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1849508	PRA-AV-17-S1 SOIL	17/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1849509	PRA-AX-16-S1 3.00 SOIL	17/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1849510	PRA-AX-17-S1 3.00 SOIL	17/05/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



## Certificate of Analysis

*Certificate Number* 21-10777

*Issued:* 27-May-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-10777

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 3 Soil samples.

*Date Received* 21-May-21

*Date Started* 21-May-21

*Date Completed* 27-May-21

*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*

A handwritten signature in black ink, appearing to read "A Fenwick".

Adam Fenwick  
Contracts Manager



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## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-10777

Client Ref

Contract Title Redcar

Lab No	1850721	1850722	1850723
Sample ID	PRA-AX-18-S1	PRA-SP036-S3	PRA-SP036-S4
Depth			
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	18/05/2021	18/05/2021	18/05/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>Metals</b>						
Arsenic	DETSC 2301#	0.2	mg/kg	5.6	5.1	5.8
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.0	1.6	2.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.3	0.1
Chromium	DETSC 2301#	0.15	mg/kg	11	35	24
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	36	20	20
Lead	DETSC 2301#	0.3	mg/kg	28	29	14
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.16	< 0.05
Nickel	DETSC 2301#	1	mg/kg	18	8.2	29
Vanadium	DETSC 2301#	0.8	mg/kg	24	70	28
Zinc	DETSC 2301#	1	mg/kg	65	67	54
<b>Inorganics</b>						
pH	DETSC 2008#		pH	8.3	11.5	11.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	7.3	9.4
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	1.4	1.3
Organic matter	DETSC 2002#	0.1	%	0.9	0.4	0.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	210	1000	630
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	18	47
<b>Petroleum Hydrocarbons</b>						
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	27	31
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	130	140
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	160	180
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	8.4
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	52	48
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	97	97
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	150	150
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	310	330
<b>PAHs</b>						
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.16	0.59
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.07	1.3
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.22	0.30
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.31	1.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-10777

Client Ref

Contract Title Redcar

Lab No	1850721	1850722	1850723
Sample ID	PRA-AX-18-S1	PRA-SP036-S3	PRA-SP036-S4
Depth			
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	18/05/2021	18/05/2021	18/05/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	2.1	7.9
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.46	1.7
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	3.6	7.8
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	2.9	6.0
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	1.3	2.9
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	1.1	2.1
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	1.5	3.1
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.56	1.2
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.89	1.9
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.51	1.1
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.15	0.33
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.58	1.2
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	16	41
<b>Phenols</b>						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-10777

Client Ref

Contract Title Redcar

Lab No	1850721
Sample ID	PRA-AX-18-S1
Depth	
Other ID	
Sample Type	SOIL
Sampling Date	18/05/2021
Sampling Time	n/s

Test	Method	LOD	Units	
<b>SVOCs</b>				
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
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

## Summary of Chemical Analysis

### Soil VOC/SVOC Samples

Our Ref 21-10777

Client Ref

Contract Title Redcar

Lab No	1850721
.Sample ID	PRA-AX-18-S1
Depth	
Other ID	
Sample Type	SOIL
Sampling Date	18/05/2021
Sampling Time	n/s

Test	Method	LOD	Units	
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1



## Summary of Asbestos Analysis Soil Samples

*Our Ref* 21-10777

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1850721	PRA-AX-18-S1	SOIL	NAD	none	Keith Wilson
1850722	PRA-SP036-S3	SOIL	NAD	none	Keith Wilson
1850723	PRA-SP036-S4	SOIL	NAD	none	Keith Wilson

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 21-10777

Client Ref

Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
1850721	PRA-AX-18-S1 SOIL	18/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1850722	PRA-SP036-S3 SOIL	18/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1850723	PRA-SP036-S4 SOIL	18/05/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-10792

*Issued:* 01-Jun-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-10792

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 5 Soil samples.

*Date Received* 21-May-21

*Date Started* 21-May-21

*Date Completed* 01-Jun-21

*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



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-10792

Client Ref

Contract Title Redcar

Lab No	1850834	1850835	1850836	1850837	1850838
Sample ID	PRA-SP036-S1	PRA-SP036-S2	PRA-SP031-S1	PRA-SP031-S2	PRA-SP031-S3
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	18/05/2021	18/05/2021	18/05/2021	18/05/2021	18/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETSC 1102	0.001	%		< 0.001	< 0.001	< 0.001	< 0.001
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	8.6	7.7	9.3	6.1	11
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.7	2.1	1.9	2.5	1.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.3	0.5	0.2	0.3
Chromium	DETSC 2301#	0.15	mg/kg	12	46	56	39	36
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	38	31	46	60	74
Lead	DETSC 2301#	0.3	mg/kg	750	39	84	41	47
Mercury	DETSC 2325#	0.05	mg/kg	0.30	0.27	0.53	0.12	0.27
Nickel	DETSC 2301#	1	mg/kg	13	12	13	11	17
Vanadium	DETSC 2301#	0.8	mg/kg	26	91	68	77	78
Zinc	DETSC 2301#	1	mg/kg	64	110	160	69	98
<b>Inorganics</b>								
pH	DETSC 2008#		pH	11.6	11.0	11.9	11.6	12.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	7.8	6.1	4.7	7.8	4.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.9	0.8	1.2	1.5	1.2
Organic matter	DETSC 2002#	0.1	%	1.1	1.9	1.2	1.2	1.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	720	640	710	940	400
Sulphur (free)	DETSC 3049#	0.75	mg/kg	19	4.6	9.1	5.2	18
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	2.9	7.3	7.7
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	17	< 1.5	61	68	91
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	83	< 3.4	270	230	480
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	100	< 10	340	300	570
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	6.1	< 0.5	15	17	15
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	42	< 0.6	110	110	140
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	110	< 1.4	290	280	470
Aromatic C5-C35	DETSC 3072*	10	mg/kg	160	< 10	410	410	620
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	260	< 10	750	710	1200
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.39	0.10	0.89	1.2	1.9

## Summary of Chemical Analysis Soil Samples

Our Ref 21-10792

Client Ref

Contract Title Redcar

Lab No	1850834	1850835	1850836	1850837	1850838
Sample ID	PRA-SP036-S1	PRA-SP036-S2	PRA-SP031-S1	PRA-SP031-S2	PRA-SP031-S3
Depth					
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	18/05/2021	18/05/2021	18/05/2021	18/05/2021	18/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.28	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.19	0.11	0.24	0.29	0.39
Fluorene	DETSC 3303	0.03	mg/kg	0.56	0.10	0.20	0.24	0.32
Phenanthrene	DETSC 3303#	0.03	mg/kg	2.6	0.87	1.1	1.3	1.6
Anthracene	DETSC 3303	0.03	mg/kg	0.75	0.16	0.15	0.17	0.25
Fluoranthene	DETSC 3303#	0.03	mg/kg	3.8	1.9	1.4	1.5	1.8
Pyrene	DETSC 3303#	0.03	mg/kg	3.2	1.6	1.1	1.1	1.4
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	1.6	0.68	0.37	0.36	0.53
Chrysene	DETSC 3303	0.03	mg/kg	0.92	0.41	0.22	0.23	0.27
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	1.5	0.66	0.27	0.29	0.37
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.70	0.24	0.11	0.11	0.15
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	1.1	0.42	0.17	0.17	0.23
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.42	0.16	0.07	0.07	0.08
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.10	0.04	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.46	0.19	0.08	0.09	0.10
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	19	7.6	6.3	7.1	9.5
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-10792

Client Ref

Contract Title Redcar

Lab No	1850838
Sample ID	PRA-SP031-S3
Depth	
Other ID	
Sample Type	SOIL
Sampling Date	18/05/2021
Sampling Time	n/s

Test	Method	LOD	Units	
<b>SVOCs</b>				
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	0.2
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	0.2
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
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



## Summary of Chemical Analysis

### Soil VOC/SVOC Samples

Our Ref 21-10792

Client Ref

Contract Title Redcar

<b>Lab No</b>	1850838
<b>Sample ID</b>	PRA-SP031-S3
<b>Depth</b>	
<b>Other ID</b>	
<b>Sample Type</b>	SOIL
<b>Sampling Date</b>	18/05/2021
<b>Sampling Time</b>	n/s

Test	Method	LOD	Units	
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

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-10792

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1850834	PRA-SP036-S1	SOIL	NAD	none	D Wilkinson
1850835	PRA-SP036-S2	SOIL	Amosite	Amosite present as fibre bundles	D Wilkinson
1850836	PRA-SP031-S1	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1850837	PRA-SP031-S2	SOIL	Chrysotile	Chrysotile present in microscopic loose fibrous asbestos debris	D Wilkinson
1850838	PRA-SP031-S3	SOIL	Chrysotile	Chrysotile present in microscopic loose fibrous asbestos debris	D Wilkinson

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-10792

Client Ref

Contract Title Redcar

<b>Lab No</b>	1850835	1850836	1850837	1850838
<b>Sample ID</b>	PRA-SP036-S2	PRA-SP031-S1	PRA-SP031-S2	PRA-SP031-S3
<b>Depth</b>				
<b>Other ID</b>				
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	18/05/2021	18/05/2021	18/05/2021	18/05/2021
<b>Sampling Time</b>				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	< 0.001	< 0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	0.001	0.001
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	<0.001	na	na
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
<b>Breakdown of Gravimetric Analysis (a)</b>						
Mass of Sample		g	1092.49	1445.39	1445.18	1311.50
ACMs present*		type			LFAD	LFAD
Mass of ACM in sample		g			0.01	0.01
% ACM by mass		%			0.00	0.00
% asbestos in ACM		%			85	85
% asbestos in sample		%			0.001	0.001
<b>Breakdown of Detailed Gravimetric Analysis (b)</b>						
% Amphibole bundles in sample		Mass %	<0.001	na	na	na
% Chrysotile bundles in sample		Mass %	na	<0.001	na	na
<b>Breakdown of PCOM Analysis (c)</b>						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
<b>Breakdown of Potentially Respirable Fibre Analysis (d)</b>						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-10792  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1850834	PRA-SP036-S1 SOIL	18/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1850835	PRA-SP036-S2 SOIL	18/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1850836	PRA-SP031-S1 SOIL	18/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1850837	PRA-SP031-S2 SOIL	18/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1850838	PRA-SP031-S3 SOIL	18/05/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-10820

*Issued:* 28-May-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-10820

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* One Soil sample.

*Date Received* 21-May-21

*Date Started* 21-May-21

*Date Completed* 28-May-21

*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



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-10820

Client Ref

Contract Title Redcar

Lab No	1850983
Sample ID	PRA-SP031-S4
Depth	
Other ID	
Sample Type	SOIL
Sampling Date	18/05/2021
Sampling Time	n/s

Test	Method	LOD	Units	
Asbestos Quantification	DETSC 1102	0.001	%	< 0.001
<b>Metals</b>				
Arsenic	DETSC 2301#	0.2	mg/kg	5.4
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.2
Chromium	DETSC 2301#	0.15	mg/kg	21
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	31
Lead	DETSC 2301#	0.3	mg/kg	25
Mercury	DETSC 2325#	0.05	mg/kg	0.08
Nickel	DETSC 2301#	1	mg/kg	10
Vanadium	DETSC 2301#	0.8	mg/kg	54
Zinc	DETSC 2301#	1	mg/kg	58
<b>Inorganics</b>				
pH	DETSC 2008#		pH	11.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	3.3
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.0
Organic matter	DETSC 2002#	0.1	%	1.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	790
Sulphur (free)	DETSC 3049#	0.75	mg/kg	18
<b>Petroleum Hydrocarbons</b>				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	2.7
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	66
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	290
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	350
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	6.9
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	95
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	280
Aromatic C5-C35	DETSC 3072*	10	mg/kg	380
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	730
<b>PAHs</b>				
Naphthalene	DETSC 3303#	0.03	mg/kg	2.6



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-10820  
 Client Ref  
 Contract Title Redcar

Lab No	1850983
Sample ID	PRA-SP031-S4
Depth	
Other ID	
Sample Type	SOIL
Sampling Date	18/05/2021
Sampling Time	n/s

Test	Method	LOD	Units	
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.42
Fluorene	DETSC 3303	0.03	mg/kg	0.31
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.6
Anthracene	DETSC 3303	0.03	mg/kg	0.23
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.8
Pyrene	DETSC 3303#	0.03	mg/kg	1.4
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.50
Chrysene	DETSC 3303	0.03	mg/kg	0.29
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.37
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.14
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.23
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.07
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.10
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	10
<b>Phenols</b>				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3

## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-10820

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1850983	PRA-SP031-S4	SOIL	Chrysotile	Bundle of Chrysotile fibres	Keith Wilson

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-10820

Client Ref

Contract Title Redcar

Lab No	1850983
.Sample ID	PRA-SP031-S4
Depth	
Other ID	
Sample Type	SOIL
Sampling Date	18/05/2021
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1268.22
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na
% Chrysotile bundles in sample		Mass %	<0.001

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na
% Chrysotile fibres in sample		Mass %	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-10820  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1850983	PRA-SP031-S4 SOIL	18/05/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-10855

*Issued:* 01-Jun-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-10855

*Client Reference* (not supplied)

*Order No* CP1096MA1004D

*Contract Title* Redcar

*Description* 7 Soil samples.

*Date Received* 24-May-21

*Date Started* 24-May-21

*Date Completed* 01-Jun-21

*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



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-10855

Client Ref

Contract Title Redcar

Lab No	1851068	1851069	1851070	1851071	1851072	1851073	1851074
Sample ID	PRA-AY-15-S1	PRA-AY-15-S2	PRA-AX-24-S1	PRA-AW-16-S1	PRA-SP025-S8	PRA-SP025-S9	PRA-SP025-S10
Depth			5.00	4.80			
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	18/05/2021	18/05/2021	18/05/2021	20/05/2021	20/05/2021	20/05/2021	20/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
<b>Metals</b>										
Arsenic	DETSC 2301#	0.2	mg/kg	8.6	8.2	8.9	6.1	8.1	9.3	8.8
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.5	0.4	1.4	0.4	0.7	1.4	0.6
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.2	0.3	0.3	0.2	0.3	0.4
Chromium	DETSC 2301#	0.15	mg/kg	25	25	29	18	26	38	23
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	27	26	29	24	28	57	27
Lead	DETSC 2301#	0.3	mg/kg	27	25	36	24	32	58	40
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	0.22	< 0.05	0.10	0.23	< 0.05
Nickel	DETSC 2301#	1	mg/kg	36	36	33	26	32	39	36
Vanadium	DETSC 2301#	0.8	mg/kg	28	28	38	22	34	57	27
Zinc	DETSC 2301#	1	mg/kg	92	85	100	88	89	120	130
<b>Inorganics</b>										
pH	DETSC 2008#		pH	8.5	8.2	8.8	8.3	8.5	8.5	8.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	2.6	< 0.1	0.9	7.8	0.3
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	3.9	3.4	2.9	2.0	2.6	2.2	3.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	100	130	220	84	150	150	180
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	< 0.75	6.9	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
<b>PAHs</b>										
Naphthalene	DETSC 3303#	0.03	mg/kg	0.06	0.08	0.04	< 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	< 0.03





# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-10855

Client Ref

Contract Title Redcar

<b>Lab No</b>	1851068	1851069	1851070	1851071	1851072	1851073	1851074
<b>Sample ID</b>	PRA-AY-15-S1	PRA-AY-15-S2	PRA-AX-24-S1	PRA-AW-16-S1	PRA-SP025-S8	PRA-SP025-S9	PRA-SP025-S10
<b>Depth</b>			5.00	4.80			
<b>Other ID</b>							
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	18/05/2021	18/05/2021	18/05/2021	20/05/2021	20/05/2021	20/05/2021	20/05/2021
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.04	0.04	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.15	0.17	0.11	0.08	0.14	0.11	0.08
Anthracene	DETSC 3303	0.03	mg/kg	0.06	0.07	0.04	< 0.03	0.07	0.06	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.09	0.10	0.08	0.05	0.19	0.15	0.05
Pyrene	DETSC 3303#	0.03	mg/kg	0.07	0.08	0.06	0.04	0.16	0.13	0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.05	0.05	0.05	< 0.03	0.08	0.06	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.05	0.05	0.04	0.04	0.08	0.07	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.03	0.03	< 0.03	< 0.03	0.09	0.04	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.06	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	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	< 0.03	0.04	0.04	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.55	0.64	0.35	0.12	0.95	0.66	0.12
<b>Phenols</b>										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-10855

Client Ref

Contract Title Redcar

Lab No	1851068	1851069	1851070
Sample ID	PRA-AY-15-S1	PRA-AY-15-S2	PRA-AX-24-S1
Depth			5.00
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	18/05/2021	18/05/2021	18/05/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>VOCs</b>						
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	
Tert-butylbenzene	DETSC 3431	0.01	mg/kg		< 0.01	

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-10855

Client Ref

Contract Title Redcar

Lab No	1851068	1851069	1851070
Sample ID	PRA-AY-15-S1	PRA-AY-15-S2	PRA-AX-24-S1
Depth			5.00
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	18/05/2021	18/05/2021	18/05/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
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	
<b>SVOCs</b>						
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
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

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-10855

Client Ref

Contract Title Redcar

Lab No	1851068	1851069	1851070
Sample ID	PRA-AY-15-S1	PRA-AY-15-S2	PRA-AX-24-S1
Depth			5.00
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	18/05/2021	18/05/2021	18/05/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units		
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

## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-10855

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1851068	PRA-AY-15-S1	SOIL	NAD	none	Keith Wilson
1851069	PRA-AY-15-S2	SOIL	NAD	none	Keith Wilson
1851070	PRA-AX-24-S1 5.00	SOIL	NAD	none	Keith Wilson
1851071	PRA-AW-16-S1 4.80	SOIL	NAD	none	Keith Wilson
1851072	PRA-SP025-S8	SOIL	NAD	none	Keith Wilson
1851073	PRA-SP025-S9	SOIL	NAD	none	Keith Wilson
1851074	PRA-SP025-S10	SOIL	NAD	none	Keith Wilson

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 21-10855  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1851068	PRA-AY-15-S1 SOIL	18/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1851069	PRA-AY-15-S2 SOIL	18/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1851070	PRA-AX-24-S1 5.00 SOIL	18/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1851071	PRA-AW-16-S1 4.80 SOIL	20/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1851072	PRA-SP025-S8 SOIL	20/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1851073	PRA-SP025-S9 SOIL	20/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1851074	PRA-SP025-S10 SOIL	20/05/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report





# DETS

## Certificate of Analysis

*Certificate Number* 21-11150

*Issued:* 10-Jun-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-11150

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* One Soil sample.

*Date Received* 18-May-21

*Date Started* 26-May-21

*Date Completed* 10-Jun-21

*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



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## Summary of Asbestos Analysis

### Samples

*Our Ref* 21-11150

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Sample Location	Material Type	Result	Comment*	Analyst
<p>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.</p>						

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-11150

Client Ref

Contract Title Redcar

Lab No	1853099
.Sample ID	PRA-SP034-S5
Depth	
Other ID	
Sample Type	ES
Sampling Date	13/05/2021
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.004</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.004
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1198.77
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na
% Chrysotile bundles in sample		Mass %	0.004

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na
% Chrysotile fibres in sample		Mass %	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-11150

Client Ref

Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1853099	PRA-SP034-S5 SOIL	13/05/21	No containers logged		Cannot evaluate

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.

### 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

End of Report



## Certificate of Analysis

*Certificate Number* 21-11157

*Issued:* 03-Jun-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-11157

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* (not supplied)

*Description* 4 Soil samples.

*Date Received* 26-May-21

*Date Started* 26-May-21

*Date Completed* 03-Jun-21

*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*

A handwritten signature in black ink, appearing to read 'A Fenwick'.

Adam Fenwick  
Contracts Manager



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-11157

Client Ref

Contract Title

Lab No	1853131	1853132	1853133	1853134
Sample ID	PRA-AW-24-S1	PRA-AX-23-S1	PRA-AX-16-S1	PRA-AW-16-S2
Depth	4.20	4.10	5.80	5.80
Other ID				
Sample Type	ES	ES	ES	ES
Sampling Date	24/05/2021	24/05/2021	21/05/2021	21/05/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
<b>Metals</b>							
Arsenic	DETSC 2301#	0.2	mg/kg	5.8	6.8	7.5	7.4
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.3	0.6	0.5	0.8
Cadmium	DETSC 2301#	0.1	mg/kg	0.1	0.2	0.4	0.3
Chromium	DETSC 2301#	0.15	mg/kg	30	24	22	22
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	24	27	26	28
Lead	DETSC 2301#	0.3	mg/kg	16	21	40	35
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.06
Nickel	DETSC 2301#	1	mg/kg	35	31	32	21
Vanadium	DETSC 2301#	0.8	mg/kg	34	26	27	36
Zinc	DETSC 2301#	1	mg/kg	56	71	110	100
<b>Inorganics</b>							
pH	DETSC 2008#		pH	8.0	8.0	8.0	8.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	0.2	0.1	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	< 0.6	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	2.0	3.0	1.7	1.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	95	180	81	89
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>							
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	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
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	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
<b>PAHs</b>							
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-11157

Client Ref

Contract Title

Lab No	1853131	1853132	1853133	1853134
Sample ID	PRA-AW-24-S1	PRA-AX-23-S1	PRA-AX-16-S1	PRA-AW-16-S2
Depth	4.20	4.10	5.80	5.80
Other ID				
Sample Type	ES	ES	ES	ES
Sampling Date	24/05/2021	24/05/2021	21/05/2021	21/05/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 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
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10
<b>Phenols</b>							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.9	1.0	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-11157

Client Ref

Contract Title

Lab No	1853131	1853132
Sample ID	PRA-AW-24-S1	PRA-AX-23-S1
Depth	4.20	4.10
Other ID		
Sample Type	ES	ES
Sampling Date	24/05/2021	24/05/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
<b>VOCs</b>					
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		0.03
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
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

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-11157

Client Ref

Contract Title

Lab No	1853131	1853132
Sample ID	PRA-AW-24-S1	PRA-AX-23-S1
Depth	4.20	4.10
Other ID		
Sample Type	ES	ES
Sampling Date	24/05/2021	24/05/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
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
<b>SVOCs</b>					
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
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

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-11157

Client Ref

Contract Title

<b>Lab No</b>	1853131	1853132
<b>Sample ID</b>	PRA-AW-24-S1	PRA-AX-23-S1
<b>Depth</b>	4.20	4.10
<b>Other ID</b>		
<b>Sample Type</b>	ES	ES
<b>Sampling Date</b>	24/05/2021	24/05/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
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	

## Summary of Asbestos Analysis Soil Samples

*Our Ref* 21-11157

*Client Ref*

*Contract Title*

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1853131	PRA-AW-24-S1 4.20	SOIL	NAD	none	Michael Kay
1853132	PRA-AX-23-S1 4.10	SOIL	NAD	none	Michael Kay
1853133	PRA-AX-16-S1 5.80	SOIL	NAD	none	Michael Kay
1853134	PRA-AW-16-S2 5.80	SOIL	NAD	none	Michael Kay

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 21-11157  
 Client Ref  
 Contract

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
1853131	PRA-AW-24-S1 4.20 SOIL	24/05/21	GJ 60ml x2, PT 1L		
1853132	PRA-AX-23-S1 4.10 SOIL	24/05/21	GJ 60ml x2, PT 1L		
1853133	PRA-AX-16-S1 5.80 SOIL	21/05/21	GJ 60ml x2, PT 1L		
1853134	PRA-AW-16-S2 5.80 SOIL	21/05/21	GJ 60ml x2, PT 1L		

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

End of Report





# DETS

## Certificate of Analysis

*Certificate Number* 21-11252

*Issued:* 04-Jun-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-11252

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 5 Soil samples.

*Date Received* 27-May-21

*Date Started* 27-May-21

*Date Completed* 04-Jun-21

*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



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-11252

Client Ref

Contract Title Redcar

Lab No	1853776	1853777	1853778	1853779	1853780
Sample ID	PRA-AT-21-S1	PRA-AW-17-S2	PRA-AW-24-S2	PRA-SP031-S5	PRA-SP034-S6
Depth	5.50	2.20	2.40		
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	24/05/2021	25/05/2021	25/05/2021	25/05/2021	25/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETSC 1102	0.001	%				< 0.001	
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	7.2	9.1	9.6	8.7	30
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.3	1.3	0.9	1.4	3.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.2	0.2	0.2	0.5
Chromium	DETSC 2301#	0.15	mg/kg	22	29	37	26	87
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	26	28	28	31	50
Lead	DETSC 2301#	0.3	mg/kg	24	24	23	28	130
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.09	0.45
Nickel	DETSC 2301#	1	mg/kg	31	36	43	12	19
Vanadium	DETSC 2301#	0.8	mg/kg	25	35	41	60	330
Zinc	DETSC 2301#	1	mg/kg	76	80	76	62	250
<b>Inorganics</b>								
pH	DETSC 2008#		pH	8.2	8.8	8.3	11.7	9.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	0.1	0.2	1.9	12
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.3
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	2.8	3.7
Organic matter	DETSC 2002#	0.1	%	2.2	2.4	3.1	2.5	0.7
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	680	320	160	72	1700
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	12	25
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	26	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	160	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	860	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	1000	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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	2.2	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	40	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	260	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	710	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	1000	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	2100	< 10

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-11252

Client Ref

Contract Title Redcar

Lab No	1853776	1853777	1853778	1853779	1853780
Sample ID	PRA-AT-21-S1	PRA-AW-17-S2	PRA-AW-24-S2	PRA-SP031-S5	PRA-SP034-S6
Depth	5.50	2.20	2.40		
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	24/05/2021	25/05/2021	25/05/2021	25/05/2021	25/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	1.1	0.47
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.36	0.04
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.34	0.04
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.31	0.04
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	< 0.03	1.6	1.3
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.25	0.16
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	1.8	3.0
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	1.4	2.4
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.66	1.7
Chrysene	DETSC 3303	0.03	mg/kg	0.03	< 0.03	< 0.03	0.45	1.0
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.74	2.0
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.37	0.69
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.58	1.3
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.20	0.40
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.04	0.15
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.18	0.45
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	10	15
<b>PCBs</b>								
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			
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.4	0.9	0.8	0.7	0.6

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-11252

Client Ref

Contract Title Redcar

Lab No	1853776	1853777	1853778
Sample ID	PRA-AT-21-S1	PRA-AW-17-S2	PRA-AW-24-S2
Depth	5.50	2.20	2.40
Other ID			
Sample Type	ES	ES	ES
Sampling Date	24/05/2021	25/05/2021	25/05/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units		
<b>VOCs</b>					
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
Tert-butylbenzene	DETSC 3431	0.01	mg/kg		< 0.01

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-11252

Client Ref

Contract Title Redcar

Lab No	1853776	1853777	1853778
Sample ID	PRA-AT-21-S1	PRA-AW-17-S2	PRA-AW-24-S2
Depth	5.50	2.20	2.40
Other ID			
Sample Type	ES	ES	ES
Sampling Date	24/05/2021	25/05/2021	25/05/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
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	
<b>SVOCs</b>						
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
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

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-11252

Client Ref

Contract Title Redcar

Lab No	1853776	1853777	1853778
Sample ID	PRA-AT-21-S1	PRA-AW-17-S2	PRA-AW-24-S2
Depth	5.50	2.20	2.40
Other ID			
Sample Type	ES	ES	ES
Sampling Date	24/05/2021	25/05/2021	25/05/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units		
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



## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-11252

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1853776	PRA-AT-21-S1 5.50	SOIL	NAD	none	D Wilkinson
1853777	PRA-AW-17-S2 2.20	SOIL	NAD	none	D Wilkinson
1853778	PRA-AW-24-S2 2.40	SOIL	NAD	none	D Wilkinson
1853779	PRA-SP031-S5	SOIL	Amosite	Amosite present as fibre bundles	D Wilkinson
1853780	PRA-SP034-S6	SOIL	NAD	none	D Wilkinson

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-11252

Client Ref

Contract Title Redcar

Lab No	1853779
.Sample ID	PRA-SP031-S5
Depth	
Other ID	
Sample Type	SOIL
Sampling Date	25/05/2021
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1244.77
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	<0.001
% Chrysotile bundles in sample		Mass %	na

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na
% Chrysotile fibres in sample		Mass %	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-11252  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1853776	PRA-AT-21-S1 5.50 SOIL	24/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1853777	PRA-AW-17-S2 2.20 SOIL	25/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1853778	PRA-AW-24-S2 2.40 SOIL	25/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1853779	PRA-SP031-S5 SOIL	25/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1853780	PRA-SP034-S6 SOIL	25/05/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-11363

*Issued:* 09-Jun-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-11363

*Client Reference* (not supplied)

*Order No* (not supplied)

*Contract Title* Redcar

*Description* 13 Soil samples.

*Date Received* 28-May-21

*Date Started* 28-May-21

*Date Completed* 09-Jun-21

*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



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-11363

Client Ref

Contract Title Redcar

Lab No	1854616	1854617	1854618	1854619	1854620	1854621	1854622
Sample ID	PRA-AW-19-S7	PRA-SP033-S6	PRA-SP037-S1	PRA-SP037-S2	PRA-AW-17-S4	PRA-SP034-S7	PRA-SP034-S8
Depth							
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	26/05/2021	26/05/2021	26/05/2021	26/05/2021	26/05/2021	26/05/2021	26/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
<b>Metals</b>										
Arsenic	DETSC 2301#	0.2	mg/kg	7.6	12	14	11	7.7	24	33
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.4	1.8	3.1	2.8	1.1	1.8	2.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.1	0.5	1.2	0.7	0.2	0.6	0.8
Chromium	DETSC 2301#	0.15	mg/kg	36	110	71	86	32	38	43
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	27	48	62	40	27	53	82
Lead	DETSC 2301#	0.3	mg/kg	48	110	120	170	25	140	170
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.52	1.2	1.3	< 0.05	0.26	0.54
Nickel	DETSC 2301#	1	mg/kg	40	28	21	16	38	23	29
Vanadium	DETSC 2301#	0.8	mg/kg	39	100	150	210	37	140	150
Zinc	DETSC 2301#	1	mg/kg	76	150	470	190	75	350	400
<b>Inorganics</b>										
pH	DETSC 2008#		pH	8.5	11.2	10.1	11.1	8.7	10.5	8.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	9.0	25	73	0.8	7.6	11
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.6	< 0.1	0.2	0.3
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	2.6	1.2	3.9	< 0.6	1.4	1.0
Organic matter	DETSC 2002#	0.1	%	3.8	1.7	1.6	1.6	2.8	1.3	2.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	2000	2300	1200	1400	260	1600	1400
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	5.9	5.8	9.1	< 0.75	20	9.7
<b>Petroleum Hydrocarbons</b>										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	1.4	< 1.2	3.1	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	9.0	15	35	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	46	60	130	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	57	76	170	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	3.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	4.1	< 0.5	2.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	19	12	26	< 0.6	26	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	61	69	80	< 1.4	96	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	79	81	110	< 10	130	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	140	160	280	< 10	130	< 10

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-11363

Client Ref

Contract Title Redcar

<b>Lab No</b>	1854616	1854617	1854618	1854619	1854620	1854621	1854622
<b>Sample ID</b>	PRA-AW-19-S7	PRA-SP033-S6	PRA-SP037-S1	PRA-SP037-S2	PRA-AW-17-S4	PRA-SP034-S7	PRA-SP034-S8
<b>Depth</b>							
<b>Other ID</b>							
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	26/05/2021	26/05/2021	26/05/2021	26/05/2021	26/05/2021	26/05/2021	26/05/2021
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
<b>PAHs</b>										
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.20	0.15	0.21	< 0.03	0.05	0.09
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	0.06	0.06	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.20	0.17	0.17	< 0.03	0.03	0.05
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.12	0.15	0.19	< 0.03	0.03	0.04
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.03	1.3	1.1	1.5	< 0.03	0.51	0.92
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.36	0.25	0.34	< 0.03	0.10	0.15
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	6.4	3.1	4.0	< 0.03	1.3	1.8
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	5.6	2.6	3.5	< 0.03	1.1	1.4
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	2.2	1.0	1.4	< 0.03	0.42	0.54
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	1.4	0.68	0.89	< 0.03	0.33	0.49
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	2.2	1.1	1.3	< 0.03	0.48	0.53
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.82	0.31	0.47	< 0.03	0.17	0.25
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	1.5	0.57	0.83	< 0.03	0.26	0.27
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.55	0.24	0.31	< 0.03	0.12	0.19
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.14	0.07	0.09	< 0.03	0.03	0.05
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.65	0.30	0.39	< 0.03	0.15	0.21
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	24	12	16	< 0.10	5.0	7.0
<b>Phenols</b>										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-11363

Client Ref

Contract Title Redcar

Lab No	1854623	1854794	1854795	1854796	1854797	1854798
Sample ID	PRA-SP034-S9	PRA-SP036-S5	PRA-SP028-S5	PRA-SP028-S6	PRA-SP028-S7	PRA-SP028-S8
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	26/05/2021	26/05/2021	26/05/2021	26/05/2021	26/05/2021	26/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	30	9.5	7.9	37	9.4	24
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.5	2.6	1.8	5.4	1.6	5.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.5	0.5	2.6	0.3	1.5
Chromium	DETSC 2301#	0.15	mg/kg	41	76	270	48	33	56
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	68	53	48	84	37	54
Lead	DETSC 2301#	0.3	mg/kg	94	51	45	250	25	120
Mercury	DETSC 2325#	0.05	mg/kg	0.16	0.47	0.17	5.1	0.12	2.6
Nickel	DETSC 2301#	1	mg/kg	24	15	16	33	18	26
Vanadium	DETSC 2301#	0.8	mg/kg	150	120	680	99	70	120
Zinc	DETSC 2301#	1	mg/kg	300	170	120	910	73	430
<b>Inorganics</b>									
pH	DETSC 2008#		pH	9.6	10.6	11.6	9.2	11.0	9.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	5.0	15	28	150	3.6	44
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.1	0.1	< 0.1	0.7	< 0.1	0.3
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.0	1.5	0.9	1.6	< 0.6	0.8
Organic matter	DETSC 2002#	0.1	%	1.4	1.7	2.2	3.4	1.1	2.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1700	550	560	520	980	960
Sulphur (free)	DETSC 3049#	0.75	mg/kg	23	3.2	< 0.75	26	1.8	1.1
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	3.1	< 1.2	3.4
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	2.1	2.8	10	< 1.5	53
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	18	100	36	< 3.4	120
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	20	100	50	< 10	180
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	1.1	< 0.5	2.3	< 0.5	2.0
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	3.0	7.7	11	< 0.6	24
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	22	110	62	< 1.4	98
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	27	120	76	< 10	120
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	46	230	130	< 10	300

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-11363

Client Ref

Contract Title Redcar

<b>Lab No</b>	1854623	1854794	1854795	1854796	1854797	1854798
<b>Sample ID</b>	PRA-SP034-S9	PRA-SP036-S5	PRA-SP028-S5	PRA-SP028-S6	PRA-SP028-S7	PRA-SP028-S8
<b>Depth</b>						
<b>Other ID</b>						
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	26/05/2021	26/05/2021	26/05/2021	26/05/2021	26/05/2021	26/05/2021
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.06	0.18	0.03	0.35	0.05	0.09
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.17	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.03	0.29	0.03	0.44	0.05	0.05
Fluorene	DETSC 3303	0.03	mg/kg	0.03	0.23	< 0.03	0.35	< 0.03	0.05
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.61	1.4	0.19	2.1	0.08	0.34
Anthracene	DETSC 3303	0.03	mg/kg	0.10	0.25	0.03	0.48	< 0.03	0.13
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.4	2.6	0.81	3.7	0.11	1.1
Pyrene	DETSC 3303#	0.03	mg/kg	1.1	2.1	0.67	3.0	0.09	0.92
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.46	0.71	0.27	1.3	0.04	0.34
Chrysene	DETSC 3303	0.03	mg/kg	0.36	0.59	0.16	1.1	0.04	0.27
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.54	0.81	0.23	1.7	0.04	0.44
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.18	0.26	0.09	0.54	< 0.03	0.16
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.24	0.39	0.11	0.83	< 0.03	0.21
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.12	0.18	0.07	0.41	< 0.03	0.11
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.04	0.06	< 0.03	0.13	< 0.03	0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.16	0.22	0.08	0.53	< 0.03	0.14
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	5.5	10	2.7	17	0.50	4.3
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-11363

Client Ref

Contract Title Redcar

Lab No	1854616	1854620
Sample ID	PRA-AW-19-S7	PRA-AW-17-S4
Depth		
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	26/05/2021	26/05/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
<b>VOCs</b>					
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	
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-11363

Client Ref

Contract Title Redcar

Lab No	1854616	1854620
Sample ID	PRA-AW-19-S7	PRA-AW-17-S4
Depth		
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	26/05/2021	26/05/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
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	
<b>SVOCs</b>					
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
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

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-11363

Client Ref

Contract Title Redcar

<b>Lab No</b>	1854616	1854620
<b>Sample ID</b>	PRA-AW-19-S7	PRA-AW-17-S4
<b>Depth</b>		
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	26/05/2021	26/05/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
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

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-11363

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1854616	PRA-AW-19-S7	SOIL	NAD	none	Keith Wilson
1854617	PRA-SP033-S6	SOIL	NAD	none	Keith Wilson
1854618	PRA-SP037-S1	SOIL	NAD	none	Keith Wilson
1854619	PRA-SP037-S2	SOIL	NAD	none	Keith Wilson
1854620	PRA-AW-17-S4	SOIL	NAD	none	Keith Wilson
1854621	PRA-SP034-S7	SOIL	NAD	none	Keith Wilson
1854622	PRA-SP034-S8	SOIL	NAD	none	Keith Wilson
1854623	PRA-SP034-S9	SOIL	NAD	none	Keith Wilson
1854794	PRA-SP036-S5	SOIL	NAD	none	Keith Wilson
1854795	PRA-SP028-S5	SOIL	NAD	none	Keith Wilson
1854796	PRA-SP028-S6	SOIL	NAD	none	Keith Wilson
1854797	PRA-SP028-S7	SOIL	NAD	none	Keith Wilson
1854798	PRA-SP028-S8	SOIL	NAD	none	Keith Wilson

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 21-11363  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1854616	PRA-AW-19-S7 SOIL	26/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1854617	PRA-SP033-S6 SOIL	26/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1854618	PRA-SP037-S1 SOIL	26/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1854619	PRA-SP037-S2 SOIL	26/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1854620	PRA-AW-17-S4 SOIL	26/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1854621	PRA-SP034-S7 SOIL	26/05/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1854622	PRA-SP034-S8 SOIL	26/05/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1854623	PRA-SP034-S9 SOIL	26/05/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1854794	PRA-SP036-S5 SOIL	26/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1854795	PRA-SP028-S5 SOIL	26/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1854796	PRA-SP028-S6 SOIL	26/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1854797	PRA-SP028-S7 SOIL	26/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1854798	PRA-SP028-S8 SOIL	26/05/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-11564

*Issued:* 14-Jun-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-11564

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 9 Soil samples.

*Date Received* 01-Jun-21

*Date Started* 01-Jun-21

*Date Completed* 14-Jun-21

*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



2139

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-11564

Client Ref

Contract Title Redcar

Lab No	1855681	1855682	1855683	1855684	1855685	1855686	1855687
Sample ID	PRA-SP034-S10	PRA-SP034-S11	PRA-AW22-S2	PRA-AW22-S3	PRA-AW22-S4	PRA-AW22-S5	PRA-AW23-S2
Depth			0	0	1	1	0
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	27/05/2021	27/05/2021	27/05/2021	27/05/2021	27/05/2021	27/05/2021	27/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
<b>Metals</b>										
Arsenic	DETSC 2301#	0.2	mg/kg	85	34	5.4	5.2	6.8	9.2	7.0
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.2	1.2	1.4	0.7	2.3	< 0.2	3.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.1	0.7	< 0.1	< 0.1	0.1	0.2	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	48	57	21	28	26	36	27
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	42	68	16	23	23	27	21
Lead	DETSC 2301#	0.3	mg/kg	90	340	11	6.7	18	24	11
Mercury	DETSC 2325#	0.05	mg/kg	0.05	1.7	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	22	28	23	26	34	42	28
Vanadium	DETSC 2301#	0.8	mg/kg	180	210	28	31	28	40	35
Zinc	DETSC 2301#	1	mg/kg	290	420	42	24	58	77	50
<b>Inorganics</b>										
pH	DETSC 2008#		pH	9.6	8.5	8.7	8.7	8.7	8.7	8.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	31	36	0.7	0.9	0.2	0.3	0.3
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	0.8	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.3	2.5	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.9	2.2	1.3	0.8	3.1	2.2	1.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1500	1400	340	690	370	820	2400
Sulphur (free)	DETSC 3049#	0.75	mg/kg	85	78	11	< 0.75	< 0.75	1.5	< 0.75
<b>Petroleum Hydrocarbons</b>										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	< 10
<b>PAHs</b>										
Naphthalene	DETSC 3303#	0.03	mg/kg	0.04	0.20	< 0.03	< 0.03	0.04	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-11564

Client Ref

Contract Title Redcar

Lab No	1855681	1855682	1855683	1855684	1855685	1855686	1855687
Sample ID	PRA-SP034-S10	PRA-SP034-S11	PRA-AW22-S2	PRA-AW22-S3	PRA-AW22-S4	PRA-AW22-S5	PRA-AW23-S2
Depth			0	0	1	1	0
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	27/05/2021	27/05/2021	27/05/2021	27/05/2021	27/05/2021	27/05/2021	27/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.04	0.06	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.04	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.41	1.1	< 0.03	< 0.03	0.04	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	0.07	0.14	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.91	2.4	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.69	1.8	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.31	0.79	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.29	0.69	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.35	0.82	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.18	0.40	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.17	0.39	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.14	0.27	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.04	0.08	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.16	0.31	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	3.8	9.4	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
<b>PCBs</b>										
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				
<b>Phenols</b>										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-11564

Client Ref

Contract Title Redcar

<b>Lab No</b>	1855688	1855689
<b>Sample ID</b>	PRA-AT-23-S1	PRA-AT-22-S1
<b>Depth</b>	5.5	5.5
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	27/05/2021	27/05/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
<b>Metals</b>					
Arsenic	DETSC 2301#	0.2	mg/kg	5.1	4.5
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.1	1.2
Cadmium	DETSC 2301#	0.1	mg/kg	1.7	0.2
Chromium	DETSC 2301#	0.15	mg/kg	16	12
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	27	17
Lead	DETSC 2301#	0.3	mg/kg	39	17
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	24	16
Vanadium	DETSC 2301#	0.8	mg/kg	21	15
Zinc	DETSC 2301#	1	mg/kg	75	54
<b>Inorganics</b>					
pH	DETSC 2008#		pH	8.6	8.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.5	0.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.9	1.7
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	220	230
Sulphur (free)	DETSC 3049#	0.75	mg/kg	24	< 0.75
<b>Petroleum Hydrocarbons</b>					
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	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
<b>PAHs</b>					
Naphthalene	DETSC 3303#	0.03	mg/kg	0.05	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-11564

Client Ref

Contract Title Redcar

<b>Lab No</b>	1855688	1855689
<b>Sample ID</b>	PRA-AT-23-S1	PRA-AT-22-S1
<b>Depth</b>	5.5	5.5
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	27/05/2021	27/05/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
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	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10
<b>PCBs</b>					
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg		
PCB 52	DETSC 3401#	0.01	mg/kg		
PCB 101	DETSC 3401#	0.01	mg/kg		
PCB 118	DETSC 3401#	0.01	mg/kg		
PCB 153	DETSC 3401#	0.01	mg/kg		
PCB 138	DETSC 3401#	0.01	mg/kg		
PCB 180	DETSC 3401#	0.01	mg/kg		
PCB 7 Total	DETSC 3401#	0.01	mg/kg		
<b>Phenols</b>					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3



# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-11564

Client Ref

Contract Title Redcar

Lab No	1855683	1855684	1855685	1855686	1855687	1855688	1855689
Sample ID	PRA-AW22-S2	PRA-AW22-S3	PRA-AW22-S4	PRA-AW22-S5	PRA-AW23-S2	PRA-AT-23-S1	PRA-AT-22-S1
Depth	0	0	1	1	0	5.5	5.5
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	27/05/2021	27/05/2021	27/05/2021	27/05/2021	27/05/2021	27/05/2021	27/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>VOCs</b>									
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	0.05		< 0.01		0.05	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01		0.03		< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01		< 0.01		< 0.01	< 0.01

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-11564

Client Ref

Contract Title Redcar

Lab No	1855683	1855684	1855685	1855686	1855687	1855688	1855689	
Sample ID	PRA-AW22-S2	PRA-AW22-S3	PRA-AW22-S4	PRA-AW22-S5	PRA-AW23-S2	PRA-AT-23-S1	PRA-AT-22-S1	
Depth	0	0	1	1	0	5.5	5.5	
Other ID								
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
Sampling Date	27/05/2021	27/05/2021	27/05/2021	27/05/2021	27/05/2021	27/05/2021	27/05/2021	
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	
Test	Method	LOD	Units					
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
<b>SVOCs</b>								
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	
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	

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-11564

Client Ref

Contract Title Redcar

Lab No	1855683	1855684	1855685	1855686	1855687	1855688	1855689
Sample ID	PRA-AW22-S2	PRA-AW22-S3	PRA-AW22-S4	PRA-AW22-S5	PRA-AW23-S2	PRA-AT-23-S1	PRA-AT-22-S1
Depth	0	0	1	1	0	5.5	5.5
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	27/05/2021	27/05/2021	27/05/2021	27/05/2021	27/05/2021	27/05/2021	27/05/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units	1855683	1855684	1855685	1855686	1855687	1855688	1855689
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	

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-11564

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1855681	PRA-SP034-S10	SOIL	NAD	none	Rebecca Burgess
1855682	PRA-SP034-S11	SOIL	NAD	none	Rebecca Burgess
1855683	PRA-AW22-S2 0	SOIL	NAD	none	Rebecca Burgess
1855684	PRA-AW22-S3 0	SOIL	NAD	none	Rebecca Burgess
1855685	PRA-AW22-S4 1	SOIL	NAD	none	Rebecca Burgess
1855686	PRA-AW22-S5 1	SOIL	NAD	none	Rebecca Burgess
1855687	PRA-AW23-S2 0	SOIL	NAD	none	Rebecca Burgess
1855688	PRA-AT-23-S1 5.5	SOIL	NAD	none	Rebecca Burgess
1855689	PRA-AT-22-S1 5.5	SOIL	NAD	none	Rebecca Burgess

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 21-11564  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1855681	PRA-SP034-S10 SOIL	27/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1855682	PRA-SP034-S11 SOIL	27/05/21	GJ 250ml, GJ 60ml x2, PT 1L		
1855683	PRA-AW22-S2 0 SOIL	27/05/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1855684	PRA-AW22-S3 0 SOIL	27/05/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1855685	PRA-AW22-S4 1 SOIL	27/05/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1855686	PRA-AW22-S5 1 SOIL	27/05/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1855687	PRA-AW23-S2 0 SOIL	27/05/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1855688	PRA-AT-23-S1 5.5 SOIL	27/05/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1855689	PRA-AT-22-S1 5.5 SOIL	27/05/21	GJ 250ml, GJ 60ml x2, PT 500ml		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-11654

*Issued:* 25-Jun-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-11654

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* One Soil sample.

*Date Received* 02-Jun-21

*Date Started* 02-Jun-21

*Date Completed* 25-Jun-21

*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



2139



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-11654

Client Ref

Contract Title Redcar

Lab No	1856624
.Sample ID	PRA-AT-19-S1
Depth	5.5
Other ID	
Sample Type	SOIL
Sampling Date	28/05/2021
Sampling Time	n/s

Test	Method	LOD	Units	
<b>Metals</b>				
Arsenic	DETSC 2301#	0.2	mg/kg	4.9
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.2
Chromium	DETSC 2301#	0.15	mg/kg	12
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	19
Lead	DETSC 2301#	0.3	mg/kg	16
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05
Nickel	DETSC 2301#	1	mg/kg	16
Vanadium	DETSC 2301#	0.8	mg/kg	19
Zinc	DETSC 2301#	1	mg/kg	59
<b>Inorganics</b>				
pH	DETSC 2008#		pH	9.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.7
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	2700
Sulphur (free)	DETSC 3049#	0.75	mg/kg	3.9
<b>Petroleum Hydrocarbons</b>				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10
<b>PAHs</b>				
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-11654

Client Ref

Contract Title Redcar

Lab No	1856624
.Sample ID	PRA-AT-19-S1
Depth	5.5
Other ID	
Sample Type	SOIL
Sampling Date	28/05/2021
Sampling Time	n/s

Test	Method	LOD	Units	
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10
<b>Phenols</b>				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3
<b>SVOCs</b>				
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

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-11654

Client Ref

Contract Title Redcar

<b>Lab No</b>	1856624
<b>Sample ID</b>	PRA-AT-19-S1
<b>Depth</b>	5.5
<b>Other ID</b>	
<b>Sample Type</b>	SOIL
<b>Sampling Date</b>	28/05/2021
<b>Sampling Time</b>	n/s

Test	Method	LOD	Units	
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
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

## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-11654

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1856624	PRA-AT-19-S1 5.5	SOIL	NAD	none	Michael Kay

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 21-11654  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1856624	PRA-AT-19-S1 5.5 SOIL	28/05/21	GJ 250ml, GJ 60ml x2, PT 500ml		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-11857

*Issued:* 25-Jun-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-11857

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* (not supplied)

*Description* One Soil sample.

*Date Received* 04-Jun-21

*Date Started* 04-Jun-21

*Date Completed* 25-Jun-21

*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



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## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-11857

Client Ref

Contract Title

Lab No	1858129
.Sample ID	PRA-AU-19-S3
Depth	3.3
Other ID	
Sample Type	SOIL
Sampling Date	02/06/2021
Sampling Time	n/s

Test	Method	LOD	Units	
<b>Metals</b>				
Arsenic	DETSC 2301#	0.2	mg/kg	13
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.9
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	37
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	28
Lead	DETSC 2301#	0.3	mg/kg	16
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05
Nickel	DETSC 2301#	1	mg/kg	47
Vanadium	DETSC 2301#	0.8	mg/kg	39
Zinc	DETSC 2301#	1	mg/kg	95
<b>Inorganics</b>				
pH	DETSC 2008#		pH	10.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6
Organic matter	DETSC 2002#	0.1	%	0.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	110
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75
<b>Petroleum Hydrocarbons</b>				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	2.5
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	2.7
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	1.5
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10
<b>PAHs</b>				
Naphthalene	DETSC 3303#	0.03	mg/kg	0.41

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-11857

Client Ref

Contract Title

<b>Lab No</b>	1858129
<b>Sample ID</b>	PRA-AU-19-S3
<b>Depth</b>	3.3
<b>Other ID</b>	
<b>Sample Type</b>	SOIL
<b>Sampling Date</b>	02/06/2021
<b>Sampling Time</b>	n/s

Test	Method	LOD	Units	
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.17
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.30
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.89
<b>Phenols</b>				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3

## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-11857

*Client Ref*

*Contract Title*

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1858129	PRA-AU-19-S3 3.3	SOIL	NAD	none	Lee Kerridge

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 21-11857  
 Client Ref  
 Contract

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1858129	PRA-AU-19-S3 3.3 SOIL	02/06/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-12041

*Issued:* 25-Jun-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-12041

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 2 Soil samples.

*Date Received* 08-Jun-21

*Date Started* 08-Jun-21

*Date Completed* 25-Jun-21

*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



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## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-12041

Client Ref

Contract Title Redcar

Lab No	1859328	1859329
.Sample ID	PRA-AX-18-S2	PRA-AU-17-S5
Depth	3.5	2.0
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	01/06/2021	03/06/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
<b>Metals</b>					
Arsenic	DETSC 2301#	0.2	mg/kg	15	13
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.5	3.1
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	37	39
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	31	33
Lead	DETSC 2301#	0.3	mg/kg	28	22
Mercury	DETSC 2325#	0.05	mg/kg	0.06	0.05
Nickel	DETSC 2301#	1	mg/kg	49	49
Vanadium	DETSC 2301#	0.8	mg/kg	42	43
Zinc	DETSC 2301#	1	mg/kg	110	100
<b>Inorganics</b>					
pH	DETSC 2008#		pH	9.6	10.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.1	1.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	110	180
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	0.24
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	0.17
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	0.04	0.10
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	0.08	0.16
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	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
<b>PAHs</b>					
Naphthalene	DETSC 3303#	0.03	mg/kg	0.41	0.16



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-12041

Client Ref

Contract Title Redcar

<b>Lab No</b>	1859328	1859329
<b>Sample ID</b>	PRA-AX-18-S2	PRA-AU-17-S5
<b>Depth</b>	3.5	2.0
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	01/06/2021	03/06/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
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	0.15	0.07
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.30	0.15
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.86	0.37
<b>Phenols</b>					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-12041

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1859328	PRA-AX-18-S2 3.5	SOIL	NAD	none	Keith Wilson
1859329	PRA-AU-17-S5 2.0	SOIL	NAD	none	Keith Wilson

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 21-12041  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1859328	PRA-AX-18-S2 3.5 SOIL	01/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1859329	PRA-AU-17-S5 2.0 SOIL	03/06/21	GJ 250ml, GJ 60ml, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-12118

*Issued:* 17-Jun-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-12118

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 5 Soil samples.

*Date Received* 09-Jun-21

*Date Started* 09-Jun-21

*Date Completed* 17-Jun-21

*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



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-12118

Client Ref

Contract Title Redcar

Lab No	1859677	1859678	1859679	1859680	1859681
Sample ID	PRA-SP039-S1	PRA-SP039-S2	PRA-AW-20-S2	PRA-AT-24-S1	PRA-AS-21-S1
Depth			3.30	5.50	5.20
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	04/06/2021	04/06/2021	04/06/2021	04/06/2021	04/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETSC 1102	0.001	%	< 0.001	< 0.001			
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	9.9	12	15	8.6	9.1
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.8	2.1	2.7	4.1	0.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.5	< 0.1	0.3	0.2
Chromium	DETSC 2301#	0.15	mg/kg	45	55	37	26	27
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	50	38	30	34	30
Lead	DETSC 2301#	0.3	mg/kg	38	35	19	30	26
Mercury	DETSC 2325#	0.05	mg/kg	0.44	0.25	0.06	0.08	< 0.05
Nickel	DETSC 2301#	1	mg/kg	14	15	50	33	38
Vanadium	DETSC 2301#	0.8	mg/kg	76	100	40	32	30
Zinc	DETSC 2301#	1	mg/kg	270	110	91	97	84
<b>Inorganics</b>								
pH	DETSC 2008#		pH	10.3	10.8	9.6	9.2	7.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	11	99	0.2	2.2	0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.3	1.2	< 0.6	0.7	< 0.6
Organic matter	DETSC 2002#	0.1	%	0.8	1.2	3.1	0.5	2.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	990	1400	120	430	380
Sulphur (free)	DETSC 3049#	0.75	mg/kg	4.3	52	< 0.75	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	3.3	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	8.1	12	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	21	35	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	57	98	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	87	150	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	0.06	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	0.11	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	14	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	29	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	61	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	130	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	240	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	87	390	< 10	< 10	< 10
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.20	0.14	0.19	0.05	0.07

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-12118

Client Ref

Contract Title Redcar

Lab No	1859677	1859678	1859679	1859680	1859681
Sample ID	PRA-SP039-S1	PRA-SP039-S2	PRA-AW-20-S2	PRA-AT-24-S1	PRA-AS-21-S1
Depth			3.30	5.50	5.20
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	04/06/2021	04/06/2021	04/06/2021	04/06/2021	04/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.27	0.21	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.17	0.33	0.08	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.3	1.7	0.15	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	0.28	0.30	< 0.03	< 0.03	0.04
Fluoranthene	DETSC 3303#	0.03	mg/kg	3.7	2.7	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	3.1	2.1	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	1.3	0.87	0.07	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.90	0.72	0.05	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	1.2	0.92	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.47	0.30	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.65	0.44	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.35	0.26	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.11	0.08	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.41	0.31	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	14	11	0.54	< 0.10	< 0.10
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-12118

Client Ref

Contract Title Redcar

Lab No	1859680	1859681
Sample ID	PRA-AT-24-S1	PRA-AS-21-S1
Depth	5.50	5.20
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	04/06/2021	04/06/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
<b>VOCs</b>					
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	
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	



## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-12118

Client Ref

Contract Title Redcar

<b>Lab No</b>	1859680	1859681
<b>Sample ID</b>	PRA-AT-24-S1	PRA-AS-21-S1
<b>Depth</b>	5.50	5.20
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	04/06/2021	04/06/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
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	
<b>SVOCs</b>					
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
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

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-12118

Client Ref

Contract Title Redcar

<b>Lab No</b>	1859680	1859681
<b>Sample ID</b>	PRA-AT-24-S1	PRA-AS-21-S1
<b>Depth</b>	5.50	5.20
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	04/06/2021	04/06/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
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

## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-12118

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1859677	PRA-SP039-S1	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1859678	PRA-SP039-S2	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1859679	PRA-AW-20-S2 3.30	SOIL	NAD	none	D Wilkinson
1859680	PRA-AT-24-S1 5.50	SOIL	NAD	none	D Wilkinson
1859681	PRA-AS-21-S1 5.20	SOIL	NAD	none	D Wilkinson

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-12118

Client Ref

Contract Title Redcar

Lab No	1859677	1859678
Sample ID	PRA-SP039-S1	PRA-SP039-S2
Depth		
Other ID		
Sample Type		
Sampling Date	04/06/2021	04/06/2021
Sampling Time		

Test	Method	Units		
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1247.96	1166.99
ACMs present*		type		
Mass of ACM in sample		g		
% ACM by mass		%		
% asbestos in ACM		%		
% asbestos in sample		%		

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na
% Chrysotile bundles in sample		Mass %	<0.001	<0.001

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na
% Chrysotile fibres in sample		Mass %	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na
Chrysotile fibres		Fibres/g	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-12118  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1859677	PRA-SP039-S1 SOIL	04/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1859678	PRA-SP039-S2 SOIL	04/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1859679	PRA-AW-20-S2 3.30 SOIL	04/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1859680	PRA-AT-24-S1 5.50 SOIL	04/06/21	GJ 250ml, GJ 60ml x2, PT 1L x2		
1859681	PRA-AS-21-S1 5.20 SOIL	04/06/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-12428

*Issued:* 21-Jun-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-12428

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 12 Soil samples.

*Date Received* 14-Jun-21

*Date Started* 14-Jun-21

*Date Completed* 21-Jun-21

*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



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-12428

Client Ref

Contract Title Redcar

Lab No	1861602	1861603	1861604	1861605	1861606	1861607
Sample ID	PRA-AR-25-S1	PRA-AR-26-S1	PRA-AR-27-S1	PRA-AX-23-S2	PRA-AW-20-S3	PRA-AV-17-S3
Depth	7.00	6.50	7.00	3.20	3.20	3.20
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	09/06/2021	09/06/2021	09/06/2021	09/06/2021	09/06/2021	09/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%						
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	6.5	7.7	5.4	21	24	13
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.8	1.2	1.5	5.6	3.7	3.4
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	0.2	< 0.1	0.1	< 0.1	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	15	25	25	43	26	38
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	12	21	19	21	22	30
Lead	DETSC 2301#	0.3	mg/kg	20	31	20	16	24	18
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	12	31	21	32	31	49
Vanadium	DETSC 2301#	0.8	mg/kg	22	32	33	61	48	43
Zinc	DETSC 2301#	1	mg/kg	41	85	55	110	61	99
<b>Inorganics</b>									
pH	DETSC 2008#		pH	7.2	6.9	6.4	11.8	11.7	9.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.3	0.5	< 0.1	< 0.1	< 0.1	< 0.1
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	1.5	1.0	1.1	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.6	1.0	1.5	1.4	0.7	0.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	190	110	79	230	430	140
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	17	6.0	< 0.75	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>									
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	0.12
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	1.6
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.03
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.16
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.25
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	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.17	0.18	0.66





# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-12428

Client Ref

Contract Title Redcar

Lab No	1861602	1861603	1861604	1861605	1861606	1861607
Sample ID	PRA-AR-25-S1	PRA-AR-26-S1	PRA-AR-27-S1	PRA-AX-23-S2	PRA-AW-20-S3	PRA-AV-17-S3
Depth	7.00	6.50	7.00	3.20	3.20	3.20
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	09/06/2021	09/06/2021	09/06/2021	09/06/2021	09/06/2021	09/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
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	0.08	0.07	0.23
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.23	0.20	0.47
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.24	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.05	0.05	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.04	0.04	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.09	< 0.03	0.09
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.09	0.05	0.07
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.03	< 0.03	0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 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	< 0.03	< 0.03	< 0.03
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	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	1.1	0.59	1.6
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-12428

Client Ref

Contract Title Redcar

Lab No	1861608	1861609	1861610	1861611	1861612	1861613
Sample ID	PRA-SP040-S1	PRA-SP040-S2	PRA-SP040-S3	PRA-SP040-S4	PRA-AS-24-S1	PRA-AS-25-S1
Depth					6.50	6.30
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	10/06/2021	10/06/2021	10/06/2021	10/06/2021	10/06/2021	10/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%	< 0.001		0.004	< 0.001		
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	9.5	7.4	11	6.7	8.2	5.6
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.2	1.9	2.2	1.9	1.0	1.1
Cadmium	DETSC 2301#	0.1	mg/kg	0.8	0.4	0.5	0.4	0.2	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	35	59	25	25	25	22
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	35	28	29	29	27	28
Lead	DETSC 2301#	0.3	mg/kg	57	49	62	43	31	27
Mercury	DETSC 2325#	0.05	mg/kg	0.08	0.38	1.2	0.86	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	12	12	14	11	52	34
Vanadium	DETSC 2301#	0.8	mg/kg	61	97	47	48	28	27
Zinc	DETSC 2301#	1	mg/kg	190	120	220	130	78	74
<b>Inorganics</b>									
pH	DETSC 2008#		pH	11.2	11.4	11.3	11.4	7.8	7.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	41	13	17	17	1.0	0.4
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.2	0.1	0.2	0.3	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.8	1.7	5.0	2.0	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.4	1.5	2.1	< 0.1	2.1	2.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	620	460	520	580	320	100
Sulphur (free)	DETSC 3049#	0.75	mg/kg	4.5	7.1	6.5	5.3	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	2.6	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	2.0	6.9	< 1.2	5.3	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	37	42	13	24	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	130	160	83	78	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	170	210	98	110	< 10	< 10
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	3.3	2.2	3.4	9.6	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	4.9	5.3	7.4	8.3	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	42	39	53	29	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	94	93	140	91	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	140	140	200	140	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	320	350	300	250	< 10	< 10
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.19	0.25	0.33	0.41	< 0.03	< 0.03



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-12428

Client Ref

Contract Title Redcar

Lab No	1861608	1861609	1861610	1861611	1861612	1861613
Sample ID	PRA-SP040-S1	PRA-SP040-S2	PRA-SP040-S3	PRA-SP040-S4	PRA-AS-24-S1	PRA-AS-25-S1
Depth					6.50	6.30
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	10/06/2021	10/06/2021	10/06/2021	10/06/2021	10/06/2021	10/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.06	< 0.03	0.05	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.39	0.44	0.41	0.59	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.37	0.49	0.46	0.64	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	2.5	3.3	3.9	4.7	0.04	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	0.32	0.41	0.53	0.69	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	2.6	3.6	4.8	5.6	0.06	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	1.9	2.6	3.6	4.2	0.05	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.76	1.1	1.6	1.9	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.69	1.0	1.7	1.6	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.84	1.2	1.7	2.1	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.31	0.45	0.65	0.76	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.45	0.68	1.0	1.3	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.30	0.46	0.66	0.79	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.09	0.13	0.23	0.27	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.33	0.50	0.72	0.86	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	12	17	22	26	0.15	< 0.10
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-12428

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1861602	PRA-AR-25-S1 7.00	SOIL	NAD	none	Michael Kay
1861603	PRA-AR-26-S1 6.50	SOIL	NAD	none	Michael Kay
1861604	PRA-AR-27-S1 7.00	SOIL	NAD	none	Michael Kay
1861605	PRA-AX-23-S2 3.20	SOIL	NAD	none	Michael Kay
1861606	PRA-AW-20-S3 3.20	SOIL	NAD	none	Michael Kay
1861607	PRA-AV-17-S3 3.20	SOIL	NAD	none	Michael Kay
1861608	PRA-SP040-S1	SOIL	Chrysotile Amosite	Chrysotile present in microscopic cement debris	Michael Kay
1861609	PRA-SP040-S2	SOIL	NAD	none	Michael Kay
1861610	PRA-SP040-S3	SOIL	Chrysotile	Bundles of Chrysotile	Michael Kay
1861611	PRA-SP040-S4	SOIL	Chrysotile	Bundles of Chrysotile	Michael Kay
1861612	PRA-AS-24-S1 6.50	SOIL	NAD	none	Michael Kay
1861613	PRA-AS-25-S1 6.30	SOIL	NAD	none	Michael Kay

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-12428

Client Ref

Contract Title Redcar

Lab No	1861608	1861610	1861611
Sample ID	PRA-SP040-S1	PRA-SP040-S3	PRA-SP040-S4
Depth			
Other ID			
Sample Type			
Sampling Date	10/06/2021	10/06/2021	10/06/2021
Sampling Time			

Test	Method	Units			
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	0.004	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	0.000	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	0.004	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1196.98	1396.95	1279.65
ACMs present*		type	Cement		
Mass of ACM in sample		g	0.02		
% ACM by mass		%	0.00		
% asbestos in ACM		%	15.00		
% asbestos in sample		%	0.000		

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	<0.001	na	na
% Chrysotile bundles in sample		Mass %	na	0.004	<0.001

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na
Chrysotile fibres		Fibres/g	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-12428  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1861602	PRA-AR-25-S1 7.00 SOIL	09/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1861603	PRA-AR-26-S1 6.50 SOIL	09/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1861604	PRA-AR-27-S1 7.00 SOIL	09/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1861605	PRA-AX-23-S2 3.20 SOIL	09/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1861606	PRA-AW-20-S3 3.20 SOIL	09/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1861607	PRA-AV-17-S3 3.20 SOIL	09/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1861608	PRA-SP040-S1 SOIL	10/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1861609	PRA-SP040-S2 SOIL	10/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1861610	PRA-SP040-S3 SOIL	10/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1861611	PRA-SP040-S4 SOIL	10/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1861612	PRA-AS-24-S1 6.50 SOIL	10/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1861613	PRA-AS-25-S1 6.30 SOIL	10/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-12522

*Issued:* 23-Jun-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-12522

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 3 Soil samples.

*Date Received* 15-Jun-21

*Date Started* 15-Jun-21

*Date Completed* 23-Jun-21

*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



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-12522

Client Ref

Contract Title Redcar

Lab No	1862198	1862199	1862200
Sample ID	PRA-AR-24-S1	PRA-AW-17-S7	PRA-AX-19-S2
Depth			
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	10/06/2021	10/06/2021	10/06/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>Metals</b>						
Arsenic	DETSC 2301#	0.2	mg/kg	8.5	15	17
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.8	2.4	3.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.1	0.1
Chromium	DETSC 2301#	0.15	mg/kg	21	35	71
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	31	29	28
Lead	DETSC 2301#	0.3	mg/kg	33	19	19
Mercury	DETSC 2325#	0.05	mg/kg	0.63	0.63	< 0.05
Nickel	DETSC 2301#	1	mg/kg	31	48	35
Vanadium	DETSC 2301#	0.8	mg/kg	26	38	75
Zinc	DETSC 2301#	1	mg/kg	97	190	170
<b>Inorganics</b>						
pH	DETSC 2008#		pH	9.1	9.8	11.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	11	< 0.1	0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.2	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.7	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	2.0	1.2	1.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	96	95	89
Sulphur (free)	DETSC 3049#	0.75	mg/kg	1.3	2.2	< 0.75
<b>Petroleum Hydrocarbons</b>						
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	0.04	0.72
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	0.90	1.1
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	4.9
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	11
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	4.4	< 1.5	13
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	74	< 3.4	26
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	79	< 10	56
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 C5-C35	DETSC 3072*	10	mg/kg	79	< 10	56

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-12522

Client Ref

Contract Title Redcar

Lab No	1862198	1862199	1862200
Sample ID	PRA-AR-24-S1	PRA-AW-17-S7	PRA-AX-19-S2
Depth			
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	10/06/2021	10/06/2021	10/06/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>PAHs</b>						
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.42	0.09
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	0.17	0.04
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.31	0.10
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.08	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.09	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.07	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.04	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.08	0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.06	< 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	0.05	0.04	0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.50	0.96	0.27
<b>Phenols</b>						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3

## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-12522

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1862198	PRA-AR-24-S1	SOIL	NAD	none	Michael Kay
1862199	PRA-AW-17-S7	SOIL	NAD	none	Michael Kay
1862200	PRA-AX-19-S2	SOIL	NAD	none	Michael Kay

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 21-12522  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1862198	PRA-AR-24-S1 SOIL	10/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1862199	PRA-AW-17-S7 SOIL	10/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1862200	PRA-AX-19-S2 SOIL	10/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-12625

*Issued:* 25-Jun-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-12625

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 5 Soil samples.

*Date Received* 16-Jun-21

*Date Started* 16-Jun-21

*Date Completed* 25-Jun-21

*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



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## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-12625

Client Ref

Contract Title Redcar

Lab No	1862671	1862672	1862673	1862674	1862675
.Sample ID	PRA-AS-26-S1	PRA-AU-17-S6	PRA-AU-19-S5	PRA-AT-26-S1	PRA-AU-19-S4
Depth	4.7	6.5	5.2	5.2	6.5
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	14/06/2021	14/06/2021	14/06/2021	14/06/2021	11/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	5.1	12	26	5.7	14
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.0	2.5	2.9	0.5	2.8
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.5	0.1	< 0.1	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	15	23	22	18	33
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	26	18	25	25	27
Lead	DETSC 2301#	0.3	mg/kg	23	18	21	26	16
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	24	20	39	22	44
Vanadium	DETSC 2301#	0.8	mg/kg	21	37	77	24	38
Zinc	DETSC 2301#	1	mg/kg	75	75	69	57	83
<b>Inorganics</b>								
pH	DETSC 2008#		pH	5.0	10.0	9.2	7.5	9.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.5	< 0.1	< 0.1	0.5	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.8	< 0.6	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	0.4	1.5	1.1	0.7	2.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	53	130	250	150	77
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	2.4	< 0.75
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	19	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	13	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	21	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	37	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	90	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	90	< 10	< 10	< 10
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.04	0.20	0.12	0.04	0.18

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-12625

Client Ref

Contract Title Redcar

Lab No	1862671	1862672	1862673	1862674	1862675
Sample ID	PRA-AS-26-S1	PRA-AU-17-S6	PRA-AU-19-S5	PRA-AT-26-S1	PRA-AU-19-S4
Depth	4.7	6.5	5.2	5.2	6.5
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	14/06/2021	14/06/2021	14/06/2021	14/06/2021	11/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 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
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.10	0.05	< 0.03	0.08
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.25	0.12	< 0.03	0.18
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.09	< 0.03	< 0.03	0.04
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.07	< 0.03	< 0.03	0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	0.04	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 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	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 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
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	0.75	0.29	< 0.10	0.48
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3



## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-12625

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1862671	PRA-AS-26-S1 4.7	SOIL	NAD	none	Michael Kay
1862672	PRA-AU-17-S6 6.5	SOIL	NAD	none	Michael Kay
1862673	PRA-AU-19-S5 5.2	SOIL	NAD	none	Michael Kay
1862674	PRA-AT-26-S1 5.2	SOIL	NAD	none	Michael Kay
1862675	PRA-AU-19-S4 6.5	SOIL	NAD	none	Michael Kay

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 21-12625  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1862671	PRA-AS-26-S1 4.7 SOIL	14/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1862672	PRA-AU-17-S6 6.5 SOIL	14/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1862673	PRA-AU-19-S5 5.2 SOIL	14/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1862674	PRA-AT-26-S1 5.2 SOIL	14/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1862675	PRA-AU-19-S4 6.5 SOIL	11/06/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



## Certificate of Analysis

*Certificate Number* 21-12727

*Issued:* 24-Jun-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-12727

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 7 Soil samples.

*Date Received* 17-Jun-21

*Date Started* 17-Jun-21

*Date Completed* 24-Jun-21

*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*

A handwritten signature in black ink, appearing to read "A Fenwick".

Adam Fenwick  
Contracts Manager



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-12727

Client Ref

Contract Title Redcar

Lab No	1863419	1863420	1863421	1863422	1863423	1863424
Sample ID	PRA-SP041-S1	PRA-SP041-S2	PRA-SP041-S3	PRA-AR-23-S1	PRA-AS-23-S1	PRA-AY-17-S4
Depth				6.50	7.00	5.20
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	15/06/2021	15/06/2021	15/06/2021	15/06/2021	15/06/2021	15/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%	0.007	< 0.001	0.058			
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	28	27	31	8.0	7.4	25
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	3.9	3.5	4.2	0.5	1.3	2.9
Cadmium	DETSC 2301#	0.1	mg/kg	1.4	1.0	1.2	0.3	0.3	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	55	78	66	24	22	25
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	75	67	75	26	28	24
Lead	DETSC 2301#	0.3	mg/kg	180	98	140	25	30	15
Mercury	DETSC 2325#	0.05	mg/kg	2.0	1.3	2.2	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	29	31	26	34	32	33
Vanadium	DETSC 2301#	0.8	mg/kg	110	150	120	26	25	34
Zinc	DETSC 2301#	1	mg/kg	500	380	410	80	99	57
<b>Inorganics</b>									
pH	DETSC 2008#		pH	9.3	10.2	9.2	8.0	8.5	10.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	11	13	18	0.2	0.2	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.4	0.2	0.3	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.7	2.1	2.0	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	3.8	3.3	4.0	3.8	2.7	1.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	240	340	380	290	270	280
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>									
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	0.02
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.57
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	20	< 1.5	4.8	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	19	< 1.2	12	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	37	6.4	25	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	96	26	110	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	170	34	150	< 10	< 10	< 10
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	3.6	2.7	1.8	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	8.5	4.6	7.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	71	34	64	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	150	84	180	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	230	120	250	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	400	160	400	< 10	< 10	< 10
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.10	0.11	0.09	< 0.03	< 0.03	0.16
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.10	0.12	0.08	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.32	0.12	0.20	< 0.03	< 0.03	< 0.03

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-12727

Client Ref

Contract Title Redcar

<b>Lab No</b>	1863419	1863420	1863421	1863422	1863423	1863424
<b>Sample ID</b>	PRA-SP041-S1	PRA-SP041-S2	PRA-SP041-S3	PRA-AR-23-S1	PRA-AS-23-S1	PRA-AY-17-S4
<b>Depth</b>				6.50	7.00	5.20
<b>Other ID</b>						
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	15/06/2021	15/06/2021	15/06/2021	15/06/2021	15/06/2021	15/06/2021
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Fluorene	DETSC 3303	0.03	mg/kg	0.26	0.13	0.17	< 0.03	< 0.03	0.08
Phenanthrene	DETSC 3303#	0.03	mg/kg	3.2	2.2	2.8	< 0.03	< 0.03	0.15
Anthracene	DETSC 3303	0.03	mg/kg	0.99	0.92	1.1	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	9.7	< 0.03	12	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	9.4	< 0.03	11	< 0.03	< 0.03	0.05
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	5.2	4.8	6.7	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	4.9	4.4	6.4	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	8.1	6.9	7.7	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	3.3	2.1	3.0	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	4.8	4.6	4.9	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	3.0	2.7	2.3	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.83	0.72	0.68	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	3.7	2.9	2.9	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	58	33	61	< 0.10	< 0.10	0.44
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-12727

Client Ref

Contract Title Redcar

Lab No	1863425
Sample ID	PRA-AS-27-S1
Depth	7.00
Other ID	
Sample Type	SOIL
Sampling Date	15/06/2021
Sampling Time	n/s

Test	Method	LOD	Units	
Asbestos Quantification	DETSC 1102	0.001	%	
<b>Metals</b>				
Arsenic	DETSC 2301#	0.2	mg/kg	5.3
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.3
Chromium	DETSC 2301#	0.15	mg/kg	38
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	14
Lead	DETSC 2301#	0.3	mg/kg	33
Mercury	DETSC 2325#	0.05	mg/kg	0.39
Nickel	DETSC 2301#	1	mg/kg	14
Vanadium	DETSC 2301#	0.8	mg/kg	33
Zinc	DETSC 2301#	1	mg/kg	100
<b>Inorganics</b>				
pH	DETSC 2008#		pH	7.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg	20
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.4
Thiocyanate	DETSC 2130#	0.6	mg/kg	2.0
Organic matter	DETSC 2002#	0.1	%	1.9
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	160
Sulphur (free)	DETSC 3049#	0.75	mg/kg	63
<b>Petroleum Hydrocarbons</b>				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10
<b>PAHs</b>				
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-12727

Client Ref

Contract Title Redcar

<b>Lab No</b>	1863425
<b>Sample ID</b>	PRA-AS-27-S1
<b>Depth</b>	7.00
<b>Other ID</b>	
<b>Sample Type</b>	SOIL
<b>Sampling Date</b>	15/06/2021
<b>Sampling Time</b>	n/s

Test	Method	LOD	Units	
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10
<b>Phenols</b>				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3



## Summary of Asbestos Analysis Soil Samples

Our Ref 21-12727

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1863419	PRA-SP041-S1	SOIL	Amosite Chrysotile	Bundles of Chrysotile and Amosite fibres	Rebecca Burgess
1863420	PRA-SP041-S2	SOIL	Chrysotile	Bundles of Chrysotile fibres	Rebecca Burgess
1863421	PRA-SP041-S3	SOIL	Chrysotile	Chrysotile in microscopic loose fibrous asbestos debris	Rebecca Burgess
1863422	PRA-AR-23-S1 6.50	SOIL	NAD	none	Rebecca Burgess
1863423	PRA-AS-23-S1 7.00	SOIL	NAD	none	Rebecca Burgess
1863424	PRA-AY-17-S4 5.20	SOIL	NAD	none	Rebecca Burgess
1863425	PRA-AS-27-S1 7.00	SOIL	NAD	none	Rebecca Burgess

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-12727

Client Ref

Contract Title Redcar

Lab No	1863419	1863420	1863421
Sample ID	PRA-SP041-S1	PRA-SP041-S2	PRA-SP041-S3
Depth			
Other ID			
Sample Type			
Sampling Date	15/06/2021	15/06/2021	15/06/2021
Sampling Time			

Test	Method	Units			
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.007	< 0.001	0.058
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	0.058
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.007	<0.001	na
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na
Breakdown of Gravimetric Analysis (a)					
Mass of Sample		g	1578.52	1415.44	1115.81
ACMs present*		type			LFAD
Mass of ACM in sample		g			0.76
% ACM by mass		%			0.07
% asbestos in ACM		%			85
% asbestos in sample		%			0.058
Breakdown of Detailed Gravimetric Analysis (b)					
% Amphibole bundles in sample		Mass %	0.001	na	na
% Chrysotile bundles in sample		Mass %	0.006	<0.001	na
Breakdown of PCOM Analysis (c)					
% Amphibole fibres in sample		Mass %	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)					
Amphibole fibres		Fibres/g	na	na	na
Chrysotile fibres		Fibres/g	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-12727  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
1863419	PRA-SP041-S1 SOIL	15/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1863420	PRA-SP041-S2 SOIL	15/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1863421	PRA-SP041-S3 SOIL	15/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1863422	PRA-AR-23-S1 6.50 SOIL	15/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1863423	PRA-AS-23-S1 7.00 SOIL	15/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1863424	PRA-AY-17-S4 5.20 SOIL	15/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1863425	PRA-AS-27-S1 7.00 SOIL	15/06/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



## Certificate of Analysis

*Certificate Number* 21-12947

*Issued:* 24-Jun-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-12947

*Client Reference* (not supplied)

*Order No* CP1096/MA1004D

*Contract Title* Redcar

*Description* 9 Soil samples.

*Date Received* 18-Jun-21

*Date Started* 18-Jun-21

*Date Completed* 24-Jun-21

*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*

A handwritten signature in black ink, appearing to read "A Fenwick".

Adam Fenwick  
Contracts Manager



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-12947

Client Ref

Contract Title Redcar

Lab No	1864514	1864515	1864516	1864517	1864518	1864519
Sample ID	PRA-AX-25-S1	PRA-AQ-23-S2	PRA-AX-26-S1	PRA-AQ-23-S1	PRA-AQ-25-S2	PRA-AW-26-S2
Depth	4.50	6.00	4.50	5.00	6.00	5.00
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	16/06/2021	16/06/2021	16/06/2021	16/06/2021	16/06/2021	16/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%						0.004
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	6.8	8.4	9.4	8.1	7.1	9.8
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.4	0.5	1.3	0.6	2.1	1.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.3	0.3	0.2	0.2	0.4
Chromium	DETSC 2301#	0.15	mg/kg	29	23	33	30	28	31
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	30	26	37	30	23	38
Lead	DETSC 2301#	0.3	mg/kg	29	32	43	29	29	42
Mercury	DETSC 2325#	0.05	mg/kg	0.46	< 0.05	0.22	< 0.05	0.05	0.56
Nickel	DETSC 2301#	1	mg/kg	35	34	39	42	30	37
Vanadium	DETSC 2301#	0.8	mg/kg	33	25	41	30	39	43
Zinc	DETSC 2301#	1	mg/kg	77	100	120	91	74	120
<b>Inorganics</b>									
pH	DETSC 2008#		pH	10.2	8.5	9.4	8.4	7.8	8.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	1.2	< 0.1	0.1	0.8
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	< 0.6	< 0.6	< 0.6	< 0.6	1.0	< 0.6
Organic matter	DETSC 2002#	0.1	%	3.3	3.1	3.0	4.1	3.5	2.7
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	440	130	260	150	73	130
Sulphur (free)	DETSC 3049#	0.75	mg/kg	16	1.5	< 0.75	< 0.75	2.5	7.8
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
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	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.04	< 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	0.04	< 0.03	< 0.03	0.06

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-12947

Client Ref

Contract Title Redcar

Lab No	1864514	1864515	1864516	1864517	1864518	1864519
Sample ID	PRA-AX-25-S1	PRA-AQ-23-S2	PRA-AX-26-S1	PRA-AQ-23-S1	PRA-AQ-25-S2	PRA-AW-26-S2
Depth	4.50	6.00	4.50	5.00	6.00	5.00
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	16/06/2021	16/06/2021	16/06/2021	16/06/2021	16/06/2021	16/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
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	< 0.03	< 0.03	0.13	0.04	< 0.03	0.09
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	< 0.03	< 0.03	0.12	< 0.03	< 0.03	0.43
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.09	< 0.03	< 0.03	0.36
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.12
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.12
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.11
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.04
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 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	< 0.03	< 0.03	0.05
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	0.06
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	0.42	< 0.10	< 0.10	1.4
<b>PCBs</b>									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01				< 0.01	
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01				< 0.01	
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01				< 0.01	
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01				< 0.01	
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01				< 0.01	
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01				< 0.01	
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01				< 0.01	
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01				< 0.01	
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-12947

Client Ref

Contract Title Redcar

<b>Lab No</b>	1864520	1864521	1864522
<b>Sample ID</b>	PRA-AW-26-S1	PRA-SP042-S1	PRA-SP042-S2
<b>Depth</b>	5.00		
<b>Other ID</b>			
<b>Sample Type</b>	SOIL	SOIL	SOIL
<b>Sampling Date</b>	16/06/2021	16/06/2021	16/06/2021
<b>Sampling Time</b>	n/s	n/s	n/s

Test	Method	LOD	Units			
Asbestos Quantification	DETSC 1102	0.001	%		0.002	0.001
<b>Metals</b>						
Arsenic	DETSC 2301#	0.2	mg/kg	9.4	9.9	13
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.5	1.4	1.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.5	0.7
Chromium	DETSC 2301#	0.15	mg/kg	29	38	46
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	33	43	60
Lead	DETSC 2301#	0.3	mg/kg	33	53	62
Mercury	DETSC 2325#	0.05	mg/kg	0.06	0.53	0.55
Nickel	DETSC 2301#	1	mg/kg	40	16	19
Vanadium	DETSC 2301#	0.8	mg/kg	32	64	80
Zinc	DETSC 2301#	1	mg/kg	97	160	160
<b>Inorganics</b>						
pH	DETSC 2008#		pH	8.3	11.6	11.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	8.6	17
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	1.3	1.3
Organic matter	DETSC 2002#	0.1	%	2.8	1.3	1.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	170	760	440
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	10	16
<b>Petroleum Hydrocarbons</b>						
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	5.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	43	44
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	230	290
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	280	330
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	3.2	1.6
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	10	10
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	54	82
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	230	370
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	300	460
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	580	800
<b>PAHs</b>						
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.22	0.38
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.04
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.30	0.41



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-12947

Client Ref

Contract Title Redcar

<b>Lab No</b>	1864520	1864521	1864522
<b>Sample ID</b>	PRA-AW-26-S1	PRA-SP042-S1	PRA-SP042-S2
<b>Depth</b>	5.00		
<b>Other ID</b>			
<b>Sample Type</b>	SOIL	SOIL	SOIL
<b>Sampling Date</b>	16/06/2021	16/06/2021	16/06/2021
<b>Sampling Time</b>	n/s	n/s	n/s

Test	Method	LOD	Units			
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.28	0.32
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	2.1	4.4
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.29	0.77
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	2.7	7.5
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	2.1	5.6
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.85	2.4
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	0.76	1.8
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.97	2.4
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.35	0.88
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	0.37	0.78
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.12	0.26
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.42	0.78
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	12	29
<b>PCBs</b>						
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg			
PCB 52	DETSC 3401#	0.01	mg/kg			
PCB 101	DETSC 3401#	0.01	mg/kg			
PCB 118	DETSC 3401#	0.01	mg/kg			
PCB 153	DETSC 3401#	0.01	mg/kg			
PCB 138	DETSC 3401#	0.01	mg/kg			
PCB 180	DETSC 3401#	0.01	mg/kg			
PCB 7 Total	DETSC 3401#	0.01	mg/kg			
<b>Phenols</b>						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-12947

Client Ref

Contract Title Redcar

Lab No	1864514	1864515	1864516	1864517	1864518	1864519
Sample ID	PRA-AX-25-S1	PRA-AQ-23-S2	PRA-AX-26-S1	PRA-AQ-23-S1	PRA-AQ-25-S2	PRA-AW-26-S2
Depth	4.50	6.00	4.50	5.00	6.00	5.00
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	16/06/2021	16/06/2021	16/06/2021	16/06/2021	16/06/2021	16/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>VOCs</b>								
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
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

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-12947

Client Ref

Contract Title Redcar

Lab No	1864514	1864515	1864516	1864517	1864518	1864519
Sample ID	PRA-AX-25-S1	PRA-AQ-23-S2	PRA-AX-26-S1	PRA-AQ-23-S1	PRA-AQ-25-S2	PRA-AW-26-S2
Depth	4.50	6.00	4.50	5.00	6.00	5.00
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	16/06/2021	16/06/2021	16/06/2021	16/06/2021	16/06/2021	16/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
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									
Test	Method	LOD	Units						
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
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

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-12947

Client Ref

Contract Title Redcar

<b>Lab No</b>	1864514	1864515	1864516	1864517	1864518	1864519
<b>Sample ID</b>	PRA-AX-25-S1	PRA-AQ-23-S2	PRA-AX-26-S1	PRA-AQ-23-S1	PRA-AQ-25-S2	PRA-AW-26-S2
<b>Depth</b>	4.50	6.00	4.50	5.00	6.00	5.00
<b>Other ID</b>						
<b>Sample Type</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date</b>	16/06/2021	16/06/2021	16/06/2021	16/06/2021	16/06/2021	16/06/2021
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units	1864514	1864515	1864516	1864517	1864518	1864519
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

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-12947

Client Ref

Contract Title Redcar

Lab No	1864520
Sample ID	PRA-AW-26- S1
Depth	5.00
Other ID	
Sample Type	SOIL
Sampling Date	16/06/2021
Sampling Time	n/s

Test	Method	LOD	Units	
<b>VOCs</b>				
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
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

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-12947

Client Ref

Contract Title Redcar

Lab No	1864520
Sample ID	PRA-AW-26-S1
Depth	5.00
Other ID	
Sample Type	SOIL
Sampling Date	16/06/2021
Sampling Time	n/s

Test	Method	LOD	Units	
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
<b>SVOCs</b>				
Phenol	DETSC 3433	0.1	mg/kg	
Aniline	DETSC 3433*	0.1	mg/kg	
2-Chlorophenol	DETSC 3433	0.1	mg/kg	
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	
2-Methylphenol	DETSC 3433	0.1	mg/kg	
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	
Dibenzofuran	DETSC 3433	0.1	mg/kg	
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	
Diethylphthalate	DETSC 3433	0.1	mg/kg	
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	
Diphenylamine	DETSC 3433	0.1	mg/kg	

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-12947

Client Ref

Contract Title Redcar

<b>Lab No</b>	1864520
<b>Sample ID</b>	PRA-AW-26-S1
<b>Depth</b>	5.00
<b>Other ID</b>	
<b>Sample Type</b>	SOIL
<b>Sampling Date</b>	16/06/2021
<b>Sampling Time</b>	n/s

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



## Summary of Asbestos Analysis Soil Samples

Our Ref 21-12947

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1864514	PRA-AX-25-S1 4.50	SOIL	NAD	none	D Wilkinson
1864515	PRA-AQ-23-S2 6.00	SOIL	NAD	none	D Wilkinson
1864516	PRA-AX-26-S1 4.50	SOIL	NAD	none	D Wilkinson
1864517	PRA-AQ-23-S1 5.00	SOIL	NAD	none	D Wilkinson
1864518	PRA-AQ-25-S2 6.00	SOIL	NAD	none	D Wilkinson
1864519	PRA-AW-26-S2 5.00	SOIL	Chrysotile	Chrysotile present in microscopic loose fibrous asbestos debris	D Wilkinson
1864520	PRA-AW-26-S1 5.00	SOIL	NAD	none	D Wilkinson
1864521	PRA-SP042-S1	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1864522	PRA-SP042-S2	SOIL	Chrysotile	Chrysotile present in microscopic loose fibrous asbestos debris	D Wilkinson

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-12947

Client Ref

Contract Title Redcar

Lab No	1864519	1864521	1864522
Sample ID	PRA-AW-26-S2	PRA-SP042-S1	PRA-SP042-S2
Depth	5.00		
Other ID			
Sample Type			
Sampling Date	16/06/2021	16/06/2021	16/06/2021
Sampling Time			

Test	Method	Units			
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.004</b>	<b>0.002</b>	<b>0.001</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	0.004	na	0.001
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	na	0.002	na
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	302.84	1429.81	1347.81
ACMs present*		type	LFAD		LFAD
Mass of ACM in sample		g	0.01		0.02
% ACM by mass		%	0.00		0.00
% asbestos in ACM		%	85.00		85
% asbestos in sample		%	0.004		0.001

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na	na
% Chrysotile bundles in sample		Mass %	na	0.002	na

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na
Chrysotile fibres		Fibres/g	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-12947  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
1864514	PRA-AX-25-S1 4.50 SOIL	16/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1864515	PRA-AQ-23-S2 6.00 SOIL	16/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1864516	PRA-AX-26-S1 4.50 SOIL	16/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1864517	PRA-AQ-23-S1 5.00 SOIL	16/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1864518	PRA-AQ-25-S2 6.00 SOIL	16/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1864519	PRA-AW-26-S2 5.00 SOIL	16/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1864520	PRA-AW-26-S1 5.00 SOIL	16/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1864521	PRA-SP042-S1 SOIL	16/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1864522	PRA-SP042-S2 SOIL	16/06/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



## Certificate of Analysis

*Certificate Number* 21-13136

*Issued:* 30-Jun-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-13136

*Client Reference* (not supplied)

*Order No* CP1096MA1004D

*Contract Title* Redcar

*Description* 16 Soil samples.

*Date Received* 22-Jun-21

*Date Started* 22-Jun-21

*Date Completed* 30-Jun-21

*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*

A handwritten signature in black ink, appearing to read "A Fenwick".

Adam Fenwick  
Contracts Manager



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13136

Client Ref

Contract Title Redcar

Lab No	1865542	1865543	1865544	1865545	1865546	1865547
Sample ID	PRA-AW-25-S1	PRA-AT-28-S1	PRA-SP042-S3	PRA-SP042-S4	PRA-AW-26-S1	PRA-AW-27-S1
Depth	4.50	6.50			5.30	4.30
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	17/06/2021	17/06/2021	17/06/2021	17/06/2021	18/06/2021	18/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%			< 0.001	< 0.001		
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	7.0	7.6	9.6	12	7.3	6.6
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.3	0.5	1.3	1.6	0.5	0.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.3	0.7	0.7	0.2	0.2
Chromium	DETSC 2301#	0.15	mg/kg	28	28	59	52	33	28
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	30	32	81	60	29	29
Lead	DETSC 2301#	0.3	mg/kg	22	35	65	81	22	19
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.18	0.68	1.1	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	36	36	15	16	34	35
Vanadium	DETSC 2301#	0.8	mg/kg	31	30	130	130	60	31
Zinc	DETSC 2301#	1	mg/kg	73	110	170	200	75	68
<b>Inorganics</b>									
pH	DETSC 2008#		pH	9.8	8.4	11.5	11.4	8.9	8.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	6.2	8.6	17	1.5	0.3
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	0.2	< 0.1	0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	4.7	2.3	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	2.9	2.5	1.4	0.7	2.7	2.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	140	320	430	750	250	120
Sulphur (free)	DETSC 3049#	0.75	mg/kg	2.3	1.4	9.6	34	11	< 0.75
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	7.7	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	20	62	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	90	250	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	110	320	< 10	< 10
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	1.3	4.2	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	6.3	18	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	58	110	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	150	310	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	220	440	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	330	760	< 10	< 10
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.37	0.30	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.10	0.06	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.52	0.86	< 0.03	< 0.03

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-13136

Client Ref

Contract Title Redcar

<b>Lab No</b>	1865542	1865543	1865544	1865545	1865546	1865547
<b>Sample ID</b>	PRA-AW-25-S1	PRA-AT-28-S1	PRA-SP042-S3	PRA-SP042-S4	PRA-AW-26-S1	PRA-AW-27-S1
<b>Depth</b>	4.50	6.50			5.30	4.30
<b>Other ID</b>						
<b>Sample Type</b>	ES	ES	ES	ES	ES	ES
<b>Sampling Date</b>	17/06/2021	17/06/2021	17/06/2021	17/06/2021	18/06/2021	18/06/2021
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Fluorene	DETSC 3303	0.03	mg/kg	0.05	< 0.03	0.57	1.3	0.05	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.03	< 0.03	3.9	6.0	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.95	0.93	< 0.03	0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	7.6	7.9	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	6.7	6.6	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	4.1	3.5	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	2.5	2.0	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	4.1	2.9	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	1.4	0.99	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	2.6	1.9	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	1.2	0.71	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.35	0.22	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	1.5	0.89	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	38	37	< 0.10	< 0.10
<b>PCBs</b>									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg						
PCB 52	DETSC 3401#	0.01	mg/kg						
PCB 101	DETSC 3401#	0.01	mg/kg						
PCB 118	DETSC 3401#	0.01	mg/kg						
PCB 153	DETSC 3401#	0.01	mg/kg						
PCB 138	DETSC 3401#	0.01	mg/kg						
PCB 180	DETSC 3401#	0.01	mg/kg						
PCB 7 Total	DETSC 3401#	0.01	mg/kg						
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-13136

Client Ref

Contract Title Redcar

Lab No	1865548	1865549	1865550	1865551	1865552	1865553
Sample ID	PRA-AW-24-S3	PRA-AW-24-S4	PRA-AR-22-S1	PRA-AT-29-S1	PRA-SP038-S1	PRA-SP038-S2
Depth	1.50	4.00	4.20	5.50		
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	18/06/2021	18/06/2021	18/06/2021	18/06/2021	18/06/2021	18/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%						
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	6.2	13	8.3	6.6	8.7	9.8
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.5	0.5	0.5	0.6	0.6	1.8
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.3	0.3	0.1	0.2	0.3
Chromium	DETSC 2301#	0.15	mg/kg	32	28	28	32	26	26
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	24	29	30	28	28	29
Lead	DETSC 2301#	0.3	mg/kg	15	22	27	21	25	44
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.33
Nickel	DETSC 2301#	1	mg/kg	38	40	40	41	38	27
Vanadium	DETSC 2301#	0.8	mg/kg	36	29	30	35	28	37
Zinc	DETSC 2301#	1	mg/kg	66	81	88	78	85	110
<b>Inorganics</b>									
pH	DETSC 2008#		pH	8.2	8.3	8.1	8.2	8.1	8.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.5	0.1	7.9
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.9	3.8	3.6	3.6	3.7	1.7
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	120	160	110	160	310	270
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
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	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.05	0.08	< 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



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-13136

Client Ref

Contract Title Redcar

<b>Lab No</b>	1865548	1865549	1865550	1865551	1865552	1865553
<b>Sample ID</b>	PRA-AW-24-S3	PRA-AW-24-S4	PRA-AR-22-S1	PRA-AT-29-S1	PRA-SP038-S1	PRA-SP038-S2
<b>Depth</b>	1.50	4.00	4.20	5.50		
<b>Other ID</b>						
<b>Sample Type</b>	ES	ES	ES	ES	ES	ES
<b>Sampling Date</b>	18/06/2021	18/06/2021	18/06/2021	18/06/2021	18/06/2021	18/06/2021
<b>Sampling Time</b>	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Fluorene	DETSC 3303	0.03	mg/kg	0.05	0.06	0.06	0.06	< 0.03	0.05
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.03	0.04	0.04	< 0.03	< 0.03
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	< 0.03	< 0.03	< 0.03	0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.04	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.04	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 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	< 0.03	< 0.03	< 0.03
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	0.04	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	0.10	0.26	< 0.10	< 0.10
<b>PCBs</b>									
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					
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-13136

Client Ref

Contract Title Redcar

Lab No	1865554	1865555	1865556	1865557
Sample ID	PRA-SP038-S3	PRA-SP038-S4	PRA-SP038-S5	PRA-SP038-S6
Depth				
Other ID				
Sample Type	ES	ES	ES	ES
Sampling Date	18/06/2021	18/06/2021	18/06/2021	18/06/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Asbestos Quantification	DETSC 1102	0.001	%				
<b>Metals</b>							
Arsenic	DETSC 2301#	0.2	mg/kg	6.8	6.5	8.6	9.2
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.2	0.8	0.7	2.0
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.3	0.3	0.3
Chromium	DETSC 2301#	0.15	mg/kg	27	28	25	26
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	22	27	27	44
Lead	DETSC 2301#	0.3	mg/kg	29	26	26	48
Mercury	DETSC 2325#	0.05	mg/kg	0.09	0.12	< 0.05	0.18
Nickel	DETSC 2301#	1	mg/kg	30	38	35	27
Vanadium	DETSC 2301#	0.8	mg/kg	35	30	26	38
Zinc	DETSC 2301#	1	mg/kg	80	89	210	110
<b>Inorganics</b>							
pH	DETSC 2008#		pH	7.7	8.3	8.1	8.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.9	2.2	0.7	5.6
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.3
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	4.7	0.9
Organic matter	DETSC 2002#	0.1	%	2.7	2.9	2.8	2.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	160	1200	150	340
Sulphur (free)	DETSC 3049#	0.75	mg/kg	2.7	< 0.75	6.8	< 0.75
<b>Petroleum Hydrocarbons</b>							
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	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
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	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
<b>PAHs</b>							
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.05	2.1
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.05	< 0.03

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-13136

Client Ref

Contract Title Redcar

<b>Lab No</b>	1865554	1865555	1865556	1865557
<b>Sample ID</b>	PRA-SP038-S3	PRA-SP038-S4	PRA-SP038-S5	PRA-SP038-S6
<b>Depth</b>				
<b>Other ID</b>				
<b>Sample Type</b>	ES	ES	ES	ES
<b>Sampling Date</b>	18/06/2021	18/06/2021	18/06/2021	18/06/2021
<b>Sampling Time</b>	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Fluorene	DETSC 3303	0.03	mg/kg	0.05	0.05	0.07	0.06
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.04	0.07	0.05	0.04
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.12	< 0.03	0.07
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.09	0.03	0.06	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.08	0.04	0.06	0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.04	0.03	0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 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
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.26	0.32	0.34	2.3
<b>PCBs</b>							
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg				
PCB 52	DETSC 3401#	0.01	mg/kg				
PCB 101	DETSC 3401#	0.01	mg/kg				
PCB 118	DETSC 3401#	0.01	mg/kg				
PCB 153	DETSC 3401#	0.01	mg/kg				
PCB 138	DETSC 3401#	0.01	mg/kg				
PCB 180	DETSC 3401#	0.01	mg/kg				
PCB 7 Total	DETSC 3401#	0.01	mg/kg				
<b>Phenols</b>							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-13136

Client Ref

Contract Title Redcar

Lab No	1865542	1865543	1865546	1865547	1865548	1865549
Sample ID	PRA-AW-25-S1	PRA-AT-28-S1	PRA-AW-26-S1	PRA-AW-27-S1	PRA-AW-24-S3	PRA-AW-24-S4
Depth	4.50	6.50	5.30	4.30	1.50	4.00
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	17/06/2021	17/06/2021	18/06/2021	18/06/2021	18/06/2021	18/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>VOCs</b>									
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	0.03	< 0.01		< 0.01	
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-13136

Client Ref

Contract Title Redcar

Lab No	1865542	1865543	1865546	1865547	1865548	1865549
Sample ID	PRA-AW-25-S1	PRA-AT-28-S1	PRA-AW-26-S1	PRA-AW-27-S1	PRA-AW-24-S3	PRA-AW-24-S4
Depth	4.50	6.50	5.30	4.30	1.50	4.00
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	17/06/2021	17/06/2021	18/06/2021	18/06/2021	18/06/2021	18/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units	1865542	1865543	1865546	1865547	1865548	1865549
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01		< 0.01	
<b>SVOCs</b>									
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
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

# Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-13136

Client Ref

Contract Title Redcar

Lab No	1865542	1865543	1865546	1865547	1865548	1865549
Sample ID	PRA-AW-25-S1	PRA-AT-28-S1	PRA-AW-26-S1	PRA-AW-27-S1	PRA-AW-24-S3	PRA-AW-24-S4
Depth	4.50	6.50	5.30	4.30	1.50	4.00
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	17/06/2021	17/06/2021	18/06/2021	18/06/2021	18/06/2021	18/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
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

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-13136

Client Ref

Contract Title Redcar

Lab No	1865550	1865551
Sample ID	PRA-AR-22-S1	PRA-AT-29-S1
Depth	4.20	5.50
Other ID		
Sample Type	ES	ES
Sampling Date	18/06/2021	18/06/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
<b>VOCs</b>					
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	
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	



# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-13136

Client Ref

Contract Title Redcar

Lab No	1865550	1865551
Sample ID	PRA-AR-22-S1	PRA-AT-29-S1
Depth	4.20	5.50
Other ID		
Sample Type	ES	ES
Sampling Date	18/06/2021	18/06/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
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	
<b>SVOCs</b>					
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
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

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-13136

Client Ref

Contract Title Redcar

<b>Lab No</b>	1865550	1865551
<b>Sample ID</b>	PRA-AR-22-S1	PRA-AT-29-S1
<b>Depth</b>	4.20	5.50
<b>Other ID</b>		
<b>Sample Type</b>	ES	ES
<b>Sampling Date</b>	18/06/2021	18/06/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
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

## Summary of Asbestos Analysis Soil Samples

Our Ref 21-13136

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1865542	PRA-AW-25-S1 4.50	SOIL	NAD	none	Michael Kay
1865543	PRA-AT-28-S1 6.50	SOIL	NAD	none	Michael Kay
1865544	PRA-SP042-S3	SOIL	Amosite	Small bundle of Amosite	Michael Kay
1865545	PRA-SP042-S4	SOIL	Chrysotile Amosite	Small bundles of Chrysotile and Amosite	Michael Kay
1865546	PRA-AW-26-S1 5.30	SOIL	NAD	none	Michael Kay
1865547	PRA-AW-27-S1 4.30	SOIL	NAD	none	Michael Kay
1865548	PRA-AW-24-S3 1.50	SOIL	NAD	none	Michael Kay
1865549	PRA-AW-24-S4 4.00	SOIL	NAD	none	Michael Kay
1865550	PRA-AR-22-S1 4.20	SOIL	NAD	none	Michael Kay
1865551	PRA-AT-29-S1 5.50	SOIL	NAD	none	Michael Kay
1865552	PRA-SP038-S1	SOIL	NAD	none	Michael Kay
1865553	PRA-SP038-S2	SOIL	NAD	none	Michael Kay
1865554	PRA-SP038-S3	SOIL	NAD	none	Michael Kay
1865555	PRA-SP038-S4	SOIL	NAD	none	Michael Kay
1865556	PRA-SP038-S5	SOIL	NAD	none	Michael Kay
1865557	PRA-SP038-S6	SOIL	NAD	none	Michael Kay

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-13136

Client Ref

Contract Title Redcar

Lab No	1865544	1865545
Sample ID	PRA-SP042-S3	PRA-SP042-S4
Depth		
Other ID		
Sample Type	ES	ES
Sampling Date	17/06/2021	17/06/2021
Sampling Time		

Test	Method	Units		
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na
Breakdown of Gravimetric Analysis (a)				
Mass of Sample		g	1428.04	1328.21
ACMs present*		type		
Mass of ACM in sample		g		
% ACM by mass		%		
% asbestos in ACM		%		
% asbestos in sample		%		
Breakdown of Detailed Gravimetric Analysis (b)				
% Amphibole bundles in sample		Mass %	<0.001	<0.001
% Chrysotile bundles in sample		Mass %	na	<0.001
Breakdown of PCOM Analysis (c)				
% Amphibole fibres in sample		Mass %	na	na
% Chrysotile fibres in sample		Mass %	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)				
Amphibole fibres		Fibres/g	na	na
Chrysotile fibres		Fibres/g	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-13136  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
1865542	PRA-AW-25-S1 4.50 SOIL	17/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1865543	PRA-AT-28-S1 6.50 SOIL	17/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1865544	PRA-SP042-S3 SOIL	17/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1865545	PRA-SP042-S4 SOIL	17/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1865546	PRA-AW-26-S1 5.30 SOIL	18/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1865547	PRA-AW-27-S1 4.30 SOIL	18/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1865548	PRA-AW-24-S3 1.50 SOIL	18/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1865549	PRA-AW-24-S4 4.00 SOIL	18/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1865550	PRA-AR-22-S1 4.20 SOIL	18/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1865551	PRA-AT-29-S1 5.50 SOIL	18/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1865552	PRA-SP038-S1 SOIL	18/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1865553	PRA-SP038-S2 SOIL	18/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1865554	PRA-SP038-S3 SOIL	18/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1865555	PRA-SP038-S4 SOIL	18/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1865556	PRA-SP038-S5 SOIL	18/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1865557	PRA-SP038-S6 SOIL	18/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-13202

*Issued:* 19-Jul-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-13202

*Client Reference* (not supplied)

*Order No* CP1096MA1004D

*Contract Title* Redcar

*Description* One Soil sample.

*Date Received* 23-Jun-21

*Date Started* 23-Jun-21

*Date Completed* 19-Jul-21

*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



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## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13202

Client Ref

Contract Title Redcar

Lab No	1865938
.Sample ID	PRA-AW-17-S8
Depth	5.5
Other ID	
Sample Type	ES
Sampling Date	21/06/2021
Sampling Time	n/s

Test	Method	LOD	Units	
<b>Metals</b>				
Arsenic	DETSC 2301#	0.2	mg/kg	5.2
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.2
Chromium	DETSC 2301#	0.15	mg/kg	8.9
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	18
Lead	DETSC 2301#	0.3	mg/kg	74
Mercury	DETSC 2325#	0.05	mg/kg	0.10
Nickel	DETSC 2301#	1	mg/kg	9.7
Vanadium	DETSC 2301#	0.8	mg/kg	15
Zinc	DETSC 2301#	1	mg/kg	52
<b>Inorganics</b>				
pH	DETSC 2008#		pH	10.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	310
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75
<b>Petroleum Hydrocarbons</b>				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10
<b>PAHs</b>				
Naphthalene	DETSC 3303#	0.03	mg/kg	0.13



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13202

Client Ref

Contract Title Redcar

<b>Lab No</b>	1865938
<b>Sample ID</b>	PRA-AW-17-S8
<b>Depth</b>	5.5
<b>Other ID</b>	
<b>Sample Type</b>	ES
<b>Sampling Date</b>	21/06/2021
<b>Sampling Time</b>	n/s

Test	Method	LOD	Units	
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.07
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.11
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.04
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.35
<b>Phenols</b>				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3

## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-13202

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1865938	PRA-AW-17-S8 5.5	SOIL	NAD	none	Michael Kay

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 21-13202  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1865938	PRA-AW-17-S8 5.5 SOIL	21/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-13440

*Issued:* 05-Jul-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-13440

*Client Reference* (not supplied)

*Order No* CP1096MA1004D

*Contract Title* Redcar

*Description* 9 Soil samples.

*Date Received* 28-Jun-21

*Date Started* 28-Jun-21

*Date Completed* 05-Jul-21

*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



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-13440

Client Ref

Contract Title Redcar

Lab No	1867421	1867422	1867423	1867425	1867426	1867427
.Sample ID	PRA-SP012-S26	PRA-SP012-S27	PRA-SP012-S28	PRA-SP012-S30	PRA-SP012-S35	PRA-SP012-S36
Depth						
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	17/06/2021	17/06/2021	17/06/2021	17/06/2021	21/06/2021	21/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%	< 0.001	< 0.001	< 0.001	< 0.001	0.002	< 0.001
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg						
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg						
Cadmium	DETSC 2301#	0.1	mg/kg						
Chromium	DETSC 2301#	0.15	mg/kg						
Chromium, Hexavalent	DETSC 2204*	1	mg/kg						
Copper	DETSC 2301#	0.2	mg/kg						
Lead	DETSC 2301#	0.3	mg/kg						
Mercury	DETSC 2325#	0.05	mg/kg						
Nickel	DETSC 2301#	1	mg/kg						
Vanadium	DETSC 2301#	0.8	mg/kg						
Zinc	DETSC 2301#	1	mg/kg						
<b>Inorganics</b>									
pH	DETSC 2008#		pH						
Cyanide, Total	DETSC 2130#	0.1	mg/kg						
Cyanide, Free	DETSC 2130#	0.1	mg/kg						
Thiocyanate	DETSC 2130#	0.6	mg/kg						
Organic matter	DETSC 2002#	0.1	%						
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l						
Sulphur (free)	DETSC 3049#	0.75	mg/kg						
<b>Petroleum Hydrocarbons</b>									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg						
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg						
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg						
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg						
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg						
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg						
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg						
Aliphatic C5-C35	DETSC 3072*	10	mg/kg						
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg						
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg						
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg						
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg						
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg						
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg						
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg						
Aromatic C5-C35	DETSC 3072*	10	mg/kg						
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg						
<b>PAHs</b>									

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-13440

Client Ref

Contract Title Redcar

Lab No	1867421	1867422	1867423	1867425	1867426	1867427
Sample ID	PRA-SP012-S26	PRA-SP012-S27	PRA-SP012-S28	PRA-SP012-S30	PRA-SP012-S35	PRA-SP012-S36
Depth						
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	17/06/2021	17/06/2021	17/06/2021	17/06/2021	21/06/2021	21/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Naphthalene	DETSC 3303#	0.03	mg/kg						
Acenaphthylene	DETSC 3303#	0.03	mg/kg						
Acenaphthene	DETSC 3303#	0.03	mg/kg						
Fluorene	DETSC 3303	0.03	mg/kg						
Phenanthrene	DETSC 3303#	0.03	mg/kg						
Anthracene	DETSC 3303	0.03	mg/kg						
Fluoranthene	DETSC 3303#	0.03	mg/kg						
Pyrene	DETSC 3303#	0.03	mg/kg						
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg						
Chrysene	DETSC 3303	0.03	mg/kg						
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg						
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg						
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg						
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg						
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg						
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg						
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg						
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg						

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13440

Client Ref

Contract Title Redcar

Lab No	1867428	1867429
.Sample ID	PRA-SP012-S37	PRA-AW-17-S9
Depth		5.5
Other ID		
Sample Type	ES	ES
Sampling Date	21/06/2021	22/06/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Asbestos Quantification	DETSC 1102	0.001	%	< 0.001	
<b>Metals</b>					
Arsenic	DETSC 2301#	0.2	mg/kg		17
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg		3.5
Cadmium	DETSC 2301#	0.1	mg/kg		0.1
Chromium	DETSC 2301#	0.15	mg/kg		64
Chromium, Hexavalent	DETSC 2204*	1	mg/kg		< 1.0
Copper	DETSC 2301#	0.2	mg/kg		23
Lead	DETSC 2301#	0.3	mg/kg		31
Mercury	DETSC 2325#	0.05	mg/kg		< 0.05
Nickel	DETSC 2301#	1	mg/kg		27
Vanadium	DETSC 2301#	0.8	mg/kg		120
Zinc	DETSC 2301#	1	mg/kg		68
<b>Inorganics</b>					
pH	DETSC 2008#		pH		12.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg		0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg		< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg		< 0.6
Organic matter	DETSC 2002#	0.1	%		1.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l		310
Sulphur (free)	DETSC 3049#	0.75	mg/kg		< 0.75
<b>Petroleum Hydrocarbons</b>					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg		< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg		< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg		< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg		< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg		< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg		< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg		< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg		< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg		< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg		< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg		< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg		< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg		< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg		< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg		< 10
<b>PAHs</b>					



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13440

Client Ref

Contract Title Redcar

<b>Lab No</b>	1867428	1867429
<b>Sample ID</b>	PRA-SP012-S37	PRA-AW-17-S9
<b>Depth</b>		5.5
<b>Other ID</b>		
<b>Sample Type</b>	ES	ES
<b>Sampling Date</b>	21/06/2021	22/06/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
Naphthalene	DETSC 3303#	0.03	mg/kg		0.12
Acenaphthylene	DETSC 3303#	0.03	mg/kg		< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg		< 0.03
Fluorene	DETSC 3303	0.03	mg/kg		0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg		0.10
Anthracene	DETSC 3303	0.03	mg/kg		< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg		< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg		< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg		< 0.03
Chrysene	DETSC 3303	0.03	mg/kg		< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg		< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg		< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg		< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg		< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg		< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg		< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg		0.24
<b>Phenols</b>					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg		< 0.3

## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-13440

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1867421	PRA-SP012-S26	SOIL	Chrysotile	Bundle of Chrysotile fibres	Rebecca Burgess
1867422	PRA-SP012-S27	SOIL	Chrysotile	Bundle of Chrysotile fibres	Rebecca Burgess
1867423	PRA-SP012-S28	SOIL	Chrysotile	Bundle of Chrysotile fibres	Rebecca Burgess
1867424	PRA-SP012-S29	SOIL	NAD	none	Rebecca Burgess
1867425	PRA-SP012-S30	SOIL	Chrysotile	Bundle of Chrysotile fibres	Rebecca Burgess
1867426	PRA-SP012-S35	SOIL	Amosite Chrysotile	Bundles of Chrysotile and Amosite fibres	Rebecca Burgess
1867427	PRA-SP012-S36	SOIL	Chrysotile	Bundle of Chrysotile fibres	Rebecca Burgess
1867428	PRA-SP012-S37	SOIL	Chrysotile	Bundle of Chrysotile fibres	Rebecca Burgess
1867429	PRA-AW-17-S9	SOIL	NAD	none	Rebecca Burgess

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-13440

Client Ref

Contract Title Redcar

	Lab No	1867421	1867422	1867423	1867425	
Sample ID		PRA-SP012-S26	PRA-SP012-S27	PRA-SP012-S28	PRA-SP012-S30	
Depth						
Other ID						
Sample Type		ES	ES	ES	ES	
Sampling Date		17/06/2021	17/06/2021	17/06/2021	17/06/2021	
Sampling Time						
Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	< 0.001	< 0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	<0.001	<0.001	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	1780.99	1666.70	1583.25	1654.58
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	na	na	na
% Chrysotile bundles in sample		Mass %	<0.001	<0.001	<0.001	<0.001
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 21-13440

Client Ref

Contract Title Redcar

<b>Lab No</b>	1867426	1867427	1867428
<b>Sample ID</b>	PRA-SP012-S35	PRA-SP012-S36	PRA-SP012-S37
<b>Depth</b>			
<b>Other ID</b>			
<b>Sample Type</b>	ES	ES	ES
<b>Sampling Date</b>	21/06/2021	21/06/2021	21/06/2021
<b>Sampling Time</b>			

Test	Method	Units			
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.002</b>	<b>&lt; 0.001</b>	<b>&lt; 0.001</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.002	<0.001	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na

### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1507.60	1260.47	1353.50
ACMs present*		type			
Mass of ACM in sample		g			
% ACM by mass		%			
% asbestos in ACM		%			
% asbestos in sample		%			

### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	<0.001	na	na
% Chrysotile bundles in sample		Mass %	0.002	<0.001	<0.001

### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na

### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na
Chrysotile fibres		Fibres/g	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-13440  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1867421	PRA-SP012-S26 SOIL	17/06/21	PT 1L		
1867422	PRA-SP012-S27 SOIL	17/06/21	PT 1L		
1867423	PRA-SP012-S28 SOIL	17/06/21	PT 1L		
1867424	PRA-SP012-S29 SOIL	17/06/21	PT 1L		
1867425	PRA-SP012-S30 SOIL	17/06/21	PT 1L		
1867426	PRA-SP012-S35 SOIL	21/06/21	PT 1L		
1867427	PRA-SP012-S36 SOIL	21/06/21	PT 1L		
1867428	PRA-SP012-S37 SOIL	21/06/21	PT 1L		
1867429	PRA-AW-17-S9 SOIL	22/06/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-13475

*Issued:* 05-Jul-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-13475

*Client Reference* (not supplied)

*Order No* CP1096MA1004D

*Contract Title* Redcar

*Description* 12 Soil samples.

*Date Received* 28-Jun-21

*Date Started* 28-Jun-21

*Date Completed* 05-Jul-21

*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



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-13475

Client Ref

Contract Title Redcar

Lab No	1867729	1867731	1867732	1867733	1867734	1867735
Sample ID	PRA-SP045-S1	PRA-AS-27-S2	PRA-AS-27-S3	PRA-AQ-25-S4	PRA-SP044-S1	PRA-SP043-S1
Depth		3.50	5.10	4.80		
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	23/06/2021	24/06/2021	24/06/2021	24/06/2021	24/06/2021	24/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%	< 0.001				0.001	0.002
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	21	7.9	8.2	7.7	7.5	18
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	3.6	0.7	1.6	0.5	1.5	2.8
Cadmium	DETSC 2301#	0.1	mg/kg	0.8	0.2	0.2	0.2	0.3	0.7
Chromium	DETSC 2301#	0.15	mg/kg	67	32	25	25	17	130
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	86	28	31	28	19	89
Lead	DETSC 2301#	0.3	mg/kg	89	20	24	28	24	76
Mercury	DETSC 2325#	0.05	mg/kg	0.94	< 0.05	< 0.05	< 0.05	0.08	2.8
Nickel	DETSC 2301#	1	mg/kg	33	39	34	35	7.3	25
Vanadium	DETSC 2301#	0.8	mg/kg	130	38	29	28	48	230
Zinc	DETSC 2301#	1	mg/kg	300	74	77	84	67	200
<b>Inorganics</b>									
pH	DETSC 2008#		pH	10.7	8.6	8.5	8.3	12.3	11.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	18	0.2	1.5	1.6	6.4	42
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.2	0.9
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.1	< 0.6	< 0.6	< 0.6	0.9	3.1
Organic matter	DETSC 2002#	0.1	%	1.9	2.7	2.6	3.4	0.8	1.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	800	200	39	330	370	680
Sulphur (free)	DETSC 3049#	0.75	mg/kg	3.7	< 0.75	< 0.75	< 0.75	29	1.2
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	2.1	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	2.3	< 1.2	< 1.2	< 1.2	3.8	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	27	< 1.5	< 1.5	< 1.5	26	32
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	86	< 3.4	< 3.4	< 3.4	94	150
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	120	< 10	< 10	< 10	130	180
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	1.1	< 0.9	< 0.9	< 0.9	7.5	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	4.6	< 0.5	< 0.5	< 0.5	7.5	4.3
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	29	< 0.6	< 0.6	< 0.6	41	64
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	80	< 1.4	< 1.4	< 1.4	120	200
Aromatic C5-C35	DETSC 3072*	10	mg/kg	120	< 10	< 10	< 10	180	260
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	230	< 10	< 10	< 10	300	440
<b>PAHs</b>									



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13475

Client Ref

Contract Title Redcar

Lab No	1867729	1867731	1867732	1867733	1867734	1867735
Sample ID	PRA-SP045-S1	PRA-AS-27-S2	PRA-AS-27-S3	PRA-AQ-25-S4	PRA-SP044-S1	PRA-SP043-S1
Depth		3.50	5.10	4.80		
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	23/06/2021	24/06/2021	24/06/2021	24/06/2021	24/06/2021	24/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Naphthalene	DETSC 3303#	0.03	mg/kg	1.2	< 0.03	< 0.03	< 0.03	0.34	0.41
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.80	< 0.03	< 0.03	< 0.03	0.51	0.44
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.79	< 0.03	< 0.03	< 0.03	0.53	0.46
Fluorene	DETSC 3303	0.03	mg/kg	0.59	< 0.03	< 0.03	< 0.03	0.43	0.52
Phenanthrene	DETSC 3303#	0.03	mg/kg	2.8	< 0.03	< 0.03	< 0.03	2.1	3.1
Anthracene	DETSC 3303	0.03	mg/kg	0.38	< 0.03	< 0.03	< 0.03	0.37	0.25
Fluoranthene	DETSC 3303#	0.03	mg/kg	3.8	< 0.03	< 0.03	< 0.03	3.3	3.5
Pyrene	DETSC 3303#	0.03	mg/kg	2.9	< 0.03	< 0.03	< 0.03	2.7	2.4
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	1.1	< 0.03	< 0.03	< 0.03	1.2	0.54
Chrysene	DETSC 3303	0.03	mg/kg	0.92	< 0.03	< 0.03	< 0.03	0.96	0.37
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	1.4	< 0.03	< 0.03	< 0.03	1.5	0.46
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.41	< 0.03	< 0.03	< 0.03	0.61	0.17
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.71	< 0.03	< 0.03	< 0.03	1.1	0.22
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.25	< 0.03	< 0.03	< 0.03	0.39	0.06
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	< 0.03	< 0.03	0.10	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.22	< 0.03	< 0.03	< 0.03	0.47	0.08
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	18	< 0.10	< 0.10	< 0.10	17	13
<b>PCBs</b>									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg						
PCB 52	DETSC 3401#	0.01	mg/kg						
PCB 101	DETSC 3401#	0.01	mg/kg						
PCB 118	DETSC 3401#	0.01	mg/kg						
PCB 153	DETSC 3401#	0.01	mg/kg						
PCB 138	DETSC 3401#	0.01	mg/kg						
PCB 180	DETSC 3401#	0.01	mg/kg						
PCB 7 Total	DETSC 3401#	0.01	mg/kg						
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	0.4	< 0.3	< 0.3

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13475

Client Ref

Contract Title Redcar

Lab No	1867736	1867737	1867738	1867739	1867740	1867741
Sample ID	PRA-SP043-S2	PRA-SP043-S3	PRA-AX-27-S1	PRA-AQ-25-S3	PRA-AW-17-S10	PRA-AW-17-S11
Depth			4.40	4.50	5.60	5.60
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	24/06/2021	24/06/2021	24/06/2021	23/06/2021	24/06/2021	24/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%	< 0.001	< 0.001				
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	16	19	7.3	6.8	17	17
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	3.3	3.0	0.8	0.5	2.8	2.3
Cadmium	DETSC 2301#	0.1	mg/kg	1.0	0.6	0.3	0.1	< 0.1	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	60	65	25	32	35	36
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	87	75	29	27	33	31
Lead	DETSC 2301#	0.3	mg/kg	67	64	21	20	16	17
Mercury	DETSC 2325#	0.05	mg/kg	0.58	0.74	< 0.05	< 0.05	0.05	0.06
Nickel	DETSC 2301#	1	mg/kg	25	29	31	38	46	48
Vanadium	DETSC 2301#	0.8	mg/kg	110	110	31	37	44	45
Zinc	DETSC 2301#	1	mg/kg	220	190	72	66	84	93
<b>Inorganics</b>									
pH	DETSC 2008#		pH	11.2	10.4	8.9	8.7	10.0	9.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	40	15	1.0	0.7	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.2	0.2	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.1	1.2	< 0.6	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.6	2.3	2.6	2.3	1.1	2.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1200	870	270	260	190	260
Sulphur (free)	DETSC 3049#	0.75	mg/kg	5.2	3.0	< 0.75	< 0.75	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	0.10	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	0.15	< 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	2.0	< 1.5	3.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	1.3	< 1.2	3.2	< 1.2	1.5	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	8.3	6.0	6.9	< 1.5	3.7	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	40	23	4.0	< 3.4	13	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	52	30	17	< 10	19	< 10
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	3.1	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	2.1	5.4	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	10	39	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	33	41	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	48	86	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	100	120	17	< 10	19	< 10
<b>PAHs</b>									

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13475

Client Ref

Contract Title Redcar

Lab No	1867736	1867737	1867738	1867739	1867740	1867741
Sample ID	PRA-SP043-S2	PRA-SP043-S3	PRA-AX-27-S1	PRA-AQ-25-S3	PRA-AW-17-S10	PRA-AW-17-S11
Depth			4.40	4.50	5.60	5.60
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	24/06/2021	24/06/2021	24/06/2021	23/06/2021	24/06/2021	24/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Naphthalene	DETS 3303#	0.03	mg/kg	0.61	0.46	< 0.03	< 0.03	0.19	0.12
Acenaphthylene	DETS 3303#	0.03	mg/kg	0.23	0.28	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETS 3303#	0.03	mg/kg	0.24	0.28	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETS 3303	0.03	mg/kg	0.39	0.27	< 0.03	< 0.03	0.10	0.08
Phenanthrene	DETS 3303#	0.03	mg/kg	1.3	1.5	< 0.03	< 0.03	0.20	0.15
Anthracene	DETS 3303	0.03	mg/kg	0.25	0.30	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETS 3303#	0.03	mg/kg	1.8	2.1	< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETS 3303#	0.03	mg/kg	1.5	1.7	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETS 3303#	0.03	mg/kg	0.50	0.62	< 0.03	< 0.03	0.06	0.03
Chrysene	DETS 3303	0.03	mg/kg	0.38	0.43	< 0.03	< 0.03	0.05	< 0.03
Benzo(b)fluoranthene	DETS 3303#	0.03	mg/kg	0.57	0.81	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETS 3303#	0.03	mg/kg	0.17	0.24	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETS 3303#	0.03	mg/kg	0.32	0.44	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETS 3303#	0.03	mg/kg	0.11	0.13	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETS 3303#	0.03	mg/kg	< 0.03	0.04	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETS 3303#	0.03	mg/kg	0.13	0.17	< 0.03	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETS 3303	0.1	mg/kg	8.5	9.8	< 0.10	< 0.10	0.60	0.35
<b>PCBs</b>									
PCB 28 + PCB 31	DETS 3401#	0.01	mg/kg						
PCB 52	DETS 3401#	0.01	mg/kg						
PCB 101	DETS 3401#	0.01	mg/kg						
PCB 118	DETS 3401#	0.01	mg/kg						
PCB 153	DETS 3401#	0.01	mg/kg						
PCB 138	DETS 3401#	0.01	mg/kg						
PCB 180	DETS 3401#	0.01	mg/kg						
PCB 7 Total	DETS 3401#	0.01	mg/kg						
<b>Phenols</b>									
Phenol - Monohydric	DETS 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-13475

Client Ref

Contract Title Redcar

Lab No	1867731	1867732	1867738	1867739
.Sample ID	PRA-AS-27-S2	PRA-AS-27-S3	PRA-AX-27-S1	PRA-AQ-25-S3
Depth	3.50	5.10	4.40	4.50
Other ID				
Sample Type	ES	ES	ES	ES
Sampling Date	24/06/2021	24/06/2021	24/06/2021	23/06/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
<b>VOCs</b>							
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

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-13475

Client Ref

Contract Title Redcar

Lab No	1867731	1867732	1867738	1867739
.Sample ID	PRA-AS-27-S2	PRA-AS-27-S3	PRA-AX-27-S1	PRA-AQ-25-S3
Depth	3.50	5.10	4.40	4.50
Other ID				
Sample Type	ES	ES	ES	ES
Sampling Date	24/06/2021	24/06/2021	24/06/2021	23/06/2021
Sampling Time	n/s	n/s	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
<b>SVOCs</b>							
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	

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-13475

Client Ref

Contract Title Redcar

Lab No	1867731	1867732	1867738	1867739
Sample ID	PRA-AS-27-S2	PRA-AS-27-S3	PRA-AX-27-S1	PRA-AQ-25-S3
Depth	3.50	5.10	4.40	4.50
Other ID				
Sample Type	ES	ES	ES	ES
Sampling Date	24/06/2021	24/06/2021	24/06/2021	23/06/2021
Sampling Time	n/s	n/s	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	

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-13475

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1867729	PRA-SP045-S1	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1867731	PRA-AS-27-S2 3.50	SOIL	NAD	none	D Wilkinson
1867732	PRA-AS-27-S3 5.10	SOIL	NAD	none	D Wilkinson
1867733	PRA-AQ-25-S4 4.80	SOIL	NAD	none	D Wilkinson
1867734	PRA-SP044-S1	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1867735	PRA-SP043-S1	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1867736	PRA-SP043-S2	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1867737	PRA-SP043-S3	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1867738	PRA-AX-27-S1 4.40	SOIL	NAD	none	D Wilkinson
1867739	PRA-AQ-25-S3 4.50	SOIL	NAD	none	D Wilkinson
1867740	PRA-AW-17-S10 5.60	SOIL	NAD	none	D Wilkinson
1867741	PRA-AW-17-S11 5.60	SOIL	NAD	none	D Wilkinson

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.



## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-13475

Client Ref

Contract Title Redcar

Lab No	1867729	1867734	1867735	1867736
Sample ID	PRA-SP045-S1	PRA-SP044-S1	PRA-SP043-S1	PRA-SP043-S2
Depth				
Other ID				
Sample Type	ES	ES	ES	ES
Sampling Date	23/06/2021	24/06/2021	24/06/2021	24/06/2021
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	0.001	0.002	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	0.001	0.002	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	413.86	1374.25	378.09	334.59
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	na	na	na
% Chrysotile bundles in sample		Mass %	<0.001	0.001	0.002	<0.001
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-13475

Client Ref

Contract Title Redcar

Lab No	1867737
Sample ID	PRA-SP043-S3
Depth	
Other ID	
Sample Type	ES
Sampling Date	24/06/2021
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	352.94
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na
% Chrysotile bundles in sample		Mass %	<0.001

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na
% Chrysotile fibres in sample		Mass %	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-13475

Client Ref

Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1867729	PRA-SP045-S1 SOIL	23/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1867731	PRA-AS-27-S2 3.50 SOIL	24/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1867732	PRA-AS-27-S3 5.10 SOIL	24/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1867733	PRA-AQ-25-S4 4.80 SOIL	24/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1867734	PRA-SP044-S1 SOIL	24/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1867735	PRA-SP043-S1 SOIL	24/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1867736	PRA-SP043-S2 SOIL	24/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1867737	PRA-SP043-S3 SOIL	24/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1867738	PRA-AX-27-S1 4.40 SOIL	24/06/21	GJ 250ml, GJ 60ml, PT 1L		
1867739	PRA-AQ-25-S3 4.50 SOIL	23/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1867740	PRA-AW-17-S10 5.60 SOIL	24/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1867741	PRA-AW-17-S11 5.60 SOIL	24/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-13586

*Issued:* 06-Jul-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-13586

*Client Reference* (not supplied)

*Order No* CP1096MA1004D

*Contract Title* Redcar

*Description* 8 Soil samples.

*Date Received* 29-Jun-21

*Date Started* 29-Jun-21

*Date Completed* 06-Jul-21

*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



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-13586

Client Ref

Contract Title Redcar

Lab No	1868306	1868307	1868308	1868309	1868310	1868311
Sample ID	PRA-SP043-S5	PRA-SP043-S6	PRA-SP043-S7	PRA-SP043-S8	PRA-SP043-S9	PRA-SP043-S10
Depth						
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	25/06/2021	25/06/2021	25/06/2021	25/06/2021	25/06/2021	25/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%	< 0.001	0.001	0.001	< 0.001	< 0.001	< 0.001
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	14	16	13	18	17	19
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	3.6	2.9	2.5	3.0	2.9	2.8
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	0.7	0.5	0.6	0.5	0.7
Chromium	DETSC 2301#	0.15	mg/kg	57	72	93	81	57	100
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	62	99	64	87	64	150
Lead	DETSC 2301#	0.3	mg/kg	71	64	50	66	57	81
Mercury	DETSC 2325#	0.05	mg/kg	0.51	0.85	0.65	1.0	0.70	0.95
Nickel	DETSC 2301#	1	mg/kg	22	27	24	28	27	28
Vanadium	DETSC 2301#	0.8	mg/kg	87	120	200	140	110	180
Zinc	DETSC 2301#	1	mg/kg	220	200	170	210	200	240
<b>Inorganics</b>									
pH	DETSC 2008#		pH	10.7	10.8	10.9	10.5	11.0	11.0
Cyanide, Total	DETSC 2130#	0.1	mg/kg	9.9	12	11	11	17	16
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.1	0.1	0.1	0.2	0.2	0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	1.2	0.9	0.7	0.8	0.7
Organic matter	DETSC 2002#	0.1	%	2.0	2.1	2.1	1.8	2.5	3.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1500	1600	1300	1100	1400	1200
Sulphur (free)	DETSC 3049#	0.75	mg/kg	4.9	< 0.75	< 0.75	< 0.75	2.5	3.7
<b>Petroleum Hydrocarbons</b>									
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	5.0	6.4	15	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	4.8	6.3	11	< 1.2	1.5	2.3
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	23	16	25	7.6	12	21
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	83	55	81	42	64	85
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	120	83	130	50	79	110
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	1.8	2.2	2.6	4.6	1.3
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	1.1	1.2	1.5	6.0	9.9	3.3
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	21	15	9.5	22	31	32
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	57	50	42	87	130	120
Aromatic C5-C35	DETSC 3072*	10	mg/kg	80	68	55	120	180	160
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	200	150	190	170	260	270
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.18	0.18	0.19	0.21	0.18	0.13

## Summary of Chemical Analysis Soil Samples

Our Ref 21-13586

Client Ref

Contract Title Redcar

Lab No	1868306	1868307	1868308	1868309	1868310	1868311
Sample ID	PRA-SP043-S5	PRA-SP043-S6	PRA-SP043-S7	PRA-SP043-S8	PRA-SP043-S9	PRA-SP043-S10
Depth						
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	25/06/2021	25/06/2021	25/06/2021	25/06/2021	25/06/2021	25/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.08	0.10	0.10	0.11	0.09	0.07
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.08	0.10	0.10	0.11	0.09	0.07
Fluorene	DETSC 3303	0.03	mg/kg	0.07	0.08	0.08	0.08	0.07	0.06
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.32	0.41	0.39	0.40	0.32	0.31
Anthracene	DETSC 3303	0.03	mg/kg	0.05	0.06	0.04	0.05	0.04	0.04
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.50	0.64	0.50	0.54	0.62	0.55
Pyrene	DETSC 3303#	0.03	mg/kg	0.41	0.52	0.38	0.41	0.50	0.42
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.12	0.15	0.11	0.14	0.17	0.14
Chrysene	DETSC 3303	0.03	mg/kg	0.13	0.16	0.12	0.12	0.16	0.14
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.10	0.15	0.10	0.12	0.14	0.11
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.04	0.05	0.04	0.06	0.06	0.05
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.06	0.08	0.06	0.07	0.09	0.08
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.03	0.03	0.03	0.04	0.03
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	0.04	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	2.2	2.7	2.2	2.4	2.6	2.1
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.5	0.6	0.4	0.6	0.6	< 0.3

## Summary of Chemical Analysis Soil Samples

Our Ref 21-13586

Client Ref

Contract Title Redcar

Lab No	1868312	1868313
Sample ID	PRA-SP043-S11	PRA-SP043-S12
Depth		
Other ID		
Sample Type	ES	ES
Sampling Date	25/06/2021	25/06/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Asbestos Quantification	DETSC 1102	0.001	%	< 0.001	< 0.001
<b>Metals</b>					
Arsenic	DETSC 2301#	0.2	mg/kg	13	13
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.3	2.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.5
Chromium	DETSC 2301#	0.15	mg/kg	180	69
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	120	61
Lead	DETSC 2301#	0.3	mg/kg	42	45
Mercury	DETSC 2325#	0.05	mg/kg	0.68	0.61
Nickel	DETSC 2301#	1	mg/kg	25	19
Vanadium	DETSC 2301#	0.8	mg/kg	210	180
Zinc	DETSC 2301#	1	mg/kg	130	140
<b>Inorganics</b>					
pH	DETSC 2008#		pH	12.0	11.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	7.3	11
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.1	0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.0	0.6
Organic matter	DETSC 2002#	0.1	%	1.5	2.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	420	1200
Sulphur (free)	DETSC 3049#	0.75	mg/kg	2.0	< 0.75
<b>Petroleum Hydrocarbons</b>					
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	2.7	4.7
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	3.1	5.3
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	20	19
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	76	74
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	100	100
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	6.2	2.6
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	6.5	4.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	27	15
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	39	33
Aromatic C5-C35	DETSC 3072*	10	mg/kg	79	55
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	180	160
<b>PAHs</b>					
Naphthalene	DETSC 3303#	0.03	mg/kg	0.29	0.18



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13586

Client Ref

Contract Title Redcar

Lab No	1868312	1868313
Sample ID	PRA-SP043-S11	PRA-SP043-S12
Depth		
Other ID		
Sample Type	ES	ES
Sampling Date	25/06/2021	25/06/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.22	0.10
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.21	0.09
Fluorene	DETSC 3303	0.03	mg/kg	0.17	0.08
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.91	0.45
Anthracene	DETSC 3303	0.03	mg/kg	0.10	0.07
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.2	0.53
Pyrene	DETSC 3303#	0.03	mg/kg	0.89	0.42
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.23	0.13
Chrysene	DETSC 3303	0.03	mg/kg	0.22	0.12
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.17	0.11
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.08	0.06
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.10	0.08
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.04	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	0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	4.9	2.4
<b>Phenols</b>					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.4	< 0.3

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-13586

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1868306	PRA-SP043-S5	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1868307	PRA-SP043-S6	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1868308	PRA-SP043-S7	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1868309	PRA-SP043-S8	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1868310	PRA-SP043-S9	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1868311	PRA-SP043-S10	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1868312	PRA-SP043-S11	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1868313	PRA-SP043-S12	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-13586

Client Ref

Contract Title Redcar

Lab No	1868306	1868307	1868308	1868309
Sample ID	PRA-SP043-S5	PRA-SP043-S6	PRA-SP043-S7	PRA-SP043-S8
Depth				
Other ID				
Sample Type	ES	ES	ES	ES
Sampling Date	25/06/2021	25/06/2021	25/06/2021	25/06/2021
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	0.001	0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	0.001	0.001	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	406.54	412.40	429.47	357.87
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	na	na	na
% Chrysotile bundles in sample		Mass %	<0.001	0.001	0.001	<0.001
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 21-13586

Client Ref

Contract Title Redcar

Lab No	1868310	1868311	1868312	1868313
Sample ID	PRA-SP043-S9	PRA-SP043-S10	PRA-SP043-S11	PRA-SP043-S12
Depth				
Other ID				
Sample Type	ES	ES	ES	ES
Sampling Date	25/06/2021	25/06/2021	25/06/2021	25/06/2021
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	< 0.001	< 0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	<0.001	<0.001	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	282.92	349.25	366.13	394.79
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	na	na	na
% Chrysotile bundles in sample		Mass %	<0.001	<0.001	<0.001	<0.001
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-13586  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1868306	PRA-SP043-S5 SOIL	25/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1868307	PRA-SP043-S6 SOIL	25/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1868308	PRA-SP043-S7 SOIL	25/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1868309	PRA-SP043-S8 SOIL	25/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1868310	PRA-SP043-S9 SOIL	25/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1868311	PRA-SP043-S10 SOIL	25/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1868312	PRA-SP043-S11 SOIL	25/06/21	GJ 250ml, PT 500ml		
1868313	PRA-SP043-S12 SOIL	25/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-13596

*Issued:* 06-Jul-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-13596

*Client Reference* (not supplied)

*Order No* CP1096MA1004D

*Contract Title* Redcar

*Description* One Soil sample.

*Date Received* 29-Jun-21

*Date Started* 29-Jun-21

*Date Completed* 06-Jul-21

*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



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-13596

Client Ref

Contract Title Redcar

Lab No	1868335
Sample ID	PRA-SP043-S4
Depth	
Other ID	
Sample Type	ES
Sampling Date	25/06/2021
Sampling Time	n/s

Test	Method	LOD	Units	
Asbestos Quantification	DETSC 1102	0.001	%	0.002
<b>Metals</b>				
Arsenic	DETSC 2301#	0.2	mg/kg	6.5
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.2
Chromium	DETSC 2301#	0.15	mg/kg	34
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	39
Lead	DETSC 2301#	0.3	mg/kg	42
Mercury	DETSC 2325#	0.05	mg/kg	0.06
Nickel	DETSC 2301#	1	mg/kg	23
Vanadium	DETSC 2301#	0.8	mg/kg	57
Zinc	DETSC 2301#	1	mg/kg	91
<b>Inorganics</b>				
pH	DETSC 2008#		pH	7.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.3
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.6
Organic matter	DETSC 2002#	0.1	%	3.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	840
Sulphur (free)	DETSC 3049#	0.75	mg/kg	5.8
<b>Petroleum Hydrocarbons</b>				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	10
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	5.0
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	23
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	82
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	120
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	6.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	6.4
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	20
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	57
Aromatic C5-C35	DETSC 3072*	10	mg/kg	90
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	210
<b>PAHs</b>				
Naphthalene	DETSC 3303#	0.03	mg/kg	0.39



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-13596  
 Client Ref  
 Contract Title Redcar

Lab No	1868335
Sample ID	PRA-SP043-S4
Depth	
Other ID	
Sample Type	ES
Sampling Date	25/06/2021
Sampling Time	n/s

Test	Method	LOD	Units	
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.29
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.29
Fluorene	DETSC 3303	0.03	mg/kg	0.29
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.3
Anthracene	DETSC 3303	0.03	mg/kg	0.16
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.6
Pyrene	DETSC 3303#	0.03	mg/kg	1.2
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.27
Chrysene	DETSC 3303	0.03	mg/kg	0.28
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.20
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.11
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.13
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.05
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.05
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	6.6
<b>Phenols</b>				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.4

## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-13596

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1868335	PRA-SP043-S4	SOIL	Chrysotile	Bundles of Chrysotile fibres	Keith Wilson

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-13596

Client Ref

Contract Title Redcar

Lab No	1868335
Sample ID	PRA-SP043-S4
Depth	
Other ID	
Sample Type	ES
Sampling Date	25/06/2021
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.002</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.002
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	294.31
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na
% Chrysotile bundles in sample		Mass %	0.002

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na
% Chrysotile fibres in sample		Mass %	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-13596  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1868335	PRA-SP043-S4 SOIL	25/06/21	GJ 250ml, GJ 60ml x2, PT 500ml		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-13726

*Issued:* 06-Jul-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-13726

*Client Reference* (not supplied)

*Order No* CP1096MA1004D

*Contract Title* Redcar

*Description* 3 Soil samples.

*Date Received* 30-Jun-21

*Date Started* 30-Jun-21

*Date Completed* 06-Jul-21

*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



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## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13726

Client Ref

Contract Title Redcar

Lab No	1869110	1869111	1869112
Sample ID	PRA-SP034-12	PRA-SP034-13	PRA-SP034-14
Depth			
Other ID			
Sample Type	ES	ES	ES
Sampling Date	28/06/2021	28/06/2021	28/06/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Asbestos Quantification	DETSC 1102	0.001	%	0.002	0.003	
<b>Metals</b>						
Arsenic	DETSC 2301#	0.2	mg/kg	21	26	27
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.5	2.6	2.6
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	0.5	0.4
Chromium	DETSC 2301#	0.15	mg/kg	48	40	37
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	41	65	46
Lead	DETSC 2301#	0.3	mg/kg	66	130	58
Mercury	DETSC 2325#	0.05	mg/kg	0.45	0.27	0.20
Nickel	DETSC 2301#	1	mg/kg	16	23	21
Vanadium	DETSC 2301#	0.8	mg/kg	190	150	150
Zinc	DETSC 2301#	1	mg/kg	210	290	220
<b>Inorganics</b>						
pH	DETSC 2008#		pH	10.1	9.2	9.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	18	12	7.7
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.5	0.3	0.2
Thiocyanate	DETSC 2130#	0.6	mg/kg	3.6	1.5	1.6
Organic matter	DETSC 2002#	0.1	%	2.5	1.4	2.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1700	1600	1600
Sulphur (free)	DETSC 3049#	0.75	mg/kg	9.0	11	6.0
<b>Petroleum Hydrocarbons</b>						
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	15	< 1.5	14
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	9.1	< 1.2	4.4
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	13	< 1.5	4.2
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	25	< 3.4	4.5
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	62	< 10	27
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	1.0	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	11	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	7.5	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	20	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	62	20	27

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13726

Client Ref

Contract Title Redcar

<b>Lab No</b>	1869110	1869111	1869112
<b>Sample ID</b>	PRA-SP034-12	PRA-SP034-13	PRA-SP034-14
<b>Depth</b>			
<b>Other ID</b>			
<b>Sample Type</b>	ES	ES	ES
<b>Sampling Date</b>	28/06/2021	28/06/2021	28/06/2021
<b>Sampling Time</b>	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>PAHs</b>						
Naphthalene	DETSC 3303#	0.03	mg/kg	0.09	0.12	0.14
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.04	0.03	0.07
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.05	0.12	0.05
Fluorene	DETSC 3303	0.03	mg/kg	0.03	0.12	0.04
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.66	1.8	2.4
Anthracene	DETSC 3303	0.03	mg/kg	0.14	0.30	0.17
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.8	3.1	5.5
Pyrene	DETSC 3303#	0.03	mg/kg	1.7	2.5	3.8
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.80	1.3	1.5
Chrysene	DETSC 3303	0.03	mg/kg	0.95	1.3	1.7
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	1.0	1.4	1.7
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.37	0.55	0.61
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.46	0.75	0.67
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.34	0.49	0.58
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.08	0.16	0.17
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.39	0.54	0.66
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	8.9	15	20
<b>Phenols</b>						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3



## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-13726

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1869110	PRA-SP034-12	SOIL	Chrysotile	Bundles of Chrysotile Fibres	Keith Wilson
1869111	PRA-SP034-13	SOIL	Chrysotile	Bundles of Chrysotile Fibres	Keith Wilson
1869112	PRA-SP034-14	SOIL	NAD	none	Keith Wilson

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-13726

Client Ref

Contract Title Redcar

<b>Lab No</b>	1869110	1869111
<b>Sample ID</b>	PRA-SP034-12	PRA-SP034-13
<b>Depth</b>		
<b>Other ID</b>		
<b>Sample Type</b>	ES	ES
<b>Sampling Date</b>	28/06/2021	28/06/2021
<b>Sampling Time</b>		

Test	Method	Units		
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.002</b>	<b>0.003</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.002	0.003
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1211.69	1321.72
ACMs present*		type		
Mass of ACM in sample		g		
% ACM by mass		%		
% asbestos in ACM		%		
% asbestos in sample		%		

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na
% Chrysotile bundles in sample		Mass %	0.002	0.003

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na
% Chrysotile fibres in sample		Mass %	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na
Chrysotile fibres		Fibres/g	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-13726

Client Ref

Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1869110	PRA-SP034-12 SOIL	28/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1869111	PRA-SP034-13 SOIL	28/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1869112	PRA-SP034-14 SOIL	28/06/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-13790

*Issued:* 19-Jul-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-13790

*Client Reference* (not supplied)

*Order No* CP1096MA1004D

*Contract Title* Redcar

*Description* 2 Soil samples.

*Date Received* 01-Jul-21

*Date Started* 01-Jul-21

*Date Completed* 19-Jul-21

*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



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## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13790

Client Ref

Contract Title Redcar

Lab No	1869478	1869479
.Sample ID	PRA-AR-27-S3	PRA-AR-28-S1
Depth	6.0	6.0
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	29/06/2021	29/06/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
<b>Metals</b>					
Arsenic	DETSC 2301#	0.2	mg/kg	5.6	12
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.1	0.9
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.4
Chromium	DETSC 2301#	0.15	mg/kg	20	30
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	33	63
Lead	DETSC 2301#	0.3	mg/kg	37	200
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.13
Nickel	DETSC 2301#	1	mg/kg	42	23
Vanadium	DETSC 2301#	0.8	mg/kg	28	26
Zinc	DETSC 2301#	1	mg/kg	100	110
<b>Inorganics</b>					
pH	DETSC 2008#		pH	7.0	7.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	2.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	6.3	1.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	76	160
Sulphur (free)	DETSC 3049#	0.75	mg/kg	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>					
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	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
<b>PAHs</b>					
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13790

Client Ref

Contract Title Redcar

<b>Lab No</b>	1869478	1869479
<b>Sample ID</b>	PRA-AR-27-S3	PRA-AR-28-S1
<b>Depth</b>	6.0	6.0
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	29/06/2021	29/06/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
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	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 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	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10
<b>Phenols</b>					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-13790

*Client Ref*

*Contract Title* Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1869478	PRA-AR-27-S3 6.0	SOIL	NAD	none	Keith Wilson
1869479	PRA-AR-28-S1 6.0	SOIL	NAD	none	Keith Wilson

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 21-13790

Client Ref

Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1869478	PRA-AR-27-S3 6.0 SOIL	29/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1869479	PRA-AR-28-S1 6.0 SOIL	29/06/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-13889

*Issued:* 19-Jul-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-13889

*Client Reference* (not supplied)

*Order No* CP1096MA1004D

*Contract Title* Redcar

*Description* 9 Soil samples.

*Date Received* 02-Jul-21

*Date Started* 02-Jul-21

*Date Completed* 19-Jul-21

*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



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-13889

Client Ref

Contract Title Redcar

Lab No	1869996	1869997	1869998	1869999	1870000	1870001	1870002
.Sample ID	PRA-SP034-S16	PRA-SP034-S17	PRA-SP034-S18	PRA-SP034-S19	PRA-SP034-S20	PRA-SP034-S21	PRA-SP034-S22
Depth							
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	30/06/2021	30/06/2021	30/06/2021	30/06/2021	30/06/2021	30/06/2021	30/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Asbestos Quantification	DETSC 1102	0.001	%	0.001	< 0.001	0.001	< 0.001	0.001	0.003	0.002
<b>Metals</b>										
Arsenic	DETSC 2301#	0.2	mg/kg	13	22	25	25	25	39	19
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	3.3	2.4	2.7	3.2	4.4	2.9	2.6
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.3	0.4	0.5	0.3	0.4	0.3
Chromium	DETSC 2301#	0.15	mg/kg	17	38	39	46	30	49	42
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	39	55	46	83	38	56	110
Lead	DETSC 2301#	0.3	mg/kg	27	80	100	130	110	110	95
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.20	0.20	0.28	0.16	0.18	0.15
Nickel	DETSC 2301#	1	mg/kg	9.2	20	18	22	12	17	14
Vanadium	DETSC 2301#	0.8	mg/kg	80	130	160	170	160	180	160
Zinc	DETSC 2301#	1	mg/kg	59	360	1800	310	120	180	260
<b>Inorganics</b>										
pH	DETSC 2008#		pH	9.7	9.5	9.2	8.3	9.2	8.5	8.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	1.7	8.0	7.6	11	5.2	7.3	8.8
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.1	0.2	0.2	0.2	0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.9	1.0	1.0	1.2	1.2	1.5	1.0
Organic matter	DETSC 2002#	0.1	%	1.1	1.7	2.3	1.5	1.1	1.3	1.8
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1500	1600	1700	1700	1600	1600	1600
Sulphur (free)	DETSC 3049#	0.75	mg/kg	17	18	41	120	43	22	30
<b>Petroleum Hydrocarbons</b>										
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	15
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	9.5
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	16
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	18
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10	59
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 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	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	2.1	2.0	1.5	1.6	2.3	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	2.5	3.2	1.0	1.1	1.8	< 0.5	1.9
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	5.2	8.8	4.3	9.3	7.9	4.1	7.2
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	14	9.4	12	17	18	4.8	10
Aromatic C5-C35	DETSC 3072*	10	mg/kg	24	23	19	29	30	< 10	20
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	24	23	19	29	30	< 10	79

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13889

Client Ref

Contract Title Redcar

Lab No	1869996	1869997	1869998	1869999	1870000	1870001	1870002
.Sample ID	PRA-SP034-S16	PRA-SP034-S17	PRA-SP034-S18	PRA-SP034-S19	PRA-SP034-S20	PRA-SP034-S21	PRA-SP034-S22
Depth							
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	30/06/2021	30/06/2021	30/06/2021	30/06/2021	30/06/2021	30/06/2021	30/06/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
<b>PAHs</b>										
Naphthalene	DETSC 3303#	0.03	mg/kg	0.11	0.06	0.12	0.11	0.12	0.11	0.14
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.04	0.07	0.03	0.03	0.05
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.06	0.08	< 0.03	< 0.03	0.05
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.29	0.35	0.76	0.97	0.55	0.47	0.82
Anthracene	DETSC 3303	0.03	mg/kg	0.05	0.08	0.15	0.24	0.13	0.10	0.17
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.50	0.81	1.5	1.9	0.98	1.1	1.6
Pyrene	DETSC 3303#	0.03	mg/kg	0.31	0.49	0.88	1.2	0.59	0.67	0.93
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.32	0.53	0.79	1.0	0.52	0.63	0.87
Chrysene	DETSC 3303	0.03	mg/kg	0.37	0.58	0.90	1.2	0.60	0.73	0.99
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.45	0.68	1.0	1.3	0.60	0.82	1.1
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.17	0.29	0.37	0.45	0.23	0.30	0.40
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.26	0.36	0.57	0.66	0.31	0.44	0.55
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.20	0.30	0.43	0.53	0.25	0.37	0.46
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.06	0.10	0.13	0.15	0.07	0.11	0.14
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.21	0.32	0.44	0.54	0.25	0.36	0.46
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	3.3	5.0	8.1	10	5.2	6.2	8.6
<b>Phenols</b>										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13889

Client Ref

Contract Title Redcar

Lab No	1870003	1870004
Sample ID	PRA-SPO34-S23	PRA-AQ-26-S1
Depth		
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	30/06/2021	30/06/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Asbestos Quantification	DETSC 1102	0.001	%	< 0.001	
<b>Metals</b>					
Arsenic	DETSC 2301#	0.2	mg/kg	26	8.2
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.8	0.8
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.2
Chromium	DETSC 2301#	0.15	mg/kg	82	26
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	110	120
Lead	DETSC 2301#	0.3	mg/kg	110	33
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	22	37
Vanadium	DETSC 2301#	0.8	mg/kg	180	32
Zinc	DETSC 2301#	1	mg/kg	720	94
<b>Inorganics</b>					
pH	DETSC 2008#		pH	8.2	7.9
Cyanide, Total	DETSC 2130#	0.1	mg/kg	5.8	0.5
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.7	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.5	3.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1700	530
Sulphur (free)	DETSC 3049#	0.75	mg/kg	2.7	< 0.75
<b>Petroleum Hydrocarbons</b>					
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	1.2	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	1.6	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	7.1	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	12	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	21	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	21	< 10

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13889

Client Ref

Contract Title Redcar

<b>Lab No</b>	1870003	1870004
<b>Sample ID</b>	PRA-SPO34-S23	PRA-AQ-26-S1
<b>Depth</b>		
<b>Other ID</b>		
<b>Sample Type</b>	SOIL	SOIL
<b>Sampling Date</b>	30/06/2021	30/06/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
<b>PAHs</b>					
Naphthalene	DETSC 3303#	0.03	mg/kg	0.12	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.04	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.60	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	0.12	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.3	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.75	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.69	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.81	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.87	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.32	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.47	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.34	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.10	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.36	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	6.9	< 0.10
<b>Phenols</b>					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-13889

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1869996	PRA-SP034-S16	SOIL	Chrysotile Crocidolite	Chrysotile and Crocidolite present as fibre bundles	D Wilkinson
1869997	PRA-SP034-S17	SOIL	Chrysotile Amosite	Chrysotile and Amosite present as fibre bundles	D Wilkinson
1869998	PRA-SP034-S18	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1869999	PRA-SP034-S19	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1870000	PRA-SP034-S20	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1870001	PRA-SP034-S21	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1870002	PRA-SP034-S22	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1870003	PRA-SP034-S23	SOIL	Chrysotile	Chrysotile as present fibre bundles	D Wilkinson
1870004	PRA-AQ-26-S1	SOIL	NAD	none	D Wilkinson

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.



## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-13889

Client Ref

Contract Title Redcar

Lab No	1869996	1869997	1869998	1869999
Sample ID	PRA-SP034-S16	PRA-SP034-S17	PRA-SP034-S18	PRA-SP034-S19
Depth				
Other ID				
Sample Type				
Sampling Date	30/06/2021	30/06/2021	30/06/2021	30/06/2021
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.001	< 0.001	0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.001	<0.001	0.001	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1337.41	1189.43	950.28	1344.14
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	<0.001	<0.001	na	na
% Chrysotile bundles in sample		Mass %	<0.001	<0.001	0.001	<0.001

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-13889

Client Ref

Contract Title Redcar

Lab No	1870000	1870001	1870002	1870003
Sample ID	PRA-SP034-S20	PRA-SP034-S21	PRA-SP034-S22	PRA-SP034-S23
Depth				
Other ID				
Sample Type				
Sampling Date	30/06/2021	30/06/2021	30/06/2021	30/06/2021
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.001	0.003	0.002	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.001	0.003	0.002	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	791.98	1162.17	1184.75	925.49
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	na	na	na
% Chrysotile bundles in sample		Mass %	0.001	0.003	0.002	<0.001
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-13889  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1869996	PRA-SP034-S16 SOIL	30/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1869997	PRA-SP034-S17 SOIL	30/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1869998	PRA-SP034-S18 SOIL	30/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1869999	PRA-SP034-S19 SOIL	30/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1870000	PRA-SP034-S20 SOIL	30/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1870001	PRA-SP034-S21 SOIL	30/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1870002	PRA-SP034-S22 SOIL	30/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1870003	PRA-SP034-S23 SOIL	30/06/21	GJ 250ml, GJ 60ml x2, PT 1L		
1870004	PRA-AQ-26-S1 SOIL	30/06/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-13969

*Issued:* 19-Jul-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-13969

*Client Reference* (not supplied)

*Order No* CP1096MA1004D

*Contract Title* Redcar

*Description* 15 Soil samples.

*Date Received* 05-Jul-21

*Date Started* 05-Jul-21

*Date Completed* 19-Jul-21

*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



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## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13969

Client Ref

Contract Title Redcar

Lab No	1870463	1870464	1870465	1870466	1870467	1870468
.Sample ID	PRA-AR-27-S2	PRA-AS-29-S1	PRA-SP049-S1	PRA-SP049-S2	PRA-SP049-S3	PRA-SP045-S7
Depth	5.5	6.0				
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%			< 0.001	0.014	< 0.001	< 0.001
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	11	6.6	6.5	11	8.1	11
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.2	2.5	1.4	1.9	1.8	3.6
Cadmium	DETSC 2301#	0.1	mg/kg	0.1	0.1	0.3	0.6	0.3	0.7
Chromium	DETSC 2301#	0.15	mg/kg	22	22	28	74	38	120
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	17	17	39	66	45	53
Lead	DETSC 2301#	0.3	mg/kg	28	27	32	50	41	66
Mercury	DETSC 2325#	0.05	mg/kg	0.11	< 0.05	0.13	0.34	0.19	0.95
Nickel	DETSC 2301#	1	mg/kg	21	18	9.7	16	12	19
Vanadium	DETSC 2301#	0.8	mg/kg	36	30	60	160	72	210
Zinc	DETSC 2301#	1	mg/kg	67	64	78	160	120	200
<b>Inorganics</b>									
pH	DETSC 2008#		pH	8.1	7.8	11.8	12.0	11.9	11.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.3	7.7	12	12	10	49
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.1	0.2	0.2	0.1	0.2	0.4
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.4	2.4	3.2	1.5	3.2	2.2
Organic matter	DETSC 2002#	0.1	%	2.1	2.3	1.3	2.1	2.6	2.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	100	180	680	750	710	1400
Sulphur (free)	DETSC 3049#	0.75	mg/kg	86	59	200	130	120	14
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	4.6	< 1.5	< 1.5	5.2
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	15	9.2	< 1.2	12
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	65	79	< 1.5	50
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	250	330	< 3.4	170
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	340	420	< 10	240
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	2.0	1.8	4.4	1.3
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	15	15	12	6.4
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	86	120	73	57
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	290	420	300	180
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	400	560	390	250
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	730	980	390	480



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13969

Client Ref

Contract Title Redcar

Lab No	1870463	1870464	1870465	1870466	1870467	1870468
Sample ID	PRA-AR-27-S2	PRA-AS-29-S1	PRA-SP049-S1	PRA-SP049-S2	PRA-SP049-S3	PRA-SP045-S7
Depth	5.5	6.0				
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.66	0.93	0.60	0.23
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.68	0.55	0.34	0.27
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.58	0.48	0.29	0.23
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.57	0.36	0.24	0.21
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.05	0.45	0.34	0.27	0.39
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.41	0.30	0.23	0.35
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.10	4.2	3.6	2.2	2.9
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.11	3.5	3.1	1.8	2.6
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.93	0.83	0.44	0.53
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	0.05	1.1	0.93	0.65	0.85
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.77	0.78	0.53	0.63
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.69	0.57	0.41	0.47
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	1.0	0.94	0.70	0.71
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	0.54	0.52	0.46	0.50
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.17	0.14	0.11	0.11
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.63	0.60	0.52	0.54
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	0.32	17	15	9.7	11
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13969

Client Ref

Contract Title Redcar

Lab No	1870469	1870470	1870471	1870472	1870473	1870474
.Sample ID	PRA-SP045-S8	PRA-SP045-S9	PRA-SP045-S10	PRA-SP045-S11	PRA-SP045-S12	PRA-SP045-S13
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%	0.002	< 0.001	0.002	< 0.001	< 0.001	< 0.001
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	16	12	8.0	12	13	12
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	3.9	3.0	4.9	4.0	2.4	2.8
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	0.6	0.3	0.5	0.6	0.5
Chromium	DETSC 2301#	0.15	mg/kg	99	120	46	61	110	76
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	100	62	66	130	100	82
Lead	DETSC 2301#	0.3	mg/kg	61	51	37	57	73	61
Mercury	DETSC 2325#	0.05	mg/kg	0.79	0.68	0.58	< 0.05	0.44	0.47
Nickel	DETSC 2301#	1	mg/kg	29	22	23	28	20	28
Vanadium	DETSC 2301#	0.8	mg/kg	160	200	73	84	170	160
Zinc	DETSC 2301#	1	mg/kg	160	170	110	150	190	180
<b>Inorganics</b>									
pH	DETSC 2008#		pH	11.3	12.0	11.0	11.3	11.9	11.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	16	17	11	9.7	13	8.9
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.2	0.1	< 0.1	0.2	0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.3	1.0	1.2	1.5	1.3	1.1
Organic matter	DETSC 2002#	0.1	%	1.7	1.8	3.3	1.3	2.2	1.7
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1400	1600	1900	1800	1000	1900
Sulphur (free)	DETSC 3049#	0.75	mg/kg	14	11	4.9	10	3.2	13
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	7.4	6.3	7.1	6.1	5.0
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	3.0	12	9.9	10	11	8.9
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	29	29	25	21	41	33
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	96	81	77	56	220	120
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	130	130	120	94	270	170
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	1.3	3.2	1.6	< 0.9	3.8	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	7.4	7.6	4.8	2.1	12	5.1
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	50	26	21	15	68	33
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	130	72	62	36	190	110
Aromatic C5-C35	DETSC 3072*	10	mg/kg	190	110	89	54	270	150
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	320	240	210	150	550	320



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13969

Client Ref

Contract Title Redcar

Lab No	1870469	1870470	1870471	1870472	1870473	1870474
Sample ID	PRA-SP045-S8	PRA-SP045-S9	PRA-SP045-S10	PRA-SP045-S11	PRA-SP045-S12	PRA-SP045-S13
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021	01/07/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.28	0.29	0.22	0.31	0.35	0.24
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.40	0.28	0.13	0.21	0.37	0.44
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.33	0.24	0.12	0.18	0.33	0.38
Fluorene	DETSC 3303	0.03	mg/kg	0.37	0.21	0.09	0.17	0.28	0.37
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.46	0.28	0.13	0.21	0.32	0.28
Anthracene	DETSC 3303	0.03	mg/kg	0.43	0.24	0.09	0.17	0.28	0.25
Fluoranthene	DETSC 3303#	0.03	mg/kg	3.2	2.4	0.72	1.6	2.9	2.1
Pyrene	DETSC 3303#	0.03	mg/kg	2.4	1.8	0.59	1.2	2.2	1.5
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.57	0.34	0.11	0.25	0.50	0.27
Chrysene	DETSC 3303	0.03	mg/kg	0.86	0.46	0.20	0.39	0.70	0.42
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.56	0.30	0.12	0.26	0.49	0.22
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.32	0.26	0.10	0.20	0.46	0.19
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.47	0.32	0.11	0.26	0.45	0.24
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.48	0.25	0.13	0.24	0.45	0.20
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.14	0.05	0.03	0.05	0.09	0.05
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.54	0.26	0.13	0.29	0.47	0.22
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	12	8.0	3.0	6.0	11	7.4
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13969

Client Ref

Contract Title Redcar

Lab No	1870475	1870476	1870477
.Sample ID	PRA-SP045-S14	PRA-SP045-S15	PRA-SP045-S16
Depth			
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	01/07/2021	01/07/2021	01/07/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Asbestos Quantification	DETSC 1102	0.001	%	0.002	< 0.001	< 0.001
<b>Metals</b>						
Arsenic	DETSC 2301#	0.2	mg/kg	5.9	12	13
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	4.3	3.0	2.8
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	0.6	0.4
Chromium	DETSC 2301#	0.15	mg/kg	30	93	56
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	46	61	96
Lead	DETSC 2301#	0.3	mg/kg	22	92	120
Mercury	DETSC 2325#	0.05	mg/kg	0.30	0.46	0.41
Nickel	DETSC 2301#	1	mg/kg	15	24	31
Vanadium	DETSC 2301#	0.8	mg/kg	41	220	81
Zinc	DETSC 2301#	1	mg/kg	81	180	160
<b>Inorganics</b>						
pH	DETSC 2008#		pH	11.1	11.5	11.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	11	11	0.2
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	0.1	0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.1	1.1	< 0.6
Organic matter	DETSC 2002#	0.1	%	2.0	1.9	1.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1500	1700	1800
Sulphur (free)	DETSC 3049#	0.75	mg/kg	10	16	7.3
<b>Petroleum Hydrocarbons</b>						
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	5.0	7.9	7.8
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	8.2	11	11
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	23	21	20
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	95	67	65
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	130	110	100
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	2.8
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	5.3	2.1	7.7
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	32	22	31
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	130	57	88
Aromatic C5-C35	DETSC 3072*	10	mg/kg	170	82	130
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	300	190	230

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-13969

Client Ref

Contract Title Redcar

Lab No	1870475	1870476	1870477
.Sample ID	PRA-SP045-S14	PRA-SP045-S15	PRA-SP045-S16
Depth			
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	01/07/2021	01/07/2021	01/07/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>PAHs</b>						
Naphthalene	DETSC 3303#	0.03	mg/kg	0.16	0.45	0.21
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.21	0.34	0.24
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.18	0.33	0.21
Fluorene	DETSC 3303	0.03	mg/kg	0.14	0.28	0.20
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.19	0.30	0.18
Anthracene	DETSC 3303	0.03	mg/kg	0.15	0.26	0.14
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.4	2.6	1.6
Pyrene	DETSC 3303#	0.03	mg/kg	1.2	2.0	1.2
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.21	0.48	0.25
Chrysene	DETSC 3303	0.03	mg/kg	0.27	0.58	0.36
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.16	0.49	0.25
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.15	0.37	0.20
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.19	0.53	0.27
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.15	0.37	0.25
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.04	0.09	0.05
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.18	0.41	0.27
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	5.0	9.8	5.8
<b>Phenols</b>						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3

## Summary of Asbestos Analysis

### Soil Samples

Our Ref 21-13969

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1870463	PRA-AR-27-S2 5.5	SOIL	NAD	none	Michael Kay
1870464	PRA-AS-29-S1 6.0	SOIL	NAD	none	Michael Kay
1870465	PRA-SP049-S1	SOIL	Chrysotile	Bundle of Chrysotile	Michael Kay
1870466	PRA-SP049-S2	SOIL	Chrysotile	Chrysotile present in microscopic loose fibrous asbestos debris	Michael Kay
1870467	PRA-SP049-S3	SOIL	Chrysotile	Bundle of Chrysotile	Michael Kay
1870468	PRA-SP045-S7	SOIL	Amosite	Small bundles of Amosite	Michael Kay
1870469	PRA-SP045-S8	SOIL	Chrysotile	Chrysotile present in microscopic loose fibrous asbestos debris	Michael Kay
1870470	PRA-SP045-S9	SOIL	Chrysotile Amosite	Small bundles of Amosite and Chrysotile	Michael Kay
1870471	PRA-SP045-S10	SOIL	Chrysotile	Chrysotile present in microscopic loose fibrous asbestos debris	Michael Kay
1870472	PRA-SP045-S11	SOIL	Chrysotile	Small bundles of Chrysotile	Michael Kay
1870473	PRA-SP045-S12	SOIL	Chrysotile	Small bundles of Chrysotile	Michael Kay
1870474	PRA-SP045-S13	SOIL	Chrysotile	Small bundles of Chrysotile	Michael Kay
1870475	PRA-SP045-S14	SOIL	Amosite Chrysotile	Amosite and Chrysotile present in microscopic loose fibrous asbestos debris	Michael Kay
1870476	PRA-SP045-S15	SOIL	Chrysotile	Chrysotile present in microscopic loose fibrous asbestos debris	Michael Kay
1870477	PRA-SP045-S16	SOIL	Chrysotile	Chrysotile present in microscopic loose fibrous asbestos debris	Michael Kay

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-13969

Client Ref

Contract Title Redcar

Lab No	1870465	1870466	1870467	1870468
Sample ID	PRA-SP049-S1	PRA-SP049-S2	PRA-SP049-S3	PRA-SP049-S7
Depth				
Other ID				
Sample Type				
Sampling Date	01/07/2021	01/07/2021	01/07/2021	01/07/2021
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	0.014	< 0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	0.014	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	na	<0.001	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	840.09	885.17	892.81	1114.21
ACMs present*		type		LFAD		
Mass of ACM in sample		g		0.15		
% ACM by mass		%		0.02		
% asbestos in ACM		%		85		
% asbestos in sample		%		0.014		

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na	na	<0.001
% Chrysotile bundles in sample		Mass %	<0.001	na	<0.001	na

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-13969

Client Ref

Contract Title Redcar

Lab No	1870469	1870470	1870471	1870472
Sample ID	PRA-SP045-S8	PRA-SP045-S9	PRA-SP045-S10	PRA-SP045-S11
Depth				
Other ID				
Sample Type				
Sampling Date	01/07/2021	01/07/2021	01/07/2021	01/07/2021
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	0.002	< 0.001	0.002	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	0.002	na	0.002	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	na	<0.001	na	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	856.94	638.59	749.28	508.56
ACMs present*		type	LFAD		LFAD	
Mass of ACM in sample		g	0.02		0.02	
% ACM by mass		%	0.00		0.00	
% asbestos in ACM		%	85		85	
% asbestos in sample		%	0.002		0.002	
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	<0.001	na	na
% Chrysotile bundles in sample		Mass %	na	<0.001	na	<0.001
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 21-13969

Client Ref

Contract Title Redcar

Lab No	1870473	1870474	1870475	1870476
Sample ID	PRA-SP045-S12	PRA-SP045-S13	PRA-SP045-S14	PRA-SP045-S15
Depth				
Other ID				
Sample Type				
Sampling Date	01/07/2021	01/07/2021	01/07/2021	01/07/2021
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	< 0.001	0.002	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	0.002	0.001
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	<0.001	na	na
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	606.05	657.74	650.12	500.53
ACMs present*		type			LFAD	LFAD
Mass of ACM in sample		g			0.02	0.00
% ACM by mass		%			0.00	0.00
% asbestos in ACM		%			85	85
% asbestos in sample		%			0.002	0.001
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	na	na	na
% Chrysotile bundles in sample		Mass %	<0.001	<0.001	na	na
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample



## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-13969

Client Ref

Contract Title Redcar

Lab No	1870477
Sample ID	PRA-SP045-S16
Depth	
Other ID	
Sample Type	
Sampling Date	01/07/2021
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	0.001
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	na
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na
Breakdown of Gravimetric Analysis (a)			
Mass of Sample		g	772.55
ACMs present*		type	LFAD
Mass of ACM in sample		g	0.01
% ACM by mass		%	0.00
% asbestos in ACM		%	85
% asbestos in sample		%	0.001
Breakdown of Detailed Gravimetric Analysis (b)			
% Amphibole bundles in sample		Mass %	na
% Chrysotile bundles in sample		Mass %	na
Breakdown of PCOM Analysis (c)			
% Amphibole fibres in sample		Mass %	na
% Chrysotile fibres in sample		Mass %	na
Breakdown of Potentially Respirable Fibre Analysis (d)			
Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-13969  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1870463	PRA-AR-27-S2 5.5 SOIL	01/07/21	GJ 250ml, GJ 60ml, PT 1L		
1870464	PRA-AS-29-S1 6.0 SOIL	01/07/21	GJ 250ml, GJ 60ml, PT 1L		
1870465	PRA-SP049-S1 SOIL	01/07/21	GJ 250ml, GJ 60ml, PT 1L		
1870466	PRA-SP049-S2 SOIL	01/07/21	GJ 250ml, GJ 60ml, PT 1L		
1870467	PRA-SP049-S3 SOIL	01/07/21	GJ 250ml, GJ 60ml, PT 1L		
1870468	PRA-SP045-S7 SOIL	01/07/21	GJ 250ml, GJ 60ml, PT 1L		
1870469	PRA-SP045-S8 SOIL	01/07/21	GJ 250ml, GJ 60ml, PT 1L		
1870470	PRA-SP045-S9 SOIL	01/07/21	GJ 250ml, GJ 60ml, PT 1L		
1870471	PRA-SP045-S10 SOIL	01/07/21	GJ 250ml, GJ 60ml, PT 1L		
1870472	PRA-SP045-S11 SOIL	01/07/21	GJ 250ml, GJ 60ml, PT 1L		
1870473	PRA-SP045-S12 SOIL	01/07/21	GJ 250ml, GJ 60ml, PT 1L		
1870474	PRA-SP045-S13 SOIL	01/07/21	GJ 250ml, GJ 60ml, PT 1L		
1870475	PRA-SP045-S14 SOIL	01/07/21	GJ 250ml, GJ 60ml, PT 1L		
1870476	PRA-SP045-S15 SOIL	01/07/21	GJ 250ml, GJ 60ml, PT 1L		
1870477	PRA-SP045-S16 SOIL	01/07/21	GJ 250ml, GJ 60ml, PT 1L		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-14356

*Issued:* 19-Jul-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-14356

*Client Reference* (not supplied)

*Order No* CP1096MA1004D

*Contract Title* (not supplied)

*Description* 10 Soil samples.

*Date Received* 08-Jul-21

*Date Started* 08-Jul-21

*Date Completed* 19-Jul-21

*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



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-14356  
 Client Ref  
 Contract Title

Lab No	1872972	1872973	1872974	1872975	1872976	1872977
.Sample ID	PRA-SP044-S3	PRA-SP044-S4	PRA-SP050-S6	PRA-SP050-S7	PRA-SP050-S8	PRA-SP050-S9
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	04/07/2021	05/07/2021	03/07/2021	03/07/2021	03/07/2021	04/07/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%	< 0.001	0.003	< 0.001	< 0.001	< 0.001	
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	12	10	34	84	4.3	200
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.1	2.0	2.1	3.5	0.9	1.5
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.4	0.3	1.5	0.3	0.9
Chromium	DETSC 2301#	0.15	mg/kg	42	73	53	45	320	110
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	57	79	42	110	32	100
Lead	DETSC 2301#	0.3	mg/kg	37	51	230	200	49	250
Mercury	DETSC 2325#	0.05	mg/kg	0.16	0.77	< 0.05	0.09	0.05	0.07
Nickel	DETSC 2301#	1	mg/kg	14	15	25	43	17	65
Vanadium	DETSC 2301#	0.8	mg/kg	73	130	200	170	290	440
Zinc	DETSC 2301#	1	mg/kg	98	120	310	840	75	560
<b>Inorganics</b>									
pH	DETSC 2008#		pH	11.4	11.9	9.9	9.2	12.0	8.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	3.3	6.4	6.1	9.8	24	3.7
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	1.6	1.3	0.7	1.2	3.4	0.8
Organic matter	DETSC 2002#	0.1	%	1.8	1.8	2.9	2.6	1.6	3.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	920	380	1100	1700	16	1800
Sulphur (free)	DETSC 3049#	0.75	mg/kg	4.5	6.8	12	2.0	6.2	1.5
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	3.1	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	2.5	9.5	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	19	51	2.7	< 1.5	5.1	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	89	250	27	< 3.4	91	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	110	310	31	< 10	96	< 10
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	1.5	4.7	< 0.5	< 0.5	0.6	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	30	83	9.4	< 0.6	11	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	91	300	27	< 1.4	69	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	120	390	37	< 10	81	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	230	700	68	< 10	180	< 10



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-14356  
 Client Ref  
 Contract Title

Lab No	1872972	1872973	1872974	1872975	1872976	1872977
.Sample ID	PRA-SP044-S3	PRA-SP044-S4	PRA-SP050-S6	PRA-SP050-S7	PRA-SP050-S8	PRA-SP050-S9
Depth						
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	04/07/2021	05/07/2021	03/07/2021	03/07/2021	03/07/2021	04/07/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.10	0.13	0.05	0.04	0.05	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.07	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.23	0.34	0.04	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	0.22	0.30	0.04	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.6	1.5	0.63	0.61	0.33	0.29
Anthracene	DETSC 3303	0.03	mg/kg	0.28	0.26	0.12	0.05	0.05	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	2.5	2.9	1.9	1.0	0.95	0.47
Pyrene	DETSC 3303#	0.03	mg/kg	2.0	2.4	1.6	0.76	0.84	0.36
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.75	0.94	0.73	0.33	0.48	0.23
Chrysene	DETSC 3303	0.03	mg/kg	0.42	0.53	0.45	0.35	0.44	0.27
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.52	0.73	1.0	0.51	0.83	0.59
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.20	0.29	0.37	0.21	0.36	0.20
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.35	0.50	0.50	0.19	0.51	0.24
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.11	0.18	0.27	0.18	0.32	0.32
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.03	0.05	0.07	0.06	0.08	0.13
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.14	0.21	0.34	0.23	0.41	0.57
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	9.4	11	8.2	4.6	5.7	3.7
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-14356  
 Client Ref  
 Contract Title

Lab No	1872978	1872979	1872980	1872981
Sample ID	PRA-SP050-S10	PRA-AW-15-S2	PRA-AW-19-S9	PRA-BA-17-S2
Depth		6.36	6.40	6.00
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	04/07/2021	05/07/2021	05/07/2021	03/07/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Asbestos Quantification	DETSC 1102	0.001	%				
<b>Metals</b>							
Arsenic	DETSC 2301#	0.2	mg/kg	140	34	32	7.0
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	1.1	2.7	2.6	1.1
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	0.6	0.5	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	76	80	90	31
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	77	64	74	23
Lead	DETSC 2301#	0.3	mg/kg	350	130	320	17
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.32	0.22	< 0.05
Nickel	DETSC 2301#	1	mg/kg	53	24	27	35
Vanadium	DETSC 2301#	0.8	mg/kg	320	320	340	36
Zinc	DETSC 2301#	1	mg/kg	630	540	420	58
<b>Inorganics</b>							
pH	DETSC 2008#		pH	9.7	10.4	10.3	8.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	6.6	9.9	14	< 0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	2.6	1.9	< 0.6
Organic matter	DETSC 2002#	0.1	%	2.9	2.0	3.5	2.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1600	1400	1500	87
Sulphur (free)	DETSC 3049#	0.75	mg/kg	2.2	5.5	11	< 0.75
<b>Petroleum Hydrocarbons</b>							
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	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
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	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-14356  
 Client Ref  
 Contract Title

Lab No	1872978	1872979	1872980	1872981
Sample ID	PRA-SP050-S10	PRA-AW-15-S2	PRA-AW-19-S9	PRA-BA-17-S2
Depth		6.36	6.40	6.00
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	04/07/2021	05/07/2021	05/07/2021	03/07/2021
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
<b>PAHs</b>							
Naphthalene	DETSC 3303#	0.03	mg/kg	0.03	0.25	0.25	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.03	0.04	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.32	0.75	1.1	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	0.03	0.09	0.14	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.54	1.6	2.2	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.45	1.3	1.7	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.21	0.54	0.68	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.26	0.62	0.83	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.36	0.71	0.90	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.13	0.28	0.35	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.12	0.27	0.33	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.10	0.19	0.23	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.03	0.06	0.08	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.12	0.23	0.27	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	2.6	6.9	9.2	< 0.10
<b>Phenols</b>							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3



## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-14356

*Client Ref*

*Contract Title*

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1872972	PRA-SP044-S3	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1872973	PRA-SP044-S4	SOIL	Chrysotile	Chrysotile present in microscopic loose fibrous asbestos debris	D Wilkinson
1872974	PRA-SP050-S6	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1872975	PRA-SP050-S7	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1872976	PRA-SP050-S8	SOIL	Chrysotile	Chrysotile present as fibre bundles	D Wilkinson
1872977	PRA-SP050-S9	SOIL	NAD	none	D Wilkinson
1872978	PRA-SP050-S10	SOIL	NAD	none	D Wilkinson
1872979	PRA-AW-15-S2 6.36	SOIL	NAD	none	D Wilkinson
1872980	PRA-AW-19-S9 6.40	SOIL	NAD	none	D Wilkinson
1872981	PRA-BA-17-S2 6.00	SOIL	NAD	none	D Wilkinson

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.

# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 21-14356

Client Ref

Contract Title

Lab No	1872971	1872972	1872973	1872974
.Sample ID		PRA-SP044-S3	PRA-SP044-S4	PRA-SP050-S6
Depth				
Other ID				
Sample Type				
Sampling Date		04/07/2021	05/07/2021	03/07/2021
Sampling Time				

Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	< 0.001	0.003	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	0.003	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	<0.001	na	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	1213.10	1271.56	1306.62	1423.73
ACMs present*		type			LFAD	
Mass of ACM in sample		g			0.05	
% ACM by mass		%			0.00	
% asbestos in ACM		%			85	
% asbestos in sample		%			0.003	
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	<0.001	na	na	na
% Chrysotile bundles in sample		Mass %	na	<0.001	na	<0.001
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 21-14356

Client Ref

Contract Title

Lab No	1872975	1872976
Sample ID	PRA-SP050-S7	PRA-SP050-S8
Depth		
Other ID		
Sample Type		
Sampling Date	03/07/2021	03/07/2021
Sampling Time		

Test	Method	Units		
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na

### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1338.68	2028.51
ACMs present*		type		
Mass of ACM in sample		g		
% ACM by mass		%		
% asbestos in ACM		%		
% asbestos in sample		%		

### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na	na
% Chrysotile bundles in sample		Mass %	<0.001	<0.001

### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na	na
% Chrysotile fibres in sample		Mass %	na	na

### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na	na
Chrysotile fibres		Fibres/g	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-14356

Client Ref

Contract

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
0	PRA-SP044-S2 SOIL	04/07/21	No containers logged		Cannot evaluate
1872972	PRA-SP044-S3 SOIL	04/07/21	GJ 250ml, GJ 60ml, PT 1L		
1872973	PRA-SP044-S4 SOIL	05/07/21	GJ 250ml, GJ 60ml x2, PT 1L		
1872974	PRA-SP050-S6 SOIL	03/07/21	GJ 250ml, GJ 60ml x2, PT 1L		
1872975	PRA-SP050-S7 SOIL	03/07/21	GJ 250ml, GJ 60ml x2, PT 1L		
1872976	PRA-SP050-S8 SOIL	03/07/21	GJ 250ml, GJ 60ml x2, PT 1L		
1872977	PRA-SP050-S9 SOIL	04/07/21	GJ 250ml, GJ 60ml, PT 1L		
1872978	PRA-SP050-S10 SOIL	04/07/21	GJ 250ml, GJ 60ml, PT 1L		
1872979	PRA-AW-15-S2 6.36 SOIL	05/07/21	GJ 250ml, GJ 60ml x2, PT 1L		
1872980	PRA-AW-19-S9 6.40 SOIL	05/07/21	GJ 250ml, GJ 60ml x2, PT 1L		
1872981	PRA-BA-17-S2 6.00 SOIL	03/07/21	GJ 250ml, GJ 60ml x2, PT 500ml		

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

End of Report



# DETS

## Certificate of Analysis

*Certificate Number* 21-14484

*Issued:* 19-Jul-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-14484

*Client Reference* (not supplied)

*Order No* CP1096MA1004D

*Contract Title* (not supplied)

*Description* 5 Soil samples.

*Date Received* 09-Jul-21

*Date Started* 09-Jul-21

*Date Completed* 19-Jul-21

*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



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## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-14484

Client Ref

Contract Title

Lab No	1873741	1873742	1873743	1873744	1873745
.Sample ID	PRA-AY-15-S3	PRA-AY-17-S7	PRA-AY-19-S4	PRA-SP0201-S1	PRA-SP0201-S2
Depth	6.00	6.00	6.35		
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETSC 1102	0.001	%					0.009
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	25	9.2	9.6	36	22
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	0.8	1.0	1.4	4.7	8.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.3	0.3	46	1.6
Chromium	DETSC 2301#	0.15	mg/kg	59	140	94	78	30
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	24	43	42	98	45
Lead	DETSC 2301#	0.3	mg/kg	45	42	50	3200	170
Mercury	DETSC 2325#	0.05	mg/kg	0.06	0.11	0.13	< 0.05	0.05
Nickel	DETSC 2301#	1	mg/kg	15	16	16	30	27
Vanadium	DETSC 2301#	0.8	mg/kg	160	350	230	190	56
Zinc	DETSC 2301#	1	mg/kg	280	65	88	4000	380
<b>Inorganics</b>								
pH	DETSC 2008#		pH	11.8	11.6	11.6	9.4	9.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	1.0	1.9	2.1	0.4	2.9
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	1.0	0.8	0.7	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	1.6	2.2	2.3	0.8	1.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	650	580	380	2100	980
Sulphur (free)	DETSC 3049#	0.75	mg/kg	42	17	14	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	0.16	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	0.26	0.17	0.11
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	3.4	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	7.9	6.3	5.0	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	120	46	10	4.6
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	2600	420	37	30
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	2800	470	56	35
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	2.9	5.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	15	10	< 0.5	1.4
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	98	25	< 0.6	21
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	1300	150	< 1.4	110
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	1400	190	< 10	130
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	4200	660	56	160



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-14484

Client Ref

Contract Title

Lab No	1873741	1873742	1873743	1873744	1873745
Sample ID	PRA-AY-15-S3	PRA-AY-17-S7	PRA-AY-19-S4	PRA-SP0201-S1	PRA-SP0201-S2
Depth	6.00	6.00	6.35		
Other ID					
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	0.24	0.15	0.22	0.13	0.12
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.28	0.64	4.5	0.18	0.16
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.25	0.51	4.2	0.15	0.15
Fluorene	DETSC 3303	0.03	mg/kg	0.16	0.45	3.0	0.10	0.09
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.62	0.98	4.0	0.16	0.13
Anthracene	DETSC 3303	0.03	mg/kg	0.60	0.97	4.1	0.12	0.09
Fluoranthene	DETSC 3303#	0.03	mg/kg	6.7	6.2	14	1.4	1.2
Pyrene	DETSC 3303#	0.03	mg/kg	5.0	5.5	11	1.0	0.87
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	1.0	1.9	4.1	0.26	0.14
Chrysene	DETSC 3303	0.03	mg/kg	1.7	2.3	4.5	0.45	0.41
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	1.0	1.9	3.6	0.39	0.26
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.97	1.9	3.1	0.26	0.23
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	1.7	3.4	5.7	0.49	0.33
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.82	1.2	1.6	0.20	0.14
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.23	0.28	0.50	0.05	0.04
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.94	1.3	1.7	0.21	0.17
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	22	29	69	5.5	4.4
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3



## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-14484

*Client Ref*

*Contract Title*

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1873741	PRA-AY-15-S3 6.00	SOIL	NAD	none	Keith Wilson
1873742	PRA-AY-17-S7 6.00	SOIL	NAD	none	Keith Wilson
1873743	PRA-AY-19-S4 6.35	SOIL	NAD	none	Keith Wilson
1873744	PRA-SP0201-S1	SOIL	NAD	none	Keith Wilson
1873745	PRA-SP0201-S2	SOIL	Chrysotile	Clump of Chrysotile fibres	Keith Wilson

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.

## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-14484

Client Ref

Contract Title

Lab No	1873745
.Sample ID	PRA-SP0201-S2
Depth	
Other ID	
Sample Type	
Sampling Date	06/07/2021
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	<b>0.009</b>
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	0.009
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na

#### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1160.10
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	

#### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na
% Chrysotile bundles in sample		Mass %	0.009

#### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na
% Chrysotile fibres in sample		Mass %	na

#### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-14484  
 Client Ref  
 Contract

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1873741	PRA-AY-15-S3 6.00 SOIL	06/07/21	GJ 250ml, GJ 60ml x2, PT 1L		
1873742	PRA-AY-17-S7 6.00 SOIL	06/07/21	GJ 250ml, GJ 60ml x2, PT 1L		
1873743	PRA-AY-19-S4 6.35 SOIL	06/07/21	GJ 250ml, GJ 60ml x2, PT 1L		
1873744	PRA-SP0201-S1 SOIL	06/07/21	GJ 250ml, GJ 60ml x2, PT 1L		
1873745	PRA-SP0201-S2 SOIL	06/07/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report



## Certificate of Analysis

*Certificate Number* 21-14599

*Issued:* 19-Jul-21

*Client* Seymour Civil Engineering  
30-34 Navigation Point  
Hartlepool Marina  
Hartlepool

*Our Reference* 21-14599

*Client Reference* (not supplied)

*Order No* CP1096MA1004D

*Contract Title* Redcar

*Description* 17 Soil samples.

*Date Received* 12-Jul-21

*Date Started* 12-Jul-21

*Date Completed* 19-Jul-21

*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*

A handwritten signature in black ink, appearing to read "A Fenwick".

Adam Fenwick  
Contracts Manager



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-14599

Client Ref

Contract Title Redcar

Lab No	1874590	1874591	1874592	1874593	1874594	1874595
Sample ID	PRA-SP050-S14	PRA-SP050-S15	PRA-SP050-S16	PRA-SP050-S17	PRA-SP050-S18	PRA-SP050-S19
Depth						
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	08/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%	< 0.001	< 0.001	< 0.001		< 0.001	< 0.001
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	59	78	23	18	48	28
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	3.2	3.3	2.5	2.8	2.5	5.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	0.4	0.2	0.2	0.4	0.3
Chromium	DETSC 2301#	0.15	mg/kg	35	42	25	20	150	27
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	49	36	21	22	54	30
Lead	DETSC 2301#	0.3	mg/kg	91	140	33	27	77	51
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	49	35	17	11	27	16
Vanadium	DETSC 2301#	0.8	mg/kg	110	140	80	51	350	82
Zinc	DETSC 2301#	1	mg/kg	380	300	130	100	270	200
<b>Inorganics</b>									
pH	DETSC 2008#		pH	8.5	7.9	10.0	9.8	10.8	9.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	1.3	4.4	3.6	34	11	9.5
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.6	0.2	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	4.4	3.0	0.7
Organic matter	DETSC 2002#	0.1	%	3.1	2.0	1.4	1.7	2.8	3.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1700	1700	1600	1700	1600	1700
Sulphur (free)	DETSC 3049#	0.75	mg/kg	5.4	3.0	1.1	2.4	1.4	< 0.75
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	6.9
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
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	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	< 0.03	0.05	0.07	0.04
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.04	0.04	0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.05	0.04	< 0.03



# Summary of Chemical Analysis Soil Samples

Our Ref 21-14599

Client Ref

Contract Title Redcar

Lab No	1874590	1874591	1874592	1874593	1874594	1874595
Sample ID	PRA-SP050-S14	PRA-SP050-S15	PRA-SP050-S16	PRA-SP050-S17	PRA-SP050-S18	PRA-SP050-S19
Depth						
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	08/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.05	< 0.03	0.03	0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.07	0.19	0.09	0.17	0.14	0.10
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.14	0.03	0.12	0.09	0.05
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.18	0.77	0.29	1.8	1.7	1.2
Pyrene	DETSC 3303#	0.03	mg/kg	0.15	0.59	0.22	1.6	1.4	0.97
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.03	0.12	0.04	0.36	0.24	0.13
Chrysene	DETSC 3303	0.03	mg/kg	0.09	0.28	0.11	0.71	0.64	0.39
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.05	0.18	0.06	0.52	0.45	0.21
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.10	0.04	0.40	0.28	0.17
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.04	0.18	0.05	0.66	0.51	0.21
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.04	0.13	0.04	0.35	0.28	0.17
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	< 0.03	0.09	0.07	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.04	0.15	0.04	0.43	0.33	0.20
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.65	3.0	1.0	7.4	6.3	3.9
<b>PCBs</b>									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg						
PCB 52	DETSC 3401#	0.01	mg/kg						
PCB 101	DETSC 3401#	0.01	mg/kg						
PCB 118	DETSC 3401#	0.01	mg/kg						
PCB 153	DETSC 3401#	0.01	mg/kg						
PCB 138	DETSC 3401#	0.01	mg/kg						
PCB 180	DETSC 3401#	0.01	mg/kg						
PCB 7 Total	DETSC 3401#	0.01	mg/kg						
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3



# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-14599

Client Ref

Contract Title Redcar

Lab No	1874596	1874597	1874598	1874599	1874600	1874601
Sample ID	PRA-SP050-S20	PRA-SP050-S21	PRA-SP050-S22	PRA-SP050-S23	PRA-SP050-S24	PRA-SP050-S25
Depth						
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	08/07/2021	08/07/2021	08/07/2021	09/07/2021	09/07/2021	09/07/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0.001	%	< 0.001		< 0.001	0.001	< 0.001	
<b>Metals</b>									
Arsenic	DETSC 2301#	0.2	mg/kg	120	75	43	38	24	15
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.8	2.6	2.2	1.8	2.5	2.5
Cadmium	DETSC 2301#	0.1	mg/kg	1.3	0.5	0.4	0.4	0.4	0.5
Chromium	DETSC 2301#	0.15	mg/kg	52	41	39	110	69	110
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	130	26	34	56	30	26
Lead	DETSC 2301#	0.3	mg/kg	250	140	110	74	60	61
Mercury	DETSC 2325#	0.05	mg/kg	0.09	< 0.05	< 0.05	< 0.05	0.11	0.22
Nickel	DETSC 2301#	1	mg/kg	59	19	23	26	27	19
Vanadium	DETSC 2301#	0.8	mg/kg	170	83	150	210	86	170
Zinc	DETSC 2301#	1	mg/kg	1600	300	200	250	340	230
<b>Inorganics</b>									
pH	DETSC 2008#		pH	8.8	8.7	8.7	11.1	10.1	10.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	66	14	2.5	6.9	8.9	22
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.2	0.8	< 0.1	< 0.1	0.6	1.4
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.7	1.5	< 0.6	< 0.6	1.1	3.0
Organic matter	DETSC 2002#	0.1	%	2.3	1.7	2.5	1.5	2.1	2.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1700	1600	1600	1400	1300	1000
Sulphur (free)	DETSC 3049#	0.75	mg/kg	0.98	2.4	1.4	2.6	0.97	< 0.75
<b>Petroleum Hydrocarbons</b>									
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	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	16	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	78	< 3.4	< 3.4	< 3.4	< 3.4	29
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	94	< 10	< 10	< 10	< 10	30
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	2.3	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	38	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	72	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	110	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	210	< 10	< 10	< 10	< 10	30
<b>PAHs</b>									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.10	0.04	0.03	0.05	< 0.03	0.05
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.05	0.04	< 0.03	< 0.03	0.03	0.05
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.04	0.05	< 0.03	< 0.03	< 0.03	0.07





# Summary of Chemical Analysis Soil Samples

Our Ref 21-14599

Client Ref

Contract Title Redcar

Lab No	1874596	1874597	1874598	1874599	1874600	1874601
Sample ID	PRA-SP050-S20	PRA-SP050-S21	PRA-SP050-S22	PRA-SP050-S23	PRA-SP050-S24	PRA-SP050-S25
Depth						
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	08/07/2021	08/07/2021	08/07/2021	09/07/2021	09/07/2021	09/07/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Fluorene	DETSC 3303	0.03	mg/kg	0.09	0.05	< 0.03	< 0.03	< 0.03	0.05
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.33	0.86	0.08	0.16	0.27	0.83
Anthracene	DETSC 3303	0.03	mg/kg	0.29	0.12	< 0.03	0.11	0.07	0.16
Fluoranthene	DETSC 3303#	0.03	mg/kg	4.8	2.6	0.33	1.6	1.2	2.8
Pyrene	DETSC 3303#	0.03	mg/kg	4.3	2.2	0.26	1.3	1.1	2.5
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.84	1.0	0.05	0.29	0.68	1.2
Chrysene	DETSC 3303	0.03	mg/kg	1.2	0.73	0.17	0.59	0.52	0.92
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.86	1.2	0.09	0.37	1.1	1.7
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.81	0.47	0.06	0.32	0.38	0.65
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	1.1	0.66	0.08	0.52	0.58	1.0
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.53	0.33	0.07	0.34	0.27	0.54
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.09	0.09	< 0.03	0.08	0.09	0.13
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.64	0.42	0.08	0.40	0.43	0.67
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	16	11	1.3	6.2	6.6	13
<b>PCBs</b>									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg						
PCB 52	DETSC 3401#	0.01	mg/kg						
PCB 101	DETSC 3401#	0.01	mg/kg						
PCB 118	DETSC 3401#	0.01	mg/kg						
PCB 153	DETSC 3401#	0.01	mg/kg						
PCB 138	DETSC 3401#	0.01	mg/kg						
PCB 180	DETSC 3401#	0.01	mg/kg						
PCB 7 Total	DETSC 3401#	0.01	mg/kg						
<b>Phenols</b>									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-14599

Client Ref

Contract Title Redcar

Lab No	1874602	1874603	1874604	1874605	1874606
Sample ID	PRA-SP050-S26	PRA-SP050-S27	PRA-SP050-S28	PRA-AS-19-S2	PRA-AS-19-S3
Depth				0.90	1.50
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	09/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Asbestos Quantification	DETSC 1102	0.001	%					
<b>Metals</b>								
Arsenic	DETSC 2301#	0.2	mg/kg	39	28	35	7.1	8.2
Boron, Water Soluble	DETSC 2311#	0.2	mg/kg	2.9	1.6	3.0	1.2	1.1
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	0.4	0.3	0.2	0.2
Chromium	DETSC 2301#	0.15	mg/kg	32	89	32	20	25
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	33	37	39	22	25
Lead	DETSC 2301#	0.3	mg/kg	69	51	77	22	23
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.10	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	29	22	19	33	36
Vanadium	DETSC 2301#	0.8	mg/kg	100	170	110	23	29
Zinc	DETSC 2301#	1	mg/kg	280	180	180	74	79
<b>Inorganics</b>								
pH	DETSC 2008#		pH	9.0	10.3	8.7	8.1	8.4
Cyanide, Total	DETSC 2130#	0.1	mg/kg	9.2	6.9	4.2	0.1	0.1
Cyanide, Free	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Thiocyanate	DETSC 2130#	0.6	mg/kg	0.8	1.5	< 0.6	< 0.6	< 0.6
Organic matter	DETSC 2002#	0.1	%	2.7	2.6	1.9	4.0	3.5
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1600	1400	1700	310	370
Sulphur (free)	DETSC 3049#	0.75	mg/kg	6.0	1.9	< 0.75	< 0.75	< 0.75
<b>Petroleum Hydrocarbons</b>								
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 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
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 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
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10
<b>PAHs</b>								
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.04	< 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

# Summary of Chemical Analysis

## Soil Samples

Our Ref 21-14599

Client Ref

Contract Title Redcar

Lab No	1874602	1874603	1874604	1874605	1874606
Sample ID	PRA-SP050-S26	PRA-SP050-S27	PRA-SP050-S28	PRA-AS-19-S2	PRA-AS-19-S3
Depth				0.90	1.50
Other ID					
Sample Type	ES	ES	ES	ES	ES
Sampling Date	09/07/2021	08/07/2021	08/07/2021	08/07/2021	08/07/2021
Sampling Time	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Fluorene	DETSC 3303	0.03	mg/kg	0.04	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.50	0.25	0.08	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	0.10	0.05	< 0.03	0.05	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.90	0.83	0.17	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.69	0.76	0.14	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.33	0.36	0.06	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.25	0.31	0.05	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.37	0.51	0.06	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.13	0.16	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.18	0.25	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.09	0.15	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.11	0.19	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	3.7	3.9	0.56	< 0.10	< 0.10
<b>PCBs</b>								
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	
<b>Phenols</b>								
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

# Summary of Chemical Analysis

## Soil VOC/SVOC Samples

Our Ref 21-14599

Client Ref

Contract Title Redcar

Lab No	1874605	1874606
Sample ID	PRA-AS-19-S2	PRA-AS-19-S3
Depth	0.90	1.50
Other ID		
Sample Type	ES	ES
Sampling Date	08/07/2021	08/07/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
<b>VOCs</b>					
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	
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	

## Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-14599

Client Ref

Contract Title Redcar

<b>Lab No</b>	1874605	1874606
<b>.Sample ID</b>	PRA-AS-19-S2	PRA-AS-19-S3
<b>Depth</b>	0.90	1.50
<b>Other ID</b>		
<b>Sample Type</b>	ES	ES
<b>Sampling Date</b>	08/07/2021	08/07/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
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	
<b>SVOCs</b>					
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
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



# Summary of Chemical Analysis Soil VOC/SVOC Samples

Our Ref 21-14599

Client Ref

Contract Title Redcar

Lab No	1874605	1874606
Sample ID	PRA-AS-19-S2	PRA-AS-19-S3
Depth	0.90	1.50
Other ID		
Sample Type	ES	ES
Sampling Date	08/07/2021	08/07/2021
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
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

## Summary of Asbestos Analysis Soil Samples

Our Ref 21-14599

Client Ref

Contract Title Redcar

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1874590	PRA-SP050-S14	SOIL	Chrysotile	Bundle of Chrysotile fibres	Rebecca Burgess
1874591	PRA-SP050-S15	SOIL	Chrysotile	Bundle of Chrysotile fibres	Rebecca Burgess
1874592	PRA-SP050-S16	SOIL	Chrysotile	Bundle of Chrysotile fibres	Rebecca Burgess
1874593	PRA-SP050-S17	SOIL	NAD	none	Rebecca Burgess
1874594	PRA-SP050-S18	SOIL	Chrysotile	Bundle of Chrysotile fibres	Rebecca Burgess
1874595	PRA-SP050-S19	SOIL	Chrysotile	Bundle of Chrysotile fibres	Rebecca Burgess
1874596	PRA-SP050-S20	SOIL	Amosite Chrysotile	Bundles of Chrysotile and Amosite fibres	Rebecca Burgess
1874597	PRA-SP050-S21	SOIL	NAD	none	Rebecca Burgess
1874598	PRA-SP050-S22	SOIL	Chrysotile	Bundle of Chrysotile fibres	Rebecca Burgess
1874599	PRA-SP050-S23	SOIL	Chrysotile	Bundle of Chrysotile fibres	Rebecca Burgess
1874600	PRA-SP050-S24	SOIL	Chrysotile	Bundle of Chrysotile fibres	Rebecca Burgess
1874601	PRA-SP050-S25	SOIL	NAD	none	Rebecca Burgess
1874602	PRA-SP050-S26	SOIL	NAD	none	Rebecca Burgess
1874603	PRA-SP050-S27	SOIL	NAD	none	Rebecca Burgess
1874604	PRA-SP050-S28	SOIL	NAD	none	Rebecca Burgess
1874605	PRA-AS-19-S2 0.90	SOIL	NAD	none	Rebecca Burgess
1874606	PRA-AS-19-S3 1.50	SOIL	NAD	none	Rebecca Burgess

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.



## Summary of Asbestos Quantification Analysis

### Soil Samples

Our Ref 21-14599

Client Ref

Contract Title Redcar

Lab No	1874590	1874591	1874592	1874594		
Sample ID	PRA-SP050-S14	PRA-SP050-S15	PRA-SP050-S16	PRA-SP050-S18		
Depth						
Other ID						
Sample Type	ES	ES	ES	ES		
Sampling Date	08/07/2021	08/07/2021	08/07/2021	08/07/2021		
Sampling Time						
Test	Method	Units				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	< 0.001	< 0.001	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	<0.001	<0.001	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
Breakdown of Gravimetric Analysis (a)						
Mass of Sample		g	480.93	387.73	312.50	405.27
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				
Breakdown of Detailed Gravimetric Analysis (b)						
% Amphibole bundles in sample		Mass %	na	na	na	na
% Chrysotile bundles in sample		Mass %	<0.001	<0.001	<0.001	<0.001
Breakdown of PCOM Analysis (c)						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
Breakdown of Potentially Respirable Fibre Analysis (d)						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

# Summary of Asbestos Quantification Analysis

## Soil Samples

Our Ref 21-14599

Client Ref

Contract Title Redcar

	Lab No	1874595	1874596	1874598	1874599	
<b>Sample ID</b>		PRA-SP050-S19	PRA-SP050-S20	PRA-SP050-S22	PRA-SP050-S23	
<b>Depth</b>						
<b>Other ID</b>						
<b>Sample Type</b>		ES	ES	ES	ES	
<b>Sampling Date</b>		08/07/2021	08/07/2021	08/07/2021	09/07/2021	
<b>Sampling Time</b>						
<b>Test</b>	<b>Method</b>	<b>Units</b>				
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001	< 0.001	< 0.001	0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na	na	na	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001	<0.001	<0.001	0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na	na	na	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na	na	na	na
<b>Breakdown of Gravimetric Analysis (a)</b>						
Mass of Sample		g	381.22	440.78	337.17	1132.50
ACMs present*		type				
Mass of ACM in sample		g				
% ACM by mass		%				
% asbestos in ACM		%				
% asbestos in sample		%				
<b>Breakdown of Detailed Gravimetric Analysis (b)</b>						
% Amphibole bundles in sample		Mass %	na	<0.001	na	na
% Chrysotile bundles in sample		Mass %	<0.001	<0.001	<0.001	0.001
<b>Breakdown of PCOM Analysis (c)</b>						
% Amphibole fibres in sample		Mass %	na	na	na	na
% Chrysotile fibres in sample		Mass %	na	na	na	na
<b>Breakdown of Potentially Respirable Fibre Analysis (d)</b>						
Amphibole fibres		Fibres/g	na	na	na	na
Chrysotile fibres		Fibres/g	na	na	na	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Summary of Asbestos Quantification Analysis Soil Samples

Our Ref 21-14599

Client Ref

Contract Title Redcar

Lab No	1874600
Sample ID	PRA-SP050-S24
Depth	
Other ID	
Sample Type	ES
Sampling Date	09/07/2021
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na

### Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	1293.30
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	

### Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na
% Chrysotile bundles in sample		Mass %	<0.001

### Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na
% Chrysotile fibres in sample		Mass %	na

### Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

\* Denotes test or material description outside of UKAS accreditation.  
 % asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264.  
 Recommended sample size for quantification is approximately 1kg  
 # denotes deviating sample

## Information in Support of the Analytical Results

Our Ref 21-14599  
 Client Ref  
 Contract Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
1874590	PRA-SP050-S14 SOIL	08/07/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1874591	PRA-SP050-S15 SOIL	08/07/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1874592	PRA-SP050-S16 SOIL	08/07/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1874593	PRA-SP050-S17 SOIL	08/07/21	GJ 250ml, GJ 60ml x2, PT 1L		
1874594	PRA-SP050-S18 SOIL	08/07/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1874595	PRA-SP050-S19 SOIL	08/07/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1874596	PRA-SP050-S20 SOIL	08/07/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1874597	PRA-SP050-S21 SOIL	08/07/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1874598	PRA-SP050-S22 SOIL	08/07/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1874599	PRA-SP050-S23 SOIL	09/07/21	GJ 250ml, GJ 60ml x2, PT 1L		
1874600	PRA-SP050-S24 SOIL	09/07/21	GJ 250ml, GJ 60ml x2, PT 1L		
1874601	PRA-SP050-S25 SOIL	09/07/21	GJ 250ml, GJ 60ml x2, PT 1L		
1874602	PRA-SP050-S26 SOIL	09/07/21	GJ 250ml, GJ 60ml x2, PT 500ml		
1874603	PRA-SP050-S27 SOIL	08/07/21	GJ 250ml, GJ 60ml x2, PT 1L		
1874604	PRA-SP050-S28 SOIL	08/07/21	GJ 250ml, GJ 60ml x2, PT 1L		
1874605	PRA-AS-19-S2 0.90 SOIL	08/07/21	GJ 250ml, GJ 60ml x2, PT 1L		
1874606	PRA-AS-19-S3 1.50 SOIL	08/07/21	GJ 250ml, GJ 60ml x2, PT 1L		

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

End of Report

## **APPENDIX F**

### **Laboratory Certificates – Geotechnical Testing**

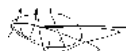
<b>Test Report:</b>	<b>Determination of water content of soil</b> BS EN 17892:2014 Water Content	<b>Report Date:</b> 02.07.2021
<b>Client:</b>	Seymour CE	<b>Lab Ref:</b> MT0318 - 19197-19202
<b>Site:</b>	British Steel, Redcar	<b>Client Ref:</b>
<b>Sample Location:</b>	See Below	<b>Date Sampled:</b> 01.07.21
<b>Material Description:</b>	See Below	<b>Date Received:</b> 01.07.21
<b>Test Method:</b>	Oven Dried Method	<b>Test conducted by:</b> WB
		<b>Sampled By:</b> WB
		<b>Variation from Standard Method:</b> None

**Test Results**

Sample No/Ref Ref	Material	Water Content (%)
PRA-AS-27-S1	19197 Firm Brown S/G, S/Sa Clay	27
PRA-AR-27-S2	19198 Firm Brown Silty Clay	22
PRA-SP043-S4	19199 Spoil	15
PRA-SP043-S5	19200 Spoil	14
PRA-SP043-S6	19201 Spoil	20
PRA-SP043-S7	19202 Spoil	15

**Comments**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

- M. Aiston (Director)
- G. Dresser (Director)
- C. Spencer (Site Works Supervisor)
- M. Caulfield (Laboratory Supervisor)

**Test Report:** **Determination of water content of soil** **Report Date:** 03.07.2021  
BS EN 17892:2014 Water Content

**Client:** Seymour CE Ltd **Lab Ref:** MT0318 - 19216-19228

**Site:** British Steel, Redcar **Client Ref:**  
**Date Sampled:** 02.07.21  
**Date Received:** 02.07.21

**Sample Location:** As Below **Test conducted by:** WB  
**Material Description:** Various **Sampled By:** WB  
**Test Method:** Oven Dried Method **Variation from Standard Method:** None

**Test Results**

Sample No/Ref Ref	Material	Water Content (%)
PRA-BM23-S14	Spoil	16
PRA-BM25-S15	Spoil	15
PRA-ST050-S1	Spoil	8.1
PRA-ST050-S2	Spoil	7.6
PRA-SP034-S24	Spoil	9
PRA-SP034-S25	Spoil	8.5
PRA-ST050-S1	Spoil	8.4
PRA-ST050-S2	Spoil	8.7
PRA-ST050-S3	Spoil	10
PRA-AU19-S8	Spoil	12
PRA-SP34-S24	Spoil	9.2
PRA-SP34-S25	Spoil	9.4
PRA-SP34-S26	Spoil	7

**Comments****Signed:**For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

 M. Aiston (Director) G. Dresser (Director) C. Spencer (Site Works Supervisor) M. Caulfield (Laboratory Supervisor)



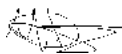
<b>Test Report:</b>	<b>Determination of Liquid Limit, Plastic Limit &amp; Plasticity Index</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	05/05/2021
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318 / 17370-17379
		<b>Client ref:</b>	PRA – See Below
		<b>Date sampled:</b>	Not Given
<b>Site:</b>	British Steel, Redcar	<b>Sampled by:</b>	Client
		<b>Date received:</b>	20/04/21
<b>Sample location:</b>	As per below		
	17370 & 17379 Dark Brown Firm CLAY,		
<b>Material:</b>	17371 Reddish Brown CLAY, 17374 Brown grey silty SAND,	<b>Date test completed:</b>	28/04/21
<b>Source of material:</b>	As Location (See Below)	<b>Test conducted by:</b>	AG
<b>Test Method:</b>	Clause 4.4		
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		
	Tested after Material >425µm washed		

**Test Results**

Test Ref/ Location	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Plasticity Class	Material Passing 425µm (%)
MT0318-17370 PRA-BC-23-S1	55	21	34	CH	100
MT0318-17374 PRA-BA-23-S1	38	16	23	CI	98
MT0318-17376 PRA-SPO12-S18	n/a	n/a	n/a	N/P	58
MT0318-17379 PRA-BA-21-S2	62	22	40	CH	100

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
[ ] M. Aiston (Director)  
[ ] Dresser (Director)

**Page:** 1 of 1

**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 26/04/21

**Client:** Seymour Civil Engineering Ltd **Lab ref:** MT0318/17380-17389

**Site:** British Steel, Redcar **Client Ref:** See Below

**Sample location:** See Below **Date Sampled:** 14/04/2021

**Material description:** Various See Logs **Date Received:** 20/04/21

**Test Method:** Oven Dried Method **Test conducted by:** AG

**Sampled By:** Client

**Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
MT0318-17380 PRA-BC-21-S1	28
MT0318-17381 PRA-AY-19-S1	28
MT0318-17382 PRA-AZ-20-S1	24
MT0318-17383 PRA-BC-25-S3	33
MT0318-17384 PRA-SP011-32	18
MT0318-17385 PRA-SP011-33	19
MT0318-17386 PRA-SP011-34	15
MT0318-17387 PRA-SP023-S7	6.9
MT0318-17388 PRA-SP023-S8	7.1
MT0318-17389 PRA-SP023-S9	7.6

Comments:

**Signed:**For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Liquid Limit, Plastic Limit &amp; Plasticity Index</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	13.05.2021
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318 / 17598-17619
		<b>Client ref:</b>	PRA – See Below
		<b>Date sampled:</b>	21/04/2021
<b>Site:</b>	British Steel, Redcar	<b>Sampled by:</b>	Client
		<b>Date received:</b>	22/04/2021
<b>Sample location:</b>	As per below		
<b>Material:</b>	Dark Brown slightly sandy CLAY, (17606 -sandy silt)	<b>Date test completed:</b>	13/05/2021
<b>Source of material:</b>	As Location (See Below)	<b>Test conducted by:</b>	AG
<b>Test Method:</b>	Clause 4.4		
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		
Tested after Material >425µm grated			

### Test Results

Test Ref/ Location	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Plasticity Class	Material Passing 425µm (%)
17598-PRA-AY-23-S2	41	22	19	CI	100
17599-PRA-AZ-19-S1	47	17	30	CI	100
17600-PRA-AZ-21-S2	30	18	12	CL	54
17601PRA-AY-19-S2	35	22	13	CL/CI	100
17606-PRA-SP029-S6	-	Non-Plastic	-	-	86
17609-PRA-SP029-S9	58	21	37	CH	67
17611-PRA-SP029-S11	53	20	33	CH	57
17612-PRA-SP029-S12	47	22	25	CI	55
17619-PRA-SP022-S5	40	24	16	CI	67

### Comments:

Signed:



For & on behalf of  
Dunelm Testing Ltd

Authorised Signatories:  
[ ] M. Aiston (Director)  
[ ] Dresser Director

Page: 1 of 1



<b>Test Report:</b>	<b>Determination of Liquid Limit, Plastic Limit &amp; Plasticity Index</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	11/05/2021
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318 / See Below
		<b>Client ref:</b>	PRA – See Below
		<b>Date sampled:</b>	20/05/21
<b>Site:</b>	British Steel, Redcar	<b>Sampled by:</b>	Client
		<b>Date received:</b>	25/05/21
<b>Sample location:</b>	As per below		
<b>Material:</b>	Dark Brown slightly sandy slightly gravelly CLAY	<b>Date test completed:</b>	27/05/04/21
<b>Source of material:</b>	As Location (See Below)	<b>Test conducted by:</b>	AB
<b>Test Method:</b>	Clause 4.4		
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		
	Tested after Material >425µm washed		

**Test Results**

Test Ref/ Location	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Plasticity Class	Material Passing 425µm (%)
MT0318-18166 PRA-AW-22-S1	36	16	20	CI	99
MT0318-18167 PRA-AW-18-S1	35	17	19	CI	99
MT0318-18169 PRA-AX-16-S1	43	22	22	CI	99
MT0318-18179 PRA-AY-15-S1	43	20	23	CI	100
MT0318-18180 PRA-AW-16-S1	36	21	15	CI	100
MT0318-18184 PRA-SPO25-S8	46	23	24	CI	100
MT0318-18185 PRA-SPO25-S9	46	26	20	CI	99
MT0318-18186 PRA-SPO25-S10	41	23	18	CI	100

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
[ ] M. Aiston (Director)  
[ ] Dresser Director

**Page:** 1 of 1

# Laboratory Report Front Sheet

Solmek  
12-16 Yarm Road,  
Stockton on Tees,  
TS18 3NA  
01642 607083  
lab@solmek.com



Site name	Job number
British Steel, Redcar	MT0318

## Client details:

Reference: MT0318  
Name: Dunelm Testing  
Address: Unit 5E Edwardson Road,  
Meadowfield,  
County Durham,  
DH7 8RL  
  
Telephone: 0191 349 9210  
Email: maiston@dunelmtesting.co.uk  
  
FAO: M Aiston

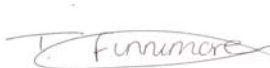
**Date commenced:** 27/04/2021

**Date reported:** 04/06/2021

## Observations and interpretations are outside of the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. 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 in full, without the prior written approval of the laboratory.

Samples will be held at the laboratory for a period of 4 weeks after the report date. After the all samples will be disposed of. Should further testing be required then the office should be informed before the above date.

<b>Signature:</b> 	<b>Approved Signatories:</b> <input type="checkbox"/> K Watkin (Lab Manager) <input checked="" type="checkbox"/> T Finnimore (Senior Technician) <input type="checkbox"/> J Brischuk (Senior Technician)
----------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

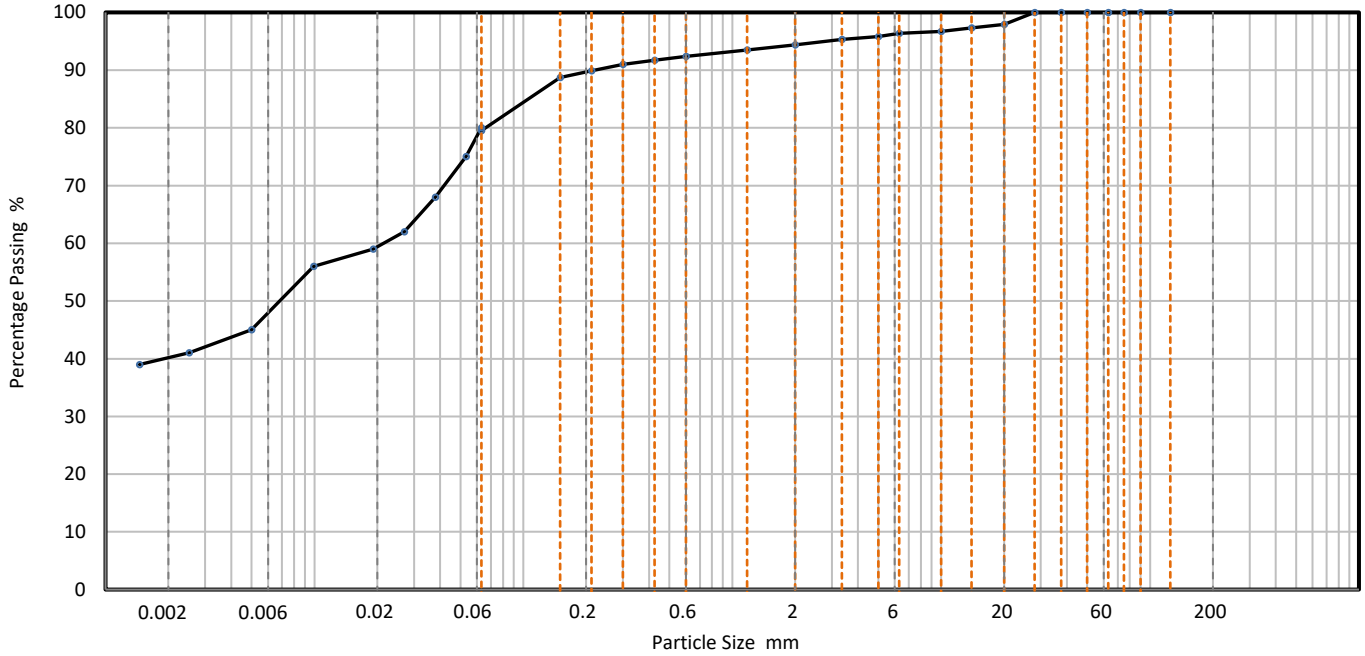
# PARTICLE SIZE DISTRIBUTION

Solmek  
12-16 Yarm Road,  
Stockton on Tees,  
TS18 3NA  
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lab@solmek.com



Site name	Job number
Redcar	MT0318

Hole	PRA-SP025-S10	Sampled 20/05/2021 (18186)	Lab sample ID	SLMK202105282
Depth (Top)	m	0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m		Soil Description	Brown, Slightly Gravelly, Slightly Sandy, Very Silty, CLAY.
Sample type	B			



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	80
90	100	0.0532	75
75	100	0.0379	68
63	100	0.0269	62
50	100	0.0191	59
37.5	100	0.0099	56
28	100	0.0050	45
20	98	0.0025	41
14	97	0.0015	39
10	97		
6.3	96		
5	96		
3.35	95		
2	94		
1.18	94		
0.6	92	Particle density (assumed)	
0.425	92	2.65 Mg/m <sup>3</sup>	
0.3	91		
0.212	90		
0.15	89		
0.063	80		

Dry Mass of sample, g

519

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	5.6
Sand	14.9
Silt	39.6
Clay	39.9

Grading Analysis		
D100	mm	
D60	mm	0.021
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

Hydrometer is the usual Sedimentation method carried out by Solmek and is part of the Solmek UKAS accreditation schedule.

Approved by	T. Finnimore
Approval date	04/06/2021 14:18



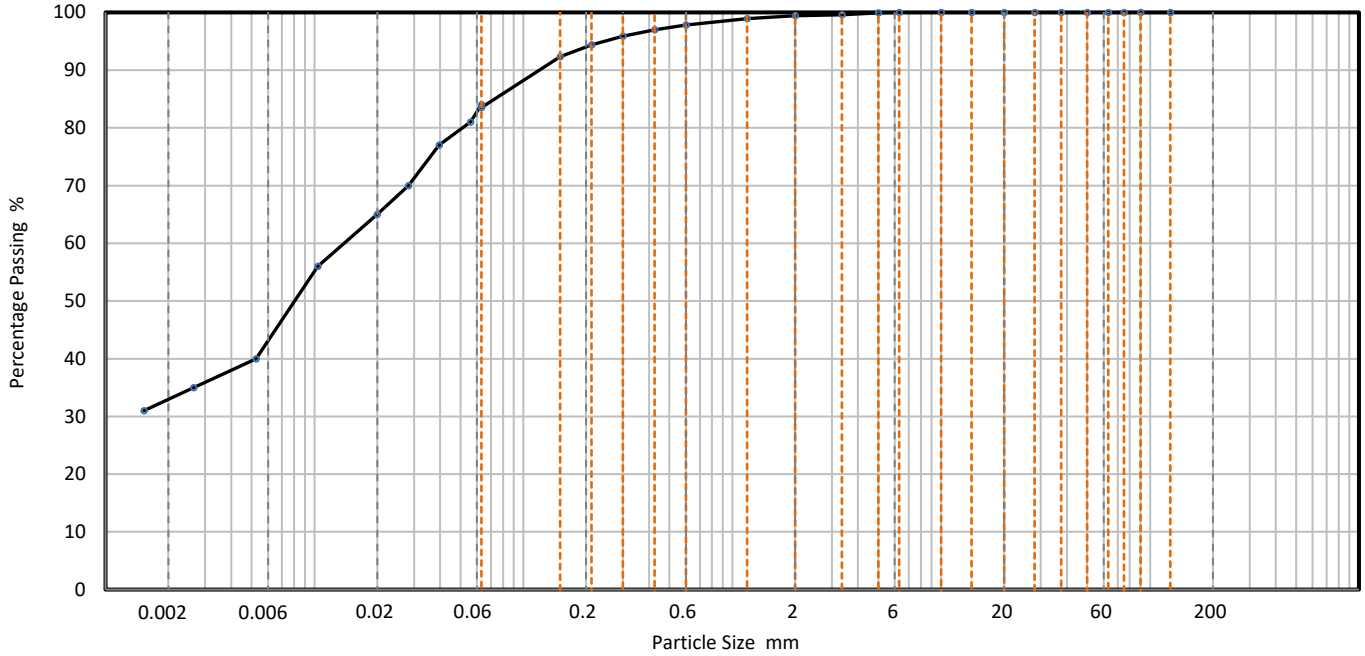
# PARTICLE SIZE DISTRIBUTION

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Stockton on Tees,  
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lab@solmek.com



Site name	Job number
Redcar	MT0318

Hole	PRA-SP025-S8	Sampled 20/05/21 (18184)	Lab sample ID	SLMK202105280
Depth (Top)	m	0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m		Soil Description	Brown, Slightly Sandy, Clayey, SILT.
Sample type	B			



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	84
90	100	0.0558	81
75	100	0.0396	77
63	100	0.0281	70
50	100	0.0200	65
37.5	100	0.0104	56
28	100	0.0053	40
20	100	0.0026	35
14	100	0.0015	31
10	100		
6.3	100		
5	100		
3.35	100		
2	99		
1.18	99		
0.6	98	Particle density (assumed)	
0.425	97	2.65	Mg/m <sup>3</sup>
0.3	96		
0.212	94		
0.15	92		
0.063	84		

Dry Mass of sample, g

402

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	0.6
Sand	15.9
Silt	50.8
Clay	32.7

Grading Analysis		
D100	mm	
D60	mm	0.0139
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

Hydrometer is the usual Sedimentation method carried out by Solmek and is part of the Solmek UKAS accreditation schedule.

Approved by	T. Finnimore
Approval date	04/06/2021 14:21

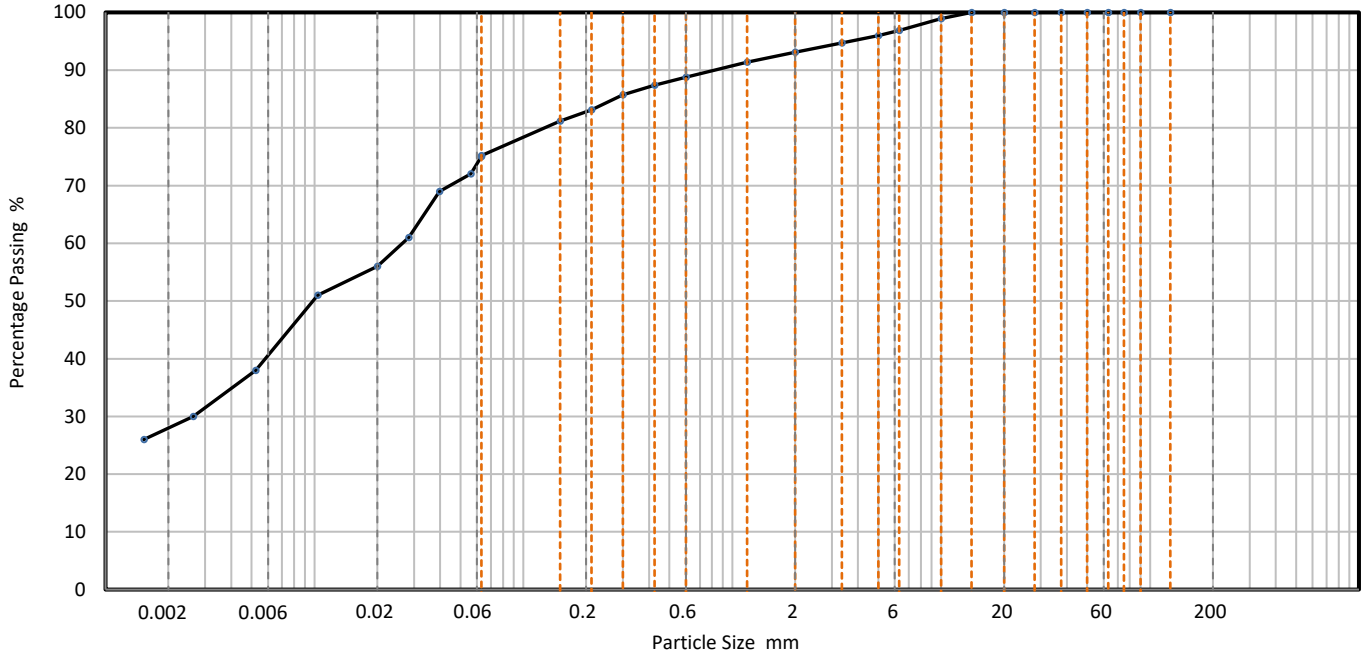
# PARTICLE SIZE DISTRIBUTION

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12-16 Yarm Road,  
Stockton on Tees,  
TS18 3NA  
01642 607083  
lab@solmek.com



Site name	Job number
Redcar	MT0318

Hole	PRA-SP025-S9	Sampled 20/05/2021 (18185)	Lab sample ID	SLMK202105281
Depth (Top)	m	0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m		Soil Description	Brown, Slightly Gravelly, Slightly Sandy, Clayey, SILT.
Sample type	B			



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	75
90	100	0.0560	72
75	100	0.0397	69
63	100	0.0282	61
50	100	0.0200	56
37.5	100	0.0104	51
28	100	0.0052	38
20	100	0.0026	30
14	100	0.0015	26
10	99		
6.3	97		
5	96		
3.35	95		
2	93		
1.18	91		
0.6	89	Particle density (assumed) 2.65 Mg/m <sup>3</sup>	
0.425	87		
0.3	86		
0.212	83		
0.15	81		
0.063	75		

Dry Mass of sample, g

493

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	6.9
Sand	17.9
Silt	47.0
Clay	28.2

Grading Analysis		
D100	mm	
D60	mm	0.0266
D30	mm	0.00251
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

Hydrometer is the usual Sedimentation method carried out by Solmek and is part of the Solmek UKAS accreditation schedule.

Approved by	T. Finnimore
Approval date	04/06/2021 14:23



<b>Test Report:</b>	<b>Determination of water content of soil</b> BS EN 17892:2014 Water Content	<b>Report Date:</b> 30.06.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab Ref:</b> MT0318-19009-19029
<b>Site:</b>	British Steel, Redcar	<b>Client Ref:</b> As below
<b>Sample Location:</b>	See Below	<b>Date Sampled:</b> 28.06.21
<b>Material Description:</b>	See Below	<b>Date Received:</b> 28.06.21
<b>Test Method:</b>	Oven Dried Method	<b>Test conducted by:</b> WB
		<b>Sampled By:</b> Client
		<b>Variation from Standard Method:</b> None

**Test Results**

Sample No/Ref Ref	Material	Water Content (%)	
PRA-SP515-S7	19909	Mudstone	8.2
PRA-SP515-S8	19010	Mudstone	9.1
PRA-SP515-S9	19011	Mudstone	6.7
PRA-SP047-S1	19012	Mudstone	6.5
PRA-SP047-S2	19013	Mudstone	4.7
PRA-SP047-S3	19014	Mudstone	9
PRA-AU-17-S7	19015	Spoil	13
PRA-AU-17-S8	19016	Spoil	16
PRA-AU-17-S9	19017	Spoil	13
PRA-SP515-S11	19018	Mudstone	4.2
PRA-SP515-S12	19019	Mudstone	4.3
PRA-SP515-S13	19020	Mudstone	4.3
PRA-SP012-43	19021	Spoil	15
PRA-SP012-44	19022	Spoil	15
PRA-SP012-45	19023	Spoil	14
PRA-SP034-S12	19024	Spoil	9.5
PRA-SP034-S13	19025	Spoil	7.8
PRA-SP034-S14	19026	Spoil	8.3
PRA-SP047-S4	19027	Mudstone	3.4
PRA-SP047-S5	19028	Spoil	9.7
PRA-AU19-S7	19029	Spoil	11

**Comments**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

- M. Aiston (Director)
- G. Dresser (Director)
- C. Spencer (Site Works Supervisor)
- M. Caulfield (Laboratory Supervisor)

# Laboratory Report Front Sheet

Solmek  
12-16 Yarm Road,  
Stockton on Tees,  
TS18 3NA  
01642 607083  
lab@solmek.com



Site name	Job number
British Steel, Redcar	MT0318

## Client details:

Reference: MT0318  
Name: Dunelm Testing  
Address: Unit 5E Edwardson Road,  
Meadowfield,  
County Durham,  
DH7 8RL  
  
Telephone: 0191 349 9210  
Email: maiston@dunelmtesting.co.uk  
  
FAO: M Aiston


**Date commenced:** 27/04/2021

**Date reported:** 11/05/2021

## Observations and interpretations are outside of the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. 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 in full, without the prior written approval of the laboratory.

Samples will be held at the laboratory for a period of 4 weeks after the report date. After the all samples will be disposed of. Should further testing be required then the office should be informed before the above date.

<b>Signature:</b>  	<b>Approved Signatories:</b> <input checked="" type="checkbox"/> K Watkin (Lab Manager) <input type="checkbox"/> T Finnimore (Senior Technician) <input type="checkbox"/> J Brischuk (Senior Technician)
--------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

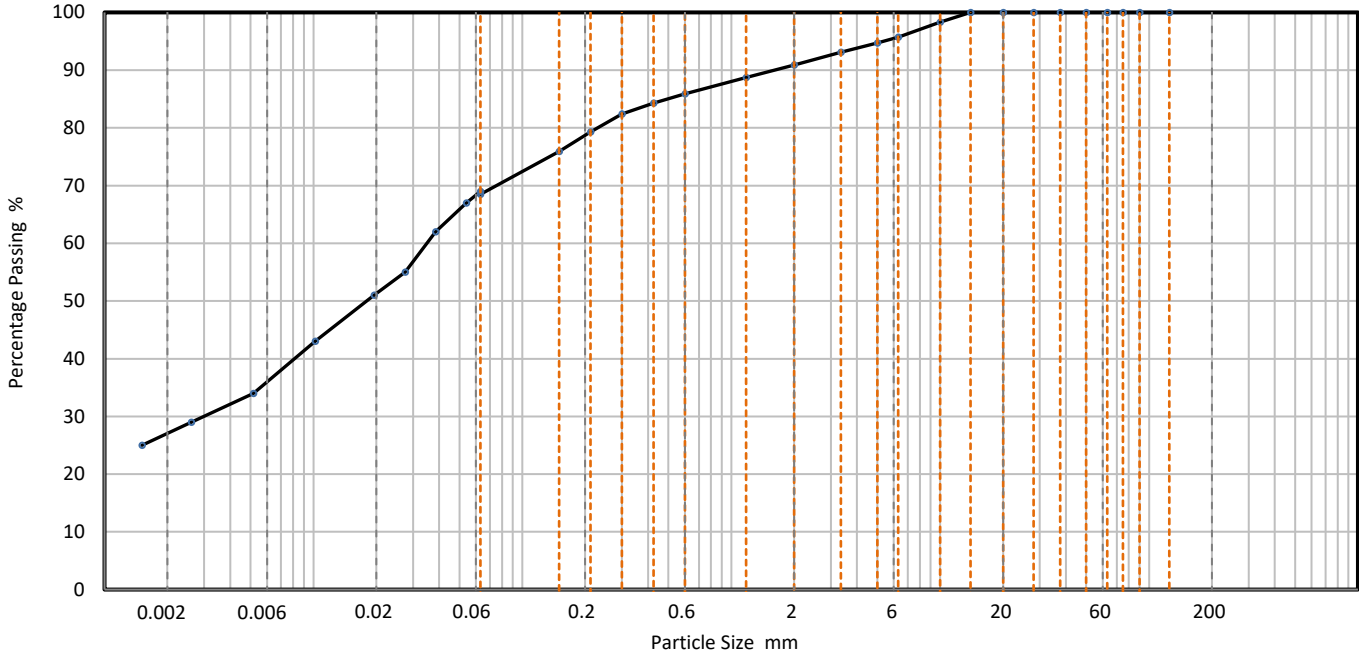
# PARTICLE SIZE DISTRIBUTION

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12-16 Yarm Road,  
Stockton on Tees,  
TS18 3NA  
01642 607083  
lab@solmek.com



Site name	Job number
Prairie Phase 1, Redcar	MT0318

Hole	PRA-SP022-54 (17618)	Lab sample ID	SLMK2021042926
Depth (Top)	m 0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m	Soil Description	Brown, slightly gravelly, slightly sandy, slightly clayey SILT
Sample type	B		



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	69
90	100	0.0540	67
75	100	0.0385	62
63	100	0.0274	55
50	100	0.0195	51
37.5	100	0.0102	43
28	100	0.0052	34
20	100	0.0026	29
14	100	0.0015	25
10	98		
6.3	96		
5	95		
3.35	93		
2	91		
1.18	89		
0.6	86	Particle density (assumed)	
0.425	84	2.65	Mg/m <sup>3</sup>
0.3	82		
0.212	79		
0.15	76		
0.063	69		

Dry Mass of sample, g

611

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	9.1
Sand	22.4
Silt	41.5
Clay	27.0

Grading Analysis		
D100	mm	
D60	mm	0.0353
D30	mm	0.00291
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

Hydrometer is the usual Sedimentation method carried out by Solmek and is part of the Solmek UKAS accreditation schedule.

Approved by	KW
Approval date	11/05/2021 14:17

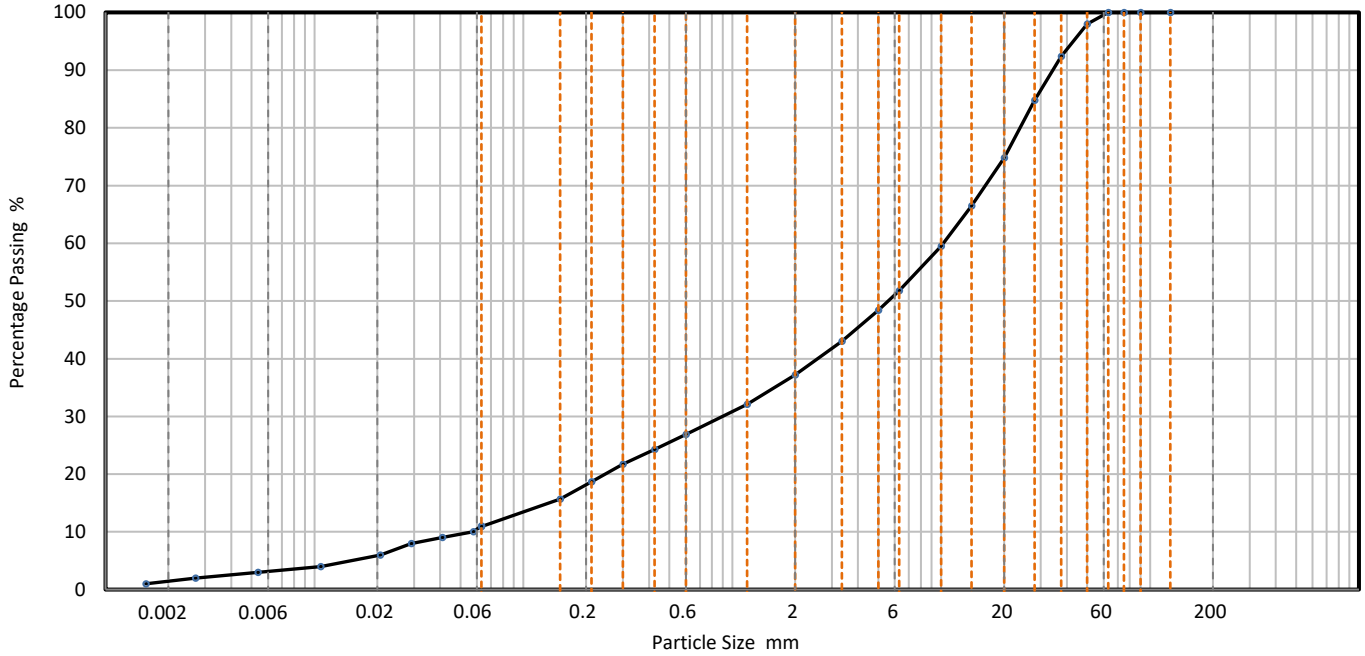
# PARTICLE SIZE DISTRIBUTION

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12-16 Yarm Road,  
Stockton on Tees,  
TS18 3NA  
01642 607083  
lab@solmek.com



Site name	Job number
Prairie Phase 1, Redcar	MT0318

Hole	PRA-SP027-S14 (17602)	Lab sample ID	SLMK2021042918
Depth (Top)	m 0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m	Soil Description	Brown, slightly clayey, slightly silty, slightly sandy GRAVEL
Sample type	B		



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	11
90	100	0.0577	10
75	100	0.0409	9
63	100	0.0290	8
50	98	0.0206	6
37.5	92	0.0107	4
28	85	0.0054	3
20	75	0.0027	2
14	67	0.0016	1
10	60		
6.3	52		
5	48		
3.35	43		
2	37		
1.18	32		
0.6	27	Particle density (assumed)	
0.425	24	2.65	Mg/m <sup>3</sup>
0.3	22		
0.212	19		
0.15	16		
0.063	11		

Dry Mass of sample, g

11882

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	62.8
Sand	26.2
Silt	9.9
Clay	1.1

Grading Analysis		
D100	mm	
D60	mm	10.2
D30	mm	0.903
D10	mm	0.0547
Uniformity Coefficient		190
Curvature Coefficient		1.5

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

Hydrometer is the usual Sedimentation method carried out by Solmek and is part of the Solmek UKAS accreditation schedule.

Approved by	KW
Approval date	11/05/2021 14:07



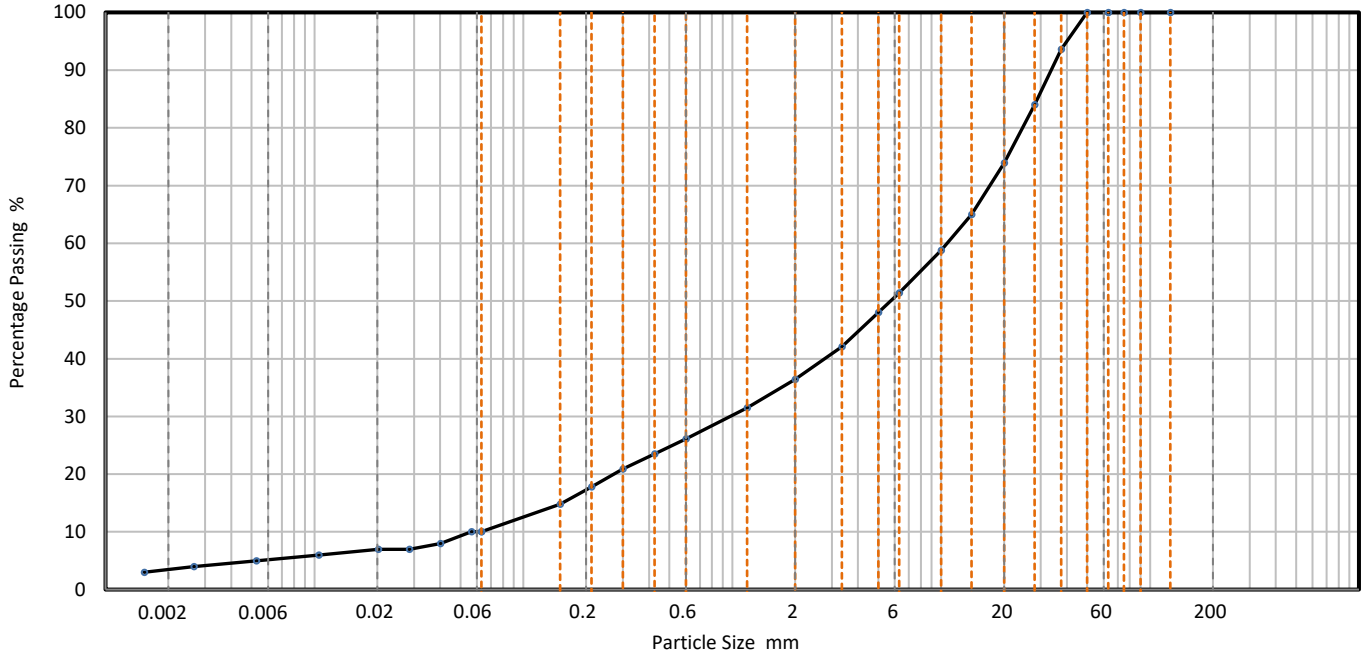
# PARTICLE SIZE DISTRIBUTION

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TS18 3NA  
01642 607083  
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Site name	Job number
Prairie Phase 1, Redcar	MT0318

Hole	PRA-SP027-S15 (17603)	Lab sample ID	SLMK2021042919
Depth (Top)	m 0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m	Soil Description	Brown, slightly clayey, slightly silty, slightly sandy GRAVEL
Sample type	B		



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	10
90	100	0.0564	10
75	100	0.0401	8
63	100	0.0285	7
50	100	0.0202	7
37.5	94	0.0105	6
28	84	0.0053	5
20	74	0.0026	4
14	65	0.0015	3
10	59		
6.3	51		
5	48		
3.35	42		
2	36		
1.18	32		
0.6	26	Particle density (assumed)	
0.425	24	2.65 Mg/m <sup>3</sup>	
0.3	21		
0.212	18		
0.15	15		
0.063	10		

Dry Mass of sample, g 12408

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	63.6
Sand	26.3
Silt	6.4
Clay	3.7

Grading Analysis		
D100	mm	
D60	mm	10.7
D30	mm	0.981
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

**Remarks**  
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

Hydrometer is the usual Sedimentation method carried out by Solmek and is part of the Solmek UKAS accreditation schedule.

Approved by	KW
Approval date	11/05/2021 14:06

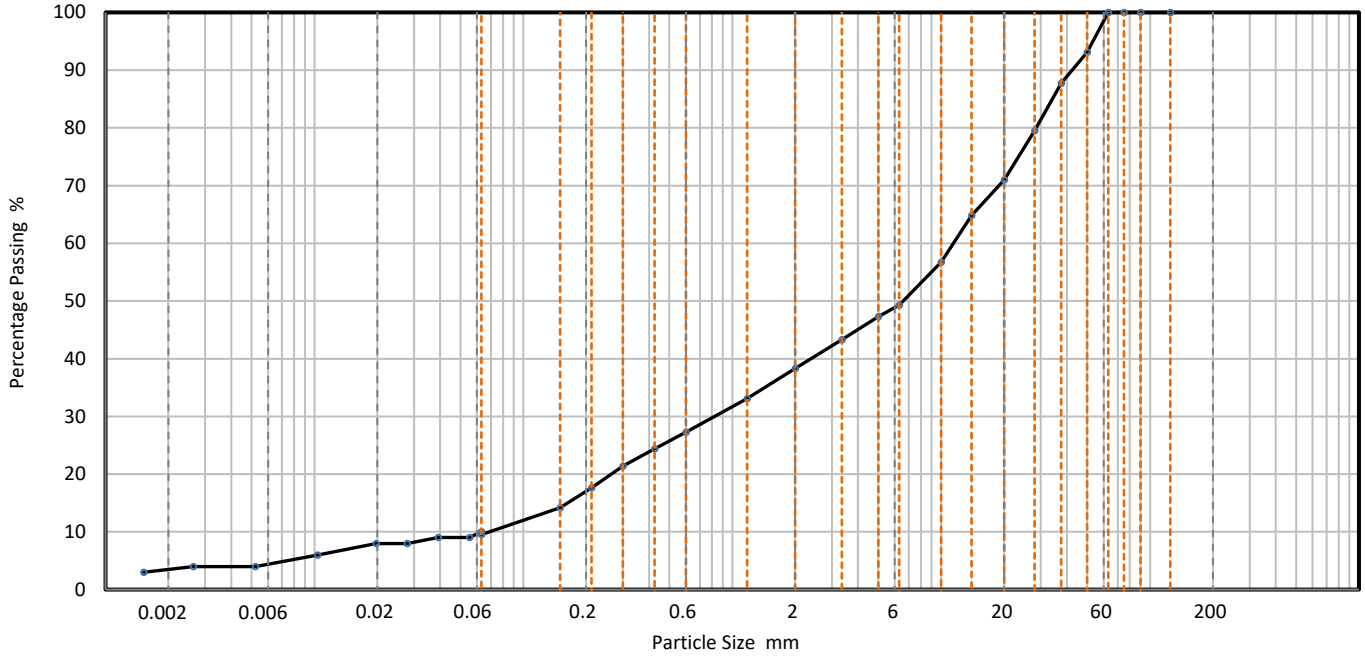
# PARTICLE SIZE DISTRIBUTION

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01642 607083  
lab@solmek.com



Site name	Job number
Prairie Phase 1, Redcar	MT0318

Hole	PRA-SP027-S16 (17604)	Lab sample ID	SLMK2021042920
Depth (Top)	m 0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m	Soil Description	Brown, slightly clayey, slightly silty, slightly sandy GRAVEL
Sample type	B		



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	10
90	100	0.0552	9
75	100	0.0391	9
63	100	0.0278	8
50	93	0.0197	8
37.5	88	0.0103	6
28	80	0.0052	4
20	71	0.0026	4
14	65	0.0015	3
10	57		
6.3	49		
5	47		
3.35	43		
2	38		
1.18	33		
0.6	27		
0.425	24	Particle density (assumed) 2.65 Mg/m <sup>3</sup>	
0.3	21		
0.212	18		
0.15	14		
0.063	10		

Dry Mass of sample, g

11871

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	61.7
Sand	28.7
Silt	6.3
Clay	3.3

Grading Analysis		
D100	mm	
D60	mm	11.5
D30	mm	0.823
D10	mm	0.0687
Uniformity Coefficient		170
Curvature Coefficient		0.86

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

Hydrometer is the usual Sedimentation method carried out by Solmek and is part of the Solmek UKAS accreditation schedule.

Approved by	KW
Approval date	11/05/2021 14:03

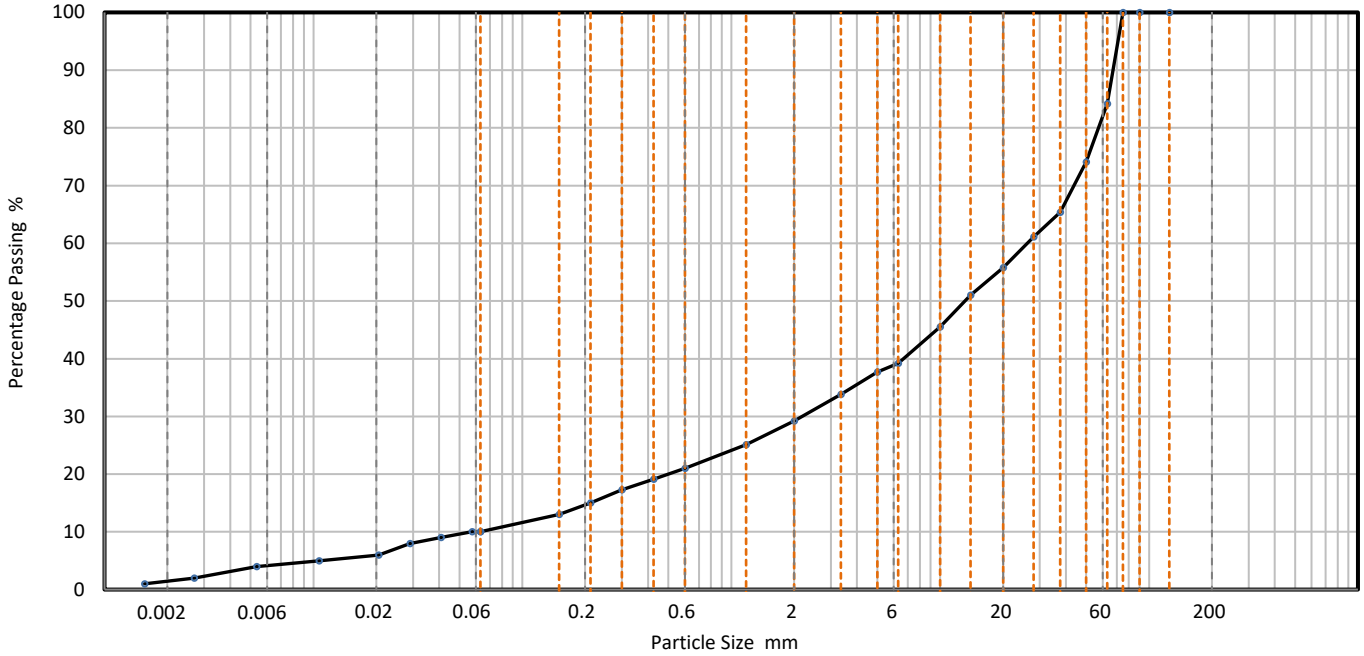
# PARTICLE SIZE DISTRIBUTION

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Stockton on Tees,  
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01642 607083  
lab@solmek.com



Site name	Job number
Prairie Phase 1, Redcar	MT0318

Hole	PRA-SP027-S17 (17605)	Lab sample ID	SLMK2021042921
Depth (Top)	m 0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m	Soil Description	Brown, slightly clayey, slightly silty, slightly sandy GRAVEL with cobbles
Sample type	B		



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	10
90	100	0.0575	10
75	100	0.0407	9
63	84	0.0289	8
50	74	0.0205	6
37.5	65	0.0106	5
28	61	0.0053	4
20	56	0.0027	2
14	51	0.0016	1
10	46		
6.3	39		
5	38		
3.35	34		
2	29		
1.18	25		
0.6	21		
0.425	19	Particle density (assumed)	
0.3	17	2.65 Mg/m <sup>3</sup>	
0.212	15		
0.15	13		
0.063	10		

Dry Mass of sample, g 14927

Sample Proportions	% dry mass
Very coarse	15.8
Gravel	55.0
Sand	19.2
Silt	8.3
Clay	1.7

Grading Analysis		
D100	mm	
D60	mm	26.2
D30	mm	2.19
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

**Remarks**  
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

Hydrometer is the usual Sedimentation method carried out by Solmek and is part of the Solmek UKAS accreditation schedule.

Approved by	KW
Approval date	11/05/2021 14:01

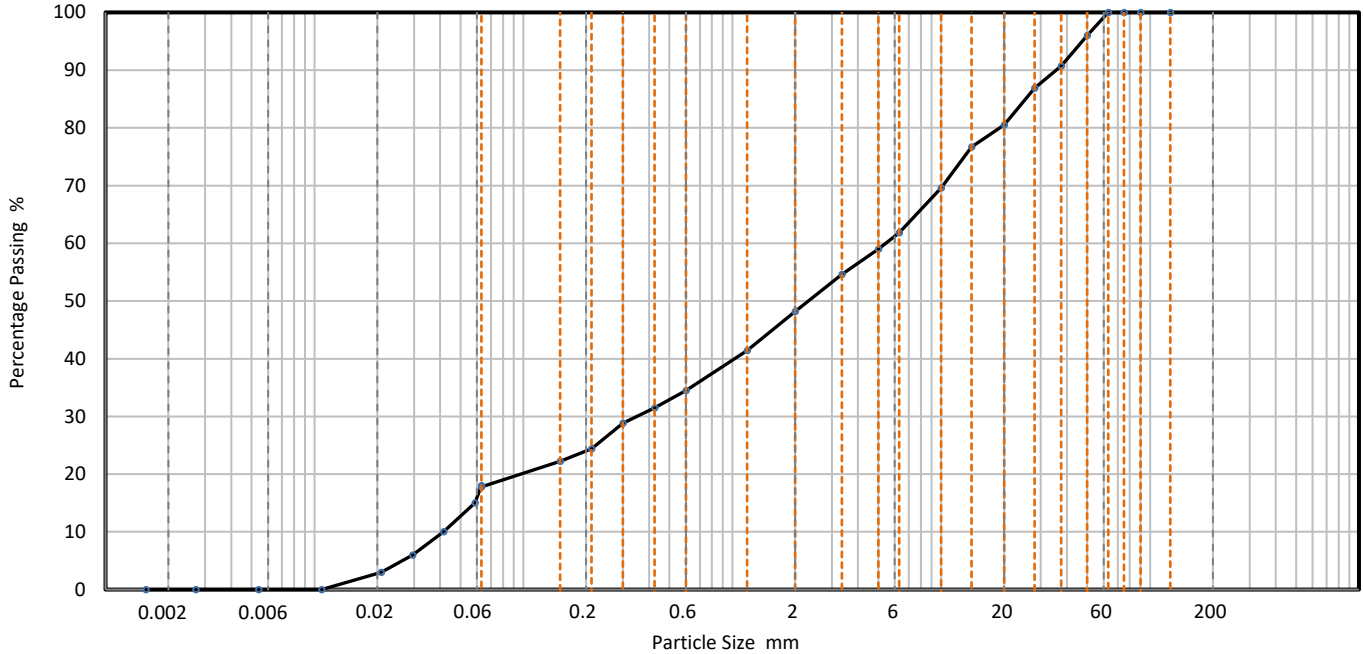
# PARTICLE SIZE DISTRIBUTION

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Stockton on Tees,  
TS18 3NA  
01642 607083  
lab@solmek.com



Site name	Job number
Prairie Phase 1, Redcar	MT0318

Hole	PRA-SP029-S11 (17611)	Lab sample ID	SLMK2021042924
Depth (Top)	m 0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m	Soil Description	Brown, slightly silty, Sandy GRAVEL
Sample type	B		



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	18
90	100	0.0586	15
75	100	0.0416	10
63	100	0.0295	6
50	96	0.0209	3
37.5	91	0.0108	0
28	87	0.0054	0
20	81	0.0027	0
14	77	0.0016	0
10	70		
6.3	62		
5	59		
3.35	55		
2	48		
1.18	41		
0.6	35	Particle density (assumed)	
0.425	32	2.65	Mg/m <sup>3</sup>
0.3	29		
0.212	24		
0.15	22		
0.063	18		

Dry Mass of sample, g

9855

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	51.8
Sand	30.4
Silt	17.8
Clay	0.0

Grading Analysis		
D100	mm	
D60	mm	5.41
D30	mm	0.349
D10	mm	0.0404
Uniformity Coefficient		130
Curvature Coefficient		0.56

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

Hydrometer is the usual Sedimentation method carried out by Solmek and is part of the Solmek UKAS accreditation schedule.

Approved by	KW
Approval date	11/05/2021 14:15

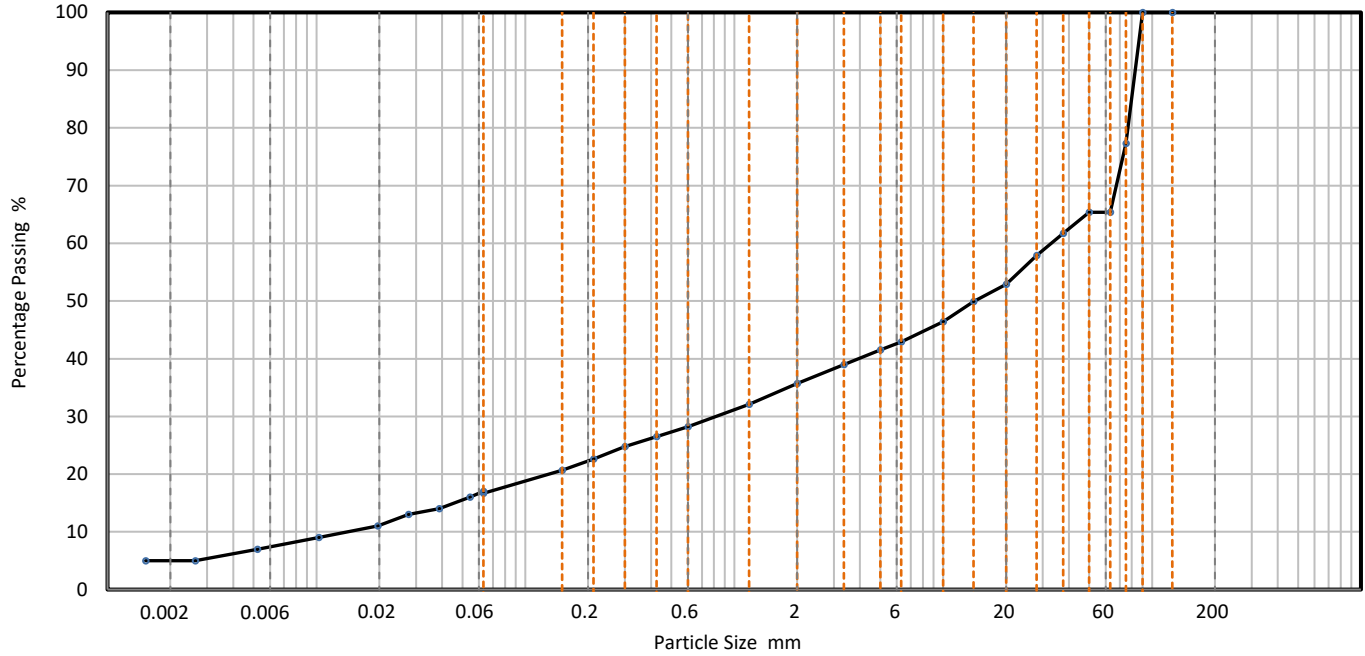
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Site name	Job number
Prairie Phase 1, Redcar	MT0318

Hole	PRA-SP029-S12 (17612)	Lab sample ID	SLMK2021042925
Depth (Top)	m 0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m	Soil Description	Brown, slightly clayey, slightly silty, slightly sandy GRAVEL with cobbles
Sample type	B		



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	17
90	100	0.0543	16
75	77	0.0386	14
63	65	0.0275	13
50	65	0.0197	11
37.5	62	0.0103	9
28	58	0.0052	7
20	53	0.0026	5
14	50	0.0015	5
10	46		
6.3	43		
5	42		
3.35	39		
2	36		
1.18	32		
0.6	28	Particle density (assumed)	
0.425	27	2.65 Mg/m <sup>3</sup>	
0.3	25		
0.212	23		
0.15	21		
0.063	17		

Dry Mass of sample, g

14238

Sample Proportions	% dry mass
Very coarse	34.6
Gravel	29.7
Sand	19.0
Silt	11.6
Clay	5.1

Grading Analysis		
D100	mm	
D60	mm	33
D30	mm	0.819
D10	mm	0.0127
Uniformity Coefficient		2600
Curvature Coefficient		1.6

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

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Approved by	KW
Approval date	11/05/2021 14:14

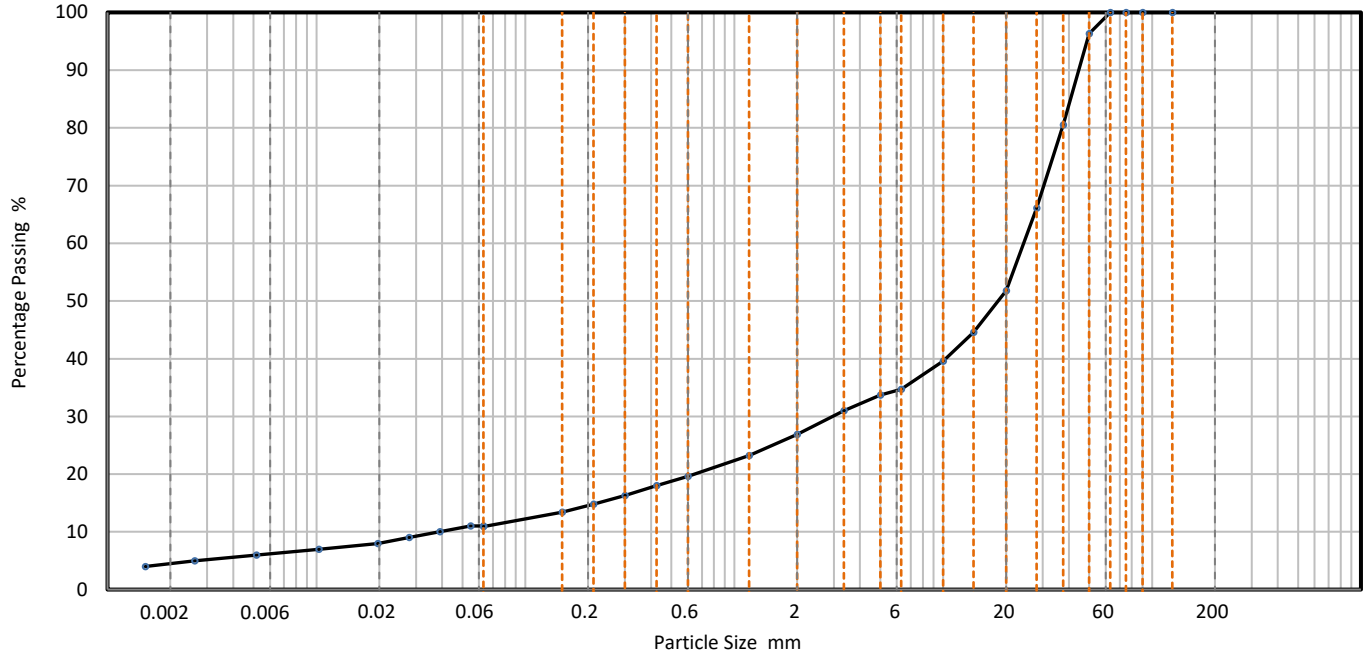
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Site name	Job number
Prairie Phase 1, Redcar	MT0318

Hole	PRA-SP029-S6 (17606)	Lab sample ID	SLMK2021042922
Depth (Top)	m 0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m	Soil Description	Brown, slightly clayey, slightly silty, slightly sandy GRAVEL
Sample type	B		



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	11
90	100	0.0547	11
75	100	0.0389	10
63	100	0.0277	9
50	96	0.0197	8
37.5	81	0.0103	7
28	66	0.0052	6
20	52	0.0026	5
14	45	0.0015	4
10	40		
6.3	35		
5	34		
3.35	31		
2	27		
1.18	23		
0.6	20		
0.425	18	Particle density (assumed)	
0.3	16	2.65	Mg/m <sup>3</sup>
0.212	15		
0.15	13		
0.063	11		

Dry Mass of sample, g

13670

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	73.1
Sand	15.9
Silt	6.9
Clay	4.1

Grading Analysis		
D100	mm	
D60	mm	24.3
D30	mm	2.96
D10	mm	0.0418
Uniformity Coefficient		580
Curvature Coefficient		8.6

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

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Approved by	KW
Approval date	11/05/2021 14:09

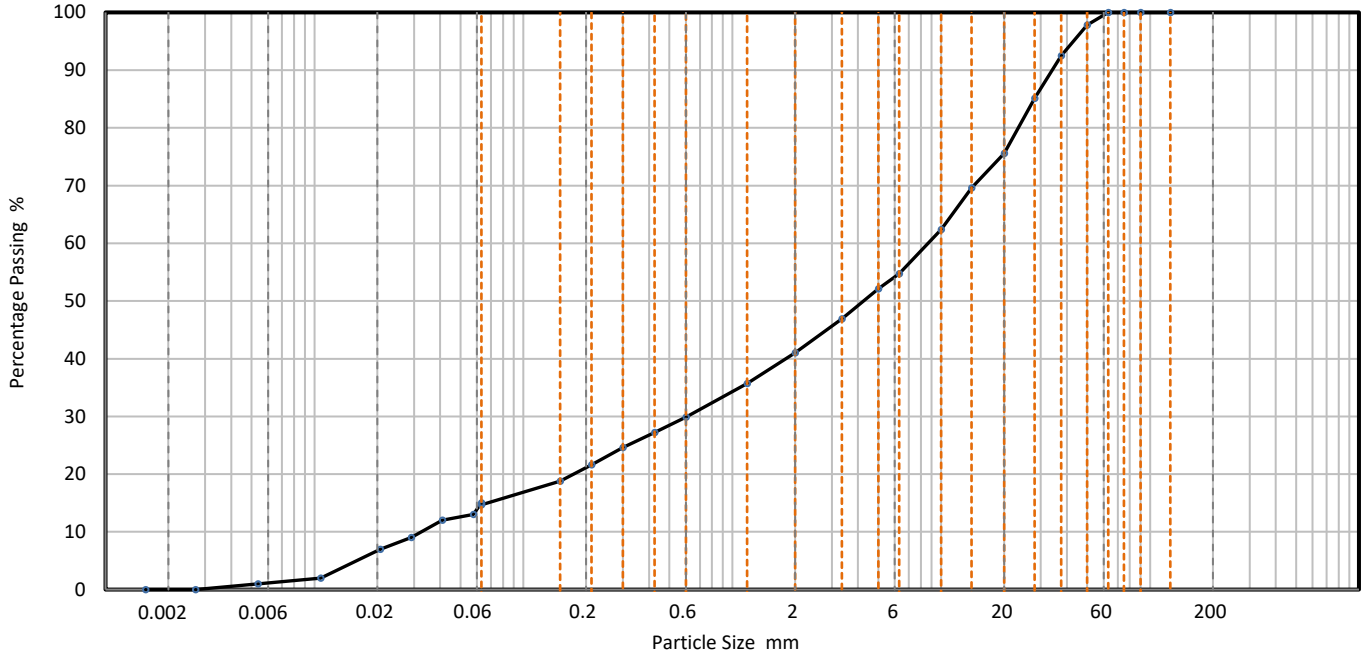
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Site name	Job number
Prairie Phase 1, Redcar	MT0318

Hole	PRA-SP029-S9 (17609)	Lab sample ID	SLMK2021042923
Depth (Top)	m 0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m	Soil Description	Brown, slightly silty, slightly sandy GRAVEL
Sample type	B		



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	15
90	100	0.0577	13
75	100	0.0409	12
63	100	0.0290	9
50	98	0.0206	7
37.5	93	0.0107	2
28	85	0.0054	1
20	76	0.0027	0
14	70	0.0016	0
10	62		
6.3	55		
5	52		
3.35	47		
2	41		
1.18	36		
0.6	30	Particle density (assumed)	
0.425	27	2.65	Mg/m <sup>3</sup>
0.3	25		
0.212	22		
0.15	19		
0.063	15		

Dry Mass of sample, g

10541

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	59.0
Sand	26.3
Silt	14.7
Clay	0.0

Grading Analysis		
D100	mm	
D60	mm	8.64
D30	mm	0.61
D10	mm	0.0325
Uniformity Coefficient		270
Curvature Coefficient		1.3

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

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Approved by	KW
Approval date	11/05/2021 14:11





# Laboratory Report Front Sheet

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12-16 Yarm Road,  
Stockton on Tees,  
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01642 607083  
lab@solmek.com



Site name	Job number
British Steel, Redcar	MT0318

## Client details:

Reference: MT0318  
Name: Dunelm Testing  
Address: Unit 5E Edwardson Road,  
Meadowfield,  
County Durham,  
DH7 8RL  
  
Telephone: 0191 349 9210  
Email: maiston@dunelmtesting.co.uk  
  
FAO: M Aiston


**Date commenced:** 27/04/2021

**Date reported:** 11/05/2021

### Observations and interpretations are outside of the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. 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 in full, without the prior written approval of the laboratory.

Samples will be held at the laboratory for a period of 4 weeks after the report date. After the all samples will be disposed of. Should further testing be required then the office should be informed before the above date.

<b>Signature:</b>  	<b>Approved Signatories:</b> <input checked="" type="checkbox"/> K Watkin (Lab Manager) <input type="checkbox"/> T Finnimore (Senior Technician) <input type="checkbox"/> J Brischuk (Senior Technician)
--------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

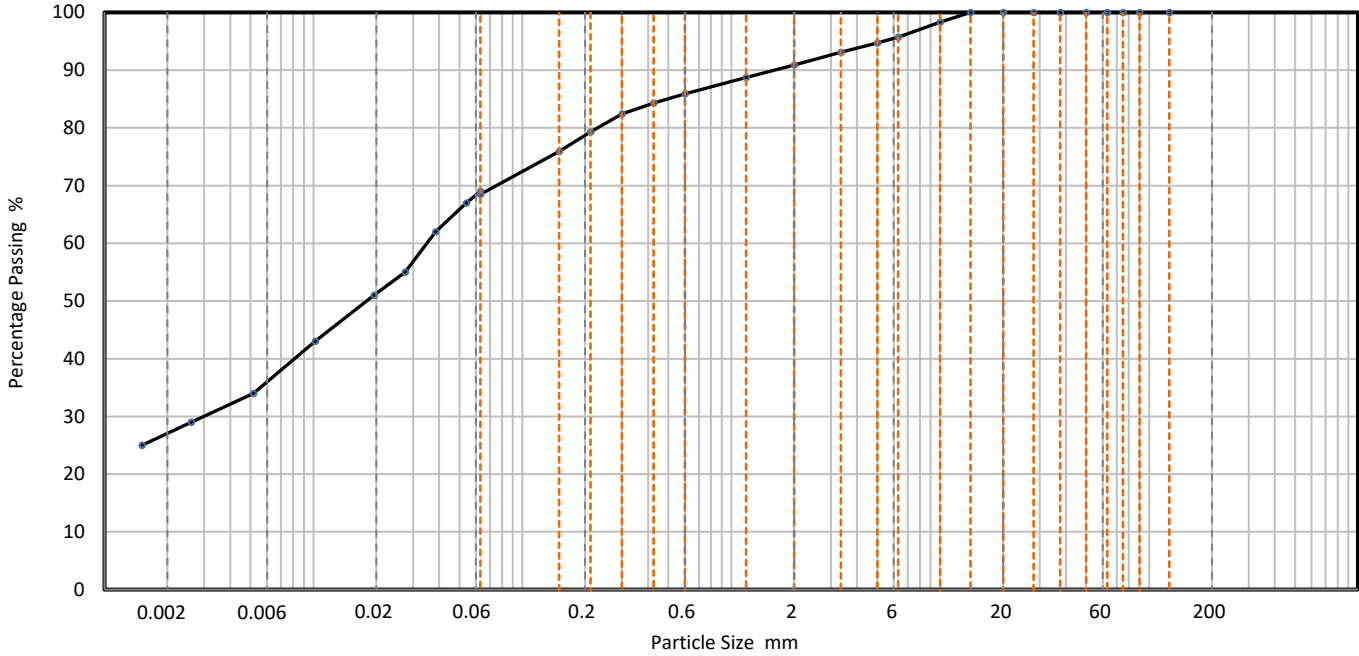
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Site name	Job number
Prairie Phase 1, Redcar	MT0318

Hole	PRA-SP022-54 (17618)	Lab sample ID	SLMK2021042926
Depth (Top)	m 0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m	Soil Description	Brown, slightly gravelly, slightly sandy, slightly clayey SILT
Sample type	B		



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	69
90	100	0.0540	67
75	100	0.0385	62
63	100	0.0274	55
50	100	0.0195	51
37.5	100	0.0102	43
28	100	0.0052	34
20	100	0.0026	29
14	100	0.0015	25
10	98		
6.3	96		
5	95		
3.35	93		
2	91		
1.18	89		
0.6	86	Particle density (assumed)	
0.425	84	2.65	Mg/m <sup>3</sup>
0.3	82		
0.212	79		
0.15	76		
0.063	69		

Dry Mass of sample, g

611

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	9.1
Sand	22.4
Silt	41.5
Clay	27.0

Grading Analysis		
D100	mm	
D60	mm	0.0353
D30	mm	0.00291
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

Hydrometer is the usual Sedimentation method carried out by Solmek and is part of the Solmek UKAS accreditation schedule.

Approved by	KW
Approval date	11/05/2021 14:17

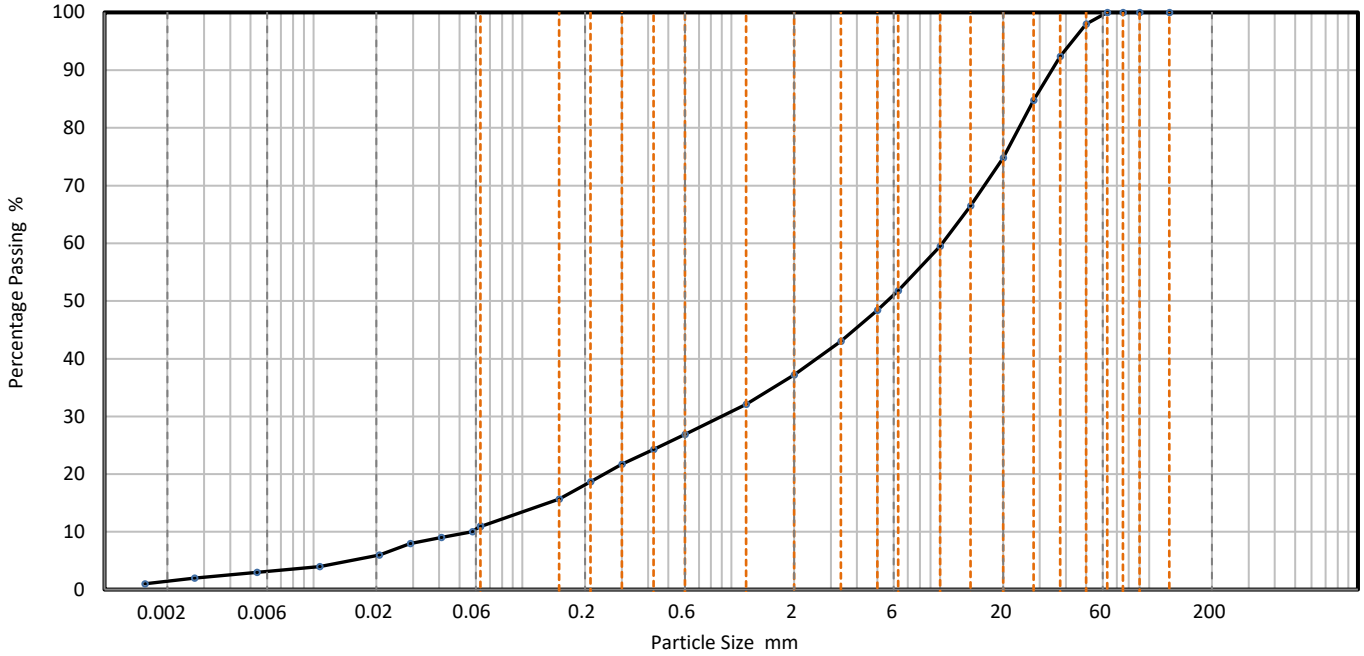
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Site name	Job number
Prairie Phase 1, Redcar	MT0318

Hole	PRA-SP027-S14 (17602)	Lab sample ID	SLMK2021042918
Depth (Top)	m 0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m	Soil Description	Brown, slightly clayey, slightly silty, slightly sandy GRAVEL
Sample type	B		



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	11
90	100	0.0577	10
75	100	0.0409	9
63	100	0.0290	8
50	98	0.0206	6
37.5	92	0.0107	4
28	85	0.0054	3
20	75	0.0027	2
14	67	0.0016	1
10	60		
6.3	52		
5	48		
3.35	43		
2	37		
1.18	32		
0.6	27	Particle density (assumed)	
0.425	24	2.65	Mg/m <sup>3</sup>
0.3	22		
0.212	19		
0.15	16		
0.063	11		

Dry Mass of sample, g

11882

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	62.8
Sand	26.2
Silt	9.9
Clay	1.1

Grading Analysis		
D100	mm	
D60	mm	10.2
D30	mm	0.903
D10	mm	0.0547
Uniformity Coefficient		190
Curvature Coefficient		1.5

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

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Approved by	KW
Approval date	11/05/2021 14:07

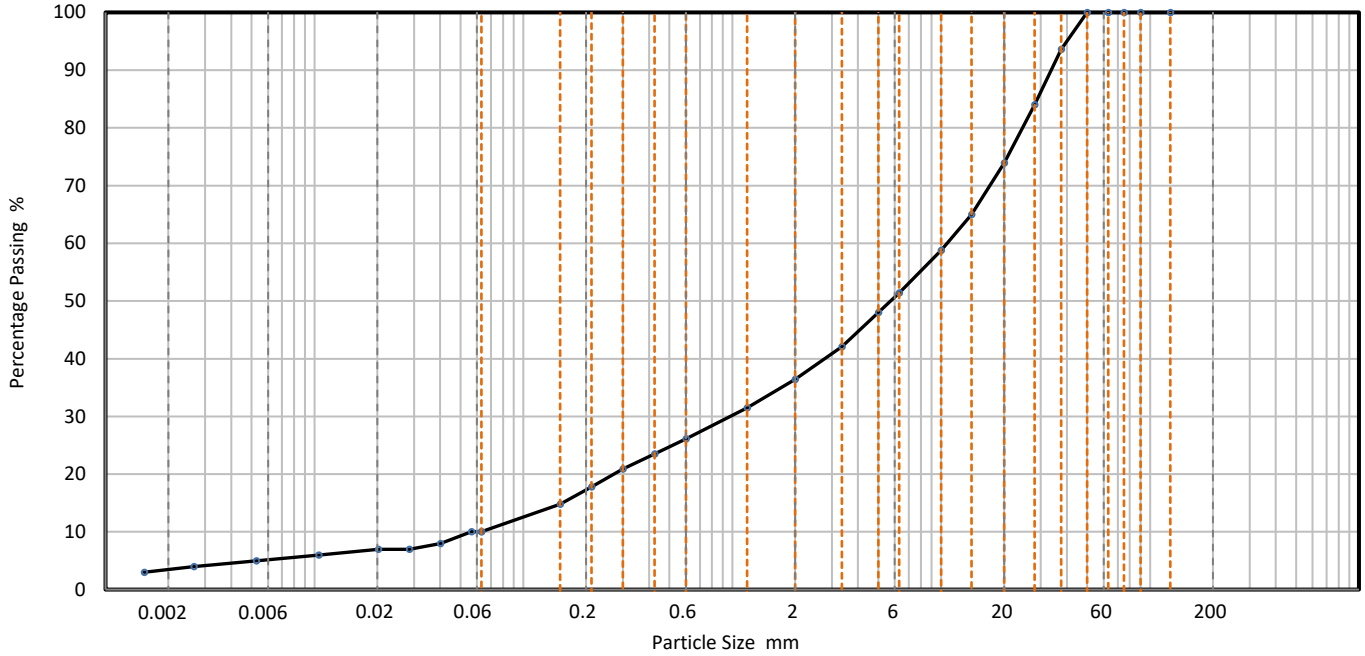
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Site name	Job number
Prairie Phase 1, Redcar	MT0318

Hole	PRA-SP027-S15 (17603)	Lab sample ID	SLMK2021042919
Depth (Top)	m 0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m	Soil Description	Brown, slightly clayey, slightly silty, slightly sandy GRAVEL
Sample type	B		



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	10
90	100	0.0564	10
75	100	0.0401	8
63	100	0.0285	7
50	100	0.0202	7
37.5	94	0.0105	6
28	84	0.0053	5
20	74	0.0026	4
14	65	0.0015	3
10	59		
6.3	51		
5	48		
3.35	42		
2	36		
1.18	32		
0.6	26	Particle density (assumed)	
0.425	24	2.65	Mg/m <sup>3</sup>
0.3	21		
0.212	18		
0.15	15		
0.063	10		

Dry Mass of sample, g

12408

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	63.6
Sand	26.3
Silt	6.4
Clay	3.7

Grading Analysis		
D100	mm	
D60	mm	10.7
D30	mm	0.981
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

Hydrometer is the usual Sedimentation method carried out by Solmek and is part of the Solmek UKAS accreditation schedule.

Approved by	KW
Approval date	11/05/2021 14:06

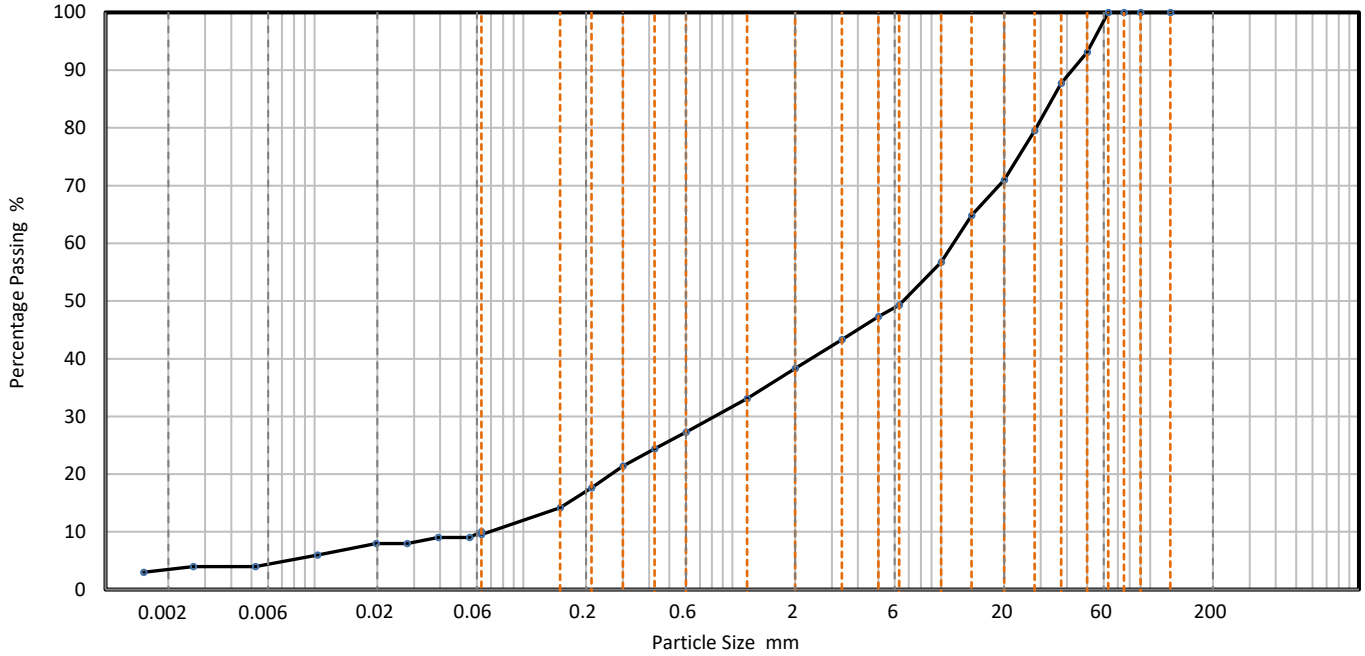
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Site name	Job number
Prairie Phase 1, Redcar	MT0318

Hole	PRA-SP027-S16 (17604)	Lab sample ID	SLMK2021042920
Depth (Top)	m 0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m	Soil Description	Brown, slightly clayey, slightly silty, slightly sandy GRAVEL
Sample type	B		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	10
90	100	0.0552	9
75	100	0.0391	9
63	100	0.0278	8
50	93	0.0197	8
37.5	88	0.0103	6
28	80	0.0052	4
20	71	0.0026	4
14	65	0.0015	3
10	57		
6.3	49		
5	47		
3.35	43		
2	38		
1.18	33		
0.6	27		
0.425	24	Particle density (assumed)	
0.3	21	2.65	Mg/m <sup>3</sup>
0.212	18		
0.15	14		
0.063	10		

Dry Mass of sample, g

11871

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	61.7
Sand	28.7
Silt	6.3
Clay	3.3

Grading Analysis		
D100	mm	
D60	mm	11.5
D30	mm	0.823
D10	mm	0.0687
Uniformity Coefficient		170
Curvature Coefficient		0.86

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

Hydrometer is the usual Sedimentation method carried out by Solmek and is part of the Solmek UKAS accreditation schedule.

Approved by	KW
Approval date	11/05/2021 14:03

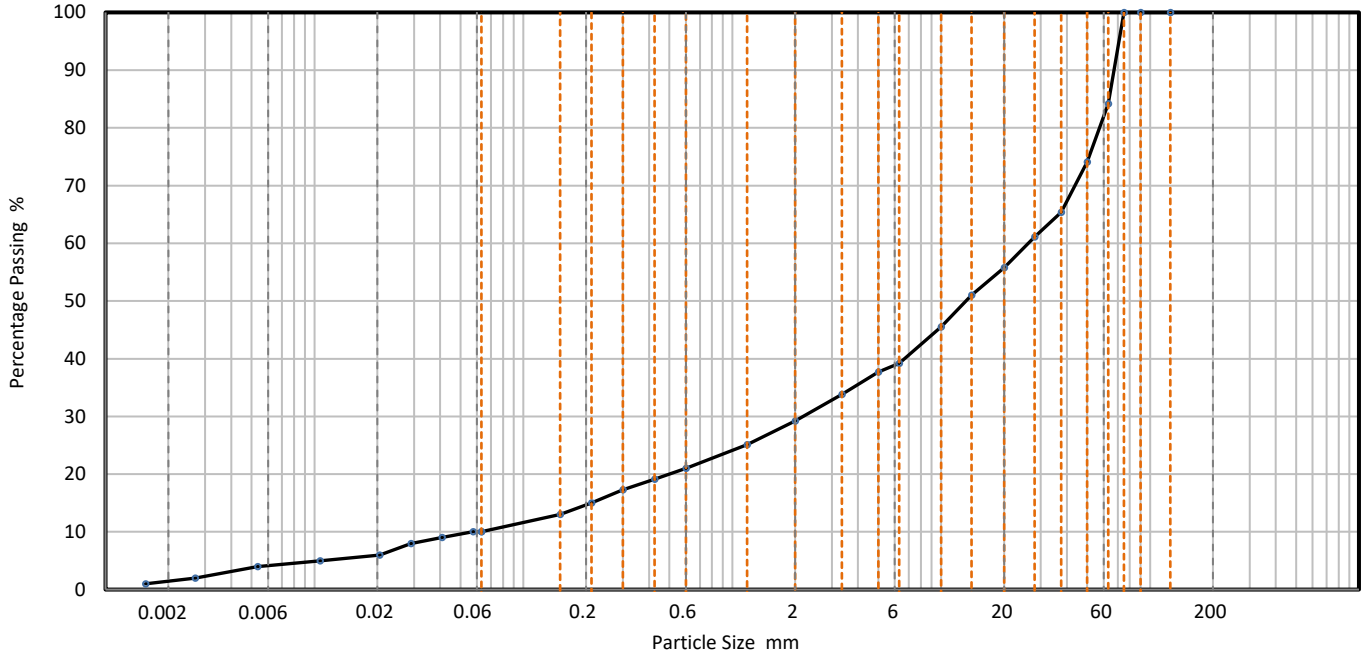
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Site name	Job number
Prairie Phase 1, Redcar	MT0318

Hole	PRA-SP027-S17 (17605)	Lab sample ID	SLMK2021042921
Depth (Top)	m 0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m	Soil Description	Brown, slightly clayey, slightly silty, slightly sandy GRAVEL with cobbles
Sample type	B		



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	10
90	100	0.0575	10
75	100	0.0407	9
63	84	0.0289	8
50	74	0.0205	6
37.5	65	0.0106	5
28	61	0.0053	4
20	56	0.0027	2
14	51	0.0016	1
10	46		
6.3	39		
5	38		
3.35	34		
2	29		
1.18	25		
0.6	21	Particle density (assumed)	
0.425	19	2.65	Mg/m <sup>3</sup>
0.3	17		
0.212	15		
0.15	13		
0.063	10		

Dry Mass of sample, g

14927

Sample Proportions	% dry mass
Very coarse	15.8
Gravel	55.0
Sand	19.2
Silt	8.3
Clay	1.7

Grading Analysis	
D100	mm
D60	mm 26.2
D30	mm 2.19
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

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Approved by	KW
Approval date	11/05/2021 14:01



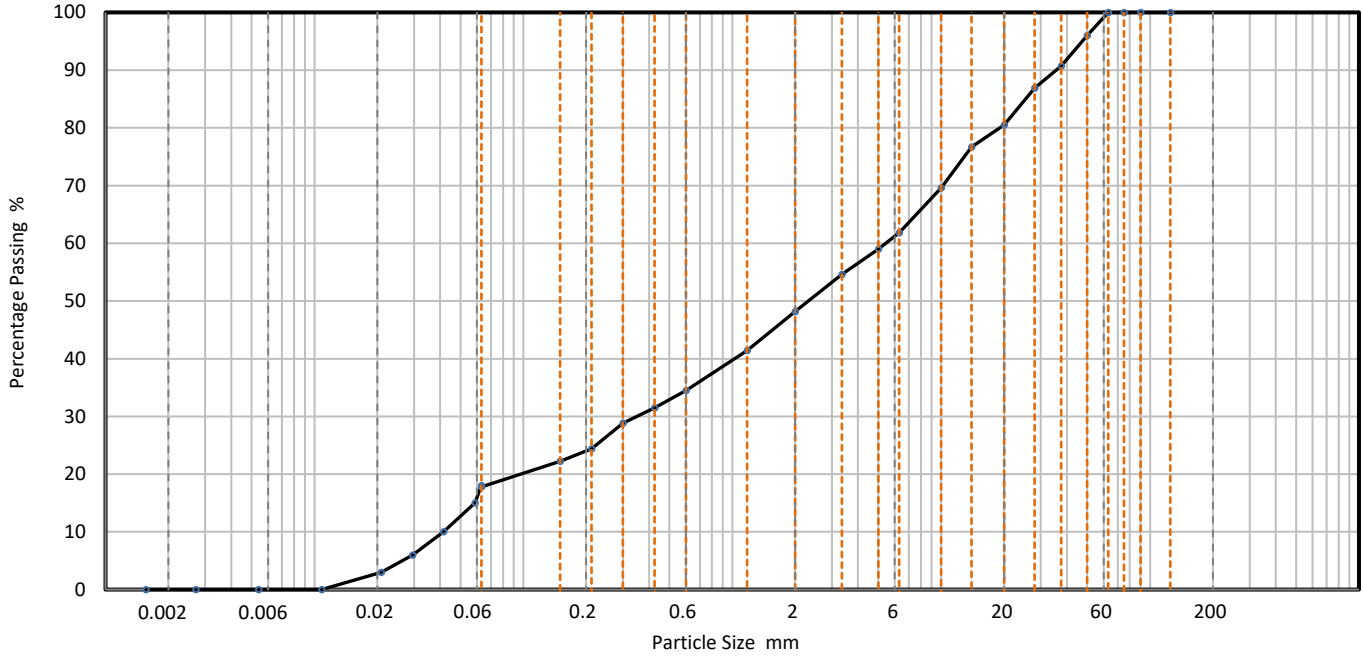
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Site name	Job number
Prairie Phase 1, Redcar	MT0318

Hole	PRA-SP029-S11 (17611)	Lab sample ID	SLMK2021042924
Depth (Top)	m 0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m	Soil Description	Brown, slightly silty, Sandy GRAVEL
Sample type	B		



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	18
90	100	0.0586	15
75	100	0.0416	10
63	100	0.0295	6
50	96	0.0209	3
37.5	91	0.0108	0
28	87	0.0054	0
20	81	0.0027	0
14	77	0.0016	0
10	70		
6.3	62		
5	59		
3.35	55		
2	48		
1.18	41		
0.6	35	Particle density (assumed)	
0.425	32	2.65 Mg/m <sup>3</sup>	
0.3	29		
0.212	24		
0.15	22		
0.063	18		

Dry Mass of sample, g

9855

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	51.8
Sand	30.4
Silt	17.8
Clay	0.0

Grading Analysis		
D100	mm	
D60	mm	5.41
D30	mm	0.349
D10	mm	0.0404
Uniformity Coefficient		130
Curvature Coefficient		0.56

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

Hydrometer is the usual Sedimentation method carried out by Solmek and is part of the Solmek UKAS accreditation schedule.

Approved by	KW
Approval date	11/05/2021 14:15

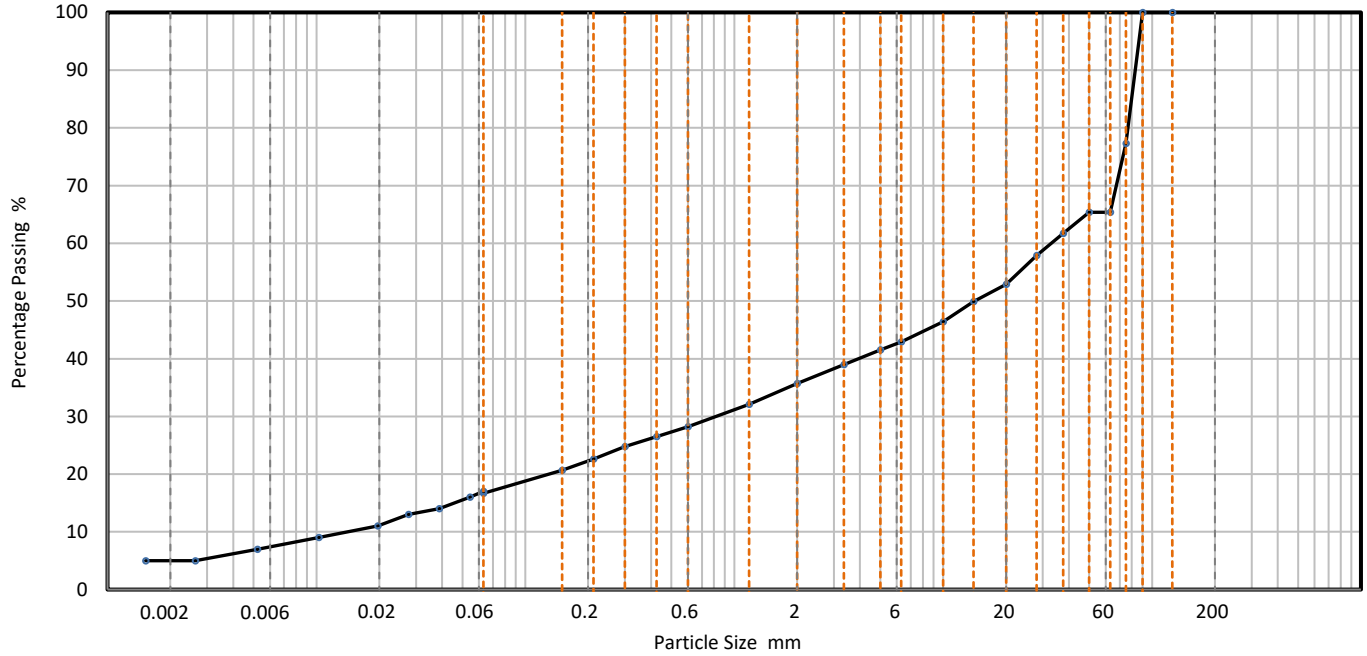
# PARTICLE SIZE DISTRIBUTION

Solmek  
12-16 Yarm Road,  
Stockton on Tees,  
TS18 3NA  
01642 607083  
lab@solmek.com



Site name	Job number
Prairie Phase 1, Redcar	MT0318

Hole	PRA-SP029-S12 (17612)	Lab sample ID	SLMK2021042925
Depth (Top)	m 0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m	Soil Description	Brown, slightly clayey, slightly silty, slightly sandy GRAVEL with cobbles
Sample type	B		



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	17
90	100	0.0543	16
75	77	0.0386	14
63	65	0.0275	13
50	65	0.0197	11
37.5	62	0.0103	9
28	58	0.0052	7
20	53	0.0026	5
14	50	0.0015	5
10	46		
6.3	43		
5	42		
3.35	39		
2	36		
1.18	32		
0.6	28	Particle density (assumed)	
0.425	27	2.65 Mg/m <sup>3</sup>	
0.3	25		
0.212	23		
0.15	21		
0.063	17		

Dry Mass of sample, g

14238

Sample Proportions	% dry mass
Very coarse	34.6
Gravel	29.7
Sand	19.0
Silt	11.6
Clay	5.1

Grading Analysis		
D100	mm	
D60	mm	33
D30	mm	0.819
D10	mm	0.0127
Uniformity Coefficient		2600
Curvature Coefficient		1.6

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

Hydrometer is the usual Sedimentation method carried out by Solmek and is part of the Solmek UKAS accreditation schedule.

Approved by	KW
Approval date	11/05/2021 14:14

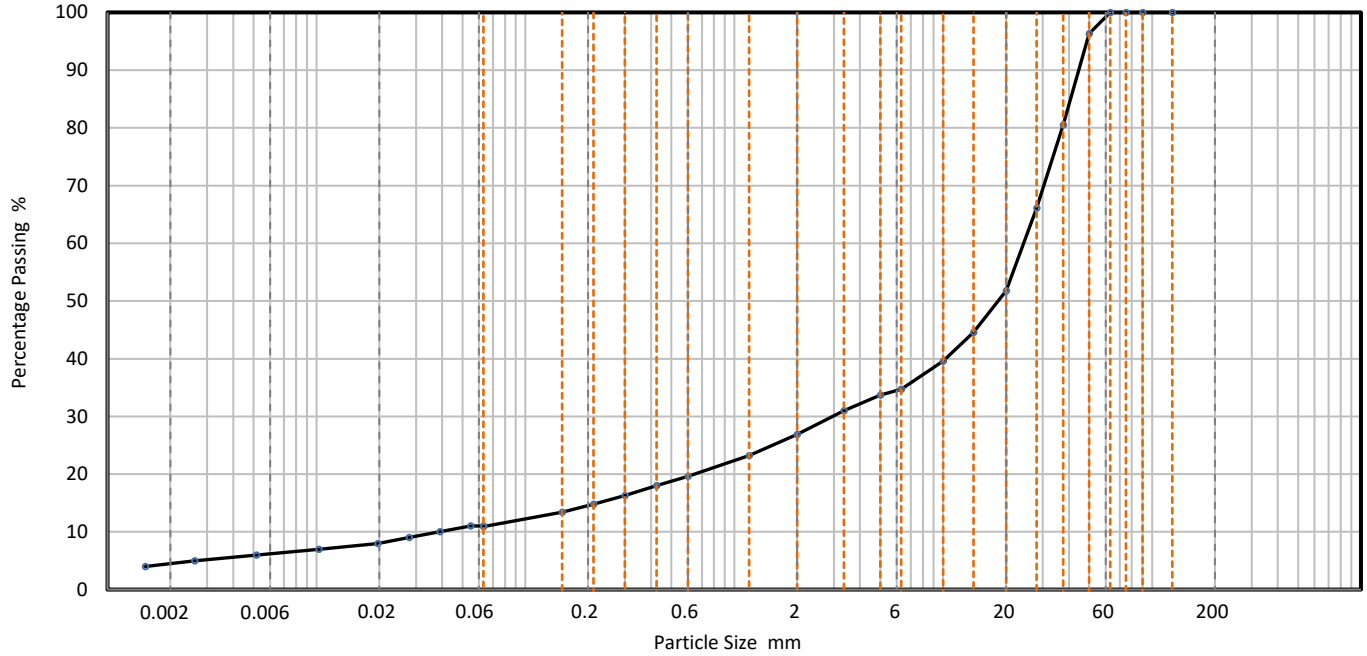
# PARTICLE SIZE DISTRIBUTION

Solmek  
12-16 Yarm Road,  
Stockton on Tees,  
TS18 3NA  
01642 607083  
lab@solmek.com



Site name	Job number
Prairie Phase 1, Redcar	MT0318

Hole	PRA-SP029-S6 (17606)	Lab sample ID	SLMK2021042922
Depth (Top)	m 0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m	Soil Description	Brown, slightly clayey, slightly silty, slightly sandy GRAVEL
Sample type	B		



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	11
90	100	0.0547	11
75	100	0.0389	10
63	100	0.0277	9
50	96	0.0197	8
37.5	81	0.0103	7
28	66	0.0052	6
20	52	0.0026	5
14	45	0.0015	4
10	40		
6.3	35		
5	34		
3.35	31		
2	27		
1.18	23		
0.6	20	Particle density (assumed)	
0.425	18	2.65	Mg/m <sup>3</sup>
0.3	16		
0.212	15		
0.15	13		
0.063	11		

Dry Mass of sample, g

13670

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	73.1
Sand	15.9
Silt	6.9
Clay	4.1

Grading Analysis		
D100	mm	
D60	mm	24.3
D30	mm	2.96
D10	mm	0.0418
Uniformity Coefficient		580
Curvature Coefficient		8.6

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

Hydrometer is the usual Sedimentation method carried out by Solmek and is part of the Solmek UKAS accreditation schedule.

Approved by	KW
Approval date	11/05/2021 14:09

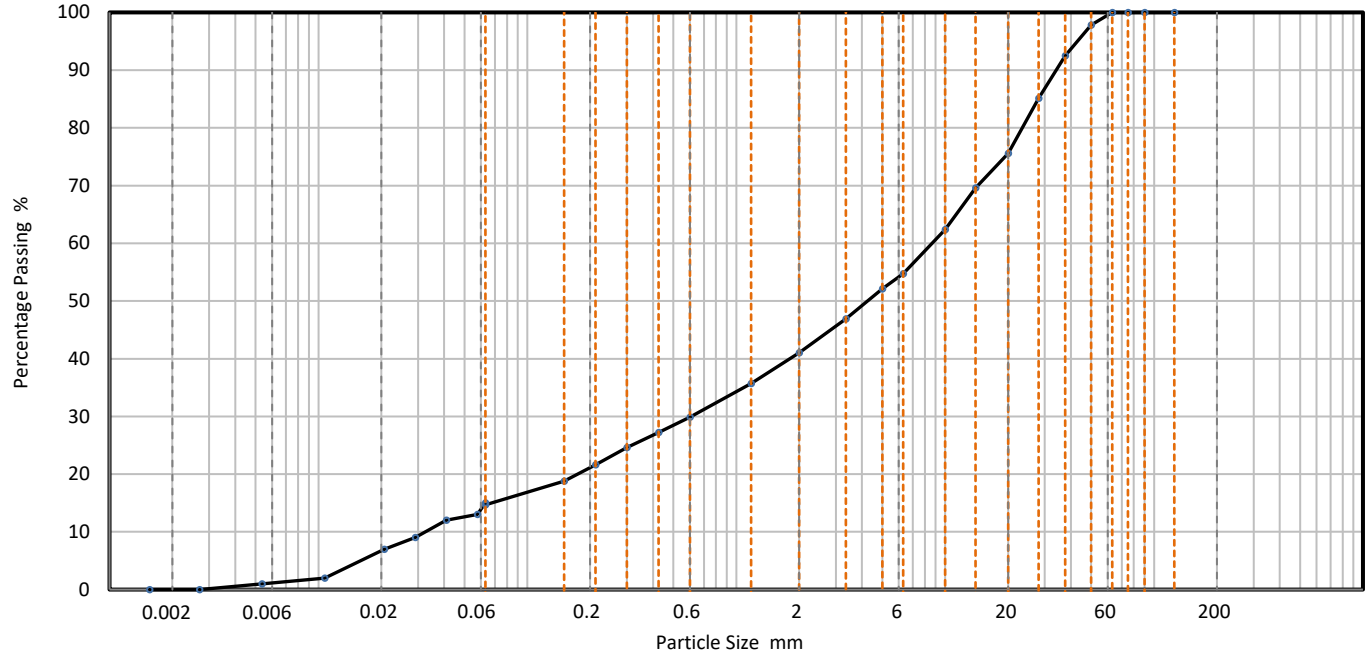
# PARTICLE SIZE DISTRIBUTION

Solmek  
12-16 Yarm Road,  
Stockton on Tees,  
TS18 3NA  
01642 607083  
lab@solmek.com



Site name	Job number
Prairie Phase 1, Redcar	MT0318

Hole	PRA-SP029-S9 (17609)	Lab sample ID	SLMK2021042923
Depth (Top)	m 0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m	Soil Description	Brown, slightly silty, slightly sandy GRAVEL
Sample type	B		



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	15
90	100	0.0577	13
75	100	0.0409	12
63	100	0.0290	9
50	98	0.0206	7
37.5	93	0.0107	2
28	85	0.0054	1
20	76	0.0027	0
14	70	0.0016	0
10	62		
6.3	55		
5	52		
3.35	47		
2	41		
1.18	36		
0.6	30		
0.425	27	Particle density (assumed)	
0.3	25	2.65	Mg/m <sup>3</sup>
0.212	22		
0.15	19		
0.063	15		

Dry Mass of sample, g

10541

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	59.0
Sand	26.3
Silt	14.7
Clay	0.0

Grading Analysis		
D100	mm	
D60	mm	8.64
D30	mm	0.61
D10	mm	0.0325
Uniformity Coefficient		270
Curvature Coefficient		1.3

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

Hydrometer is the usual Sedimentation method carried out by Solmek and is part of the Solmek UKAS accreditation schedule.

Approved by	KW
Approval date	11/05/2021 14:11



<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	05/05/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-17375
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO12-S17
<b>Sample location:</b>	PRA-SPO12-S17	<b>Date sampled:</b>	
<b>Material:</b>	Recycled MADEGROUNG	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	20/04/21
<b>Test Method:</b>	Wash and Dry Sieve Method	<b>Date test completed:</b>	22/04/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	AG/JK
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 14%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500	100		6.3	59	
300	100		5	55	
125	100		3.35	51	
90	100		2	44	
75	100		1.18	39	
63	98		0.600	34	
50	98		0.425	31	
37.5	93		0.300	28	
28	89		0.212	24	
20	52		0.150	21	
14	76		0.063	15	
10	68				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	05/05/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-17376
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO12-S18
<b>Sample location:</b>	PRA-SPO12-S18	<b>Date sampled:</b>	
<b>Material:</b>	Recycled MADEGROUNG	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	20/04/21
<b>Test Method:</b>	Wash and Dry Sieve Method	<b>Date test completed:</b>	22/04/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	AG/JK
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 14%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500	100		6.3	62	
300	100		5	59	
125	100		3.35	54	
90	100		2	48	
75	100		1.18	44	
63	100		0.600	39	
50	93		0.425	36	
37.5	90		0.300	34	
28	84		0.212	30	
20	76		0.150	27	
14	70		0.063	23	
10	63				

**Comments:**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Signed:**

For & on behalf of  
**Dunelm Testing Ltd**

**Page:** 1 of 1



<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	05/05/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-17377
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO12-S19
<b>Sample location:</b>	PRA-SPO12-S19	<b>Date sampled:</b>	
<b>Material:</b>	Recycled MADEGROUNG	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	20/04/21
<b>Test Method:</b>	Wash and Dry Sieve Method	<b>Date test completed:</b>	22/04/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	JK
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 12%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500	100		6.3	51	
300	100		5	48	
125	100		3.35	43	
90	100		2	37	
75	100		1.18	33	
63	96		0.600	28	
50	87		0.425	26	
37.5	82		0.300	24	
28	76		0.212	20	
20	69		0.150	17	
14	65		0.063	13	
10	59				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	05/05/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-17378
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO12-S20
<b>Sample location:</b>	PRA-SPO12-S20	<b>Date sampled:</b>	
<b>Material:</b>	Recycled MADEGROUNG	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	20/04/21
<b>Test Method:</b>	Wash and Dry Sieve Method	<b>Date test completed:</b>	22/04/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	JK
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 14%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500	100		6.3	56	
300	100		5	53	
125	100		3.35	49	
90	100		2	43	
75	100		1.18	38	
63	96		0.600	32	
50	89		0.425	29	
37.5	83		0.300	26	
28	81		0.212	22	
20	75		0.150	18	
14	73		0.063	13	
10	64				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	28/04/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318/17387
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SP023-S7
<b>Sample location:</b>	PRA-SP023-S7	<b>Date sampled:</b>	
<b>Material:</b>	Crushed CONCRETE/BRICK	<b>Sampled by:</b>	Client
<b>Source of material:</b>		<b>Date received:</b>	22/04/21
<b>Test Method:</b>	Wash & Dry Sieving	<b>Date test completed:</b>	26/04/21
<b>Specification:</b>		<b>Test conducted by:</b>	JK
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

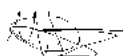
**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 6.9

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500	0		6.3	5.1	
300	0		5	4.7	
125	94		3.35	4.1	
90	39		2	3.3	
75	29		1.18	2.7	
37.5	13		0.600	2.1	
28	11		0.425	1.8	
20	8.8		0.300	1.6	
14	7.2		0.150	1.1	
10	6.1		0.063	0.7	
8	5.6				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	28/04/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318/17388
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SP023-S8
<b>Sample location:</b>	PRA-SP023-S8	<b>Date sampled:</b>	
<b>Material:</b>	Crushed CONCRETE/BRICK	<b>Sampled by:</b>	Client
<b>Source of material:</b>		<b>Date received:</b>	22/04/21
<b>Test Method:</b>	Wash & Dry Sieving	<b>Date test completed:</b>	26/04/21
<b>Specification:</b>		<b>Test conducted by:</b>	JK
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

### Test Results

Moisture Content (BS1377, Part 2, 1990) : 7.1

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500	0		6.3	9.2	
300	0		5	8.5	
125	76		3.35	7.7	
90	46		2	6.5	
75	30		1.18	5.4	
37.5	17		0.600	4.4	
28	15		0.425	3.9	
20	14		0.300	3.4	
14	12		0.150	2.5	
10	11		0.063	1.7	
8	9.9				

Comments:

Signed:



For & on behalf of  
Dunelm Testing Ltd

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)

Page: 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	28/04/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318/17389
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SP023-S9
<b>Sample location:</b>	PRA-SP023-S9	<b>Date sampled:</b>	
<b>Material:</b>	Crushed CONCRETE/BRICK	<b>Sampled by:</b>	Client
<b>Source of material:</b>		<b>Date received:</b>	22/04/21
<b>Test Method:</b>	Wash & Dry Sieving	<b>Date test completed:</b>	26/04/21
<b>Specification:</b>		<b>Test conducted by:</b>	JK
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 7.6

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500	0		6.3	6.9	
300	0		5	6.4	
125	82		3.35	5.7	
90	38		2	4.8	
75	28		1.18	4.0	
37.5	13		0.600	3.2	
28	12		0.425	2.9	
20	10		0.300	2.6	
14	9.0		0.150	1.8	
10	8.1		0.063	1.2	
8	7.5				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

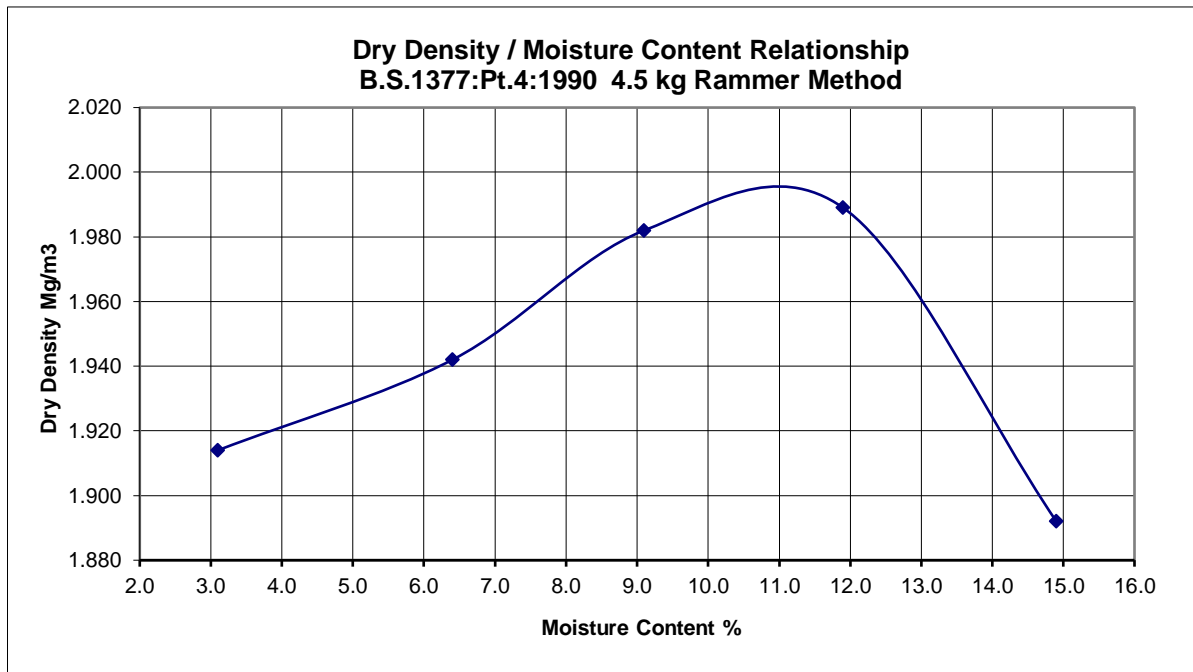
**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	25/05/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-17602
		<b>Client ref:</b>	PRA-SPO27-S14
<b>Site:</b>	British Steel, Redcar	<b>Date sampled:</b>	21/04/21
<b>Source:</b>	Site Won	<b>Sampled by:</b>	Client
<b>Sample location:</b>	PRA-SPO27-S14	<b>Date received:</b>	2204/21
<b>Material:</b>	Black/Brown MADEGROUND	<b>Date test completed:</b>	14/05/21
<b>Test Method:</b>	3.5.4.2 4.5 Kg Rammer	<b>Test conducted by:</b>	AG
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Max. size of cohesive pieces:</b>	N/A

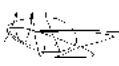
**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	7.6
Grading Zone:	3	% retained on 20mm Test Sieve:	25
Single/Multiple samples:	Multiple	Particle Density: (Assumed/):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.99	<b>Optimum Moisture Content (%):</b>	11
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Comments :

**Signed:** 

For & on behalf of  
**Dunelm Testing Services**

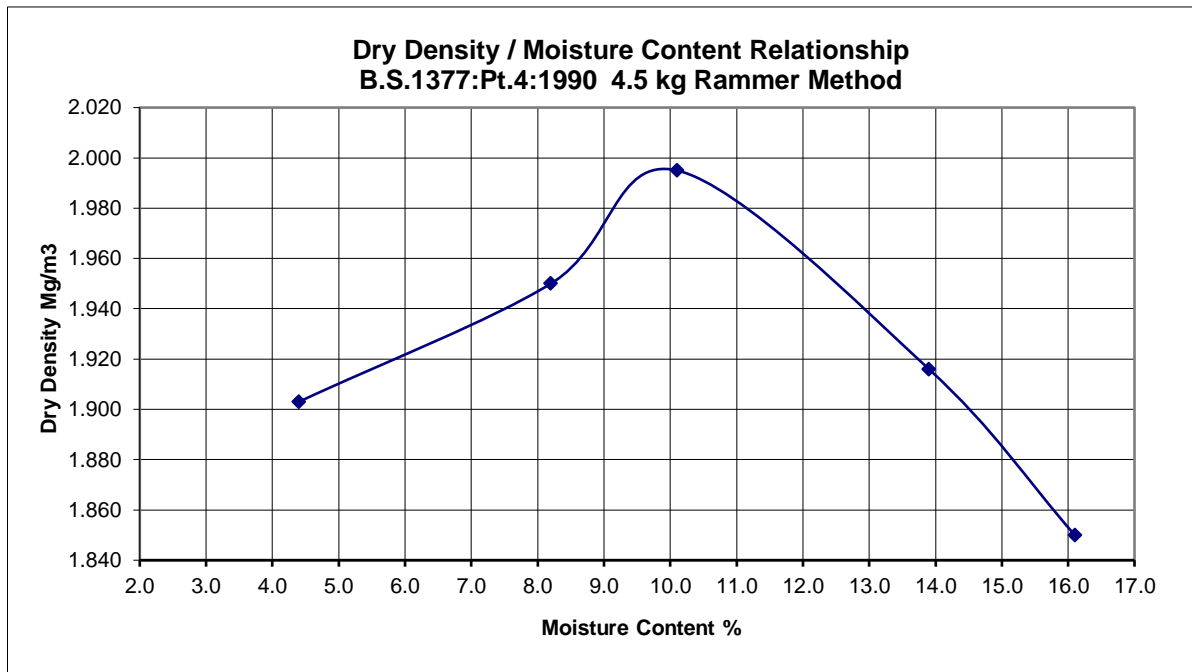
Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	25/05/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-17603
		<b>Client ref:</b>	PRA-SPO27-S15
<b>Site:</b>	British Steel, Redcar	<b>Date sampled:</b>	21/04/21
<b>Source:</b>	Site Won	<b>Sampled by:</b>	Client
<b>Sample location:</b>	PRA-SPO27-S15	<b>Date received:</b>	2204/21
<b>Material:</b>	Black/Brown MADEGROUND	<b>Date test completed:</b>	14/05/21
<b>Test Method:</b>	3.5.4.2 4.5 Kg Rammer	<b>Test conducted by:</b>	AG
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Max. size of cohesive pieces:</b>	N/A

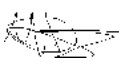
**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	6.4
Grading Zone:	3	% retained on 20mm Test Sieve:	26
Single/Multiple samples:	Multiple	Particle Density: (Assumed/):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.99	<b>Optimum Moisture Content (%):</b>	10
------------------------------------------------	------	--------------------------------------	----



Comments :

**Signed:** 

For & on behalf of  
**Dunelm Testing Services**

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)

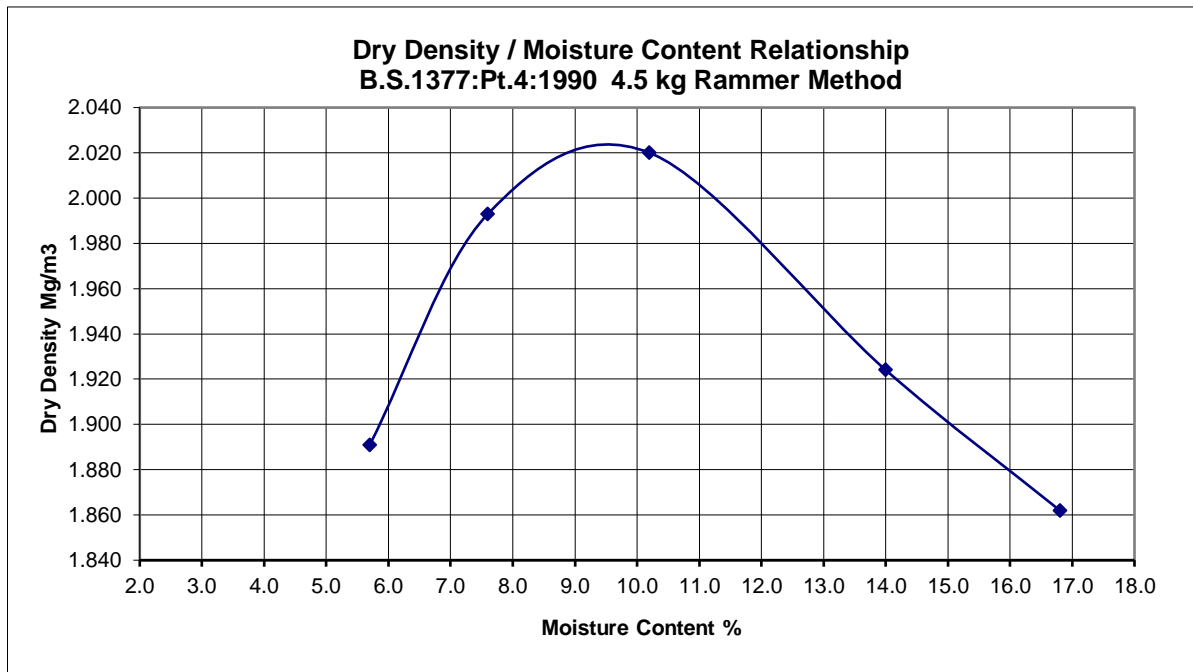


<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	25/05/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-17604
		<b>Client ref:</b>	PRA-SPO27-S16
<b>Site:</b>	British Steel, Redcar	<b>Date sampled:</b>	21/04/21
<b>Source:</b>	Site Won	<b>Sampled by:</b>	Client
<b>Sample location:</b>	PRA-SPO27-S16	<b>Date received:</b>	2204/21
<b>Material:</b>	Black/Brown MADEGROUND	<b>Date test completed:</b>	18/05/21
<b>Test Method:</b>	3.5.4.2 4.5 Kg Rammer	<b>Test conducted by:</b>	AG
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Max. size of cohesive pieces:</b>	N/A

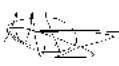
**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	5.4
Grading Zone:	3	% retained on 20mm Test Sieve:	8.6
Single/Multiple samples:	Multiple	Particle Density: (Assumed/):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	2.02	<b>Optimum Moisture Content (%):</b>	9.5
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Comments :

**Signed:** 

For & on behalf of  
**Dunelm Testing Services**

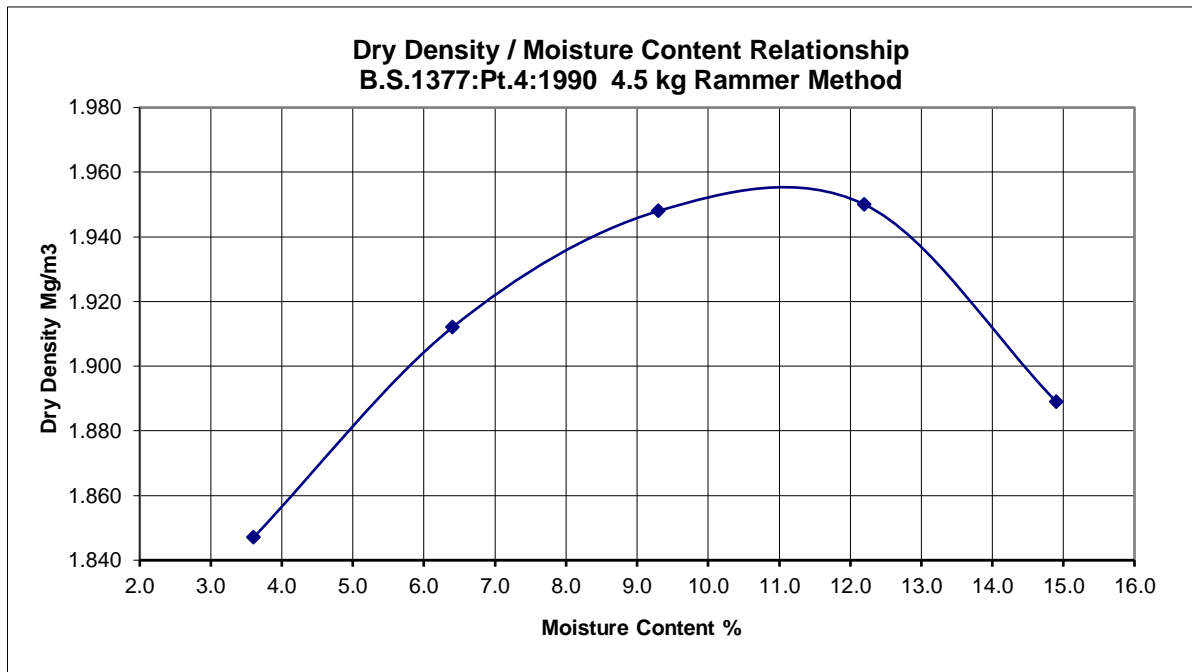
Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	25/05/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-16605
		<b>Client ref:</b>	PRA-SPO27-S17
<b>Site:</b>	British Steel, Redcar	<b>Date sampled:</b>	21/04/21
<b>Source:</b>	Site Won	<b>Sampled by:</b>	Client
<b>Sample location:</b>	PRA-SPO27-S17	<b>Date received:</b>	22/04/21
<b>Material:</b>	Black/Brown MADEGROUND	<b>Date test completed:</b>	18/05/21
<b>Test Method:</b>	3.5.4.2 4.5 Kg Rammer	<b>Test conducted by:</b>	AG
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Max. size of cohesive pieces:</b>	N/A

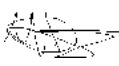
**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	8.8
Grading Zone:	3	% retained on 20mm Test Sieve:	5.2
Single/Multiple samples:	Multiple	Particle Density: (Assumed/):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	2.02	<b>Optimum Moisture Content (%):</b>	9.5
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Comments :

**Signed:** 

For & on behalf of  
**Dunelm Testing Services**

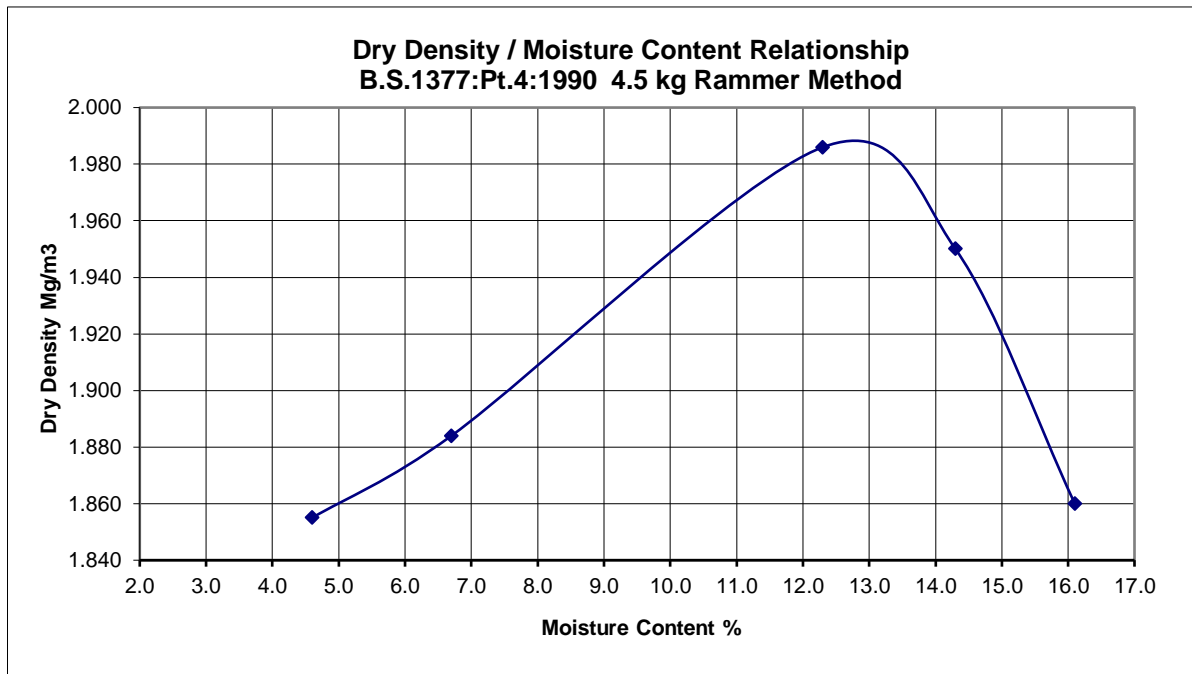
Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	25/05/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-17607
		<b>Client ref:</b>	PRA-SPO29-S7
<b>Site:</b>	British Steel, Redcar	<b>Date sampled:</b>	21/04/21
<b>Source:</b>	Site Won	<b>Sampled by:</b>	Client
<b>Sample location:</b>	PRA-SPO29-S7	<b>Date received:</b>	2204/21
<b>Material:</b>	Black/Brown MADEGROUND	<b>Date test completed:</b>	18/05/21
<b>Test Method:</b>	3.5.4.2 4.5 Kg Rammer	<b>Test conducted by:</b>	AG
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Max. size of cohesive pieces:</b>	N/A

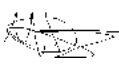
**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	6.7
Grading Zone:	3	% retained on 20mm Test Sieve:	9.6
Single/Multiple samples:	Multiple	Particle Density: (Assumed/):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.99	<b>Optimum Moisture Content (%):</b>	13
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Comments :

**Signed:** 

For & on behalf of  
**Dunelm Testing Services**

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	11/05/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-17607
		<b>Client ref:</b>	PRA-SPO29-S7
<b>Site:</b>	British Steel, Redcar	<b>Date sampled:</b>	
		<b>Sampled by:</b>	Client
<b>Sample location:</b>	PRA-SPO29-S7	<b>Date received:</b>	22/04/21
<b>Material:</b>	Recycled MADEGROUNG		
<b>Source of material:</b>	As location	<b>Date test completed:</b>	10/05/21
<b>Test Method:</b>	Wash and Dry Sieve Method	<b>Test conducted by:</b>	AG
<b>Specification:</b>	SHW Series 600 Tbl 6/2		
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

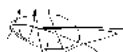
**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 15%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500	100		6.3	52	
300	100		5	49	
125	100		3.35	46	
90	100		2	42	
75	100		1.18	37	
63	100		0.600	32	
50	93		0.425	30	
37.5	86		0.300	28	
28	79		0.212	25	
20	69		0.150	22	
14	65		0.063	17	
10	56				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	11/05/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-17608
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO29-S8
<b>Sample location:</b>	PRA-SPO29-S8	<b>Date sampled:</b>	
<b>Material:</b>	Recycled MADEGROUNG	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	22/04/21
<b>Test Method:</b>	Wash and Dry Sieve Method	<b>Date test completed:</b>	10/05/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	AG
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 13%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500	100		6.3	53	
300	100		5	50	
125	100		3.35	47	
90	100		2	42	
75	100		1.18	37	
63	95		0.600	32	
50	95		0.425	30	
37.5	91		0.300	28	
28	83		0.212	25	
20	74		0.150	22	
14	66		0.063	17	
10	60				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	11/05/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-17610
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO29-S10
<b>Sample location:</b>	PRA-SPO29-S10	<b>Date sampled:</b>	
<b>Material:</b>	Recycled MADEGROUNG	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	08/04/21
<b>Test Method:</b>	Wash and Dry Sieve Method	<b>Date test completed:</b>	10/05/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	AG
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

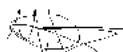
**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 18%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500	100		6.3	59	
300	100		5	56	
125	100		3.35	52	
90	100		2	47	
75	100		1.18	42	
63	97		0.600	37	
50	97		0.425	34	
37.5	93		0.300	32	
28	85		0.212	30	
20	77		0.150	27	
14	70		0.063	22	
10	64				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

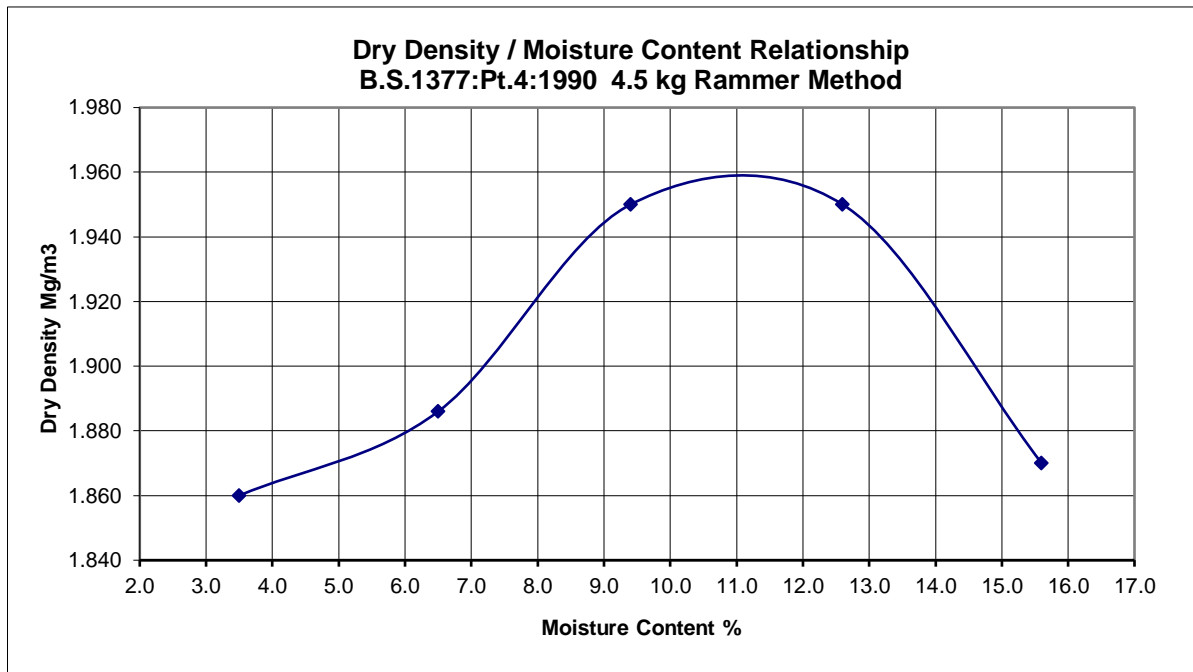
**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	25/05/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-17612
		<b>Client ref:</b>	PRA-SPO29-S12
<b>Site:</b>	British Steel, Redcar	<b>Date sampled:</b>	21/04/21
<b>Source:</b>	Site Won	<b>Sampled by:</b>	Client
<b>Sample location:</b>	PRA-SPO29-S12	<b>Date received:</b>	2204/21
<b>Material:</b>	Black/Brown MADEGROUND	<b>Date test completed:</b>	18/05/21
<b>Test Method:</b>	3.5.4.2 4.5 Kg Rammer	<b>Test conducted by:</b>	AG
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Max. size of cohesive pieces:</b>	N/A

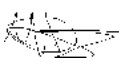
**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	3.8
Grading Zone:	3	% retained on 20mm Test Sieve:	5.0
Single/Multiple samples:	Multiple	Particle Density: (Assumed/):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.96	<b>Optimum Moisture Content (%):</b>	11
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Comments :

**Signed:** 

For & on behalf of  
**Dunelm Testing Services**

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)



<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	11/05/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-17613
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO29-S13
<b>Sample location:</b>	PRA-SPO29-S13	<b>Date sampled:</b>	
<b>Material:</b>	Recycled MADEGROUNG	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	08/04/21
<b>Test Method:</b>	Wash and Dry Sieve Method	<b>Date test completed:</b>	10/05/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	AG
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

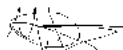
**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 15%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500	100		6.3	51	
300	100		5	48	
125	100		3.35	45	
90	100		2	40	
75	100		1.18	36	
63	94		0.600	32	
50	91		0.425	30	
37.5	84		0.300	28	
28	76		0.212	25	
20	67		0.150	21	
14	62		0.063	18	
10	57				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	17/05/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-17614
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO13-S16
<b>Sample location:</b>	PRA-SPO13-S16	<b>Date sampled:</b>	
<b>Material:</b>	Recycled MADEGROUNG (Coarse)	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	08/04/21
<b>Test Method:</b>	Wash and Dry Sieve	<b>Date test completed:</b>	10/05/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	AG
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 9.5%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
300	100		6.3	15	
125	89		5	14	
90	54		3.35	13	
75	39		2	11	
37.5	26		1.18	9.6	
28	24		0.600	7.9	
20	21		0.425	7.1	
14	19		0.300	6.3	
10	17		0.150	4.1	
8	16		0.063	3.2	

**Comments:**

**Signed:**



For & on behalf of  
Dunelm Testing Ltd

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

**Test Report:** **Determination of Particle Size Distribution** **Report Date:** 17/05/21  
BS 1377: Part 2: 1990

**Client:** Seymour Civil Engineering Ltd **Lab ref:** MT0318-17615  
**Client ref:** PRA-SPO13-S17

**Site:** British Steel, Redcar **Date sampled:**  
**Sampled by:** Client

**Sample location:** PRA-SPO13-S17 **Date received:** 08/04/21

**Material:** Recycled MADEGROUNG (Coarse)

**Source of material:** As location **Date test completed:** 10/05/21

**Test Method:** Wash and Dry Sieve **Test conducted by:** NY

**Specification:** SHW Series 600 Tbl 6/2

**Variation from standard method:** None

**Method of sample preparation:** BS 1377-1:1990

**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 5.7%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
300	100		6.3	12	
125	85		5	11	
90	37		3.35	9.9	
75	25		2	8.6	
37.5	17		1.18	7.2	
28	16		0.600	5.7	
20	16		0.425	5.0	
14	15		0.300	4.3	
10	13		0.150	2.7	
8	13		0.063	1.9	

**Comments:**

**Signed:**

For & on behalf of  
**Dunelm Testing Ltd**



Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	17/05/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-17616
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO13-S18
<b>Sample location:</b>	PRA-SPO13-S18	<b>Date sampled:</b>	
<b>Material:</b>	Recycled MADEGROUNG (Coarse)	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	08/04/21
<b>Test Method:</b>	Wash and Dry Sieve	<b>Date test completed:</b>	04/05/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	AG
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 4.2%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
300	100		6.3	14	
125	75		5	13	
90	41		3.35	12	
75	31		2	11	
37.5	22		1.18	9.2	
28	20		0.600	7.6	
20	19		0.425	6.8	
14	17		0.300	6.0	
10	16		0.150	4.1	
8	15		0.063	2.8	

**Comments:**

**Signed:**

For & on behalf of  
Dunelm Testing Ltd



Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	17/05/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-17617
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO13-S19
<b>Sample location:</b>	PRA-SPO13-S19	<b>Date sampled:</b>	
<b>Material:</b>	Recycled MADEGROUNG (Coarse)	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	08/04/21
<b>Test Method:</b>	Wash and Dry Sieve	<b>Date test completed:</b>	04/05/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	AG
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 4.8%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
300	100		6.3	10	
125	76		5	9.9	
90	25		3.35	9.2	
75	17		2	8.3	
37.5	14		1.18	7.5	
28	13		0.600	6.5	
20	12		0.425	6.0	
14	12		0.300	5.4	
10	11		0.150	3.9	
8	11		0.063	2.8	

**Comments:**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Signed:**

For & on behalf of  
**Dunelm Testing Ltd**

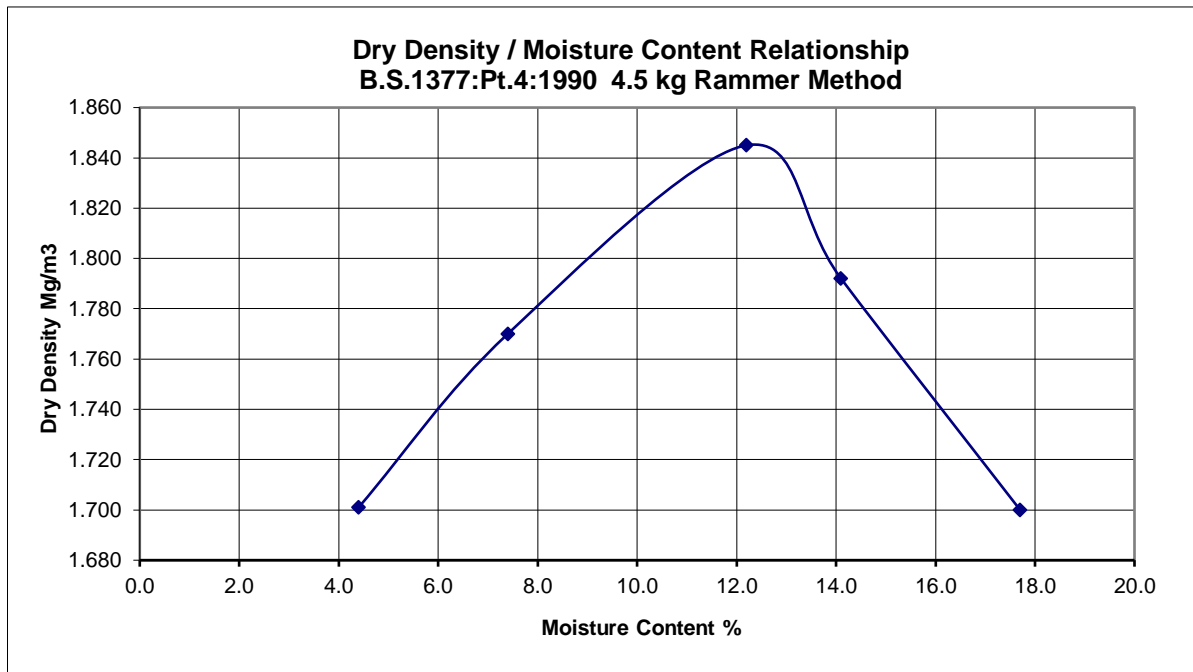
**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	01/06/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-17618
		<b>Client ref:</b>	PRA-SPO22-S4
<b>Site:</b>	British Steel, Redcar	<b>Date sampled:</b>	21/04/21
<b>Source:</b>	Site Won	<b>Sampled by:</b>	Client
<b>Sample location:</b>	PRA-SPO22-S4	<b>Date received:</b>	22/04/21
<b>Material:</b>	Brown slightly sandy slightly gravelly CLAY	<b>Date test completed:</b>	18/05/21
<b>Test Method:</b>	3.5.4.1/ 3.5.4.2/ 3.6.4.1/ 3.6.4.2 4.5 Kg Rammer	<b>Test conducted by:</b>	AG
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Max. size of cohesive pieces:</b>	

**Test Results**

Mould Type:	1 litre	% retained on 37.5mm Test Sieve:	0
Grading Zone:		% retained on 20mm Test Sieve:	0
Single/Multiple samples:	Single	Particle Density: (Assumed):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.84	<b>Optimum Moisture Content (%):</b>	12
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Comments :

**Signed:**

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)

For & on behalf of  
**Dunelm Testing Services**

<b>Test Report:</b>	<b>Determination of Liquid Limit, Plastic Limit &amp; Plasticity Index</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	13.05.2021
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318 / 17672-17680
		<b>Client ref:</b>	PRA – See Below
		<b>Date sampled:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Sampled by:</b>	Client
		<b>Date received:</b>	27/04/2021
<b>Sample location:</b>	As per below		
<b>Material:</b>	Dark Brown slightly sandy CLAY,	<b>Date test completed:</b>	11/05/2021
<b>Source of material:</b>	As Location (See Below)	<b>Test conducted by:</b>	AG
<b>Test Method:</b>	Clause 4.4		
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		
	Tested after Material >425µm grated		

#### Test Results

Test Ref/ Location	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Plasticity Class	Material Passing 425µm (%)
17672-PRA-AY-21-S2	36	17	19	CI	99
17673 PRA-AZ-19-S2	39	20	20	CI	100
17674 PRA-AU-19-S1	31	16	15	CL	100
17675 PRA-AT-18-S1	31	18	13	CL	100
17676 PRA-AY-22-S2	44	20	24	CI	98
17677 PRA-SP025-S5	38	22	16	CI	92
17678 PRA-SP025-S6	46	15	31	CI	100
17679 PRA-SP025-S7	49	24	25	CI	81
17680 PRA-AV-18-S1	45	25	20	CI	100

#### Comments:

Signed:



For & on behalf of  
Dunelm Testing Ltd

Authorised Signatories:  
[ ] M. Aiston (Director)  
[ ] Dresser (Director)

Page: 1 of 1





# DETS

## Certificate of Analysis

*Certificate Number* 21-09638

*Issued:* 12-May-21

*Client* Dunelm Testing Ltd  
Unit 5e  
Edwardson Road  
Meadowfield  
Durham  
TS5 6HA

*Our Reference* 21-09638

*Client Reference* D10379

*Order No* DT0488

*Contract Title* Seymour Redcar

*Description* 2 Soil samples.

*Date Received* 10-May-21

*Date Started* 10-May-21

*Date Completed* 12-May-21

*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



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-09638

Client Ref D10379

Contract Title Seymour Redcar

<b>Lab No</b>	1843862	1843863
<b>Sample ID</b>	PRA-AZ-19-S2/17673	PRA-SP025-55/17677
<b>Depth</b>		
<b>Other ID</b>		
<b>Sample Type</b>	D	D
<b>Sampling Date</b>	22/04/2021	26/04/2021
<b>Sampling Time</b>	n/s	n/s

Test	Method	LOD	Units		
<b>Inorganics</b>					
Calorific Value	DETSC 5008	1	MJ/kg	< 1.0	< 1.0

## Information in Support of the Analytical Results

Our Ref 21-09638

Client Ref D10379

Contract Seymour Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1843862	PRA-AZ-19-S2/17673 SOIL	22/04/21	PT 1L		
1843863	PRA-SP025-55/17677 SOIL	26/04/21	PT 1L		

Key: P-Plastic 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

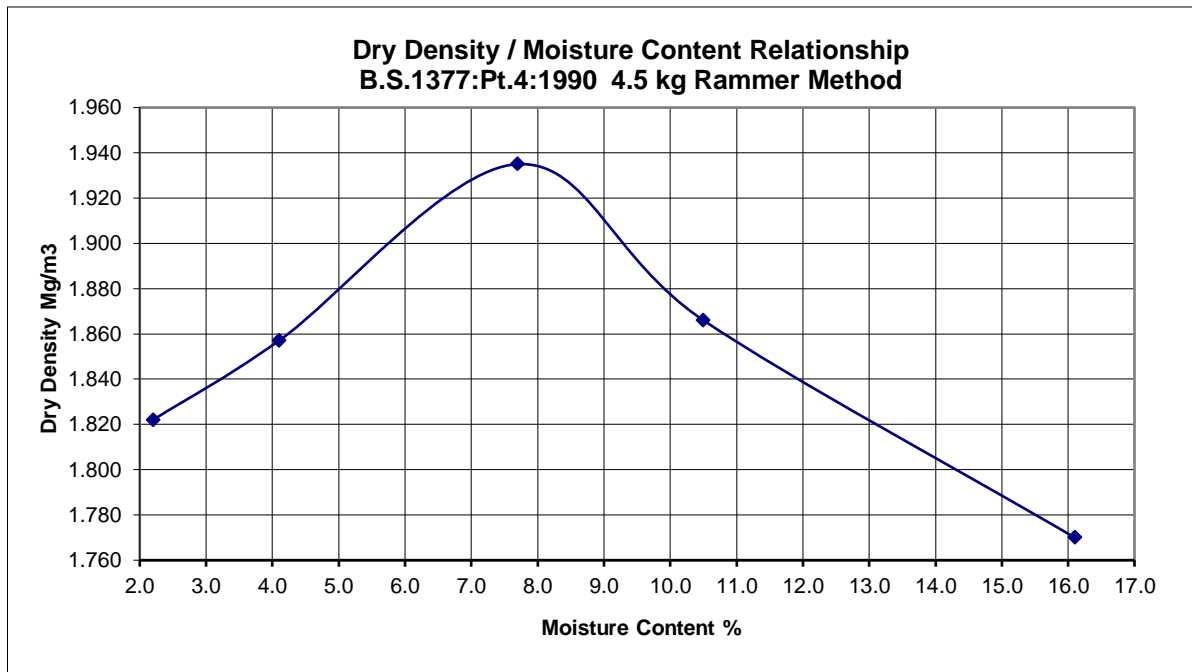
End of Report

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	27.05.2021
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-17677
		<b>Client ref:</b>	PRA-SPO25-S5
<b>Site:</b>	British Steel, Redcar	<b>Date sampled:</b>	27.04.2021
<b>Source:</b>	Site Won	<b>Sampled by:</b>	Client
<b>Sample location:</b>	PRA-SPO25-S5	<b>Date received:</b>	27.04.2021
<b>Material:</b>	Brown sandy gravelly slightly silty CLAY	<b>Date test completed:</b>	18.05.2021
<b>Test Method:</b>	3.5.4.2 4.5 Kg Rammer	<b>Test conducted by:</b>	NY/AG
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Max. size of cohesive pieces:</b>	N/A

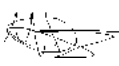
**Test Results**

Mould Type:	1 Litre	% retained on 37.5mm Test Sieve:	0
Grading Zone:		% retained on 20mm Test Sieve:	0
Single/Multiple samples:	Single	Particle Density: (Assumed/):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.94	<b>Optimum Moisture Content (%):</b>	7.8
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Comments :

**Signed:** 

For & on behalf of  
**Dunelm Testing Services**

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)

# Laboratory Report Front Sheet

Solmek  
12-16 Yarm Road,  
Stockton on Tees,  
TS18 3NA  
01642 607083  
lab@solmek.com



Site name	Job number
British Steel, Redcar	MT0318

## Client details:

Reference: MT0318  
Name: Dunelm Testing  
Address: Unit 5E Edwardson Road,  
Meadowfield,  
County Durham,  
DH7 8RL  
  
Telephone: 0191 349 9210  
Email: maiston@dunelmtesting.co.uk  
  
FAO: M Aiston


**Date commenced:** 27/04/2021

**Date reported:** 18/05/2021

## Observations and interpretations are outside of the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. 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 in full, without the prior written approval of the laboratory.

Samples will be held at the laboratory for a period of 4 weeks after the report date. After the all samples will be disposed of. Should further testing be required then the office should be informed before the above date.

<b>Signature:</b>  	<b>Approved Signatories:</b> <input checked="" type="checkbox"/> K Watkin (Lab Manager) <input type="checkbox"/> T Finnimore (Senior Technician) <input type="checkbox"/> J Brischuk (Senior Technician)
--------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

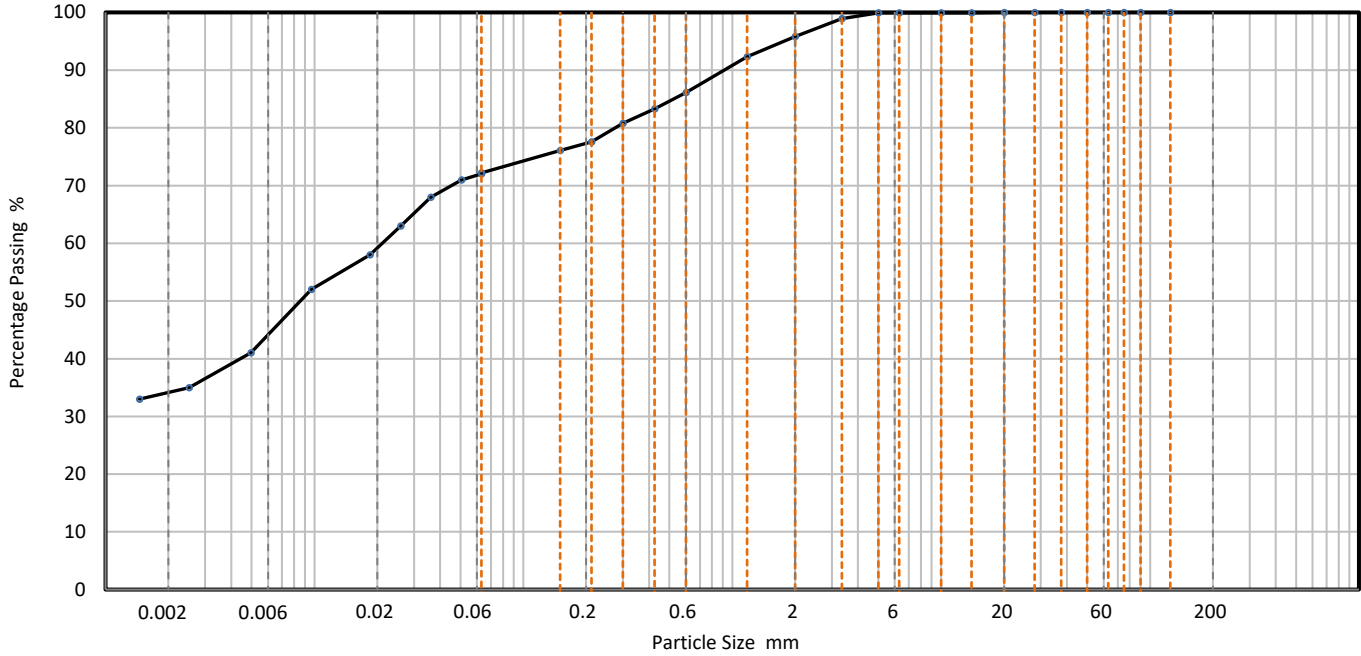
# PARTICLE SIZE DISTRIBUTION

Solmek  
12-16 Yarm Road,  
Stockton on Tees,  
TS18 3NA  
01642 607083  
lab@solmek.com



Site name	Job number
British Steel, Redcar	MT0318

Hole	PRA-SPO25-S6 (17678)	Lab sample ID	SLMK2021050720
Depth (Top)	m 0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m	Soil Description	Brown, slightly gravelly, slightly sandy, Very Clayey SILT
Sample type	B		



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	72
90	100	0.0507	71
75	100	0.0361	68
63	100	0.0259	63
50	100	0.0185	58
37.5	100	0.0097	52
28	100	0.0050	41
20	100	0.0025	35
14	100	0.0015	33
10	100		
6.3	100		
5	100		
3.35	99		
2	96		
1.18	92		
0.6	86	Particle density (assumed)	
0.425	83	2.65 Mg/m <sup>3</sup>	
0.3	81		
0.212	78		
0.15	76		
0.063	72		

Dry Mass of sample, g

495

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	4.2
Sand	23.7
Silt	37.7
Clay	34.4

Grading Analysis		
D <sub>100</sub>	mm	
D <sub>60</sub>	mm	0.021
D <sub>30</sub>	mm	
D <sub>10</sub>	mm	
Uniformity Coefficient		
Curvature Coefficient		

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

Hydrometer is the usual Sedimentation method carried out by Solmek and is part of the Solmek UKAS accreditation schedule.

Approved by	KW
Approval date	18/05/2021 14:36







# DETS

## Certificate of Analysis

*Certificate Number* 21-10559

*Issued:* 24-May-21

*Client* Dunelm Testing Ltd  
Unit 5e  
Edwardson Road  
Meadowfield  
Durham  
TS5 6HA

*Our Reference* 21-10559

*Client Reference* MT0318

*Order No* DT0498

*Contract Title* British Steel, Redcar

*Description* 3 Soil samples.

*Date Received* 19-May-21

*Date Started* 19-May-21

*Date Completed* 24-May-21

*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



2139

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-10559

Client Ref MT0318

Contract Title British Steel, Redcar

Lab No	1849322	1849323	1849324
Sample ID	PRA-SP034-S4	PRA-AV-19-S1	PRA-AV-19-S3
Depth			
Other ID	18028	18020	18019
Sample Type	SOIL	SOIL	SOIL
Sampling Date	13/05/2021	08/05/2021	08/05/2021
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>Inorganics</b>						
pH	DETSC 2008#		pH	9.9	8.9	8.9
Calorific Value	DETSC 5008	1	MJ/kg	< 1.0	< 1.0	< 1.0
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1400	2700	2000

## Information in Support of the Analytical Results

Our Ref 21-10559  
 Client Ref MT0318  
 Contract British Steel, Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date		Containers Received	Holding time exceeded for tests	Inappropriate container for tests
		Sampled				
1849322	PRA-SP034-S4 SOIL	13/05/21		PT 1L		
1849323	PRA-AV-19-S1 SOIL	08/05/21		PT 1L	pH + Conductivity (7 days)	
1849324	PRA-AV-19-S3 SOIL	08/05/21		PT 1L	pH + Conductivity (7 days)	

Key: P-Plastic 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

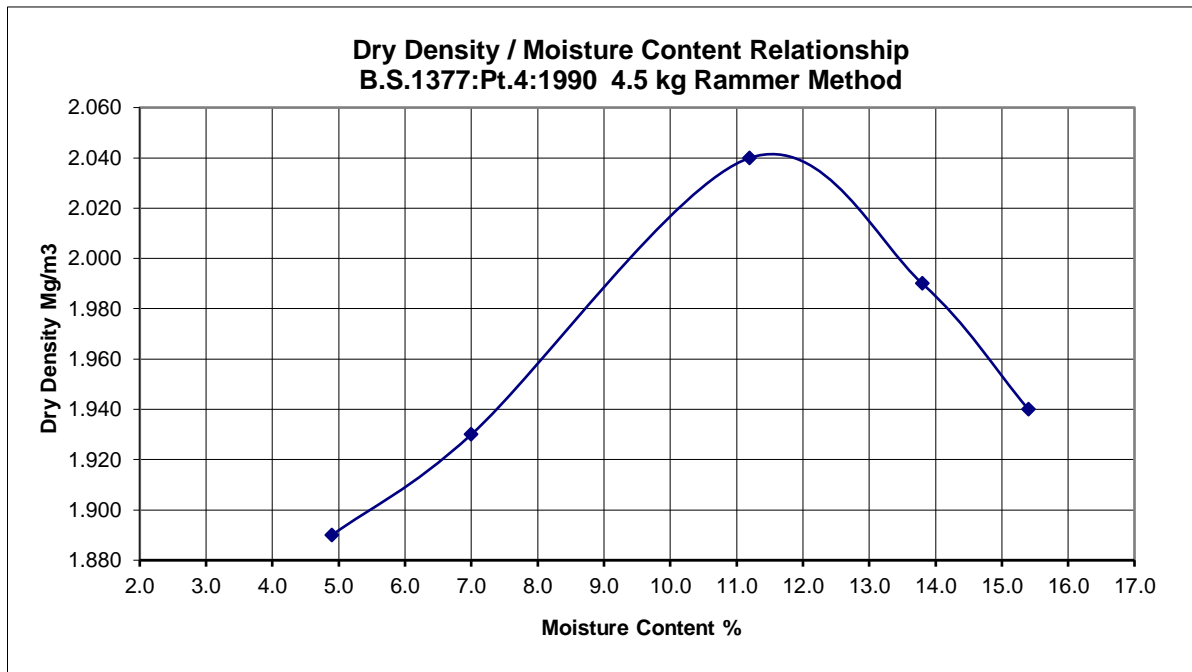
End of Report

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	02/06/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-18021
		<b>Client ref:</b>	PRA-SPO34-S1
<b>Site:</b>	British Steel, Redcar	<b>Date sampled:</b>	17/05/21
<b>Source:</b>	Site Won	<b>Sampled by:</b>	Client
<b>Sample location:</b>	PRA-SPO34-S1	<b>Date received:</b>	18/05/21
<b>Material:</b>	Black/Brown MADEGROUND	<b>Date test completed:</b>	26/05/21
<b>Test Method:</b>	3.5.4.2 4.5 Kg Rammer	<b>Test conducted by:</b>	AG
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Max. size of cohesive pieces:</b>	N/A

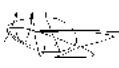
**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	17
Grading Zone:	3	% retained on 20mm Test Sieve:	9.5
Single/Multiple samples:	Multiple	Particle Density: (Assumed/):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	2.04	<b>Optimum Moisture Content (%):</b>	11
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Comments :

**Signed:** 

For & on behalf of  
**Dunelm Testing Services**

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	02/06/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18021
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO34-S1
<b>Sample location:</b>	PRA-SPO34-S1	<b>Date sampled:</b>	17/05/21
<b>Material:</b>	Recycled MADEGROUNG	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	18/05/21
<b>Test Method:</b>	Wash and Dry Sieve Method	<b>Date test completed:</b>	25/05/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	NY
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 10%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500	100		6.3	29	
300	100		5	26	
125	100		3.35	22	
90	100		2	18	
75	100		1.18	15	
63	100		0.600	11	
50	88		0.425	9.0	
37.5	71		0.300	7.5	
28	63		0.212	6.0	
20	53		0.150	4.6	
14	46		0.063	2.4	
10	37				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	02/06/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18022
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO34-S2
<b>Sample location:</b>	PRA-SPO34-S2	<b>Date sampled:</b>	17/05/21
<b>Material:</b>	Recycled MADEGROUNG	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	18/05/21
<b>Test Method:</b>	Wash and Dry Sieve Method	<b>Date test completed:</b>	26/05/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	NY
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

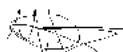
**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 12%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500	100		6.3	38	
300	100		5	35	
125	100		3.35	31	
90	100		2	27	
75	100		1.18	23	
63	100		0.600	19	
50	90		0.425	16	
37.5	82		0.300	14	
28	71		0.212	11	
20	62		0.150	8.6	
14	52		0.063	4.7	
10	45				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	02/06/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18025
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO35-S1
<b>Sample location:</b>	PRA-SPO35-S1	<b>Date sampled:</b>	17/05/21
<b>Material:</b>	Recycled MADEGROUNG (Coarse)	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	18/05/21
<b>Test Method:</b>	Wash and Dry Sieve	<b>Date test completed:</b>	26/05/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	NY
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 8.9%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
300	100		6.3	3.3	
125	100		5	3.0	
90	43		3.35	2.7	
75	11		2	2.2	
37.5	4.6		1.18	1.7	
28	4.4		0.600	1.2	
20	4.3		0.425	1.0	
14	4.0		0.300	0.8	
10	3.7		0.150	0.5	
8	3.5		0.063	0.3	

**Comments:**

**Signed:**

For & on behalf of  
Dunelm Testing Ltd



Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1



<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	02/06/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18026
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO35-S2
<b>Sample location:</b>	PRA-SPO35-S2	<b>Date sampled:</b>	17/05/21
<b>Material:</b>	Recycled MADEGROUNG (Coarse)	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	18/05/21
<b>Test Method:</b>	Wash and Dry Sieve	<b>Date test completed:</b>	26/05/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	NY
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 8.3%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
300	100		6.3	3.9	
125	100		5	3.6	
90	61		3.35	3.1	
75	18		2	2.7	
37.5	5.3		1.18	2.4	
28	4.9		0.600	2.1	
20	4.7		0.425	2.0	
14	4.5		0.300	1.9	
10	4.3		0.150	1.6	
8	4.1		0.063	1.4	

**Comments:**

**Signed:**

For & on behalf of  
Dunelm Testing Ltd



Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	02/06/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18027
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO35-S3
<b>Sample location:</b>	PRA-SPO35-S3	<b>Date sampled:</b>	17/05/21
<b>Material:</b>	Recycled MADEGROUNG (Coarse)	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	18/05/21
<b>Test Method:</b>	Wash and Dry Sieve	<b>Date test completed:</b>	26/05/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	NY
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 7.2%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
300	100		6.3	0.5	
125	100		5	0.5	
90	49		3.35	0.5	
75	15		2	0.5	
37.5	0.6		1.18	0.5	
28	0.5		0.600	0.4	
20	0.5		0.425	0.4	
14	0.5		0.300	0.4	
10	0.5		0.150	0.3	
8	0.5		0.063	0.3	

**Comments:**

**Signed:**

For & on behalf of  
Dunelm Testing Ltd



Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

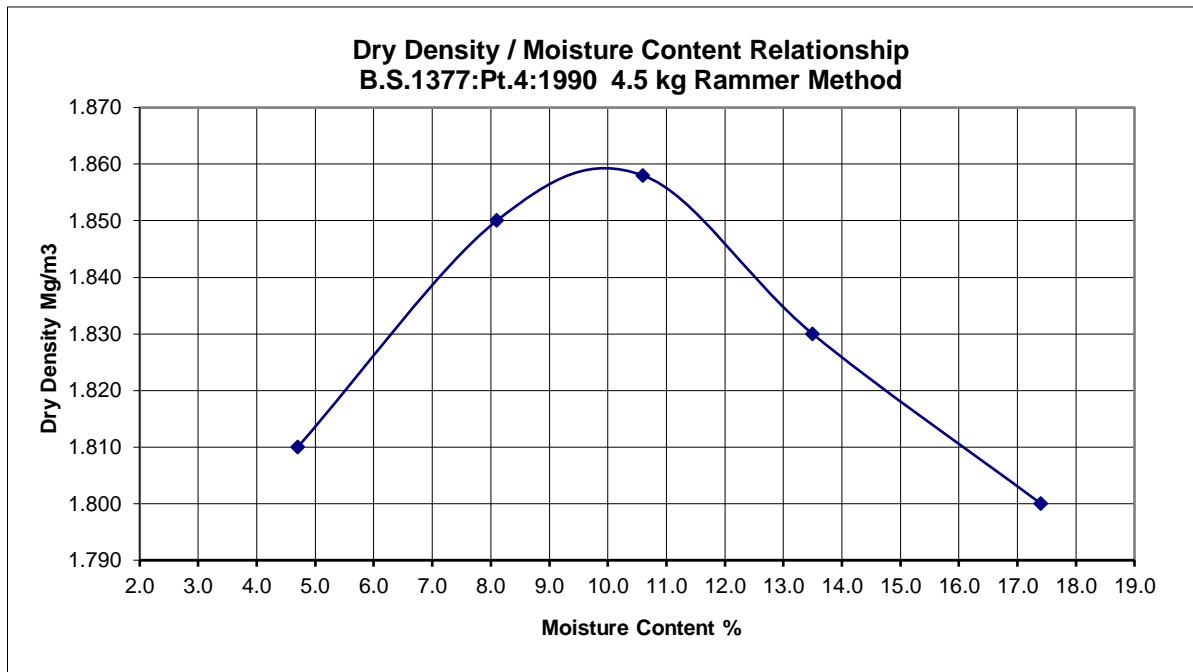
**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	02/06/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-18028
		<b>Client ref:</b>	PRA-SPO34-S4
<b>Site:</b>	British Steel, Redcar	<b>Date sampled:</b>	17/05/21
<b>Source:</b>	Site Won	<b>Sampled by:</b>	Client
<b>Sample location:</b>	PRA-SPO34-S4	<b>Date received:</b>	18/05/21
<b>Material:</b>	Black/Brown MADEGROUND	<b>Date test completed:</b>	26/05/21
<b>Test Method:</b>	3.5.4.2 4.5 Kg Rammer	<b>Test conducted by:</b>	AG
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Max. size of cohesive pieces:</b>	N/A

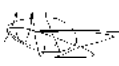
**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	5.5
Grading Zone:	3	% retained on 20mm Test Sieve:	7.9
Single/Multiple samples:	Multiple	Particle Density: (Assumed/):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.86	<b>Optimum Moisture Content (%):</b>	10
------------------------------------------------	------	--------------------------------------	----



Comments :

**Signed:** 

For & on behalf of  
**Dunelm Testing Services**

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)

# Laboratory Report Front Sheet

Solmek  
12-16 Yarm Road,  
Stockton on Tees,  
TS18 3NA  
01642 607083  
lab@solmek.com



Site name	Job number
Redcar	MT0318

## Client details:

Reference: MT0318  
Name: Dunelm Testing  
Address: Unit 5E Edwardson Road,  
Meadowfield,  
County Durham,  
DH7 8RL  
  
Telephone: 0191 349 9210  
Email: maiston@dunelmtesting.co.uk  
  
FAO: M. Aiston

**Date commenced:** 21/05/2021

**Date reported:** 01/06/2021

## Observations and interpretations are outside of the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. 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 in full, without the prior written approval of the laboratory.

Samples will be held at the laboratory for a period of 4 weeks after the report date. After the all samples will be disposed of. Should further testing be required then the office should be informed before the above date.

Signature:	Approved Signatories:
	<input type="checkbox"/> K Watkin (Lab Manager) <input type="checkbox"/> T Finnimore (Senior Technician) <input checked="" type="checkbox"/> J Brischuk (Senior Technician)

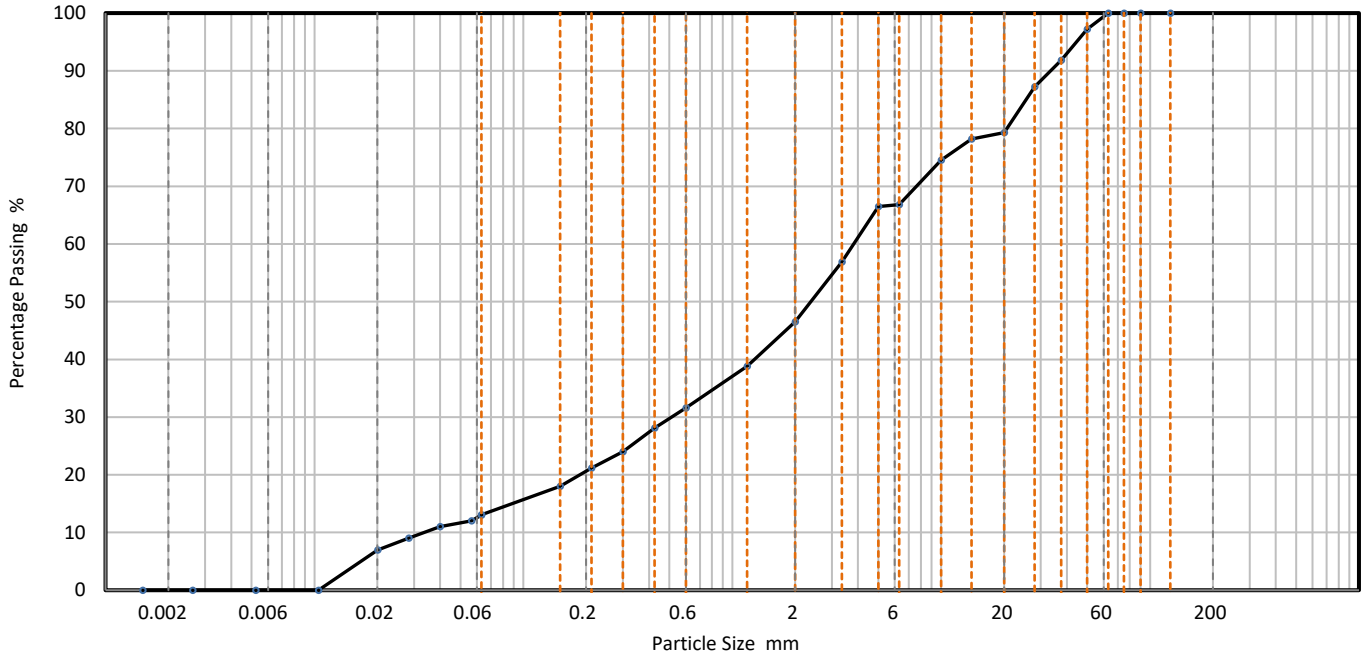
# PARTICLE SIZE DISTRIBUTION

Solmek  
12-16 Yarm Road,  
Stockton on Tees,  
TS18 3NA  
01642 607083  
lab@solmek.com



Site name	Job number
Redcar	MT0318

Hole	PRA-SPO34-54	Sampled 13/05/21 (18028)	Lab sample ID	SLMK2021052113
Depth (Top)	m	0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m		Soil Description	Brown, slightly sandy, gravelly, CLAY
Sample type	B			



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	13
90	100	0.0564	12
75	100	0.0400	11
63	100	0.0283	9
50	97	0.0201	7
37.5	92	0.0104	0
28	87	0.0052	0
20	79	0.0026	0
14	78	0.0015	0
10	75		
6.3	67		
5	67		
3.35	57		
2	47		
1.18	39		
0.6	32	Particle density (assumed)	
0.425	28	2.65 Mg/m <sup>3</sup>	
0.3	24		
0.212	21		
0.15	18		
0.063	13		

Dry Mass of sample, g

6934

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	53.5
Sand	33.4
Silt	13.1
Clay	0.0

Grading Analysis		
D100	mm	
D60	mm	3.82
D30	mm	0.512
D10	mm	0.0319
Uniformity Coefficient		120
Curvature Coefficient		2.2

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

Hydrometer is the usual Sedimentation method carried out by Solmek and is part of the Solmek UKAS accreditation schedule.

Approved by	KW
Approval date	01/06/2021 13:34

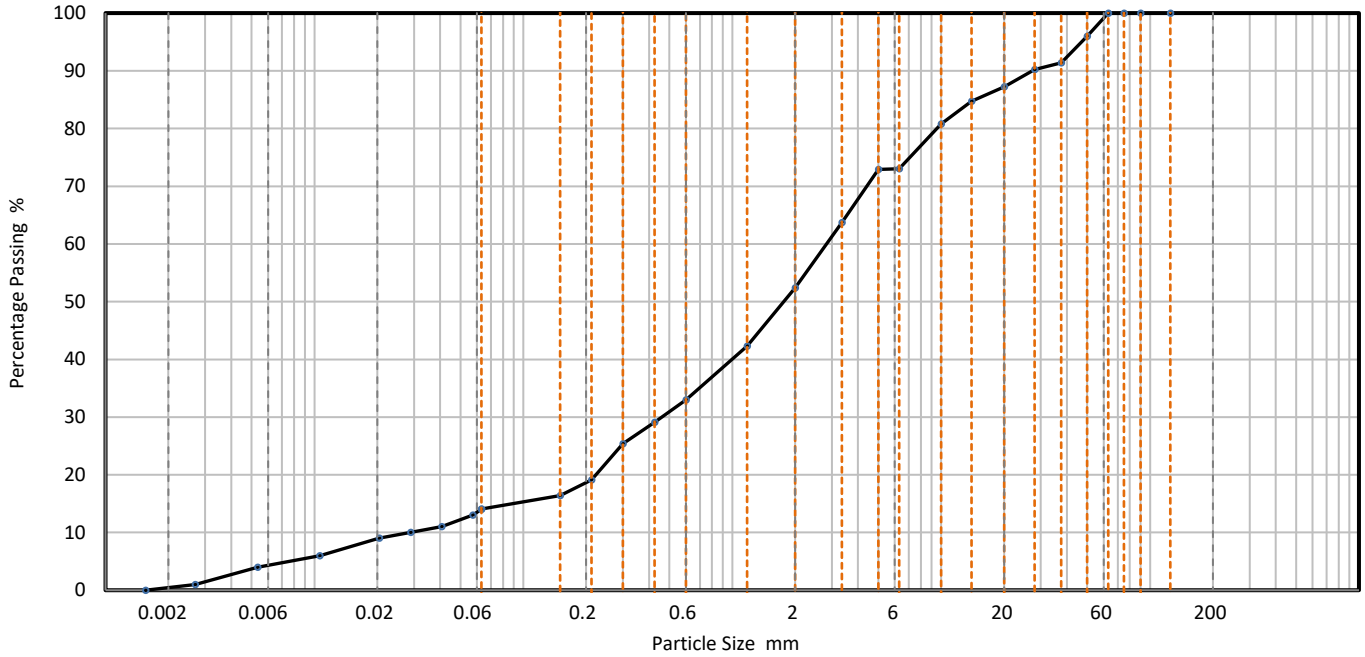
# PARTICLE SIZE DISTRIBUTION

Solmek  
12-16 Yarm Road,  
Stockton on Tees,  
TS18 3NA  
01642 607083  
lab@solmek.com



Site name	Job number
Redcar	MT0318

Hole	PRA-SPO34-S5	Sampled 13/05/21 (18029)	Lab sample ID	SLMK2021052114
Depth (Top)	m	0.00	Test Method	BS 1377 - 2 : 1990 Clauses 9.2 and 9.5
Depth (Base)	m		Soil Description	Brown, slightly sandy, Gravelly CLAY
Sample type	B			



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0630	14
90	100	0.0572	13
75	100	0.0406	11
63	100	0.0288	10
50	96	0.0204	9
37.5	91	0.0106	6
28	90	0.0053	4
20	87	0.0027	1
14	85	0.0016	0
10	81		
6.3	73		
5	73		
3.35	64		
2	52		
1.18	42		
0.6	33	Particle density (assumed)	
0.425	29	2.65 Mg/m <sup>3</sup>	
0.3	25		
0.212	19		
0.15	16		
0.063	14		

Dry Mass of sample, g

6930

Sample Proportions	% dry mass
Very coarse	0.0
Gravel	47.6
Sand	38.3
Silt	13.7
Clay	0.4

Grading Analysis		
D100	mm	
D60	mm	2.83
D30	mm	0.46
D10	mm	0.0312
Uniformity Coefficient		91
Curvature Coefficient		2.4

Remarks
Preparation and testing in accordance with test method unless noted below

**Accreditation status**

Hydrometer is the usual Sedimentation method carried out by Solmek and is part of the Solmek UKAS accreditation schedule.

Approved by	KW
Approval date	01/06/2021 13:35

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	13/05/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318/18035
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SP033-S1
<b>Sample location:</b>	PRA-SP033-S1	<b>Date sampled:</b>	
<b>Material:</b>	Crushed CONCRETE/BRICK	<b>Sampled by:</b>	Client
<b>Source of material:</b>		<b>Date received:</b>	13/05/21
<b>Test Method:</b>	Wash & Dry Sieving	<b>Date test completed:</b>	18/05/21
<b>Specification:</b>		<b>Test conducted by:</b>	AG
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

#### Test Results

Moisture Content (BS1377, Part 2, 1990) : 7.8

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500	100		6.3	10	
300	100		5	9.7	
125	100		3.35	8.6	
90	65		2	7.6	
75	41		1.18	6.8	
37.5	20		0.600	6.0	
28	17		0.425	5.6	
20	16		0.300	5.2	
14	14		0.150	4.3	
10	12		0.063	3.5	
8	11				

Comments:

Signed:

For & on behalf of  
Dunelm Testing Ltd



Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

Page: 1 of 1



<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	13/05/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318/18036
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SP033-S2
<b>Sample location:</b>	PRA-SP033-S2	<b>Date sampled:</b>	
<b>Material:</b>	Crushed CONCRETE/BRICK	<b>Sampled by:</b>	Client
<b>Source of material:</b>		<b>Date received:</b>	13/05/21
<b>Test Method:</b>	Wash & Dry Sieving	<b>Date test completed:</b>	18/05/21
<b>Specification:</b>		<b>Test conducted by:</b>	AG
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		


**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 5.9

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500	100		6.3	11	
300	100		5	11	
125	98		3.35	9.4	
90	58		2	8.1	
75	37		1.18	7.2	
37.5	22		0.600	6.3	
28	19		0.425	5.8	
20	17		0.300	5.3	
14	15		0.150	4.6	
10	13		0.063	3.5	
8	12				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	13/05/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318/18037
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SP033-S3
<b>Sample location:</b>	PRA-SP033-S3	<b>Date sampled:</b>	
<b>Material:</b>	Crushed CONCRETE/BRICK	<b>Sampled by:</b>	Client
<b>Source of material:</b>		<b>Date received:</b>	13/05/21
<b>Test Method:</b>	Wash & Dry Sieving	<b>Date test completed:</b>	18/05/21
<b>Specification:</b>		<b>Test conducted by:</b>	AG
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 8.5

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500	100		6.3	13	
300	100		5	12	
125	100		3.35	11	
90	63		2	9.8	
75	43		1.18	8.8	
37.5	25		0.600	7.8	
28	22		0.425	7.3	
20	19		0.300	6.8	
14	17		0.150	5.6	
10	15		0.063	4.6	
8	14				

**Comments:**

**Signed:**

For & on behalf of  
**Dunelm Testing Ltd**



Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	13/05/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318/18038
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SP033-S4
<b>Sample location:</b>	PRA-SP033-S4	<b>Date sampled:</b>	
<b>Material:</b>	Crushed CONCRETE/BRICK	<b>Sampled by:</b>	Client
<b>Source of material:</b>		<b>Date received:</b>	13/05/21
<b>Test Method:</b>	Wash & Dry Sieving	<b>Date test completed:</b>	18/05/21
<b>Specification:</b>		<b>Test conducted by:</b>	AG
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

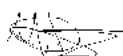
**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 8.2

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500	100		6.3	11	
300	100		5	11	
125	97		3.35	9.8	
90	64		2	9.0	
75	43		1.18	8.3	
37.5	21		0.600	7.5	
28	19		0.425	7.1	
20	16		0.300	6.6	
14	14		0.150	5.5	
10	13		0.063	4.6	
8	12				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	13/05/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318/18039
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SP033-S5
<b>Sample location:</b>	PRA-SP033-S5	<b>Date sampled:</b>	
<b>Material:</b>	Crushed CONCRETE/BRICK	<b>Sampled by:</b>	Client
<b>Source of material:</b>		<b>Date received:</b>	13/05/21
<b>Test Method:</b>	Wash & Dry Sieving	<b>Date test completed:</b>	18/05/21
<b>Specification:</b>		<b>Test conducted by:</b>	AG
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

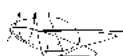
**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 7.3

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500	100		6.3	16	
300	100		5	15	
125	100		3.35	13	
90	75		2	11	
75	47		1.18	9.6	
37.5	29		0.600	8.3	
28	27		0.425	7.7	
20	24		0.300	7.1	
14	21		0.150	5.7	
10	18		0.063	4.6	
8	17				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	08/06/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18168
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO20-S7
<b>Sample location:</b>	PRA-SPO20-S7	<b>Date sampled:</b>	20/05/21
<b>Material:</b>	Black sandy GRAVEL	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	25/04/21
<b>Test Method:</b>	Wash and Dry Sieve Method	<b>Date test completed:</b>	08/06/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	AG
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

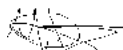
**Test Results**

Moisture Content (BS1377, Part 2, 1990) 10 %

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500	100		6.3	43	
300	100		5	40	
125	100		3.35	33	
90	100		2	26	
75	90		1.18	21	
63	90		0.600	17	
50	85		0.425	15	
37.5	82		0.300	13	
28	76		0.212	11	
20	67		0.150	9.6	
14	58		0.063	6.7	
10	52				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

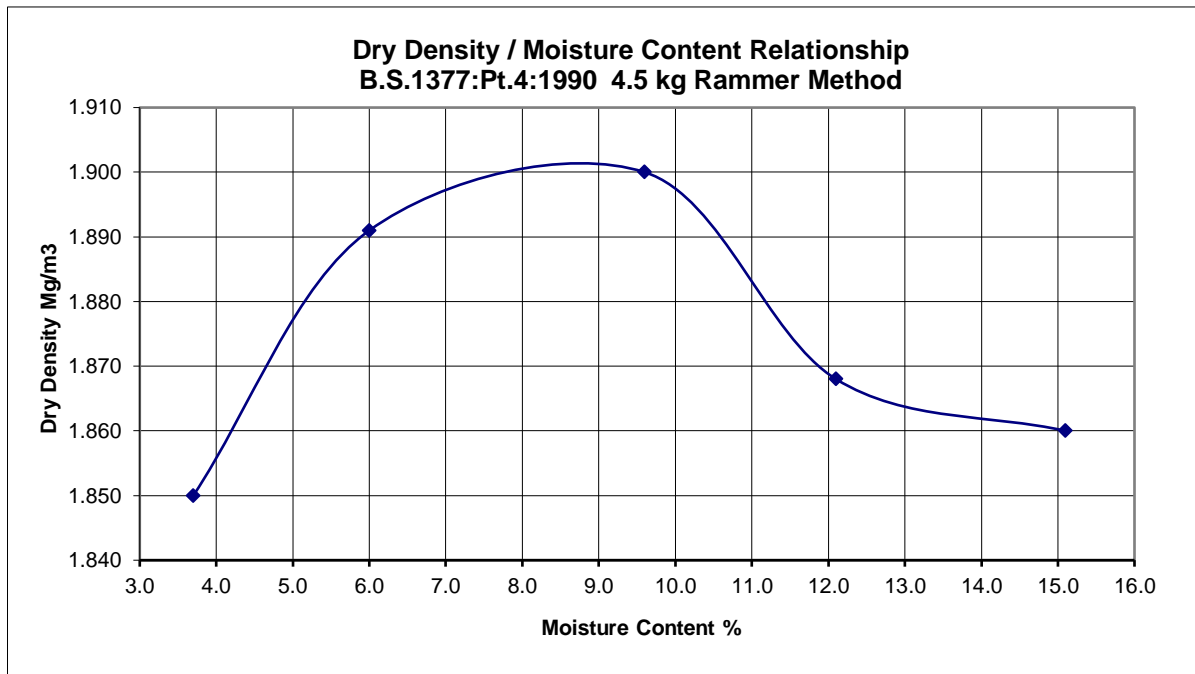
**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	08/06/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-18170
		<b>Client ref:</b>	PRA-SPO14-S11
<b>Site:</b>	British Steel, Redcar	<b>Date sampled:</b>	20/05/21
<b>Source:</b>	Site Won	<b>Sampled by:</b>	Client
<b>Sample location:</b>	PRA-SPO14-S11	<b>Date received:</b>	25/05/21
<b>Material:</b>	Black sandy GRAVEL	<b>Date test completed:</b>	28/05/21
<b>Test Method:</b>	3.5.4.2 4.5 Kg Rammer	<b>Test conducted by:</b>	NE/AG
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Max. size of cohesive pieces:</b>	N/A

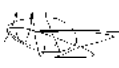
**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	3.5
Grading Zone:	3	% retained on 20mm Test Sieve:	15
Single/Multiple samples:	Multiple	Particle Density: (Assumed/):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.90	<b>Optimum Moisture Content (%):</b>	9.0
------------------------------------------------	------	--------------------------------------	-----



Comments :

Signed: 

For & on behalf of  
**Dunelm Testing Services**

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)



# DETS

## Certificate of Analysis

*Certificate Number* 21-11253

*Issued:* 02-Jun-21

*Client* Dunelm Testing Ltd  
Unit 5e  
Edwardson Road  
Meadowfield  
Durham  
TS5 6HA

*Our Reference* 21-11253

*Client Reference* MT0318

*Order No* DT0508

*Contract Title* British Steel, Redcar

*Description* One Soil sample.

*Date Received* 27-May-21

*Date Started* 27-May-21

*Date Completed* 02-Jun-21

*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





## Summary of Chemical Analysis

### Soil Samples

*Our Ref* 21-11253  
*Client Ref* MT0318  
*Contract Title* British Steel, Redcar

<b>Lab No</b>	1853781
<b>Sample ID</b>	PRA SP014-S11
<b>Depth</b>	
<b>Other ID</b>	18170
<b>Sample Type</b>	SOIL
<b>Sampling Date</b>	17/05/2021
<b>Sampling Time</b>	n/s

Test	Method	LOD	Units
<b>Inorganics</b>			
Calorific Value	DETSC 5008	1	MJ/kg
			< 1.0

## Information in Support of the Analytical Results

Our Ref 21-11253  
 Client Ref MT0318  
 Contract British Steel, Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1853781	PRA SP014-S11 SOIL	17/05/21	PT 1L		
<p>Key: P-Plastic T-Tub</p> <p>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.</p>					

### Soil Analysis Notes

<p>Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.</p> <p>Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.</p> <p>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.</p>
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

### Disposal

<p>From the issue date of this test certificate, samples will be held for the following times prior to disposal :-</p> <p>Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months</p>
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

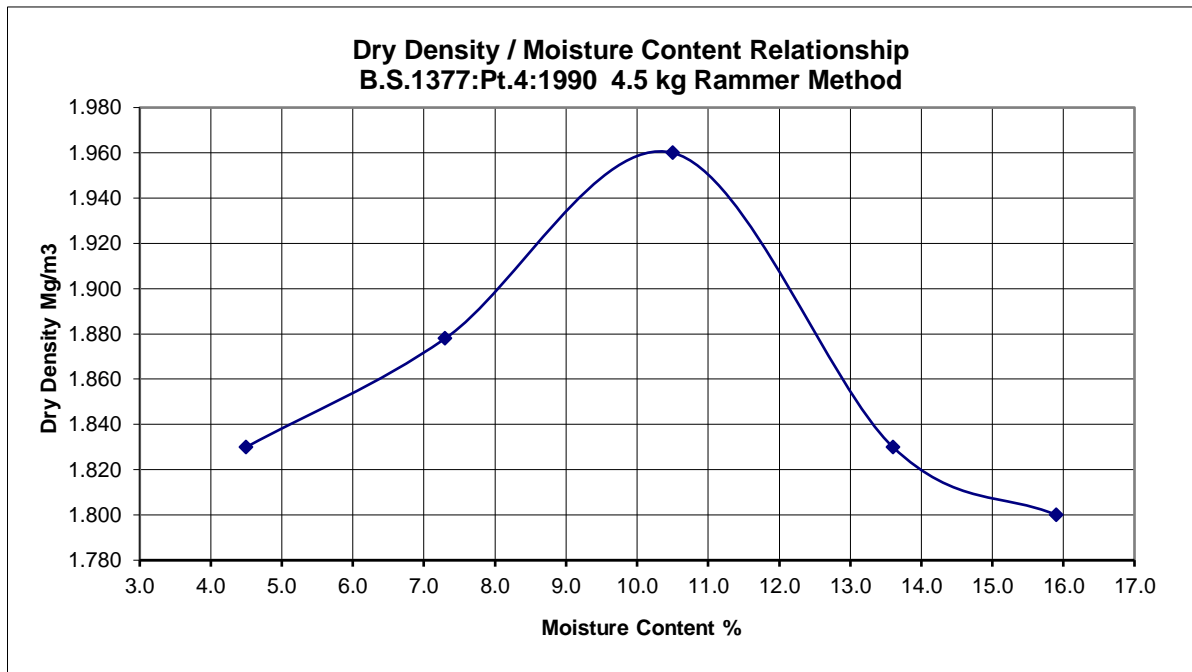
End of Report

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	08/06/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-18171
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO14-S12
<b>Source:</b>	Site Won	<b>Date sampled:</b>	20/05/21
<b>Sample location:</b>	PRA-SPO14-S12	<b>Sampled by:</b>	Client
<b>Material:</b>	Black sandy GRAVEL	<b>Date received:</b>	25/05/21
<b>Test Method:</b>	3.5.4.2 4.5 Kg Rammer	<b>Date test completed:</b>	28/05/21
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Test conducted by:</b>	NE/AG
		<b>Max. size of cohesive pieces:</b>	N/A

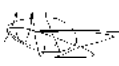
**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	2.0
Grading Zone:	3	% retained on 20mm Test Sieve:	16
Single/Multiple samples:	Multiple	Particle Density: (Assumed/):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.96	<b>Optimum Moisture Content (%):</b>	11
------------------------------------------------	------	--------------------------------------	----



Comments :

**Signed:** 

For & on behalf of  
**Dunelm Testing Services**

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	04/06/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18171
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO14-S12
<b>Sample location:</b>	PRA-SPO14-S12	<b>Date sampled:</b>	20/05/21
<b>Material:</b>	Black sandy GRAVEL	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	25/04/21
<b>Test Method:</b>	Wash and Dry Sieve Method	<b>Date test completed:</b>	28/04/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	AB
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

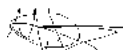
**Test Results**

Moisture Content (BS1377, Part 2, 1990) :6.8 %

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500	100		6.3	40	
300	100		5	38	
125	100		3.35	34	
90	100		2	31	
75	100		1.18	28	
63	100		0.600	24	
50	100		0.425	22	
37.5	98		0.300	19	
28	76		0.212	12	
20	60		0.150	9.0	
14	51		0.063	7.0	
10	45				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	04/06/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18172
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO31-S1
<b>Sample location:</b>	PRA-SPO31-S1	<b>Date sampled:</b>	20/05/21
<b>Material:</b>	Recycled MADEGROUNG (Coarse)	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	25/05/21
<b>Test Method:</b>	Wash and Dry Sieve	<b>Date test completed:</b>	02/06/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	NY
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

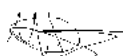
**Test Results**

Moisture Content (BS1377, Part 2, 1990) : 13%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
300	100		6.3	27	
125	91		5	25	
90	62		3.35	22	
75	49		2	18	
37.5	44		1.18	16	
28	42		0.600	13	
20	38		0.425	12	
14	35		0.300	10	
10	31		0.150	7.6	
8	29		0.063	5.4	

**Comments:**

**Signed:**



For & on behalf of  
Dunelm Testing Ltd

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

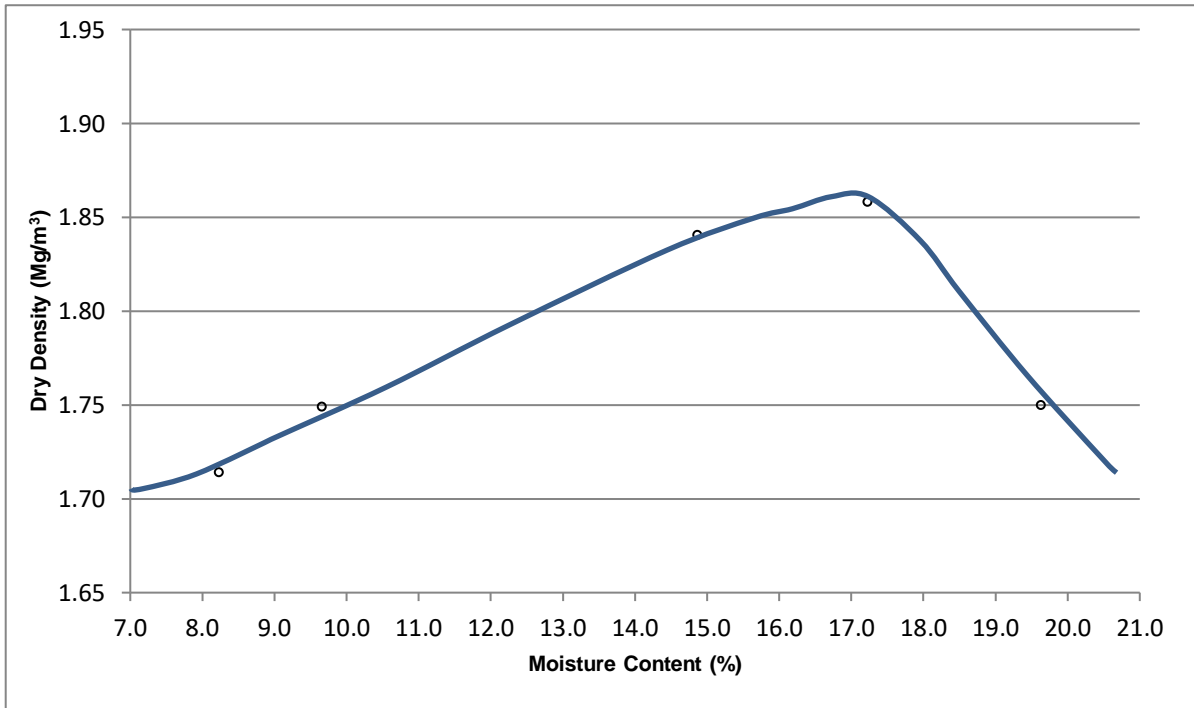
**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	08/06/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18172
		<b>Client ref:</b>	PRA-SPO31-S1
		<b>Date sampled:</b>	20/05/21
<b>Site:</b>	British Steel, Redcar	<b>Sampled by:</b>	Client
		<b>Date received:</b>	25/05/21
<b>Sample location:</b>	PRA-SPO31-S1	<b>Date test completed:</b>	04/06/21
<b>Material:</b>	Coarse MADEGROUND	<b>Test conducted by:</b>	AG
<b>Test Method:</b>	Clause 3.7.5.1 /3.7.5.2 Vibrating Hammer method	<b>Variation from standard method:</b>	None
<b>Sample Preparation:</b>	Clause 3.2.4.2		

**Test Results**

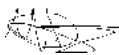
Mould Type:	CBR	% retained on 37.5mm Test Sieve:	5.3
Grading Zone:	3	% retained on 20mm Test Sieve:	3.5
Single/Multiple samples:	Multiple	Particle Density: (assumed)	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.85	<b>Optimum Moisture Content (%):</b>	17
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**Comments:** Combined with PRA-SPO31 S2 & S3

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	04/06/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18173
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO31-S2
<b>Sample location:</b>	PRA-SPO31-S2	<b>Date sampled:</b>	20/05/21
<b>Material:</b>	Recycled MADEGROUNG (Coarse)	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	25/05/21
<b>Test Method:</b>	Wash and Dry Sieve	<b>Date test completed:</b>	02/06/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	NY
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**

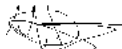
Moisture Content (BS1377, Part 2, 1990) : 13%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
300	100		6.3	35	
125	100		5	32	
90	87		3.35	29	
75	77		2	26	
37.5	58		1.18	22	
28	55		0.600	18	
20	50		0.425	16	
14	46		0.300	15	
10	41		0.150	11	
8	38		0.063	8.4	

**Comments:**

**Signed:**

For & on behalf of  
Dunelm Testing Ltd



Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1



**Test Report:** **Determination of Particle Size Distribution** **Report Date:** 04/06/21  
BS 1377: Part 2: 1990

**Client:** Seymour Civil Engineering Ltd **Lab ref:** MT0318-18174  
**Client ref:** PRA-SPO31-S3

**Site:** British Steel, Redcar **Date sampled:** 20/05/21  
**Sampled by:** Client

**Sample location:** PRA-SPO31-S3 **Date received:** 25/05/21

**Material:** Recycled MADEGROUNG (Coarse) **Date test completed:** 02/06/21

**Source of material:** As location **Test conducted by:** NY

**Test Method:** Wash and Dry Sieve

**Specification:** SHW Series 600 Tbl 6/2

**Variation from standard method:** None

**Method of sample preparation:** BS 1377-1:1990

**Test Results**

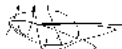
Moisture Content (BS1377, Part 2, 1990) : 11%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
300	100		6.3	21	
125	100		5	19	
90	73		3.35	17	
75	49		2	15	
37.5	40		1.18	13	
28	37		0.600	11	
20	32		0.425	9.9	
14	29		0.300	8.8	
10	25		0.150	6.4	
8	23		0.063	4.6	

**Comments:**

**Signed:**

For & on behalf of  
Dunelm Testing Ltd



Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	04/06/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18175
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO36-S1
<b>Sample location:</b>	PRA-SPO36-S1	<b>Date sampled:</b>	20/05/21
<b>Material:</b>	Recycled MADEGROUNG (Coarse)	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	25/05/21
<b>Test Method:</b>	Wash and Dry Sieve	<b>Date test completed:</b>	02/06/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	NY
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**

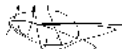
Moisture Content (BS1377, Part 2, 1990) :9.4%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
300	100		6.3	27	
125	100		5	25	
90	86		3.35	23	
75	73		2	20	
37.5	51		1.18	18	
28	45		0.600	15	
20	40		0.425	14	
14	36		0.300	12	
10	32		0.150	8.8	
8	29		0.063	7.1	

**Comments:**

**Signed:**

For & on behalf of  
Dunelm Testing Ltd



Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

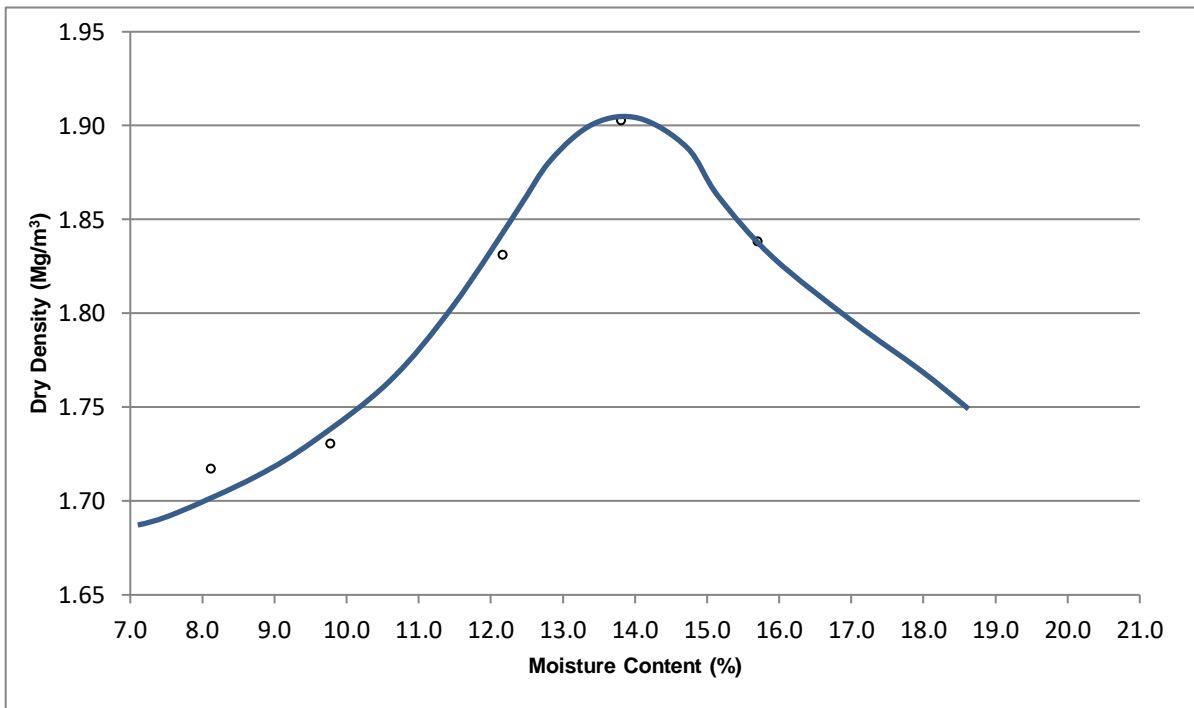
**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	08/06/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18175
		<b>Client ref:</b>	PRA-SPO36-S1
		<b>Date sampled:</b>	20/05/21
<b>Site:</b>	British Steel, Redcar	<b>Sampled by:</b>	Client
		<b>Date received:</b>	25/05/21
<b>Sample location:</b>	PRA-SPO36-S1	<b>Date test completed:</b>	04/06/21
<b>Material:</b>	Coarse MADEGROUND	<b>Test conducted by:</b>	AG
<b>Test Method:</b>	Clause 3.7.5.1 /Vibrating Hammer method	<b>Variation from standard method:</b>	None
<b>Sample Preparation:</b>	Clause 3.2.4.2		

**Test Results**

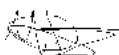
Mould Type:	CBR	% retained on 37.5mm Test Sieve:	21.6
Grading Zone:	3	% retained on 20mm Test Sieve:	5.0
Single/Multiple samples:	Multiple	Particle Density: (assumed)	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.90	<b>Optimum Moisture Content (%):</b>	14
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Comments: **Combined with PRA-SPO36 S2, S3 & S4**

Signed:



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	04/06/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18176
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO36-S2
<b>Sample location:</b>	PRA-SPO36-S2	<b>Date sampled:</b>	20/05/21
<b>Material:</b>	Recycled MADEGROUNG (Coarse)	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	25/05/21
<b>Test Method:</b>	Wash and Dry Sieve	<b>Date test completed:</b>	02/06/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	NY
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**

Moisture Content (BS1377, Part 2, 1990) :9.4%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
300	100		6.3	21	
125	100		5	20	
90	63		3.35	19	
75	53		2	17	
37.5	41		1.18	15	
28	37		0.600	13	
20	33		0.425	12	
14	28		0.300	11	
10	25		0.150	7.5	
8	23		0.063	5.1	

**Comments:**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Signed:**

For & on behalf of  
**Dunelm Testing Ltd**

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	04/06/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18177
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO36-S3
<b>Sample location:</b>	PRA-SPO36-S3	<b>Date sampled:</b>	20/05/21
<b>Material:</b>	Recycled MADEGROUNG (Coarse)	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	25/05/21
<b>Test Method:</b>	Wash and Dry Sieve	<b>Date test completed:</b>	03/06/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	NY
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**


Moisture Content (BS1377, Part 2, 1990) :9.2%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
300	100		6.3	37	
125	100		5	34	
90	94		3.35	32	
75	71		2	28	
37.5	61		1.18	25	
28	54		0.600	21	
20	50		0.425	19	
14	45		0.300	17	
10	41		0.150	13	
8	39		0.063	9.8	

**Comments:**

**Signed:**

For & on behalf of  
Dunelm Testing Ltd



Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	04/06/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18178
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO36-S4
<b>Sample location:</b>	PRA-SPO36-S4	<b>Date sampled:</b>	20/05/21
<b>Material:</b>	Recycled MADEGROUNG (Coarse)	<b>Sampled by:</b>	Client
<b>Source of material:</b>	As location	<b>Date received:</b>	25/05/21
<b>Test Method:</b>	Wash and Dry Sieve	<b>Date test completed:</b>	03/06/21
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	NY
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**

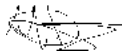
Moisture Content (BS1377, Part 2, 1990) :7.7%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
300	100		6.3	26	
125	100		5	24	
90	82		3.35	20	
75	65		2	17	
37.5	46		1.18	15	
28	43		0.600	12	
20	38		0.425	11	
14	33		0.300	9.8	
10	30		0.150	7.1	
8	28		0.063	5.0	

**Comments:**

**Signed:**

For & on behalf of  
Dunelm Testing Ltd



Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

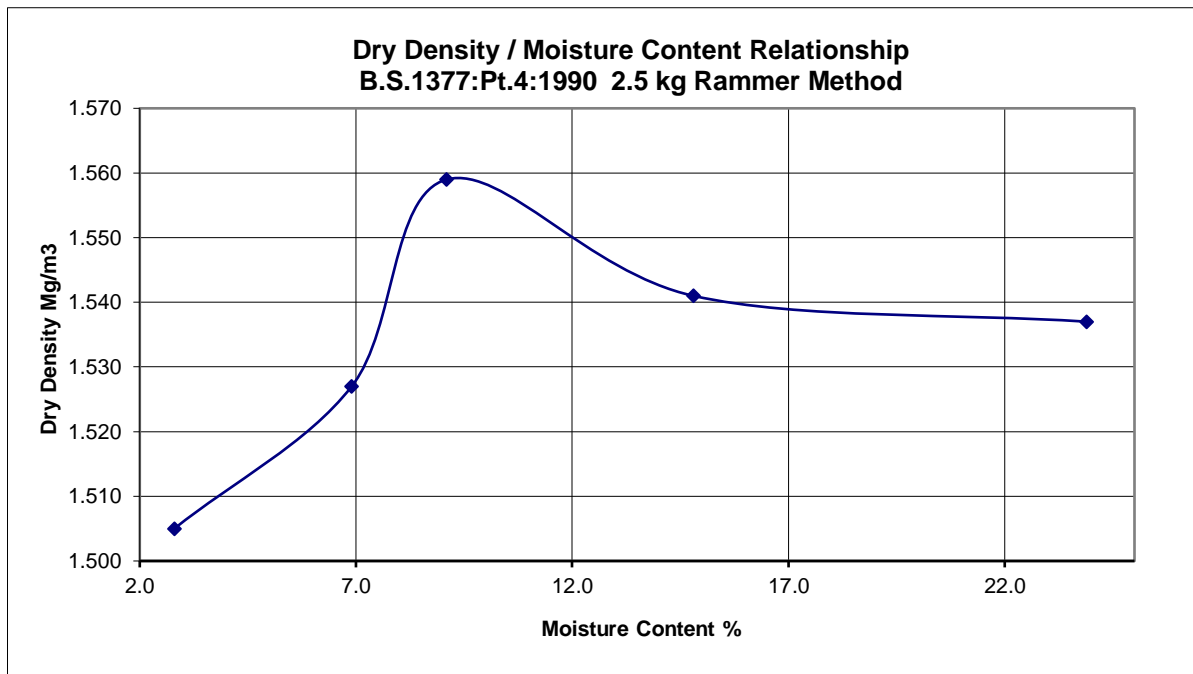
**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	07/06/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18184
		<b>Client ref:</b>	PRA-SPO25-S8
<b>Site:</b>	British Steel, Redcar	<b>Date sampled:</b>	20/05/21
<b>Source:</b>	Site Won	<b>Sampled by:</b>	Client
<b>Sample location:</b>	PRA-SPO25-S8	<b>Date received:</b>	25/05/21
<b>Material:</b>	Brown slightly sandy CLAY	<b>Date test completed:</b>	01/06/21
<b>Test Method:</b>	3.3.4.1/ 3.3.4.2/ 3.4.4.1/ 3.4.4.2 2.5 Kg Rammer	<b>Test conducted by:</b>	AG
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Max. size of cohesive pieces:</b>	N/A

**Test Results**

Mould Type:	1 litre	% retained on 37.5mm Test Sieve:	0
Grading Zone:		% retained on 20mm Test Sieve:	0
Single/Multiple samples:	Single	Particle Density: (Assumed/Measured):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.56	<b>Optimum Moisture Content (%):</b>	7.0
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Comments :

**Signed:**

For & on behalf of  
**Dunelm Testing Services**

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)

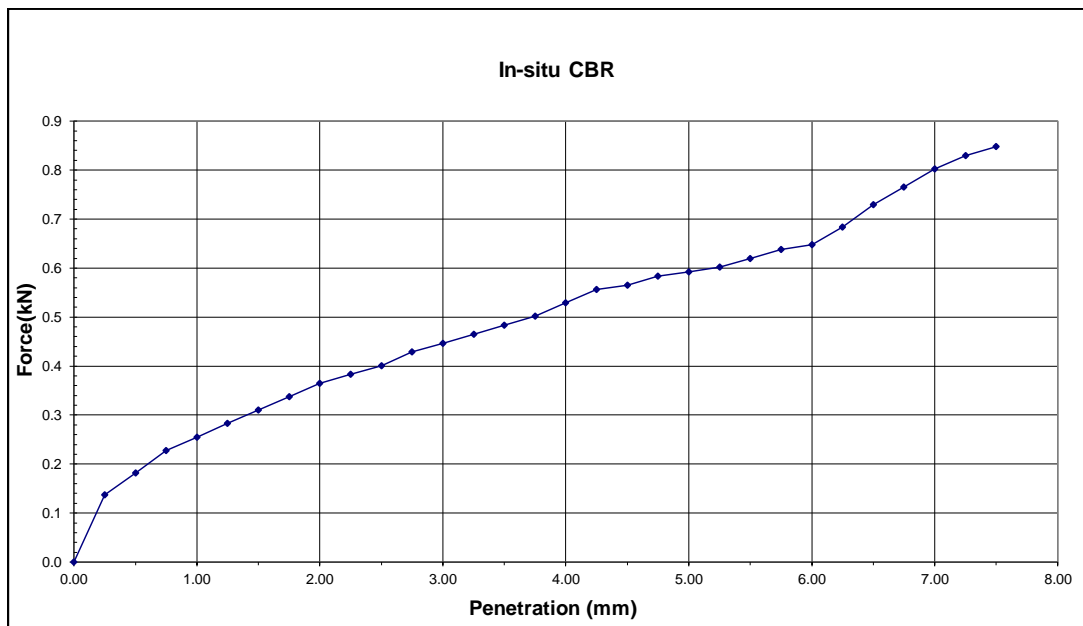
**Page:** 1 of 1



<b>Test Report:</b>	<b>Determination of California Bearing Ratio (CBR)</b> BS 1377: Part 4: 1990 clause 7	<b>Report Date:</b>	04/06/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-18184
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO25-S8
<b>Sample description:</b>	Brown soft CLAY	<b>Date tested:</b>	03/06/21
<b>Test location:</b>	PRA-SPO25-S8	<b>Test conducted by:</b>	AG
<b>Variation from standard method:</b>	None	<b>Surcharge (kg):</b>	12kg
<b>Method of sample preparation:</b>	BS 1377-1:1990	<b>Test depth (m):</b>	N/A
<b>&gt;20mm present:</b>	No	<b>Soaking details:</b>	Not soaked

**Test Results**

California Bearing Ratio (%) TOP	3.2
Water Content (%) TOP	26



**Comments:** Water content Carried out in accordance with BS 1377-2

**Signed:**



Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)  
 C. Spencer (Site Works Supervisor)

For & on behalf of  
**Dunelm Testing Ltd**

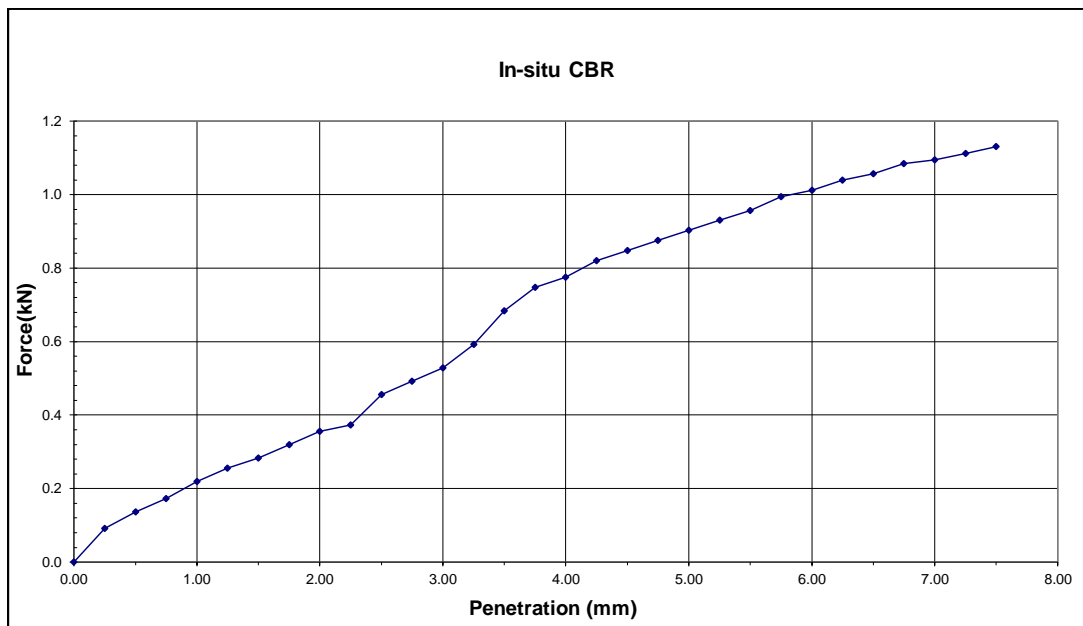
**Page:** 1 of 1

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<b>Test Report:</b>	<b>Determination of California Bearing Ratio (CBR)</b> BS 1377: Part 4: 1990 clause 7	<b>Report Date:</b>	04/06/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-18184
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO25-S8
<b>Sample description:</b>	Brown soft CLAY	<b>Date tested:</b>	03/06/21
<b>Test location:</b>	PRA-SPO25-S8	<b>Test conducted by:</b>	AG
<b>Variation from standard method:</b>	None	<b>Surcharge (kg):</b>	12kg
<b>Method of sample preparation:</b>	BS 1377-1:1990	<b>Test depth (m):</b>	N/A
<b>&gt;20mm present:</b>	No	<b>Soaking details:</b>	Not soaked


**Test Results**

California Bearing Ratio (%) <b>BOTTOM</b>	4.6
Water Content (%) <b>BOTTOM</b>	24



**Comments:** Water content Carried out in accordance with BS 1377-2  
Average CBR N/A

**Signed:**



Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)  
 C. Spencer ( Site Works Supervisor)

For & on behalf of  
**Dunelm Testing Ltd**

**Page:** 1 of 1

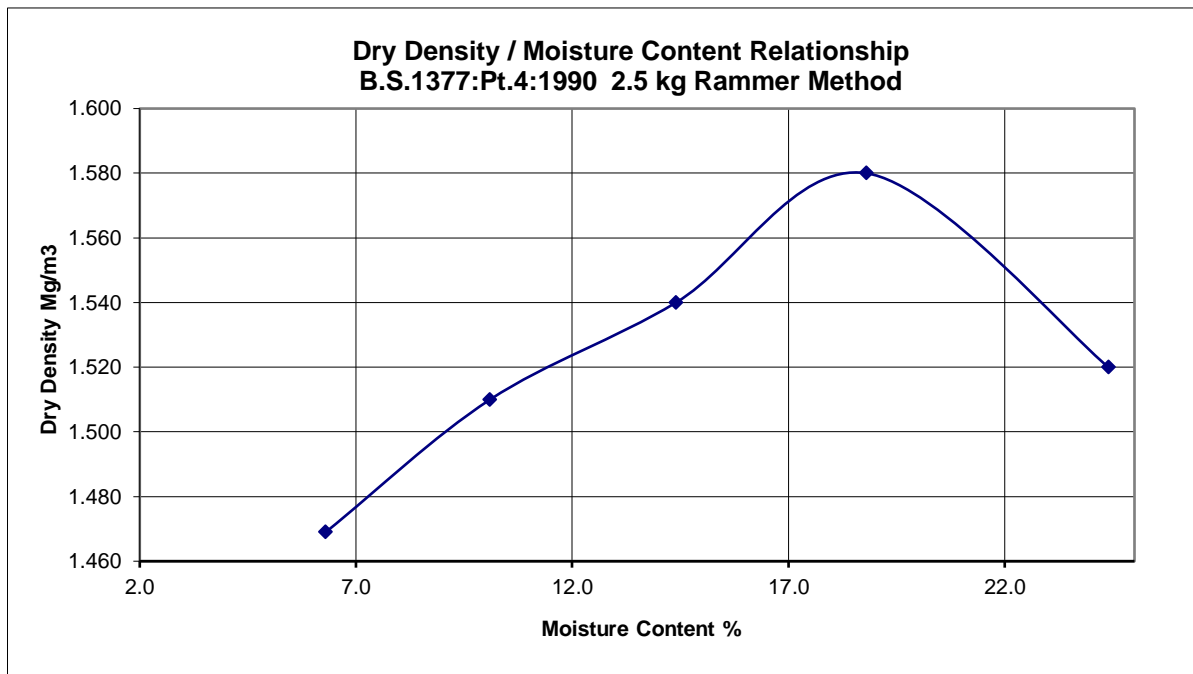
This report relates only to the samples tested and may not be reproduced except in full, without the written approval of Dunelm Testing Ltd

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	08/06/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18185
		<b>Client ref:</b>	PRA-SPO25-S9
<b>Site:</b>	British Steel, Redcar	<b>Date sampled:</b>	20/05/21
<b>Source:</b>	Site Won	<b>Sampled by:</b>	Client
<b>Sample location:</b>	PRA-SPO25-S9	<b>Date received:</b>	25/05/21
<b>Material:</b>	Brown slightly sandy CLAY	<b>Date test completed:</b>	01/06/21
<b>Test Method:</b>	3.3.4.1/ 2.5 Kg Rammer	<b>Test conducted by:</b>	AG
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Max. size of cohesive pieces:</b>	N/A

**Test Results**

Mould Type:	1 litre	% retained on 37.5mm Test Sieve:	0
Grading Zone:	1	% retained on 20mm Test Sieve:	0
Single/Multiple samples:	Single	Particle Density: (Assumed/Measured):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.58	<b>Optimum Moisture Content (%):</b>	17
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Comments :

**Signed:**



For & on behalf of  
**Dunelm Testing Services**

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)

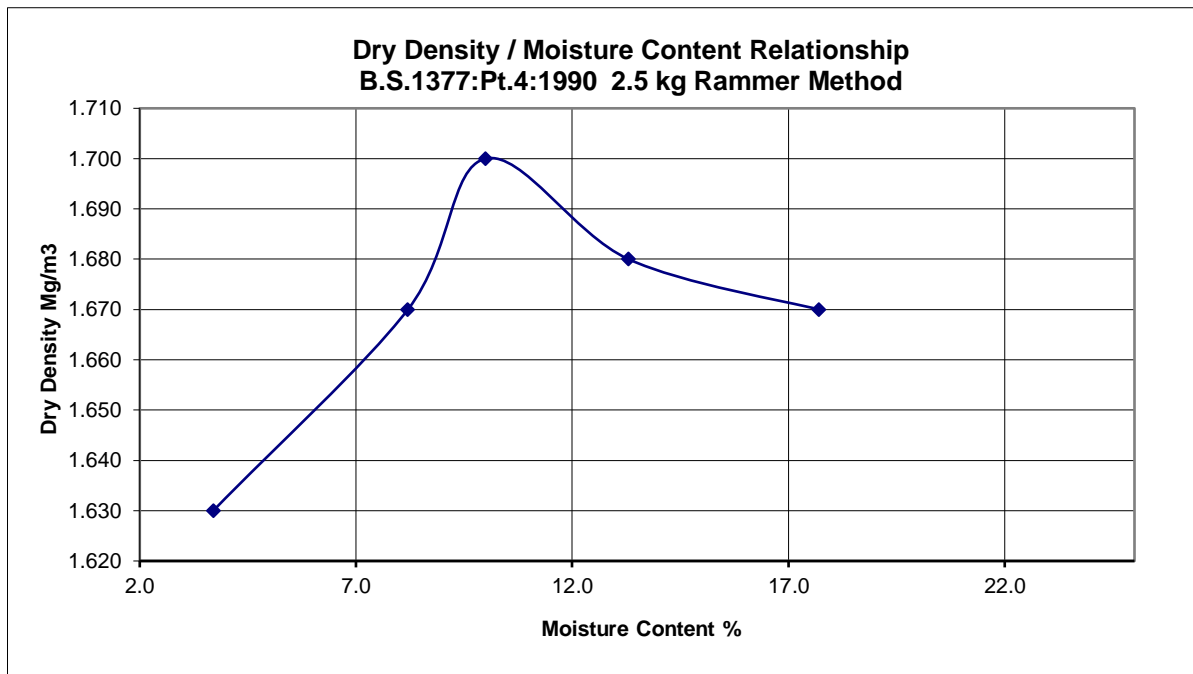
**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	08/06/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18186
		<b>Client ref:</b>	PRA-SPO25-S10
<b>Site:</b>	British Steel, Redcar	<b>Date sampled:</b>	20/05/21
<b>Source:</b>	Site Won	<b>Sampled by:</b>	Client
<b>Sample location:</b>	PRA-SPO25-S10	<b>Date received:</b>	25/05/21
<b>Material:</b>	Brown slightly sandy CLAY	<b>Date test completed:</b>	01/06/21
<b>Test Method:</b>	3.3.4.1 2.5 Kg Rammer	<b>Test conducted by:</b>	AG
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Max. size of cohesive pieces:</b>	N/A

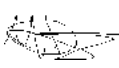
**Test Results**

Mould Type:	1 litre	% retained on 37.5mm Test Sieve:	0
Grading Zone:		% retained on 20mm Test Sieve:	0
Single/Multiple samples:	Single	Particle Density: (Assumed/Measured):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.70	<b>Optimum Moisture Content (%):</b>	10
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Comments :

**Signed:** 

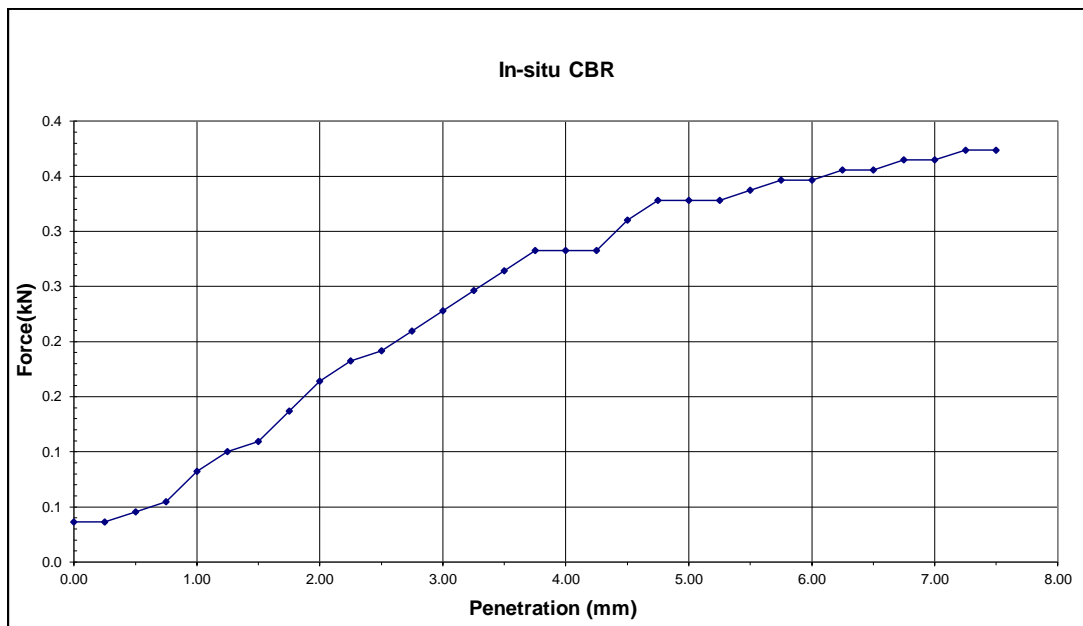
For & on behalf of  
**Dunelm Testing Services**

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)

<b>Test Report:</b>	<b>Determination of California Bearing Ratio (CBR)</b> BS 1377: Part 4: 1990 clause 7	<b>Report Date:</b>	04/06/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-18186
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO25-S10
<b>Sample description:</b>	Brown soft CLAY	<b>Date tested:</b>	03/06/21
<b>Test location:</b>	PRA-SPO25-S10	<b>Test conducted by:</b>	AG
<b>Variation from standard method:</b>	None	<b>Surcharge (kg):</b>	12kg
<b>Method of sample preparation:</b>	BS 1377-1:1990	<b>Test depth (m):</b>	N/A
<b>&gt;20mm present:</b>	No	<b>Soaking details:</b>	Not soaked


**Test Results**

California Bearing Ratio (%) <b>BOTTOM</b>	1.6
Moisture Content (%) <b>BOTTOM</b>	31



**Comments:** Moisture content Carried out in accordance with BS 1377-2  
Average CBR N/A

**Signed:**



Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)  
 C. Spencer ( Site Works Supervisor)

For & on behalf of  
**Dunelm Testing Ltd**

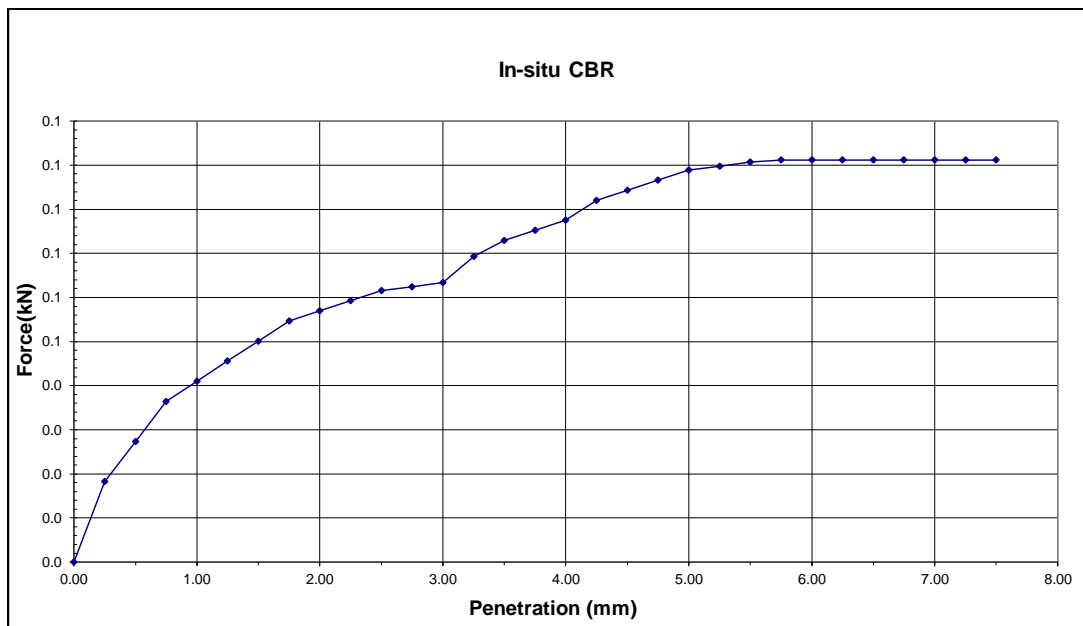
**Page:** 1 of 1

This report relates only to the samples tested and may not be reproduced except in full, without the written approval of Dunelm Testing Ltd

<b>Test Report:</b>	<b>Determination of California Bearing Ratio (CBR)</b> BS 1377: Part 4: 1990 clause 7	<b>Report Date:</b>	04/06/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-18186
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	PRA-SPO25-S10
<b>Sample description:</b>	Brown soft CLAY	<b>Date tested:</b>	03/06/21
<b>Test location:</b>	PRA-SPO25-S10	<b>Test conducted by:</b>	AG
<b>Variation from standard method:</b>	None	<b>Surcharge (kg):</b>	12kg
<b>Method of sample preparation:</b>	BS 1377-1:1990	<b>Test depth (m):</b>	N/A
<b>&gt;20mm present:</b>	No	<b>Soaking details:</b>	Not soaked


**Test Results**

California Bearing Ratio (%) TOP	0.4
Moisture Content (%) TOP	31



**Comments:** Moisture content Carried out in accordance with BS EN 17892:2014  
Average CBR N/A

**Signed:**



Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)  
 C. Spencer ( Site Works Supervisor)

For & on behalf of  
**Dunelm Testing Ltd**

**Page:** 1 of 1

This report relates only to the samples tested and may not be reproduced except in full, without the written approval of Dunelm Testing Ltd

**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 24.06.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318 18271-18279

**Site:** British Steel , Redcar **Client Ref:** See Below

**Sample location:** As below 17 **Date Sampled:** 27/05/2021

**Material description:** As below **Date Received:** 02/06/2021

**Test Method:** Oven Dried Method **Test conducted by:** AB


**Sampled By:** WB

**Variation from Standard Method:** None

**Test Results**

Test No	Material	Water Content (%)
PRA-AW-24-S2 18271	Clay Base	24
PRA-SP037-S1 18272	Crushed Concrete	13
PRA-SP037-S2 18273	Crushed Concrete	11
PRA-SP015-S10 18274	Slag Rich Made Ground	12
PRA-SP015-S11 18275	Slag Rich Made Ground	11
PRA-SP034-S10 18276	Slag Rich Railway Embankment Fines	8.8
PRA-SP034-S11 18277	Slag Rich Railway Embankment Fines	9.5
PRA-AW-19-S7 18278	Clay Base	30
PRA-AW-17-S4 18279	Clay Base	28

Comments:

**Signed:**  
For & on behalf of  
Dunelm Testing LtdAuthorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1



<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS EN 933: Part 1: 2012	<b>Report Date:</b>	24.06.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-18272
<b>Site:</b>	British Steel , Redcar	<b>Client ref:</b>	-
<b>Sample location:</b>	PRA-SP037-S1	<b>Date sampled:</b>	27.05.2021
<b>Material:</b>	Crushed Concrete	<b>Sampled by:</b>	Client
<b>Source of material:</b>	Site Won	<b>Date received:</b>	02.06.2021
<b>Test Method:</b>	Washing & Sieving Method	<b>Date test completed:</b>	16.06.2021
<b>Specification:</b>	-	<b>Test conducted by:</b>	AG
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**


Moisture Content (BS1377, Part 2, 1990) 13%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
90			5	46	
75			3.35	42	
63	100		2	37	
50	96		1.18	32	
37.5	83		0.600	27	
28	74		0.425	25	
20	64		0.300	22	
14	59		0.212	20	
10	54		0.150	17	
6.3	48		0.063	13	

**Comments:**

**Signed:**

For & on behalf of  
**Dunelm Testing Ltd**



Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

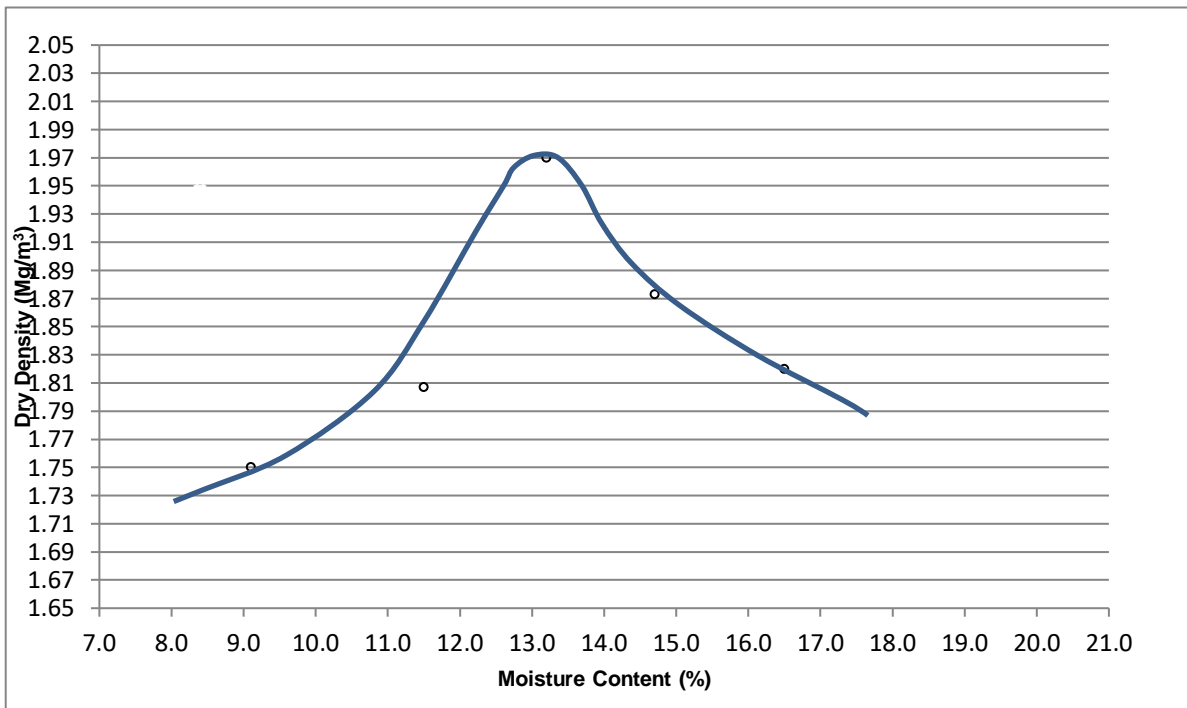
**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	24/06/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18272
		<b>Client ref:</b>	
		<b>Date sampled:</b>	27/05/21
<b>Site:</b>	British Steel, Redcar	<b>Sampled by:</b>	Client
		<b>Date received:</b>	02/06/21
<b>Sample location:</b>	PRA-SP037-S1	<b>Date test completed:</b>	04/06/21
<b>Material:</b>	Crushed Concrete	<b>Test conducted by:</b>	AG
<b>Test Method:</b>	Clause 3.7.5.1 /Vibrating Hammer method	<b>Variation from standard method:</b>	None
<b>Sample Preparation:</b>	Clause 3.2.4.2		

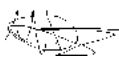
**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	17
Grading Zone:	5	% retained on 20mm Test Sieve:	37
Single/Multiple samples:	Multiple	Particle Density: (assumed)	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.97	<b>Optimum Moisture Content (%):</b>	13
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**Comments:**

Signed: 

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

For & on behalf of  
**Dunelm Testing Ltd**

**Test Report:** **Determination of Particle Size Distribution** **Report Date:** 24.06.2021  
BS EN 933: Part 1: 2012

**Client:** Seymour CE Ltd **Lab ref:** MT0318-18273

**Site:** British Steel , Redcar **Client ref:** -

**Sample location:** PRA-SP037-S2 **Date sampled:** 27.05.2021

**Material:** Crushed Concrete **Sampled by:** Client

**Source of material:** Site Won **Date received:** 02.06.2021

**Test Method:** Washing & Sieving Method **Date test completed:** 16.06.2021

**Specification:** - **Test conducted by:** AG

**Variation from standard method:** None

**Method of sample preparation:** BS 1377-1:1990

**Test Results**

Moisture Content (BS1377, Part 2, 1990) 11%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
90	100		5	31	
75	90		3.35	28	
63	78		2	24	
50	73		1.18	21	
37.5	63		0.600	17	
28	57		0.425	16	
20	51		0.300	14	
14	44		0.212	12	
10	39		0.150	11	
6.3	34		0.063	7.7	

**Comments:**

**Signed:**

For & on behalf of  
**Dunelm Testing Ltd**



Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

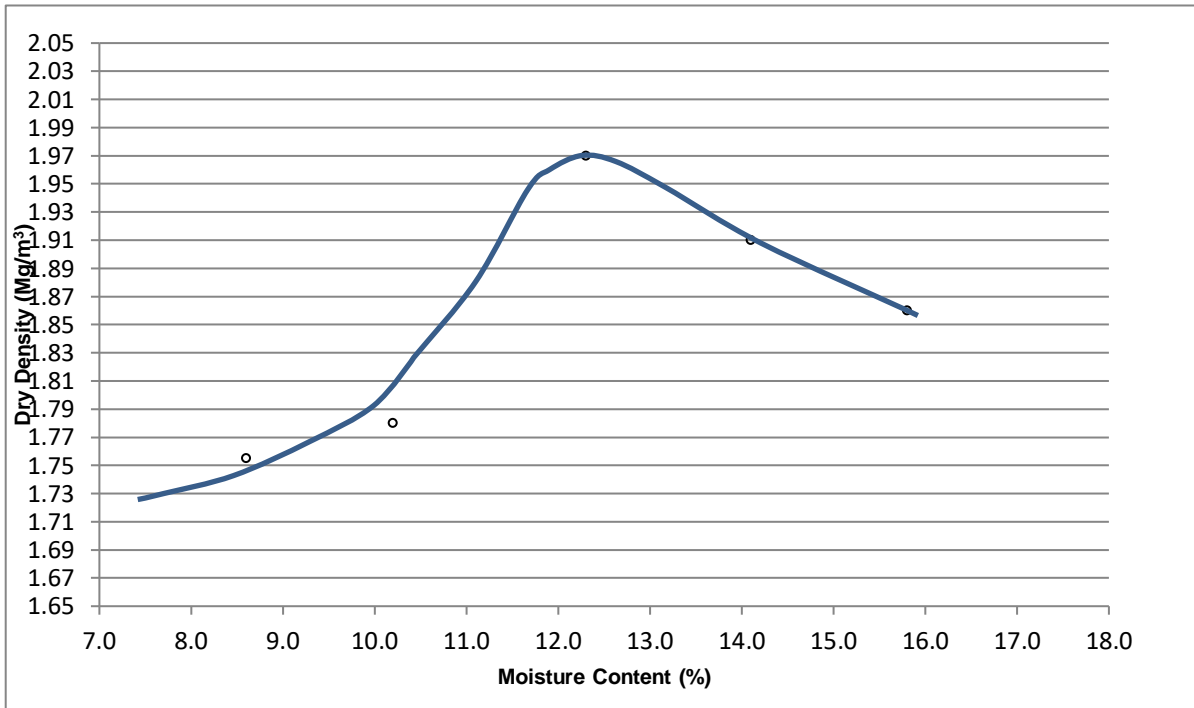
**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	24/06/21
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18273
		<b>Client ref:</b>	
		<b>Date sampled:</b>	27/05/21
<b>Site:</b>	British Steel, Redcar	<b>Sampled by:</b>	Client
		<b>Date received:</b>	02/06/21
<b>Sample location:</b>	PRA-SP037-S2	<b>Date test completed:</b>	04/06/21
<b>Material:</b>	Crushed Concrete	<b>Test conducted by:</b>	AG
<b>Test Method:</b>	Clause 3.7.5.1 /Vibrating Hammer method	<b>Variation from standard method:</b>	None
<b>Sample Preparation:</b>	Clause 3.2.4.2		


**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	37
Grading Zone:	X	% retained on 20mm Test Sieve:	50
Single/Multiple samples:	Multiple	Particle Density: (assumed)	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.97	<b>Optimum Moisture Content (%):</b>	12
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**Comments: Grading Zone X – deviating sample**

Signed: 

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

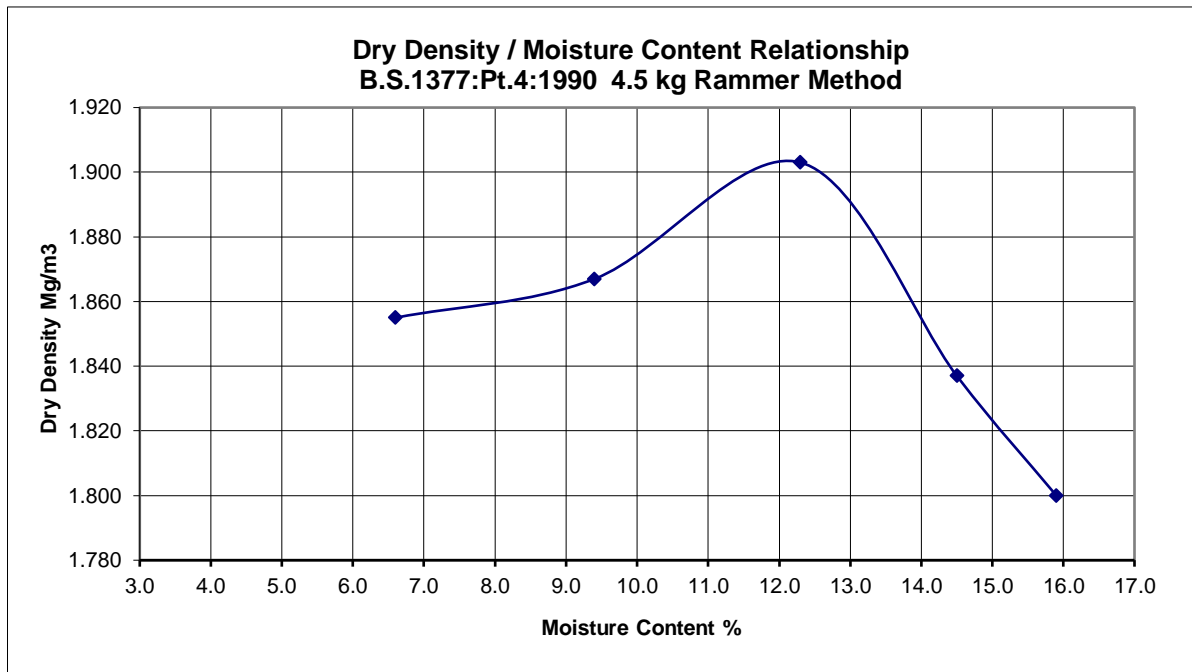
For & on behalf of  
**Dunelm Testing Ltd**

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	24/06/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-18274
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	
<b>Source:</b>	Site Won	<b>Date sampled:</b>	27/05/21
<b>Sample location:</b>	PRA-SP015-S10	<b>Sampled by:</b>	Client
<b>Material:</b>	Slag Rich Made Ground	<b>Date received:</b>	02/06/2021
<b>Test Method:</b>	3.5.4.2 4.5 Kg Rammer	<b>Date test completed:</b>	21/06/2021
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Test conducted by:</b>	AG
		<b>Max. size of cohesive pieces:</b>	N/A

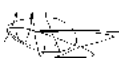
**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	12
Grading Zone:	3	% retained on 20mm Test Sieve:	31
Single/Multiple samples:	Multiple	Particle Density: (Assumed/):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	<b>Optimum Moisture Content (%):</b>	12
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Comments :

**Signed:** 

For & on behalf of  
**Dunelm Testing Services**

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS EN 933: Part 1: 2012	<b>Report Date:</b>	24.06.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-18274
<b>Site:</b>	British Steel , Redcar	<b>Client ref:</b>	-
<b>Sample location:</b>	PRA-SP015-S10	<b>Date sampled:</b>	27.05.2021
<b>Material:</b>	Rich Slag Made Ground	<b>Sampled by:</b>	Client
<b>Source of material:</b>	Site Won	<b>Date received:</b>	02.06.2021
<b>Test Method:</b>	Washing & Sieving Method	<b>Date test completed:</b>	16.06.2021
<b>Specification:</b>	-	<b>Test conducted by:</b>	AG
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**


Moisture Content (BS1377, Part 2, 1990) 12%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
90			5	41	
75			3.35	35	
63	100		2	30	
50	98		1.18	24	
37.5	89		0.600	22	
28	78		0.425	19	
20	69		0.300	15	
14	59		0.212	11	
10	50		0.150	7.2	
6.3	46		0.063	6.6	

Comments:

Signed:

For & on behalf of  
Dunelm Testing Ltd



Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

Page: 1 of 1



# DETS

## Certificate of Analysis

*Certificate Number* 21-11567

*Issued:* 04-Jun-21

*Client* Dunelm Testing Ltd  
Unit 5e  
Edwardson Road  
Meadowfield  
Durham  
TS5 6HA

*Our Reference* 21-11567

*Client Reference* MT0318

*Order No* DT0508

*Contract Title* British Steel , Redcar

*Description* 3 Soil samples.

*Date Received* 02-Jun-21

*Date Started* 02-Jun-21

*Date Completed* 04-Jun-21

*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



2139



## Summary of Chemical Analysis Soil Samples

Our Ref 21-11567

Client Ref MT0318

Contract Title British Steel , Redcar

<b>Lab No</b>	1855702	1855703	1855704
<b>Sample ID</b>	PRA-SP015-S10	PRA-SP015-S11	PRA-SP015-S12
<b>Depth</b>			
<b>Other ID</b>	18274	18275	18276
<b>Sample Type</b>	SOIL	SOIL	SOIL
<b>Sampling Date</b>	27/05/2021	27/05/2021	27/05/2021
<b>Sampling Time</b>	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>Inorganics</b>						
Calorific Value	DETSC 5008	1	MJ/kg	2.1	5.8	< 1.0

## Information in Support of the Analytical Results

Our Ref 21-11567  
 Client Ref MT0318  
 Contract British Steel , Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1855702	PRA-SP015-S10 SOIL	27/05/21	PT 1L		
1855703	PRA-SP015-S11 SOIL	27/05/21	PT 1L		
1855704	PRA-SP015-S12 SOIL	27/05/21	PT 1L		

Key: P-Plastic 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

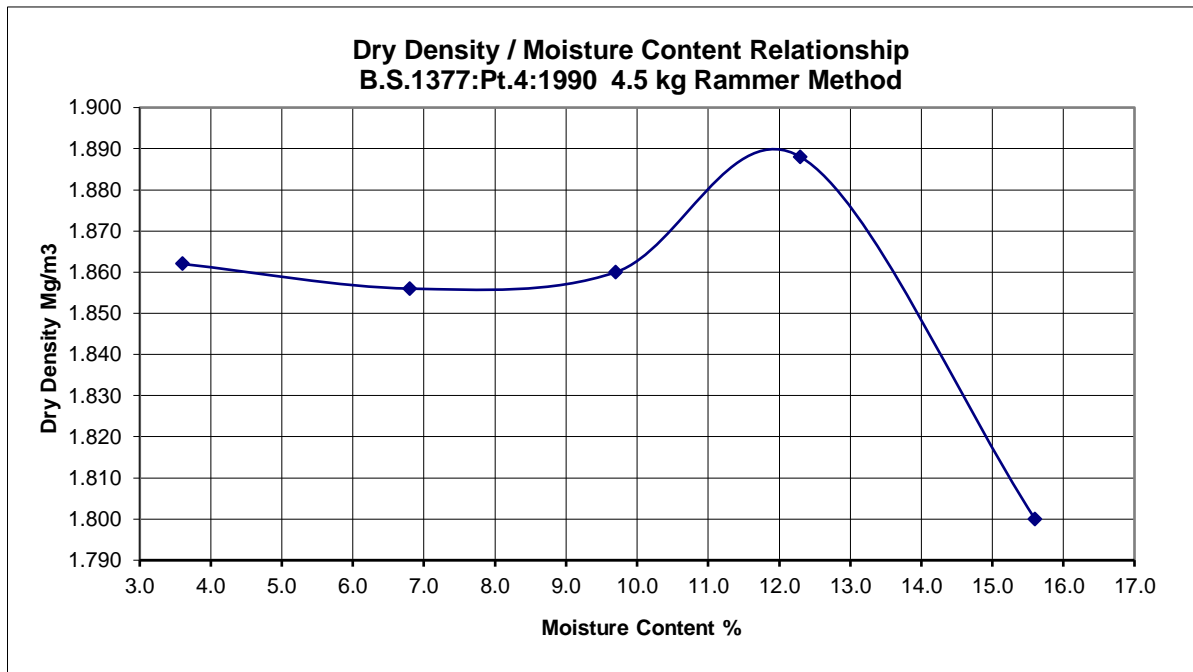
End of Report

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	24/06/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-18275
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	
<b>Source:</b>	Site Won	<b>Date sampled:</b>	27/05/21
<b>Sample location:</b>	PRA-SP015-S11	<b>Sampled by:</b>	Client
<b>Material:</b>	Slag Rich Made Ground	<b>Date received:</b>	02/06/2021
<b>Test Method:</b>	3.5.4.2 4.5 Kg Rammer	<b>Date test completed:</b>	21/06/2021
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Test conducted by:</b>	AG
		<b>Max. size of cohesive pieces:</b>	N/A

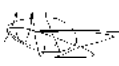
**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	9
Grading Zone:	3	% retained on 20mm Test Sieve:	31
Single/Multiple samples:	Multiple	Particle Density: (Assumed/):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.89	<b>Optimum Moisture Content (%):</b>	12
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Comments :

**Signed:** 

For & on behalf of  
**Dunelm Testing Services**

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS EN 933: Part 1: 2012	<b>Report Date:</b>	24.06.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-18275
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel , Redcar	<b>Date sampled:</b>	27.05.2021
		<b>Sampled by:</b>	Client
<b>Sample location:</b>	PRA-SP015-S11	<b>Date received:</b>	02.06.2021
<b>Material:</b>	Rich Slag Made Ground		
<b>Source of material:</b>	Site Won	<b>Date test completed:</b>	16.06.2021
<b>Test Method:</b>	Washing & Sieving Method	<b>Test conducted by:</b>	AG
<b>Specification:</b>	-		
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**


Moisture Content (BS1377, Part 2, 1990) 11%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
90			5	40	
75			3.35	36	
63	100		2	31	
50	91		1.18	27	
37.5	88		0.600	22	
28	80		0.425	19	
20	69		0.300	17	
14	59		0.212	12	
10	52		0.150	8.7	
6.3	44		0.063	6.2	

Comments:

Signed:

For & on behalf of  
Dunelm Testing Ltd



Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

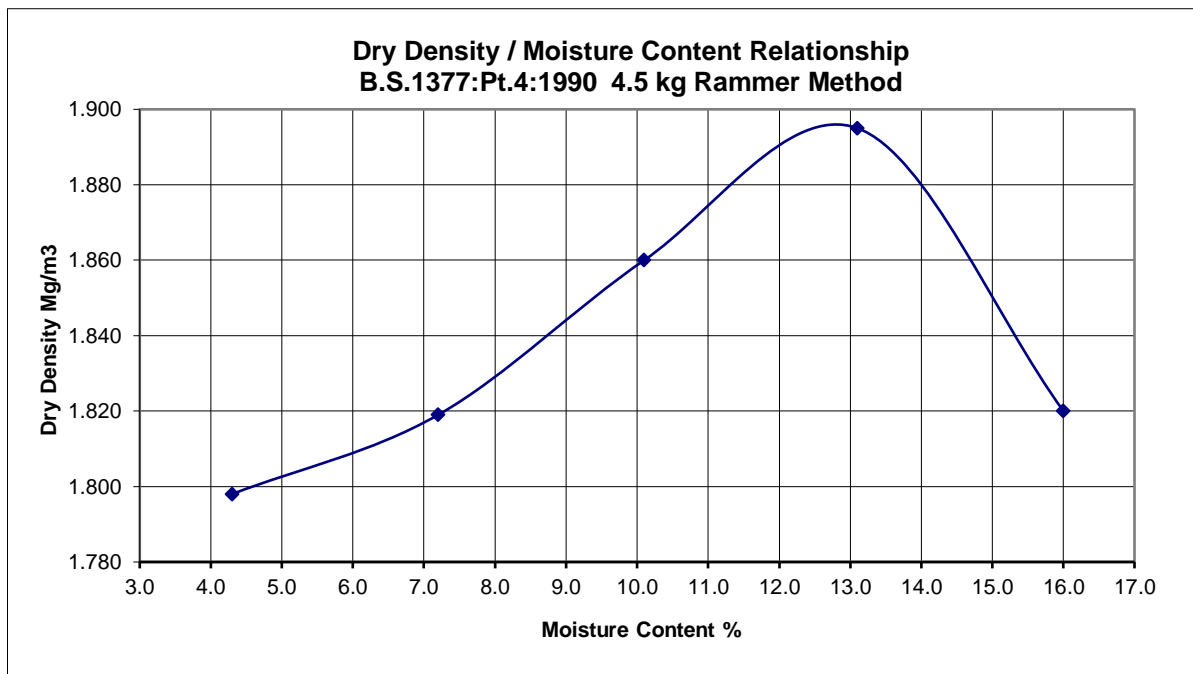
Page: 1 of 1

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	24/06/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-18276
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	
<b>Source:</b>	Site Won	<b>Date sampled:</b>	27/05/21
<b>Sample location:</b>	PRA-SP034-S10	<b>Sampled by:</b>	Client
<b>Material:</b>	Railway Embankment Screened Fines (Slag Rich )	<b>Date received:</b>	02/06/2021
<b>Test Method:</b>	3.5.4.2 4.5 Kg Rammer	<b>Date test completed:</b>	22/06/2021
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Test conducted by:</b>	AG
		<b>Max. size of cohesive pieces:</b>	N/A

**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	3
Grading Zone:	3	% retained on 20mm Test Sieve:	39
Single/Multiple samples:	Multiple	Particle Density: (Assumed/):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.89	<b>Optimum Moisture Content (%):</b>	13
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Comments :

**Signed:**



For & on behalf of  
**Dunelm Testing Services**

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)

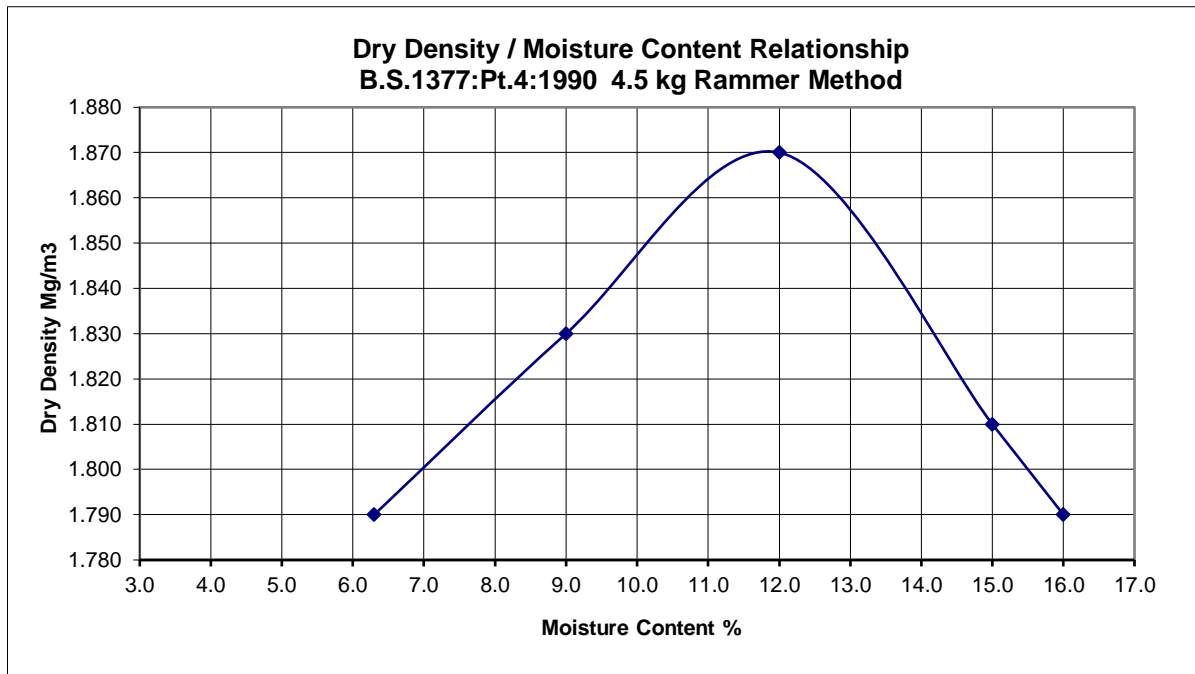
**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	24/06/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-18277
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	
<b>Source:</b>	Site Won	<b>Date sampled:</b>	27/05/21
<b>Sample location:</b>	PRA-SP034-S11	<b>Sampled by:</b>	Client
<b>Material:</b>	Railway Embankment Screened Fines (Slag Rich )	<b>Date received:</b>	02/06/2021
<b>Test Method:</b>	3.5.4.2 4.5 Kg Rammer	<b>Date test completed:</b>	22/06/2021
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Test conducted by:</b>	AG
		<b>Max. size of cohesive pieces:</b>	N/A

**Test Results**


Mould Type:	CBR	% retained on 37.5mm Test Sieve:	12
Grading Zone:	3	% retained on 20mm Test Sieve:	34
Single/Multiple samples:	Multiple	Particle Density: (Assumed/):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.87	<b>Optimum Moisture Content (%):</b>	12
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Comments :

**Signed:**



For & on behalf of  
**Dunelm Testing Services**

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS EN 933: Part 1: 2012	<b>Report Date:</b>	24.06.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-18277
<b>Site:</b>	British Steel , Redcar	<b>Client ref:</b>	-
<b>Sample location:</b>	PRA-SP034-S11	<b>Date sampled:</b>	27.05.2021
<b>Material:</b>	Railway Embankment Screened fines (Slag Rich)	<b>Sampled by:</b>	Client
<b>Source of material:</b>	Site Won	<b>Date received:</b>	02.06.2021
<b>Test Method:</b>	Washing & Sieving Method	<b>Date test completed:</b>	16.06.2021
<b>Specification:</b>	-	<b>Test conducted by:</b>	AG
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**


Moisture Content (BS1377, Part 2, 1990) 9.5%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
90			5	44	
75	100		3.35	41	
63	93		2	36	
50	91		1.18	31	
37.5	88		0.600	24	
28	74		0.425	21	
20	66		0.300	18	
14	59		0.212	15	
10	54		0.150	12	
6.3	47		0.063	7.1	

Comments:

Signed:

For & on behalf of  
Dunelm Testing Ltd



Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

Page: 1 of 1



**Test Report:** **Determination of water content of soil**  
ASTM D4643 -17 Microwave Oven Heating **Report Date:** 16.06.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318 18551-18552

**Site:** British Steel , Redcar **Client Ref:** See Below

**Sample location:** See Below **Date Sampled:** 11/06/2021

**Material description:** Grey MUDSTONE **Date Received:** N/A

**Test Method:** Microwave - Method **Test conducted by:** WB

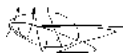
**Sampled By:** Client

**Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
18551- PRA-SPO11-S55	11
18552 - PRA-SPO11-S56	11

Comments:

**Signed:**For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1

**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 11.06.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318 18553-18558

**Site:** British Steel , Redcar **Client Ref:** See Below

**Sample location:** See Below **Date Sampled:** 11/06/21

**Material description:** Grey MUDSTONE **Date Received:** 14/06/21

**Test Method:** Oven Dried Method **Test conducted by:** MC

**Sampled By:** WB

**Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
MT0318-18553 PRA-SPO11-S55	18
MT0318-18554 PRA-SPO11-S56	20
MT0318-18555 PRA-SPO11-S57	16
MT0318-18556 PRA-SPO11-S58	19
MT0318-18557 PRA-AV-20-S2	11
PMT0318-18558 RA-AV-20-S4	12

Comments:

**Signed:**For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1

**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 24.06.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318-18594-18604

**Site:** British Steel Redcar **Client Ref:**

**Sample location:** See Below **Date Sampled:** 04.06.2021

**Material description:** See Below **Date Received:** 14.06.2021

**Test Method:** Oven Dried Method **Test conducted by:** AG


**Sampled By:** Client

**Variation from Standard Method:** None

**Test Results**

Test No	Material	Water Content (%)
PRA-SP027-S23 18594	Screened Spoil	16
PRA-SP027-S24 18595	Screened Spoil	13
PRA-SP027-S25 18596	Screened Spoil	12
PRA-SP029-S29 18597	Screened Spoil	12
PRA-SP029-S30 18587	Screened Spoil	14
PRA-SP029-S31 18599	Screened Spoil	20
PRA-AT-24-S1 18600	Base Sample - Clay	30
PRA-AV-18-S5 18601	Imported Mudstone	8.2
PRA-AW-20-S2 18602	Imported Mudstone	4.9
PRA-SP039-S1 18603	Crushed Concrete	8.2
PRA-SP039-S2 18604	Crushed Concrete	8.2

Comments:

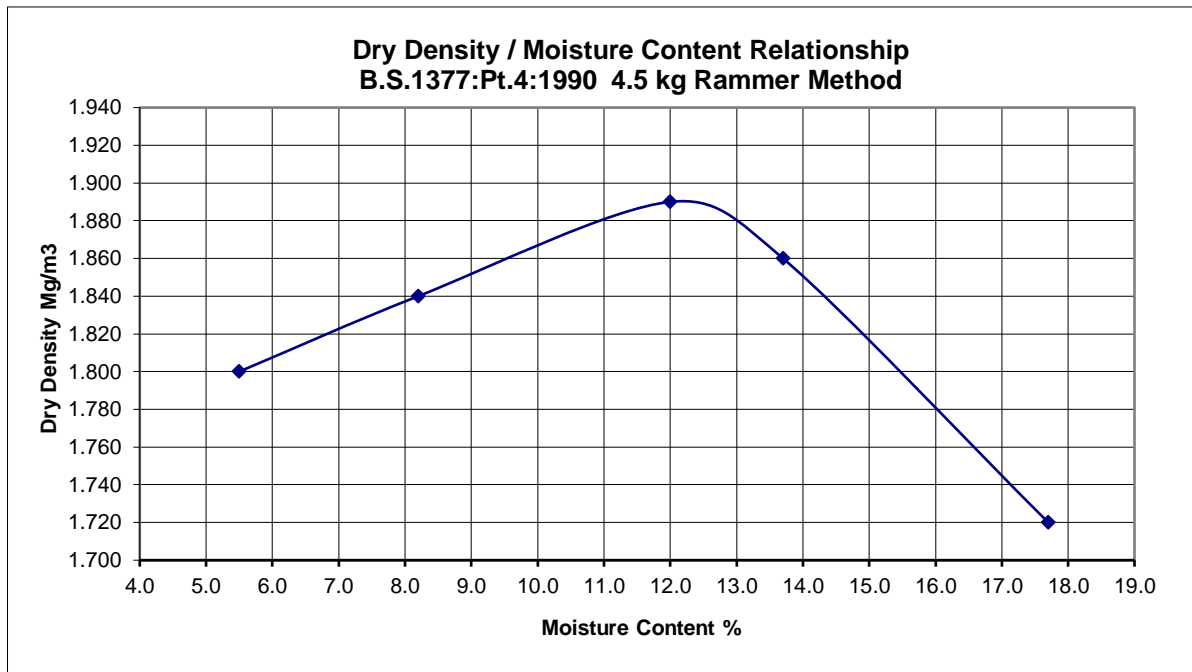
**Signed:**For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	25.06.2021
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-18603
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date sampled:</b>	04.06.2021
<b>Source:</b>	Site Won	<b>Sampled by:</b>	Client
<b>Sample location:</b>	PRA-SP039-S1 (combined with S2)	<b>Date received:</b>	14.06.2021
<b>Material:</b>	Crushed Concrete	<b>Date test completed:</b>	21.06.2021
<b>Test Method:</b>	3.5.4.2 4.5 Kg Rammer	<b>Test conducted by:</b>	NY/AG
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Max. size of cohesive pieces:</b>	N/A

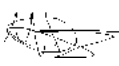
**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	43
Grading Zone:	X	% retained on 20mm Test Sieve:	51
Single/Multiple samples:	Multiple	Particle Density: (Assumed/):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.89	<b>Optimum Moisture Content (%):</b>	12
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Comments : **Grading Zone X -Deviating Sample ( sampled combined with PRA-SP039-S2 18604)**

**Signed:** 

For & on behalf of  
**Dunelm Testing Services**

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS EN 933: Part 1: 2012	<b>Report Date:</b>	25.06.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-18603
<b>Site:</b>	British Steel , Redcar	<b>Client ref:</b>	-
<b>Sample location:</b>	PRA-SP039-S1	<b>Date sampled:</b>	04.06.2021
<b>Material:</b>	Crushed Concrete	<b>Sampled by:</b>	Client
<b>Source of material:</b>	Site Won	<b>Date received:</b>	14.06.2021
<b>Test Method:</b>	Washing & Sieving Method	<b>Date test completed:</b>	21.06.2021
<b>Specification:</b>	-	<b>Test conducted by:</b>	AG
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**


Moisture Content (BS1377, Part 2, 1990) 8.2%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
125	100				
90	93		5	38	
75	84		3.35	36	
63	74		2	33	
50	62		1.18	28	
37.5	58		0.600	25	
28	54		0.425	21	
20	50		0.300	19	
14	45		0.212	17	
10	42		0.150	14	
6.3	38		0.063	11	

**Comments:**

**Signed:**

For & on behalf of  
**Dunelm Testing Ltd**



Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS EN 933: Part 1: 2012	<b>Report Date:</b>	25.06.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-18604
<b>Site:</b>	British Steel , Redcar	<b>Client ref:</b>	-
<b>Sample location:</b>	PRA-SP039-S2	<b>Date sampled:</b>	04.06.2021
<b>Material:</b>	Crushed Concrete	<b>Sampled by:</b>	Client
<b>Source of material:</b>	Site Won	<b>Date received:</b>	14.06.2021
<b>Test Method:</b>	Washing & Sieving Method	<b>Date test completed:</b>	21.06.2021
<b>Specification:</b>	-	<b>Test conducted by:</b>	AG
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

**Test Results**

Moisture Content (BS1377, Part 2, 1990) 8.2%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
125	100				
90	94		5	35	
75	83		3.35	32	
63	70		2	28	
50	61		1.18	24	
37.5	57		0.600	20	
28	53		0.425	18	
20	49		0.300	17	
14	44		0.212	16	
10	41		0.150	14	
6.3	37		0.063	11	

**Comments:**

**Signed:**

For & on behalf of  
**Dunelm Testing Ltd**



Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

**Test Report:** **Determination of water content of soil**  
ASTM D4643 -17 Microwave Oven Heating

**Report Date:** 18/06/21

**Client:** Seymour CE Ltd

**Lab ref:** MT0318 18724-18727

**Site:** British Steel , Redcar

**Client Ref:** See Below

**Date Sampled:** 15/06/2021

**Date Received:** 16/06/2021

**Sample location:** As below

**Test conducted by:** WB

**Material description:** Mudstone

**Sampled By:** Client

**Test Method:** Microwave - Method

**Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
PRA-AU-19-S5 18724	7.9
PRA-SPO12-S21 18725	19
PRA-SPO12-S23 18726	19
PRA-AY-23-S4 18727	14

Comments:

**Signed:**For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1



**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 21.06.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318 18728-18733

**Site:** British Steel , Redcar **Client Ref:** See Below

**Sample location:** As below 17 **Date Sampled:** 15/06/21

**Material description:** Grey MUDSTONE **Date Received:** 16/06/21

**Test Method:** Oven Dried Method **Test conducted by:** AB


**Sampled By:** WB

**Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
PRA-AU-19-S5 18728	17
PRA-SPO12-S22 18729	20
PRA-SPO12-S23 18730	18
PRA-AU-19-S5 18731	7.9
PRA-AY-21-S3 18732	17
PRA-AY-23-S4 18733	16

Comments:

**Signed:**For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1

**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 25.06.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318-18825-18832

**Site:** British Steel, Redcar **Client Ref:** See Below

**Sample location:** See Below **Date Sampled:** 11.06.2021

**Material description:** See Below **Date Received:** 16.06.2021

**Test Method:** Oven Dried Method **Test conducted by:** AG

**Sampled By:** Client

**Variation from Standard Method:** None

**Test Results**

Test No	Material	Water Content (%)
PRA-AR-27-S1 18825	Clay Base	20
PRA-AX-23-S2 18826	Mudstone	3.4
PRA-SPO40-S1 18827	Crushed Concrete	10
PRA-SPO40-S2 18828	Crushed Concrete	11
PRA-SPO40-S3 18829	Crushed Concrete	12
PRA-SPO40-S4 18830	Crushed Concrete	11
PRA-AW-17-S7 18831	Mudstone	2.8
PRA-AR-24-S1 18832	Clay Base	26

Comments:

**Signed:**For & on behalf of  
Dunelm Testing LtdAuthorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	25.06.2021
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18827
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	
<b>Sample location:</b>	PRA-SPO40-S1	<b>Date sampled:</b>	11.06.2021
<b>Material:</b>	Crushed Concrete	<b>Sampled by:</b>	Client
<b>Source of material:</b>	Site Won	<b>Date received:</b>	16.06.2021
<b>Test Method:</b>	Wash and Dry Sieve Method	<b>Date test completed:</b>	23.06.2021
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	NE
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

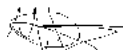
**Test Results**

Moisture Content (BS1377, Part 2, 1990) 10%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500			6.3	37	
300			5	34	
125			3.35	32	
90	100		2	28	
75	95		1.18	24	
63	86		0.600	21	
50	78		0.425	18	
37.5	68		0.300	17	
28	58		0.212	16	
20	51		0.150	13	
14	45		0.063	10	
10	40				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

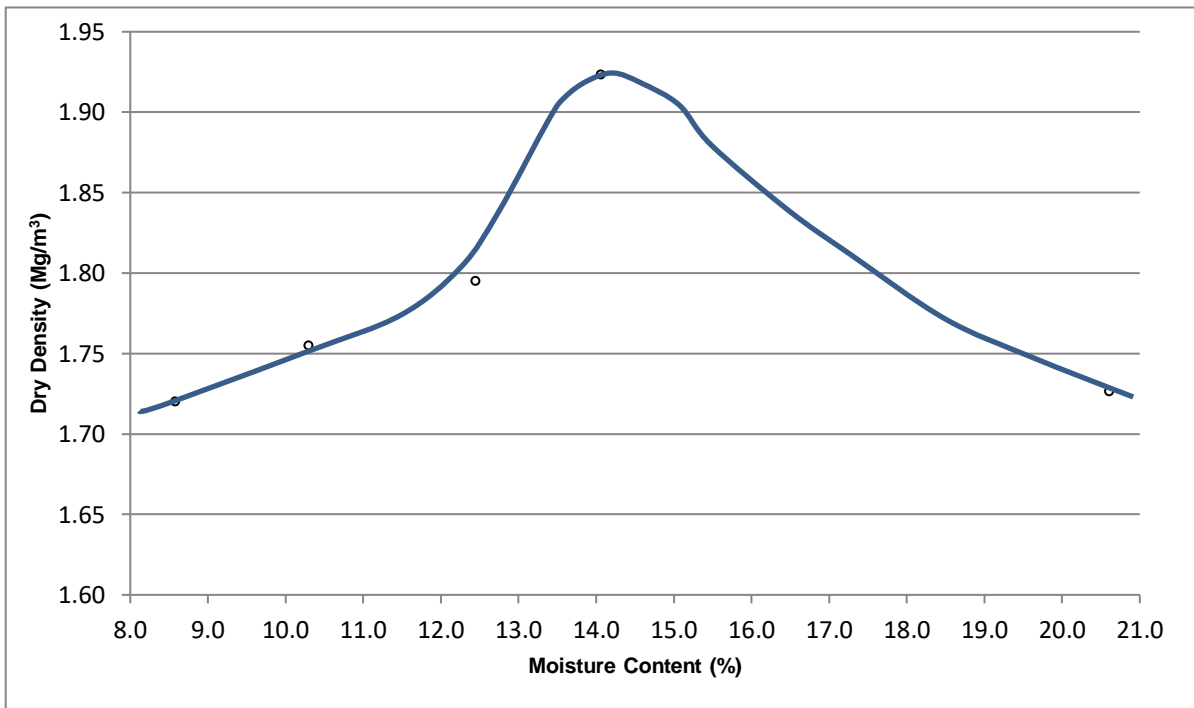
**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	29/06/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-18827
		<b>Client ref:</b>	PRA-SPO40-S1
		<b>Date sampled:</b>	11/06/21
<b>Site:</b>	British Steel, Redcar	<b>Sampled by:</b>	Client
		<b>Date received:</b>	16/06/21
<b>Sample location:</b>	PRA-SPO40-S1	<b>Date test completed:</b>	25/06/21
<b>Material:</b>	Crushed Concrete	<b>Test conducted by:</b>	AG
<b>Test Method:</b>	Clause 3.7.5.1 Vibrating Hammer method	<b>Variation from standard method:</b>	None
<b>Sample Preparation:</b>	Clause 3.2.4.2		

**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	32
Grading Zone:	X	% retained on 20mm Test Sieve:	49
Single/Multiple samples:	Multiple	Particle Density: (assumed)	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.92	<b>Optimum Moisture Content (%):</b>	14
------------------------------------------------	------	--------------------------------------	----



**Comments:** Grading Zone X – Deviating sample

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

- M. Aiston (Director)
- G Dresser (Director)
- M. Caulfield ( Laboratory Supervisor)

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	25.06.2021
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18828
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	
<b>Sample location:</b>	PRA-SPO40-S2	<b>Date sampled:</b>	11.06.2021
<b>Material:</b>	Crushed Concrete	<b>Sampled by:</b>	Client
<b>Source of material:</b>	Site Won	<b>Date received:</b>	16.06.2021
<b>Test Method:</b>	Wash and Dry Sieve Method	<b>Date test completed:</b>	23.06.2021
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	NE
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

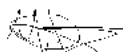
**Test Results**

Moisture Content (BS1377, Part 2, 1990) 11%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500			6.3	31	
300			5	28	
125	100		3.35	25	
90	93		2	22	
75	70		1.18	20	
63	66		0.600	17	
50	62		0.425	16	
37.5	56		0.300	15	
28	53		0.212	12	
20	47		0.150	11	
14	41		0.063	8.6	
10	36				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

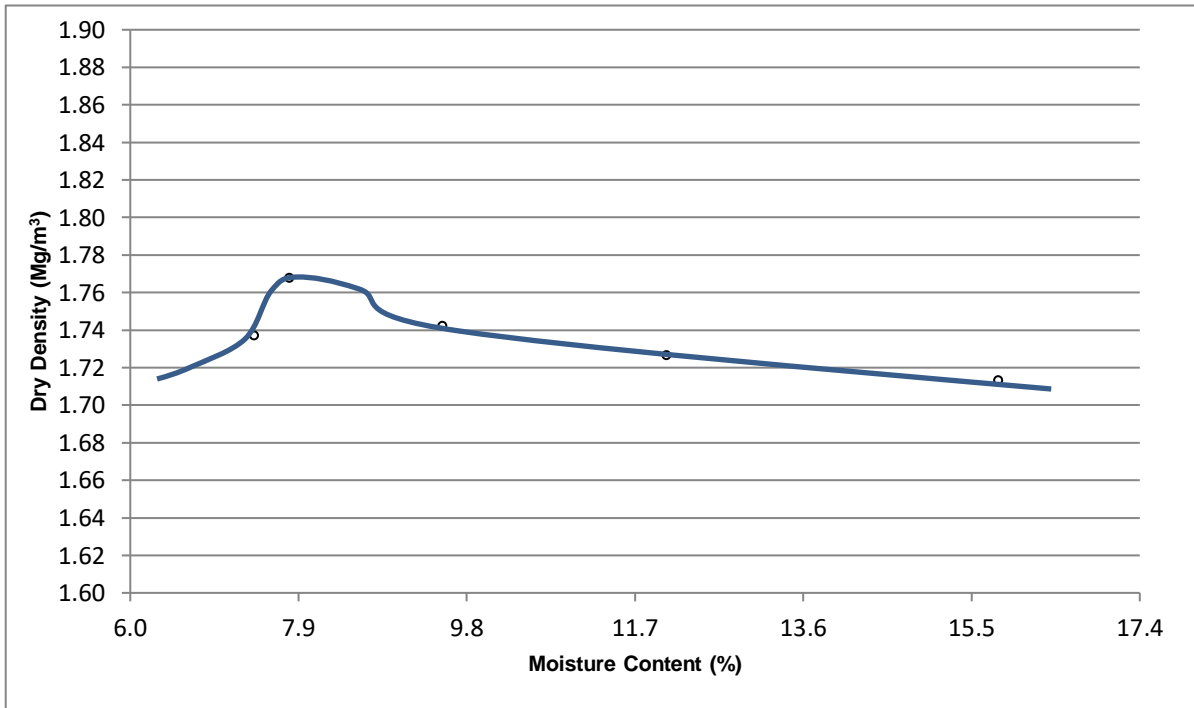
**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	29/06/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-18828
		<b>Client ref:</b>	PRA-SPO40-S2
		<b>Date sampled:</b>	11/06/21
<b>Site:</b>	British Steel, Redcar	<b>Sampled by:</b>	Client
		<b>Date received:</b>	16/06/21
<b>Sample location:</b>	PRA-SPO40-S2	<b>Date test completed:</b>	25/06/21
<b>Material:</b>	Crushed Concrete	<b>Test conducted by:</b>	AG
<b>Test Method:</b>	Clause 3.7.5.1 Vibrating Hammer method	<b>Variation from standard method:</b>	None
<b>Sample Preparation:</b>	Clause 3.2.4.2		

**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	44
Grading Zone:	x	% retained on 20mm Test Sieve:	53
Single/Multiple samples:	Multiple	Particle Density: (assumed)	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.79	<b>Optimum Moisture Content (%):</b>	7.8
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**Comments: Grading Zone X – Deviating Sample**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)  
 M. Caulfield ( Laboratory Supervisor)

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	25.06.2021
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18829
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	
<b>Sample location:</b>	PRA-SPO40-S3	<b>Date sampled:</b>	11.06.2021
<b>Material:</b>	Crushed Concrete	<b>Sampled by:</b>	Client
<b>Source of material:</b>	Site Won	<b>Date received:</b>	16.06.2021
<b>Test Method:</b>	Wash and Dry Sieve Method	<b>Date test completed:</b>	23.06.2021
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	NE
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

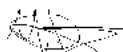
**Test Results**

Moisture Content (BS1377, Part 2, 1990) 12%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500			6.3	47	
300			5	44	
125			3.35	39	
90			2	34	
75	100		1.18	30	
63	98		0.600	26	
50	95		0.425	23	
37.5	87		0.300	21	
28	79		0.212	15	
20	71		0.150	11	
14	61		0.063	9.3	
10	54				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

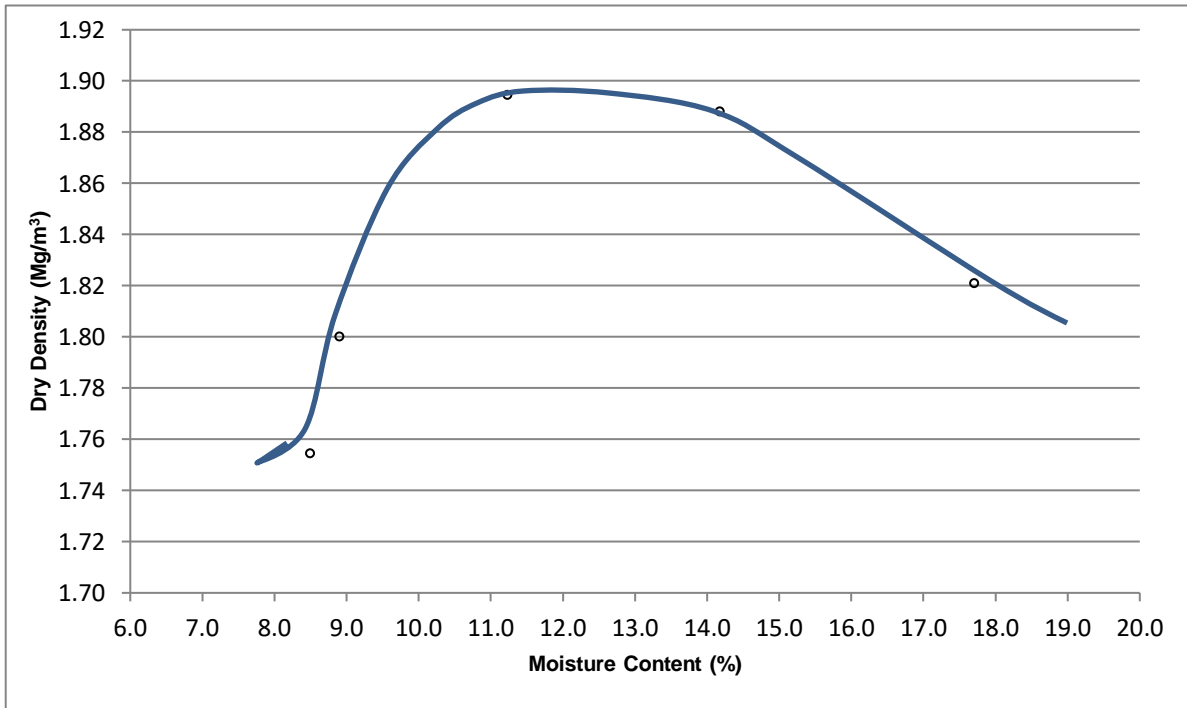


<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	29/06/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-18829
		<b>Client ref:</b>	PRA-SPO40-S3
		<b>Date sampled:</b>	11/06/21
<b>Site:</b>	British Steel, Redcar	<b>Sampled by:</b>	Client
		<b>Date received:</b>	16/06/21
<b>Sample location:</b>	PRA-SPO40-S3	<b>Date test completed:</b>	25/06/21
<b>Material:</b>	Crushed Concrete	<b>Test conducted by:</b>	AG
<b>Test Method:</b>	Clause 3.7.5.1 Vibrating Hammer method	<b>Variation from standard method:</b>	None
<b>Sample Preparation:</b>	Clause 3.2.4.2		

**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	13
Grading Zone:	5	% retained on 20mm Test Sieve:	29
Single/Multiple samples:	Multiple	Particle Density: (assumed)	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.89	<b>Optimum Moisture Content (%):</b>	14
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**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

- M. Aiston (Director)
- G Dresser (Director)
- M. Caulfield ( Laboratory Supervisor)

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	25.06.2021
<b>Client:</b>	Seymour Civil Engineering Ltd	<b>Lab ref:</b>	MT0318-18830
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	
<b>Sample location:</b>	PRA-SPO40-S4	<b>Date sampled:</b>	11.06.2021
<b>Material:</b>	Crushed Concrete	<b>Sampled by:</b>	Client
<b>Source of material:</b>	Site Won	<b>Date received:</b>	16.06.2021
<b>Test Method:</b>	Wash and Dry Sieve Method	<b>Date test completed:</b>	23.06.2021
<b>Specification:</b>	SHW Series 600 Tbl 6/2	<b>Test conducted by:</b>	NE
<b>Variation from standard method:</b>	None		
<b>Method of sample preparation:</b>	BS 1377-1:1990		

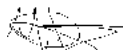
**Test Results**

Moisture Content (BS1377, Part 2, 1990) 11%

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500			6.3	39	
300			5	36	
125			3.35	32	
90			2	28	
75			1.18	23	
63	100		0.600	19	
50	82		0.425	17	
37.5	75		0.300	15	
28	68		0.212	9.1	
20	59		0.150	5.5	
14	52		0.063	4.6	
10	46				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

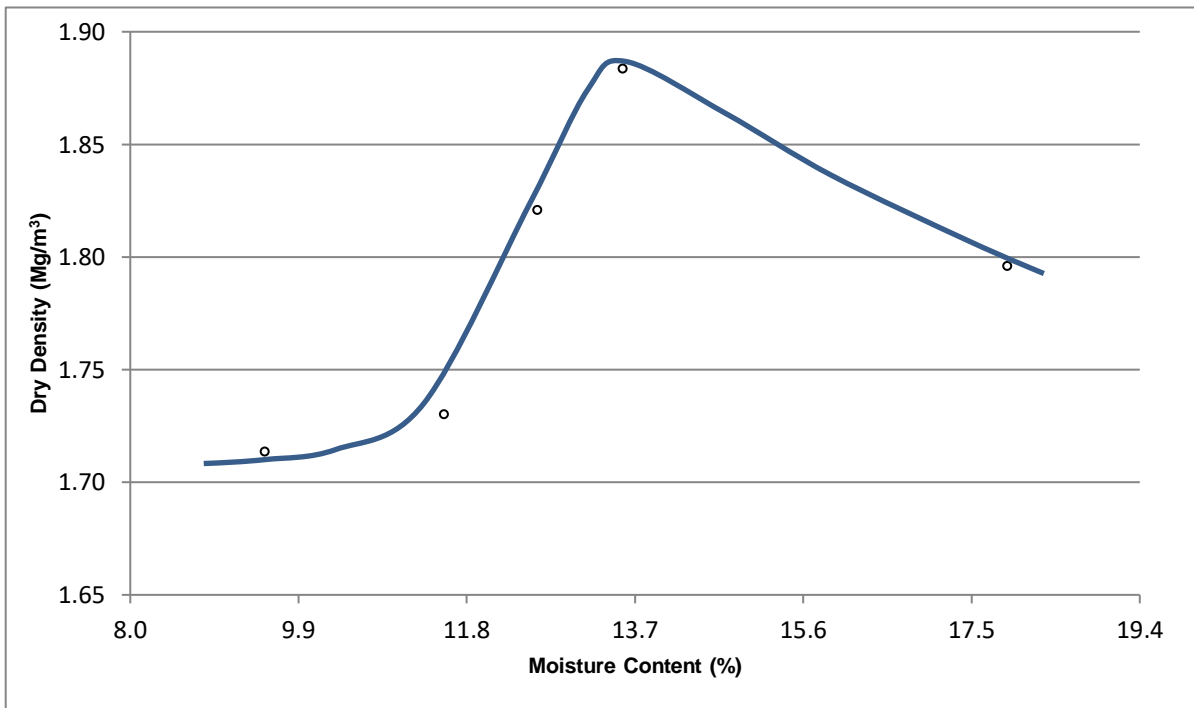
**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	29/06/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-18830
		<b>Client ref:</b>	PRA-SPO40-S4
		<b>Date sampled:</b>	11/06/21
<b>Site:</b>	British Steel, Redcar	<b>Sampled by:</b>	Client
		<b>Date received:</b>	16/06/21
<b>Sample location:</b>	PRA-SPO40-S4	<b>Date test completed:</b>	25/06/21
<b>Material:</b>	Crushed Concrete	<b>Test conducted by:</b>	AG
<b>Test Method:</b>	Clause 3.7.5.1 Vibrating Hammer method	<b>Variation from standard method:</b>	None
<b>Sample Preparation:</b>	Clause 3.2.4.2		

**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	25
Grading Zone:	X	% retained on 20mm Test Sieve:	41
Single/Multiple samples:	Multiple	Particle Density: (assumed)	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.88	<b>Optimum Moisture Content (%):</b>	14
------------------------------------------------	------	--------------------------------------	----



**Comments: Grading Zone X – Deviating Sample**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)  
 M. Caulfield (Laboratory Supervisor)

<b>Test Report:</b>	<b>Determination of water content of soil</b> BS EN 17892:2014 Water Content	<b>Report Date:</b> 30.06.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab Ref:</b> MT0318 -18893-18908
<b>Site:</b>	British Steel Redcar	<b>Client Ref:</b> As below
<b>Sample Location:</b>	See below	<b>Date Sampled:</b> 15.06.2021
<b>Material Description:</b>	See Below	<b>Date Received:</b> 23.06.2021
<b>Test Method:</b>	Oven Dried Method	<b>Test conducted by:</b> AG
		<b>Sampled By:</b> Client
		<b>Variation from Standard Method:</b> None

**Test Results**

Sample No/Ref Ref	Material	Water Content (%)
18893 PRA-SP012-S21	Screened Spoil	18
18894 PRA-SP012-S22	Screened Spoil	19
18895 PRA-SP012-S23	Screened Spoil	18
18896 PRA-AU-17-S6	Mudstone	7.4
18897 PRA-AU-19-S5	Mudstone	6.8
18898 PRA-AR-23-S1	Clay Base	22
18999 PRA-AS-23-S1	Clay Base	20
18900 PRA-AY-17-S4	Mudstone	6.7
18901 PRA-AS-27-S1	Clay Base	4.5*
18902 PRA-AY-21-S3	Screened Spoil (damp, uncompacted)	16
18903 PRA-AY-23-S4	Screened Spoil (SI damp, compacted)	12
18904 PRA-AU-19-S6	Mudstone	8.1
18905 PRA-AW-15-S1	Mudstone	11
18906 PRA-SP041-S1	Spoil	7.8
18907 PRA-SP41-S2	Spoil	7.6
18908 PRA-SP041-S3	Spoil	7.8

\* sample received dry

**Comments**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

- M. Aiston (Director)
- G. Dresser (Director)
- C. Spencer (Site Works Supervisor)
- M. Caulfield (Laboratory Supervisor)

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	30.06.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab Ref:</b>	MT0318- 18906
<b>Site:</b>	British Steel, Redcar	<b>Client Ref:</b>	PRA-SP41-S1
<b>Sample Location:</b>	PRA-SP41-S1	<b>Date Sampled:</b>	15.06.2021
<b>Material:</b>	Spoil	<b>Date Received:</b>	23.06.2021
<b>Source of Material:</b>	Site Won	<b>Test conducted by:</b>	NE
<b>Test Method:</b>	Oven Dried Method	<b>Sampled By:</b>	Client
<b>Specification:</b>	SHW Series 600 Tbl 6/2		
<b>Variation from standard method:</b>	None		
<b>Method of Sample Preparation:</b>	BS 1377-1: 1990		

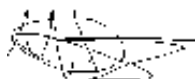
**Test Results**

Moisture Content (BS1377, Part 2: 1990) 7.8

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500			6.3	49	
300			5	45	
125			3.35	40	
90			2	36	
75			1.18	31	
63	100		0.600	27	
50	89		0.425	24	
37.5	81		0.300	19	
28	73		0.212	15	
20	68		0.150	8.5	
14	61		0.063	8.1	
10	52				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

- M. Aiston (Director)
- G. Dresser (Director)
- C. Spencer (Site Works Supervisor)
- M. Caulfield (Laboratory Supervisor)

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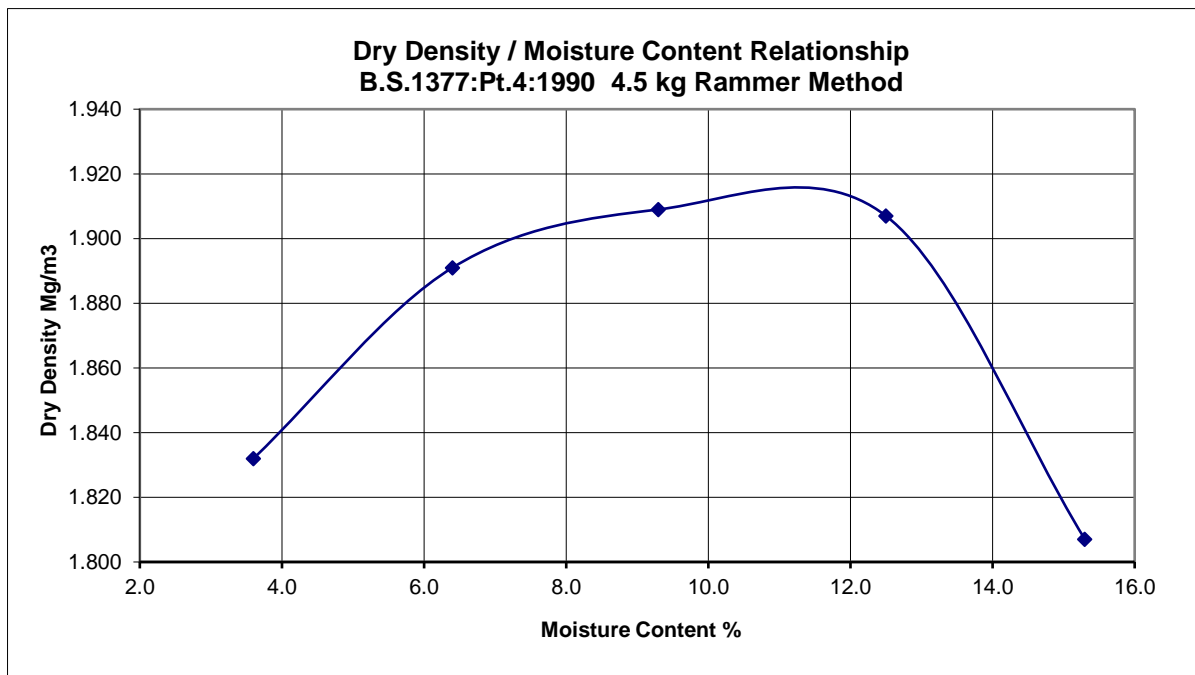
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<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	13/07/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-18906
		<b>Client ref:</b>	PRA-SPO41-S1
<b>Site:</b>	British Steel, Redcar	<b>Date sampled:</b>	15/06/21
<b>Source:</b>	Site Won	<b>Sampled by:</b>	Client
<b>Sample location:</b>	PRA-SPO41-S1	<b>Date received:</b>	23/06/21
<b>Material:</b>	Screened SPOIL	<b>Date test completed:</b>	01/07/21
<b>Test Method:</b>	3.5.4.2/ 3.6.4.2 4.5 Kg Rammer	<b>Test conducted by:</b>	AG
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Max. size of cohesive pieces:</b>	20mm

**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	19
Grading Zone:	X	% retained on 20mm Test Sieve:	32
Single/Multiple samples:	Multiple	Particle Density: (Assumed):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.91	<b>Optimum Moisture Content (%):</b>	11
------------------------------------------------	------	--------------------------------------	----



Comments :

**Signed:**



For & on behalf of  
**Dunelm Testing Services**

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)  
 M. Caulfield (Laboratory Supervisor)

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	30.06.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab Ref:</b>	MT0318- 18907
<b>Site:</b>	British Steel, Redcar	<b>Client Ref:</b>	PRA-SP41-S2
<b>Sample Location:</b>	PRA-SP41-S2	<b>Date Sampled:</b>	15.06.2021
<b>Material:</b>	Spoil	<b>Date Received:</b>	23.06.2021
<b>Source of Material:</b>	Site Won	<b>Test conducted by:</b>	NE
<b>Test Method:</b>	Oven Dried Method	<b>Sampled By:</b>	Client
<b>Specification:</b>	SHW Series 600 Tbl 6/2		
<b>Variation from standard method:</b>	None		
<b>Method of Sample Preparation:</b>	BS 1377-1: 1990		

**Test Results**

Moisture Content (BS1377, Part 2: 1990) 6.8

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500			6.3	50	
300			5	44	
125			3.35	41	
90			2	37	
75			1.18	29	
63	100		0.600	25	
50	93		0.425	22	
37.5	89		0.300	18	
28	81		0.212	14	
20	73		0.150	7.6	
14	68		0.063	7	
10	61				

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

- M. Aiston (Director)
- G. Dresser (Director)
- C. Spencer (Site Works Supervisor)
- M. Caulfield (Laboratory Supervisor)

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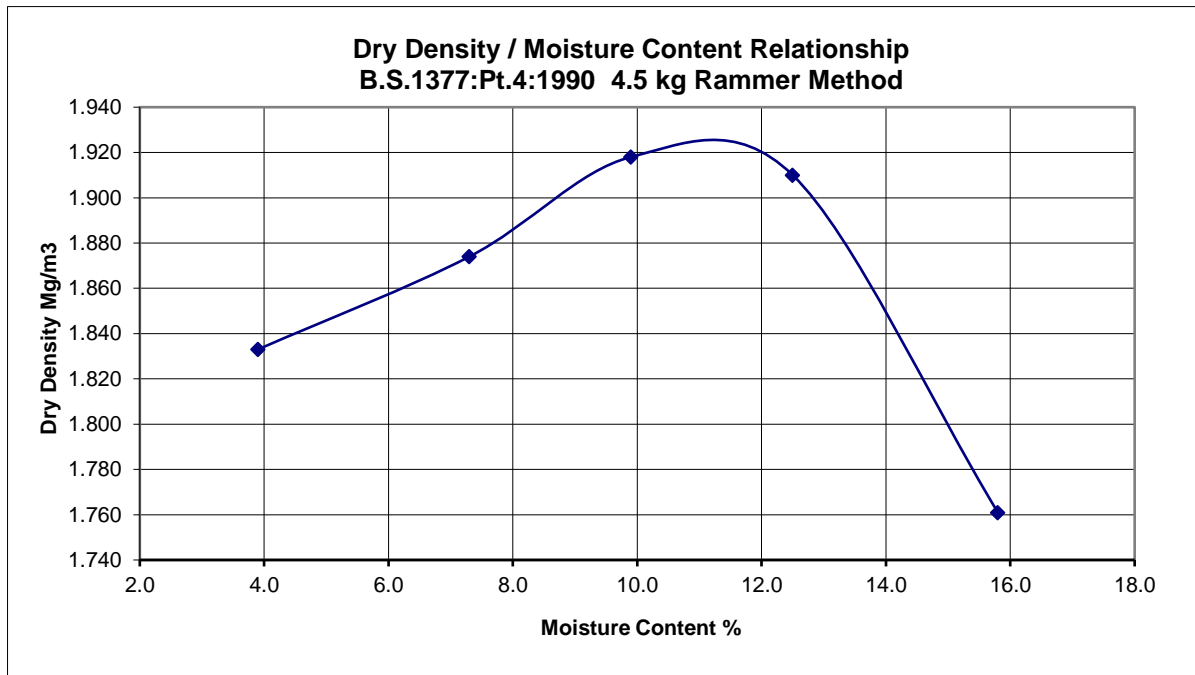
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<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	13/07/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-18907
		<b>Client ref:</b>	PRA-SPO41-S2
<b>Site:</b>	British Steel, Redcar	<b>Date sampled:</b>	15/06/21
<b>Source:</b>	Site Won	<b>Sampled by:</b>	Client
<b>Sample location:</b>	PRA-SPO41-S2	<b>Date received:</b>	23/06/21
<b>Material:</b>	Screened SPOIL	<b>Date test completed:</b>	01/07/21
<b>Test Method:</b>	3.5.4.2/ 3.6.4.2 4.5 Kg Rammer	<b>Test conducted by:</b>	AG
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Max. size of cohesive pieces:</b>	20mm

**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	11
Grading Zone:	X	% retained on 20mm Test Sieve:	27
Single/Multiple samples:	Multiple	Particle Density: (Assumed):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.93	<b>Optimum Moisture Content (%):</b>	11
------------------------------------------------	------	--------------------------------------	----



Comments :

Signed:



For & on behalf of  
**Dunelm Testing Services**

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)  
 M. Caulfield (Laboratory Supervisor)

Page: 1 of 1

<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS 1377: Part 2: 1990	<b>Report Date:</b>	30.06.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab Ref:</b>	MT0318- 18908
<b>Site:</b>	British Steel, Redcar	<b>Client Ref:</b>	PRA-SP41-S3
<b>Sample Location:</b>	PRA-SP41-S3	<b>Date Sampled:</b>	15.06.2021
<b>Material:</b>	Spoil	<b>Date Received:</b>	23.06.2021
<b>Source of Material:</b>	Site Won	<b>Test conducted by:</b>	NE
<b>Test Method:</b>	Oven Dried Method	<b>Sampled By:</b>	Client
<b>Specification:</b>	SHW Series 600 Tbl 6/2		
<b>Variation from standard method:</b>	None		
<b>Method of Sample Preparation:</b>	BS 1377-1: 1990		

#### Test Results

Moisture Content (BS1377, Part 2: 1990)

7.7

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
500			6.3	56	
300			5	52	
125			3.35	46	
90			2	41	
75			1.18	34	
63	98		0.600	29	
50	95		0.425	25	
37.5	89		0.300	20	
28	80		0.212	15	
20	74		0.150	9.4	
14	67		0.063	9	
10	59				

#### Comments:

Signed:



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

- M. Aiston (Director)
- G. Dresser (Director)
- C. Spencer (Site Works Supervisor)
- M. Caulfield (Laboratory Supervisor)



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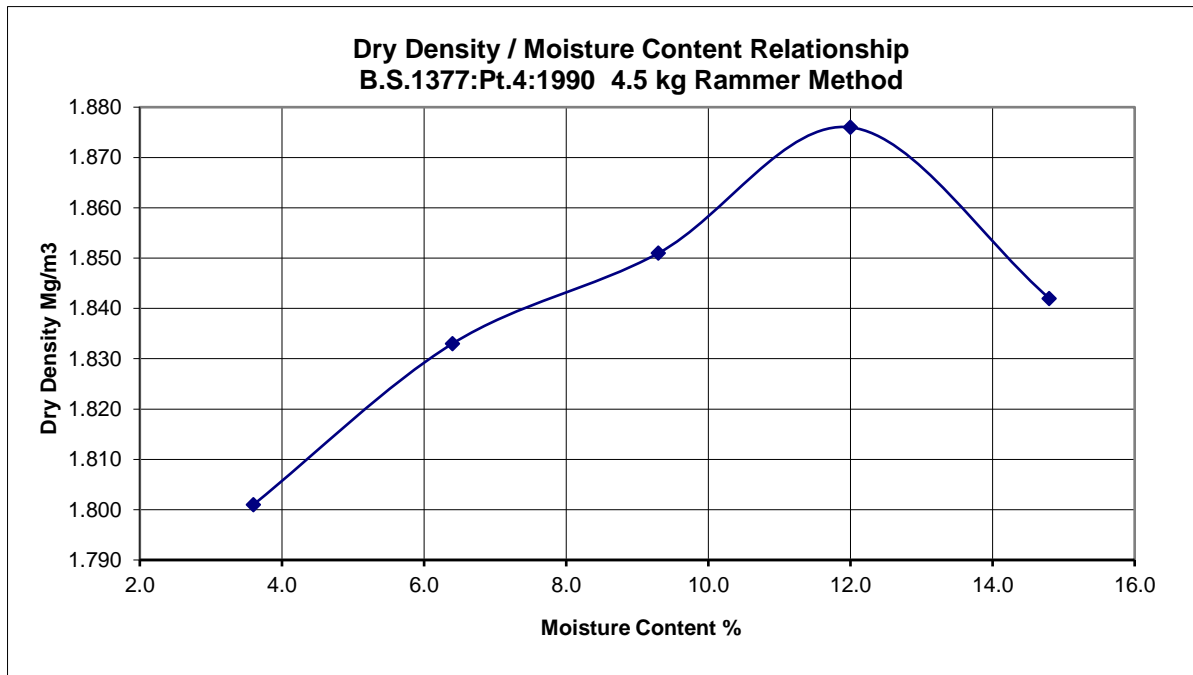
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<b>Test Report:</b>	<b>Determination of Dry Density/Moisture Content Relationship</b> BS 1377: Part 4: 1990	<b>Report Date:</b>	13/07/21
<b>Client:</b>	Seymour Civil Engineering	<b>Lab ref:</b>	MT0318-18908
		<b>Client ref:</b>	PRA-SPO41-S3
<b>Site:</b>	British Steel, Redcar	<b>Date sampled:</b>	15/06/21
<b>Source:</b>	Site Won	<b>Sampled by:</b>	Client
<b>Sample location:</b>	PRA-SPO41-S3	<b>Date received:</b>	23/06/21
<b>Material:</b>	Screened SPOIL	<b>Date test completed:</b>	01/07/21
<b>Test Method:</b>	3.5.4.2/ 3.6.4.2 4.5 Kg Rammer	<b>Test conducted by:</b>	NE
<b>Sample Preparation:</b>	Clause 3.2.4.2	<b>Max. size of cohesive pieces:</b>	20mm

**Test Results**

Mould Type:	CBR	% retained on 37.5mm Test Sieve:	11
Grading Zone:	X	% retained on 20mm Test Sieve:	26
Single/Multiple samples:	Multiple	Particle Density: (Assumed):	2.65

<b>Maximum Dry Density (Mg/m<sup>3</sup>):</b>	1.88	<b>Optimum Moisture Content (%):</b>	12
------------------------------------------------	------	--------------------------------------	----



Comments :

**Signed:**



For & on behalf of  
**Dunelm Testing Services**

Authorised Signatories:  
 M. Aiston (Director)  
 G. Dresser (Director)  
 M. Caulfield (Laboratory Supervisor)

**Page:** 1 of 1

**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 25.06.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318-18930-18936

**Site:** British Steel, Redcar **Client Ref:** See Below

**Sample location:** See Below **Date Sampled:** 23.06.2021

**Material description:** Spoil **Date Received:** 23.06.2021

**Test Method:** Oven Dried Method **Test conducted by:** WB

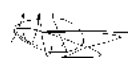
**Sampled By:** Client

**Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
PRA-AU-21-S2 18930	14
PRA-AW-23-S3 18931	19
PRA-SP012-S40 18932	17
PRA-SP012-S41 18933	16
PRA-SP012-S42 18934	16
PRA-SP012-S39 18935	18
PRA-SP012-S38 18936	17

Comments:

**Signed:**For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1



# DETS

## Certificate of Analysis

*Certificate Number* 21-14606

*Issued:* 14-Jul-21

*Client* Dunelm Testing Ltd  
Unit 5e  
Edwardson Road  
Meadowfield  
Durham  
TS5 6HA

*Our Reference* 21-14606

*Client Reference* MTO373 19441

*Order No* DT0568

*Contract Title* Iron Ponds Teesworks RDL Demolition

*Description* One Soil sample.

*Date Received* 12-Jul-21

*Date Started* 13-Jul-21

*Date Completed* 14-Jul-21

*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



2139

## Summary of Asbestos Analysis

### Soil Samples

*Our Ref* 21-14606

*Client Ref* MTO373 19441

*Contract Title* Iron Ponds Teesworks RDL Demolition

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1874623	19441	SOIL	NAD	none	Jordan Farley
<p>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.</p>					

## Information in Support of the Analytical Results

Our Ref 21-14606

Client Ref MTO373 19441

Contract Iron Ponds Teesworks RDL Demolition

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1874623	19441 SOIL	08/07/21	PT 1L		
<p>Key: P-Plastic T-Tub</p> <p>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.</p>					

### 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

End of Report



<b>Test Report:</b>	<b>Determination of Particle Size Distribution</b> BS EN 933: Part 1: 2012	<b>Report Date:</b>	16.07.2021
<b>Client:</b>	MGL Group	<b>Lab ref:</b>	MT0373-19441
<b>Site:</b>	Teesworks RDL Demolition	<b>Client ref:</b>	
<b>Sample location:</b>	Stockpile	<b>Date sampled:</b>	08.07.2021
<b>Material:</b>	6F5 Capping	<b>Sampled by:</b>	Client
<b>Specification:</b>	SHW Series 600 Tbl 6/5	<b>Date received:</b>	08.07.2021
<b>Test Method:</b>	Washing & Sieving Method	<b>Source of Material:</b>	Site Crushed
		<b>Date test completed:</b>	16.07.2021
		<b>Test conducted by:</b>	MC

**Test Results**

Particle Size Distribution					
Sieve (mm)	% Passing	Specification	Sieve (mm)	% Passing	Specification
			8	8.8	
125	100	100	6.3	6.8	
80	72*	75-99	4	5.2	
63	42		2.8	4.5	
40	32*	50-90	2	3.8	0-35
31.5	20		1	3.0	
20	16*	30-75	0.500	2.5	
16	14		0.250	1.9	
14	12		0.125	1.5	
10	10*	15-60	0.063	1.2	0-12

	Result	Specification
Moisture Content %:	2.9	-
Uniformity Coefficient:	-	-

**Comments:**

\*outside grading specification

**Signed:**



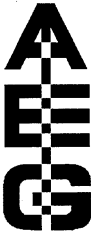
For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)  
 M. Caulfield ( Laboratory Supervisor)

**Page:** 1 of 1

# ALLIED EXPLORATION & GEOTECHNICS LIMITED

Head Office: Unit 25 Stella Gill Industrial Estate, Pelton Fell, Chester-le-Street, Co. Durham, DH2 2RG - Tel: 0191 3874700 Fax: 0191 3874710  
Regional Office: Unit 20 Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL - Tel: 01722 735 300 Fax: 01722 735 999



## LABORATORY REPORT CERTIFICATE



**Contract Title:** Prairie Remediation

**AEG Reference:** SLS1212

**Client Address:** Seymour Civil Engineering  
Seymour House  
Harbour Walk  
Hartlepool  
T24 0UX


We certify that Laboratory testing was carried out on samples from the above contract in accordance with techniques outlined in BS 1377: 1990, BS EN ISO 17892:2014 or other appropriate standards as quoted. The samples were received from 11<sup>th</sup> November 2020 and the following results, given on the attached enclosures, were obtained.

The tests carried out are indicated in the attached table showing the enclosure number and the total number of pages.

For and on behalf of Allied Exploration & Geotechnics Limited

- Nick Vater (Managing Director)  
 Kevin Warriner (HSE & Quality Director)  
 Michelle Selkirk (Laboratory Manager)

Signed

  
\_\_\_\_\_

Date: 18 November 2020

Tests marked not UKAS accredited in this certificate are not included in the UKAS accreditation schedule for our laboratory. Any opinions and interpretations expressed herein are outside the scope of the laboratory's UKAS accreditation.

Please note the material was derived from samples taken outside the control of the laboratory.

# LABORATORY REPORT CERTIFICATE

## ENCLOSURES

Enclosure Number	Description	UKAS Accredited	Reference	No. of Pages
0	Laboratory Report Certificate	N/A		3
1	Sample Description Sheets	N/A		1
2	Particle Size Distribution Sieving	Yes	BS 1377 Part 2 1990	9

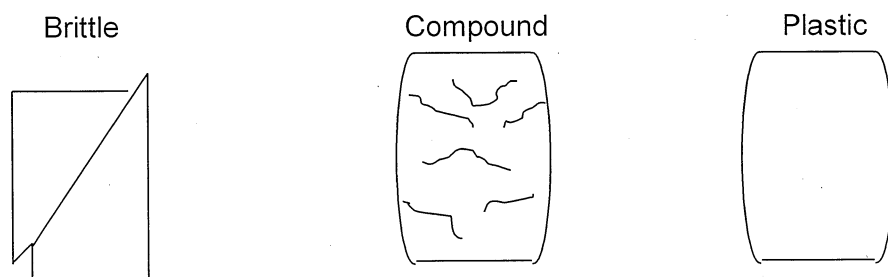
# LABORATORY REPORT CERTIFICATE

## ABBREVIATIONS

All the abbreviations used on the laboratory certificates are given below:

<b>Br</b>	Brittle	<b>PSD</b>	Particle Size Distribution by sieve analysis
<b>C</b>	Compound	<b>SB</b>	Shear Box
<b>CBR</b>	California Bearing Ratio	<b>SED</b>	Sedimentation Analysis
<b>CDT</b>	Consolidated Drained Triaxial	<b>SO4</b>	Sulphate (total, water extract, groundwater)
<b>CL</b>	Chloride content (water or soil)	<b>CP2</b>	Dry Density/Moisture Content 2.5kg rammer
<b>US</b>	Unsuitable sample for test	<b>CP4</b>	As above using 4.5kg rammer
<b>UUT</b>	Undrained Unconsolidated Triaxial	<b>CPV</b>	As above using vibrating hammer
<b>HSV</b>	Vane Test	<b>CUT</b>	Consolidated Undrained Triaxial
<b>IS</b>	Insufficient sample for test	<b>R</b>	Remoulded
<b>LOI</b>	Loss On Ignition	<b>U</b>	Undisturbed
<b>M</b>	Multi-stage testing	<b>MC</b>	Moisture Content
<b>MCV</b>	Moisture Content Value	<b>PL</b>	Point Load
<b>NAT</b>	Natural preparation method	<b>NMC</b>	Natural (or as received) moisture content
<b>P</b>	Plastic	<b>PFH</b>	Permeability Falling Head Method
<b>OED</b>	Oedometer	<b>PTXL</b>	Permeability in Triaxial Cell
<b>OMC</b>	Optimum Moisture Content	<b>ORG</b>	Organic content
<b>B</b>	Large disturbed (bulk) sample	<b>PD</b>	Particle Density (SG)
<b>J</b>	Small disturbed (jar) sample	<b>PI</b>	Liquid limit, plastic limit and plasticity index

### Typical Mode of Failure for Triaxial Testing



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## LABORATORY SAMPLE DESCRIPTION SHEET

Exploratory Hole No.	Sample Depth (m) ID	Description	Laboratory Tests/Remarks
PRA - SP001 - 01	0.00 Bx2	MADE GROUND (Dark grey brown clayey very sandy gravel including glass, slag and brick fragments).	PSD
PRA - SP002 - 01	0.00 Bx2	MADE GROUND (Dark grey brown clayey very sandy gravel including wood, brick and ceramic fragments).	PSD
PRA - SP003 - 01	0.00 Bx2	MADE GROUND (Dark grey brown clayey very sandy gravel including wood, slag, glass and brick fragments).	PSD
PRA - SP005 - 11	0.00 Bx2	MADE GROUND (Dark grey brown clayey very sandy gravel including wood, plastic, glass, slag and brick fragments).	PSD
PRA - SP006 - 01	0.00 Bx2	MADE GROUND (Dark grey brown clayey sandy gravel with occasional clay pockets and a medium cobble content. Gravel includes glass and brick fragments).	PSD
PRA - SP006 - 04	0.00 Bx2	MADE GROUND (Brown clayey very sandy gravel including glass and brick fragments).	PSD
PRA - SP006 - 16	0.00 Bx2	MADE GROUND (Dark grey brown slightly clayey sandy gravel with a low cobble content. Gravel includes fabric, glass, brick and ceramic fragments).	PSD
PRA - SP010 - 11	0.00 Bx2	MADE GROUND (Dark grey brown cobbles with much sandy gravel including metal and brick fragments).	PSD
PRA - SP010 - 18	0.00 Bx2	MADE GROUND (Dark grey brown cobbles with much gravel including concrete and brick fragments).	PSD

Contract Title :-

Prairie Remediation

Client :-

Seymour Civil Engineering



Signed :-

*msero*

Name :-

SELKIRK

Page 1 of 1

Date of issue :-

18/11/2020

Certificate No :-

SD/SLS1212/1

AEG Contract No. :-

SLS1212

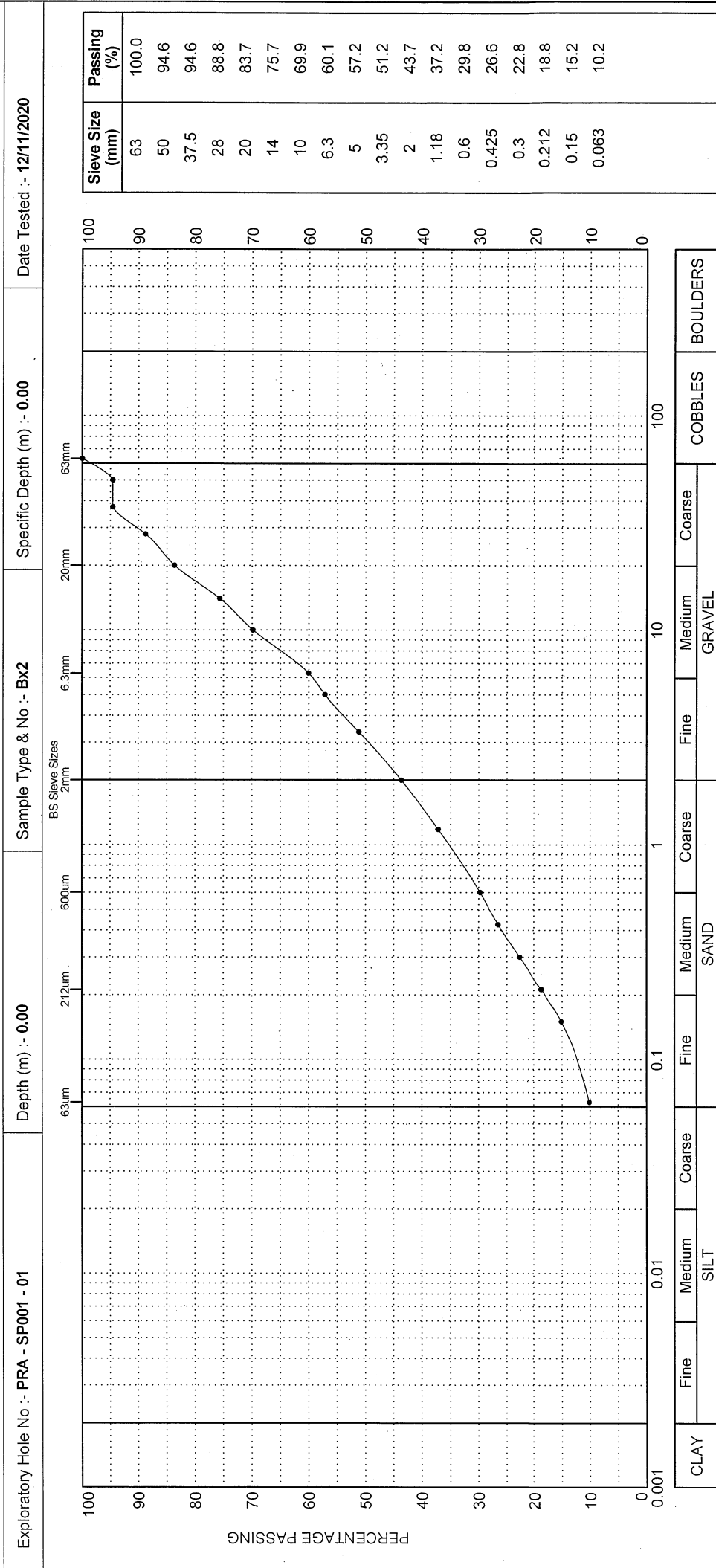


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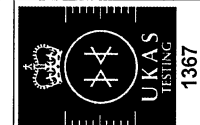
## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990



For description of sample please refer to the Laboratory Sample Description Sheet

<b>Date of issue :-</b> 18/11/2020	<b>Certificate No :-</b> PSD/SLS1212/PRA - SP001 - 01/Bx2/0.00	<b>Signed :-</b> <i>msong</i>	<b>Name :-</b> M. SONGIRK	<b>Page 1 of 1</b>
<b>Client :-</b> Seymour Civil Engineering	<b>Contract Title :-</b> Prairie Remediation	<b>AEG Contract No :-</b> SLS1212		



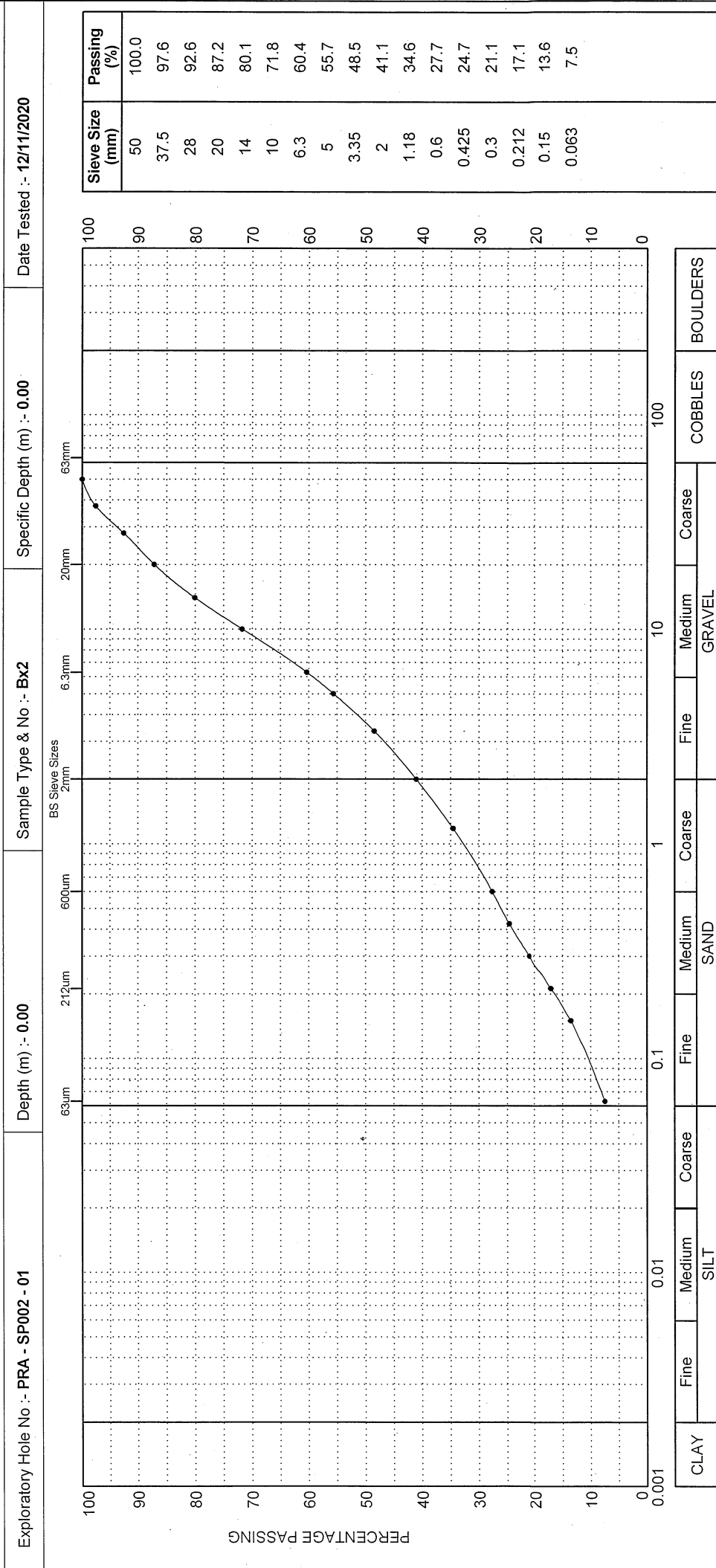
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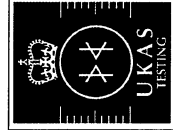
## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990



For description of sample please refer to the Laboratory Sample Description Sheet

<b>Logo</b>	Date of issue :- 18/11/2020	Certificate No :- PSD/SLS1212/PRA - SP002 - 01/Bx2/0.00	Signed :- <i>[Signature]</i>	Name :-
Client :- Seymour Civil Engineering	Contract Title :-	Prairie Remediation		
		AEG Contract No :- SLS1212	Page 1 of 1	

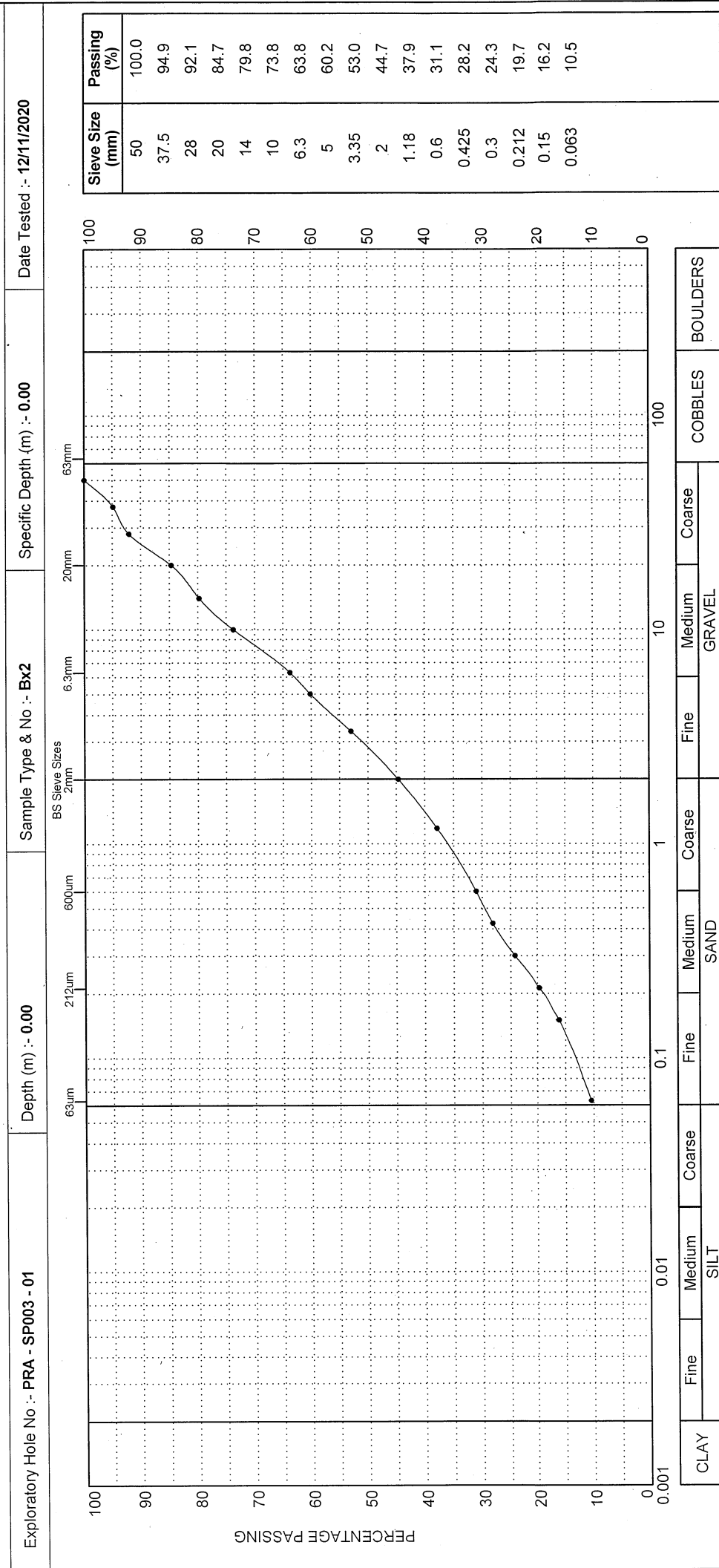


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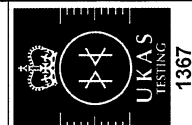
## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990



For description of sample please refer to the Laboratory Sample Description Sheet

<b>AEG</b>	Date of issue :- 18/11/2020	Certificate No :- PSD/SLS1212/PRA - SP003 - 01/Bx2/0.00	Signed :- <i>M. SORO</i>
Client :- Seymour Civil Engineering	Contract Title :-	Name :- <i>M. SORO</i>	
	Prairie Remediation	Page 1 of 1	
		AEG Contract No :- SLS1212	



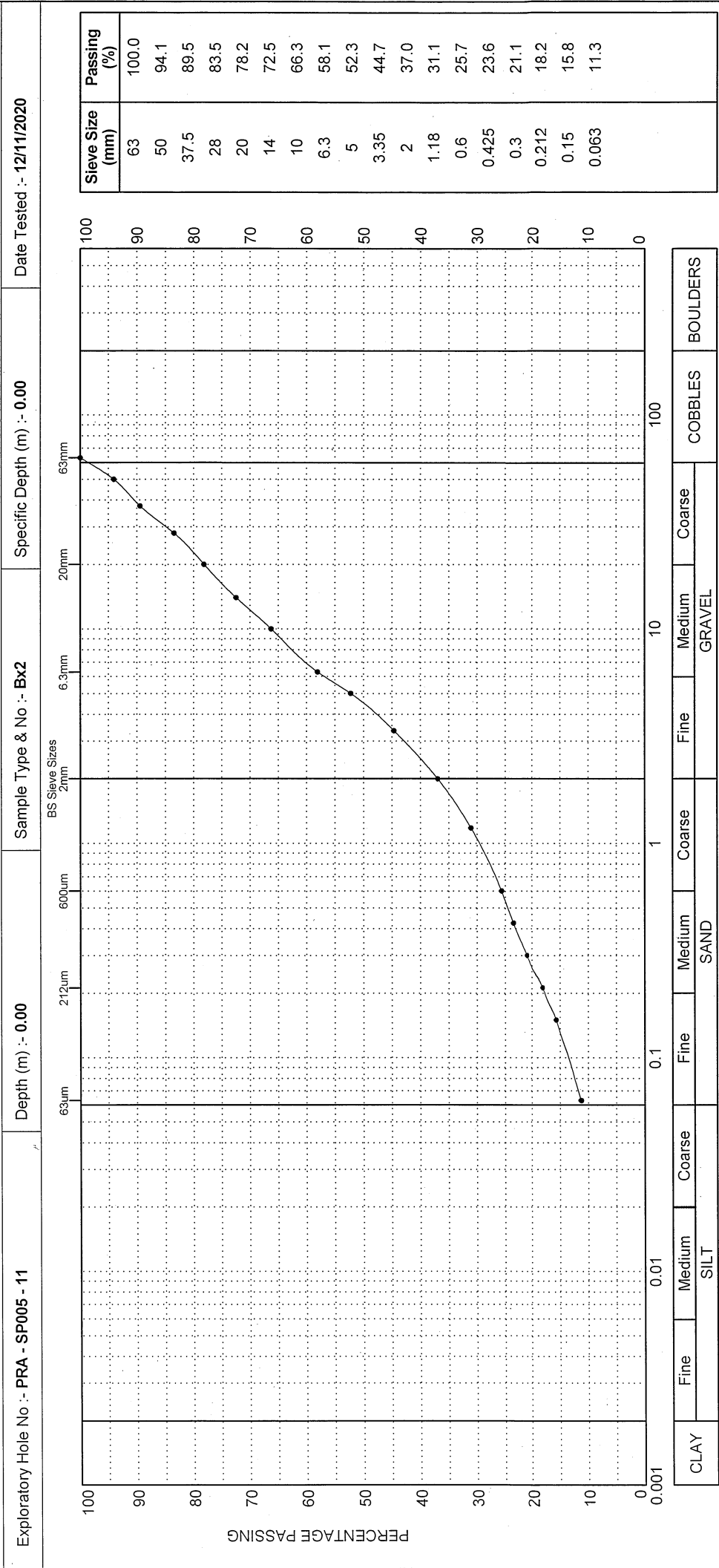


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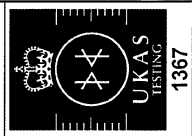
## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990



For description of sample please refer to the Laboratory Sample Description Sheet

<b>Date of issue :-</b> 18/11/2020	<b>Certificate No :-</b> PSD/SLS1212/PRA - SP005 - 11/Bx2/0.00	<b>Signed :-</b> <i>Mason</i>	<b>Name :-</b> Mason
<b>Client :-</b> Seymour Civil Engineering	<b>Contract Title :-</b> Prairie Remediation		
		<b>Page 1 of 1</b>	
		<b>AEG Contract No :-</b> SLS1212	



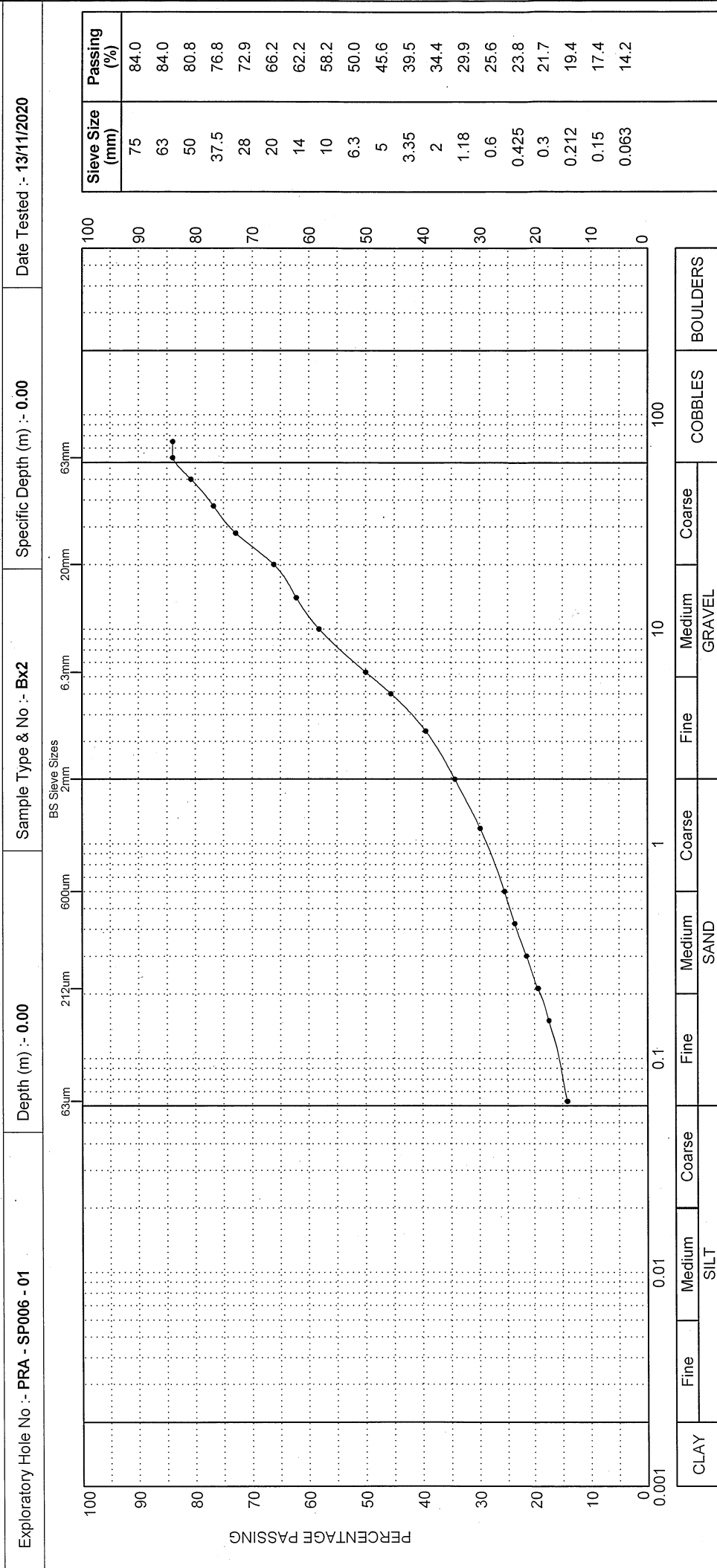
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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

(Test deviated from standard due to insufficient sample mass)



For description of sample please refer to the Laboratory Sample Description Sheet

Date of issue :- 18/11/2020	Certificate No :- PSD/SLS1212/PRA - SP006 - 01/Bx2/0.00	Signed :- <i>M. S. ...</i>	Name :- ...	Page 1 of 1
Client :- Seymour Civil Engineering	Contract Title :- Prairie Remediation		AEG Contract No :- SLS1212	

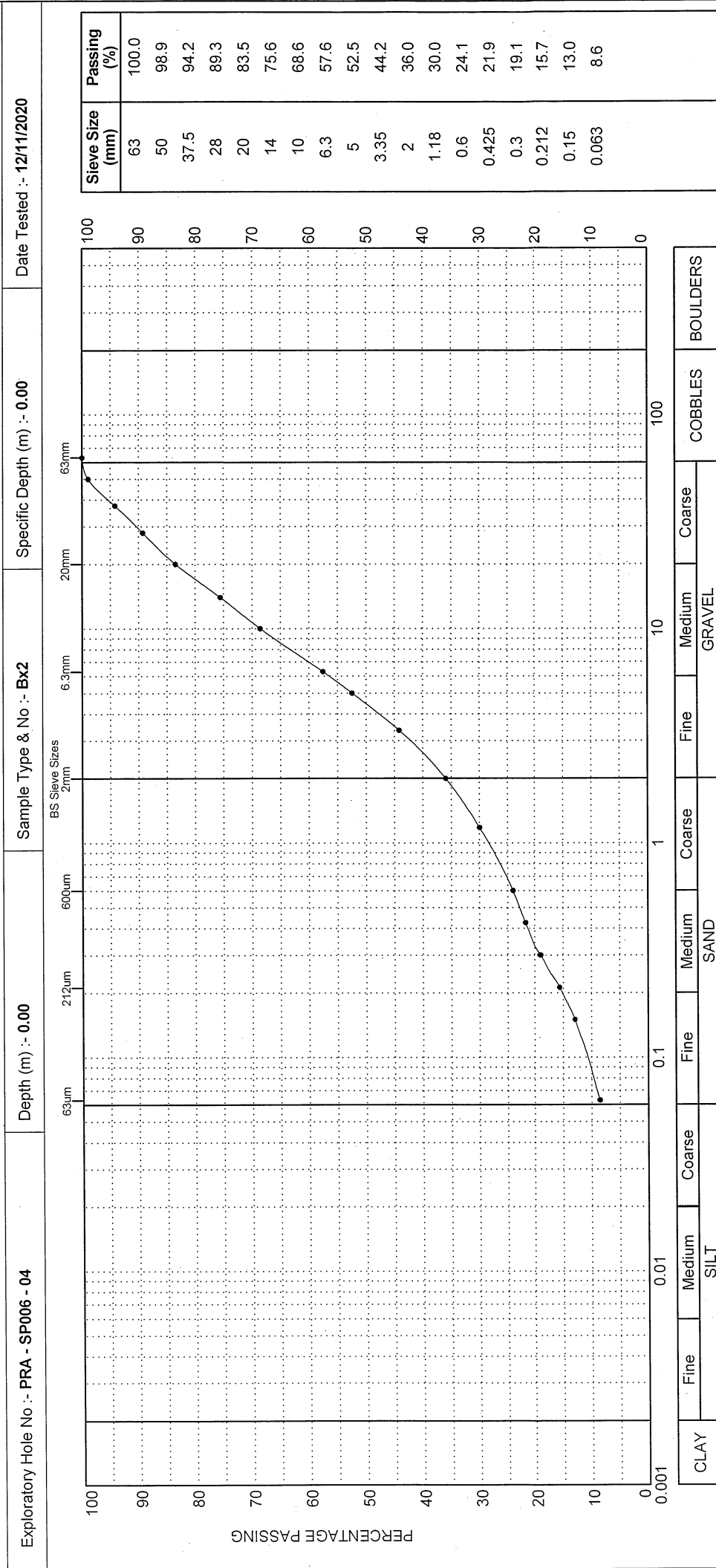


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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990



For description of sample please refer to the Laboratory Sample Description Sheet

<b>Date of issue :-</b> 18/11/2020	<b>Certificate No :-</b> PSD/SLS1212/PRA - SP006 - 04/Bx2/0.00	<b>Signed :-</b> <i>MISO</i>	<b>Name :-</b> AEG Contract No :- SLS1212
<b>Client :-</b> Seymour Civil Engineering		<b>Contract Title :-</b> Prairie Remediation	



# 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 735 699

## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

(Test deviated from standard due to insufficient sample mass)

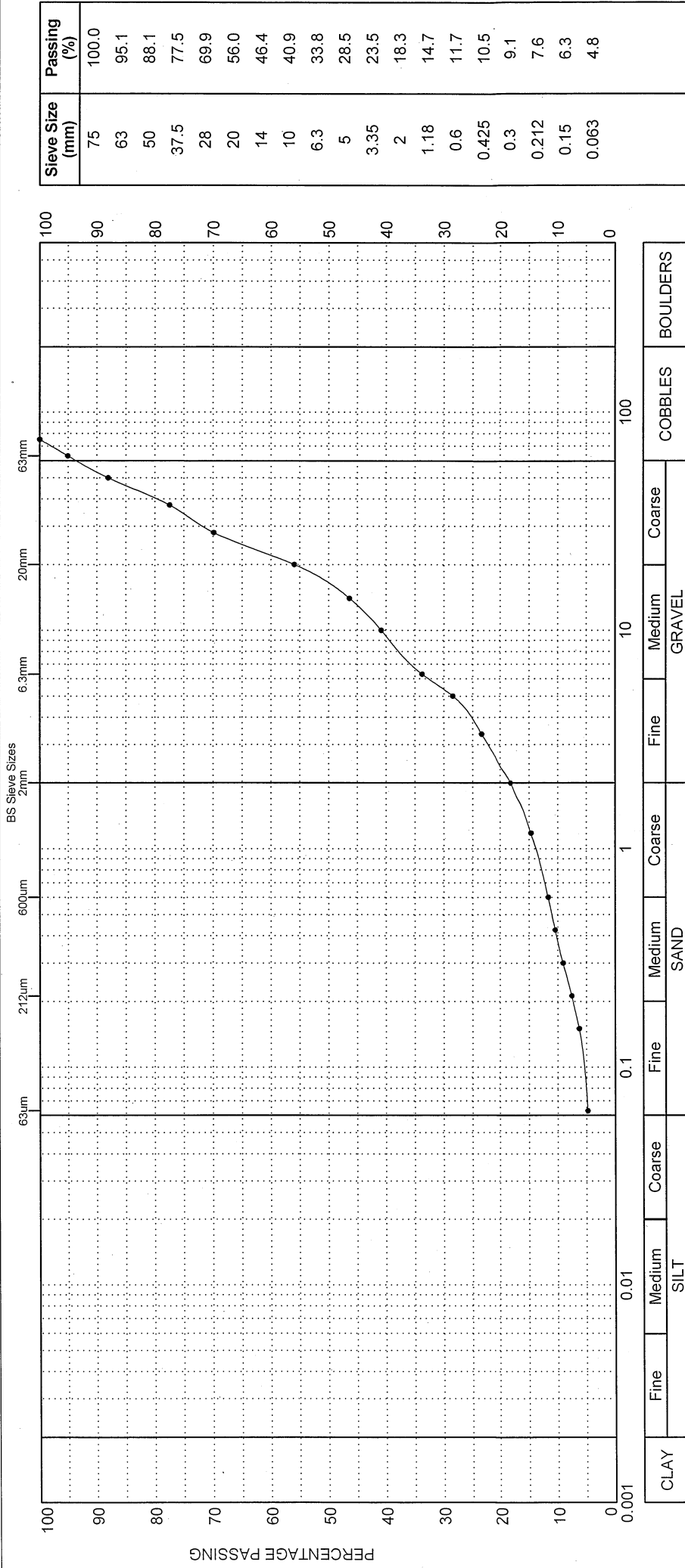
Exploratory Hole No :- PRA - SP006 - 16

Depth (m) :- 0.00

Sample Type & No :- Bx2

Specific Depth (m) :- 0.00

Date Tested :- 13/11/2020



For description of sample please refer to the Laboratory Sample Description Sheet

	Date of issue :- 18/11/2020	Certificate No :- PSD/SLS1212/PRA - SP006 - 16/Bx2/0.00	Name :- <i>M. DEL KIRK</i>	Page 1 of 1
	Client :- Seymour Civil Engineering	Contract Title :- Prairie Remediation	Signed :- <i>msore</i>	AEG Contract No :- SLS1212



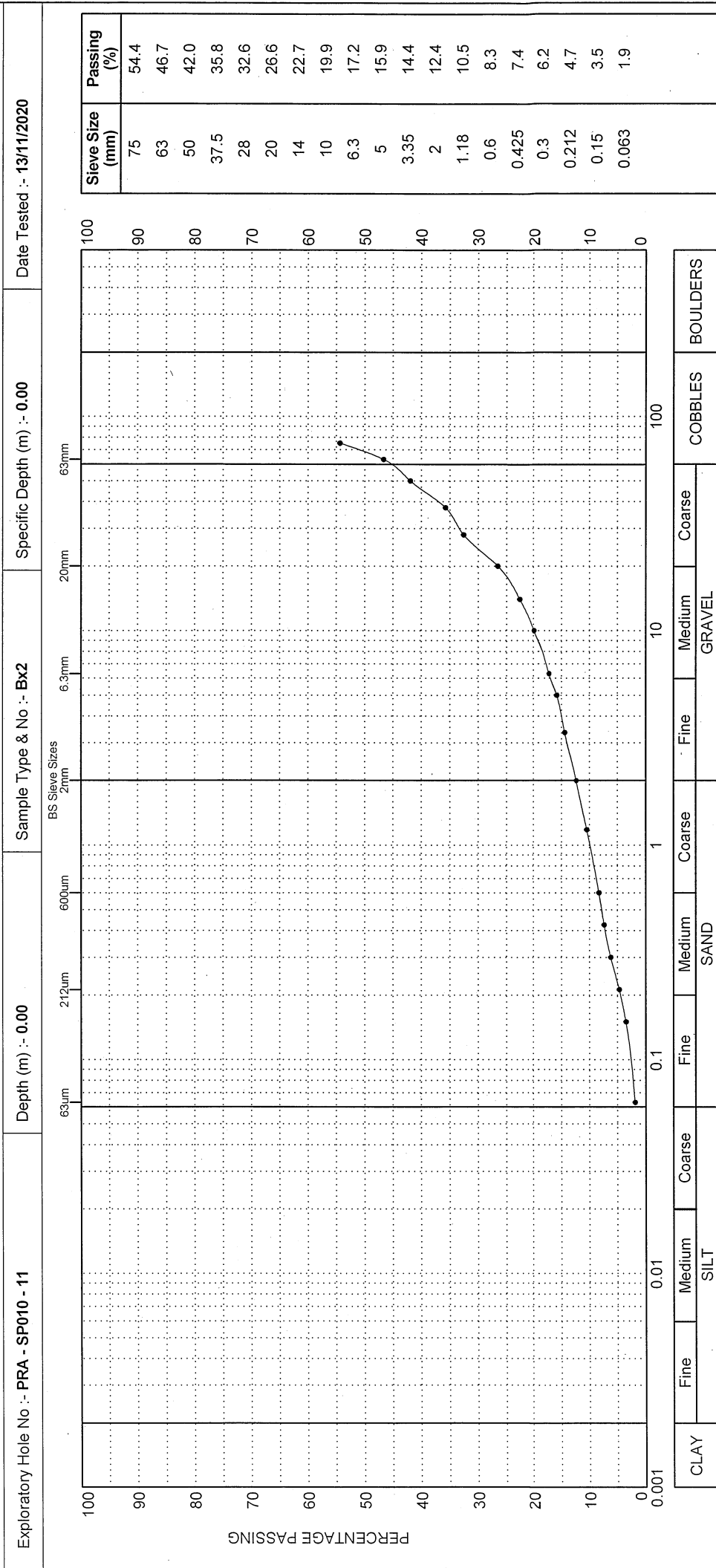
# ALLIED EXPLORATION & GEOTECHNICS LIMITED

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Regional Office: Unit 20, Business Development Centre, Enam Wharf, Blackburn, BB1 5BL. Tel: 01772 735 300 Fax: 01772 735 899

## PARTICLE SIZE DISTRIBUTION

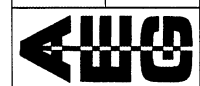
BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

(Test deviated from standard due to insufficient sample mass)



For description of sample please refer to the Laboratory Sample Description Sheet

<b>Date of issue :-</b> 18/11/2020	<b>Certificate No :-</b> PSD/SLS1212/PRA - SP010 - 11/Bx2/0.00	<b>Signed :-</b> <i>MSO</i>	<b>Name :-</b> MSO
<b>Client :-</b> Seymour Civil Engineering	<b>Contract Title :-</b> Prairie Remediation		
<b>Page 1 of 1</b>		<b>AEG Contract No :-</b> SLS1212	



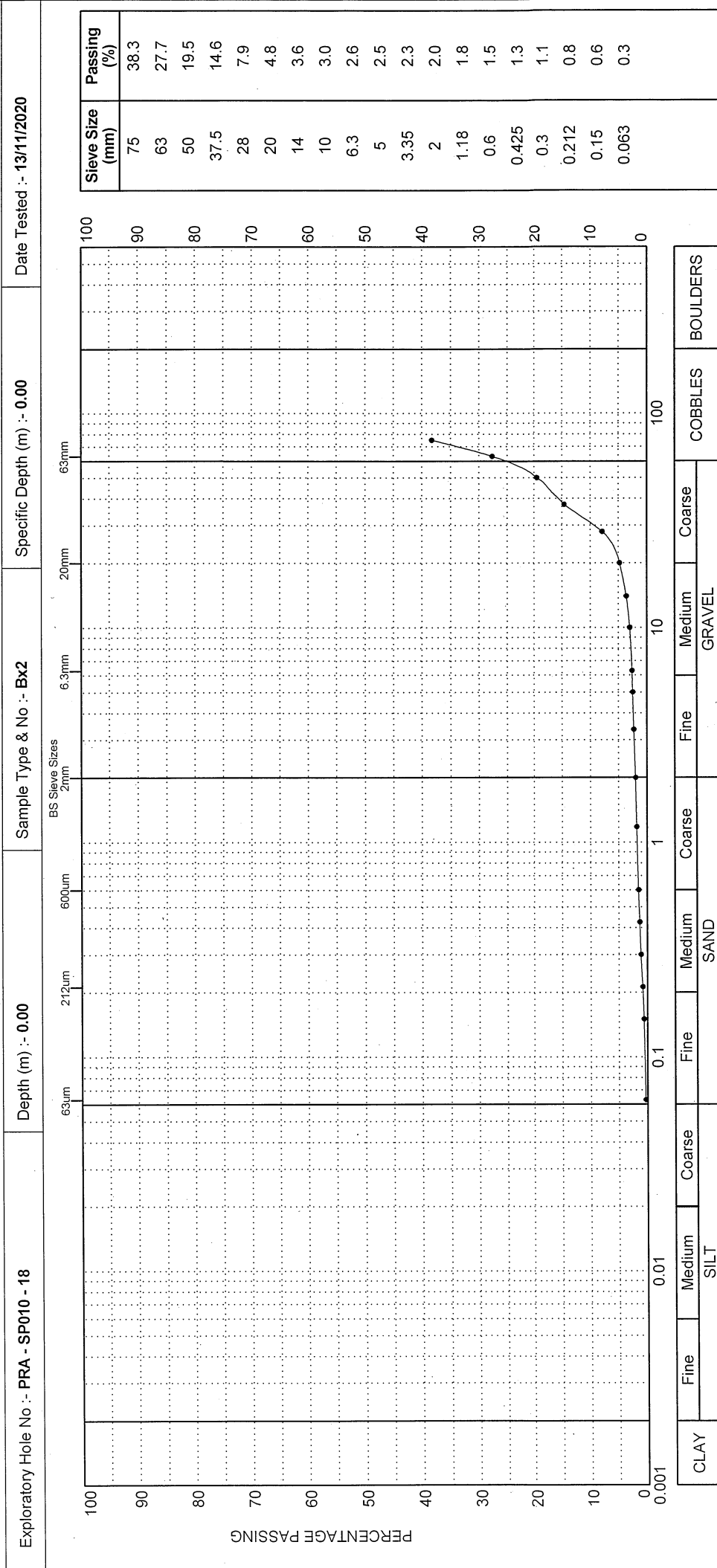
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 Regional Office: Unit 20, Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL. Tel: 01772 735 300 Fax: 01772 735 999

## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

(Test deviated from standard due to insufficient sample mass)



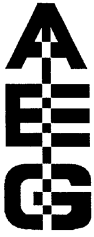
For description of sample please refer to the Laboratory Sample Description Sheet

<b>Date of issue :-</b> 18/11/2020	<b>Certificate No :-</b> PSD/SLS1212/PRA - SP010 - 18/Bx2/0.00	<b>Signed :-</b> <i>M. S. ELKIRK</i>	<b>Name :-</b> M. S. ELKIRK
<b>Client :-</b> Seymour Civil Engineering	<b>Contract Title :-</b> Prairie Remediation	<b>Page 1 of 1</b>	
		<b>AEG Contract No :-</b> SLS1212	



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## LABORATORY REPORT CERTIFICATE



**Contract Title:** Prairie Remediation

**AEG Reference:** SLS1212

**Client Address:** Seymour Civil Engineering  
Seymour House  
Harbour Walk  
Hartlepool  
T24 0UX

We certify that Laboratory testing was carried out on samples from the above contract in accordance with techniques outlined in BS 1377: 1990, BS EN ISO 17892:2014 or other appropriate standards as quoted. The samples were received from 15<sup>th</sup> December 2020 and the following results, given on the attached enclosures, were obtained.

The tests carried out are indicated in the attached table showing the enclosure number and the total number of pages.

For and on behalf of Allied Exploration & Geotechnics Limited

- Nick Vater (Managing Director)
- Kevin Warriner (HSE & Quality Director)
- Michelle Selkirk (Laboratory Manager)

Signed



Date: 23 December 2020

Tests marked not UKAS accredited in this certificate are not included in the UKAS accreditation schedule for our laboratory. Any opinions and interpretations expressed herein are outside the scope of the laboratory's UKAS accreditation.

Please note the material was derived from samples taken outside the control of the laboratory.

# LABORATORY REPORT CERTIFICATE

## ENCLOSURES

Enclosure Number	Description	UKAS Accredited	Reference	No. of Pages
0	Laboratory Report Certificate	N/A		3
1	Sample Description Sheets	N/A		1
2	Particle Size Distribution Sieving	Yes	BS 1377 Part 2 1990	5



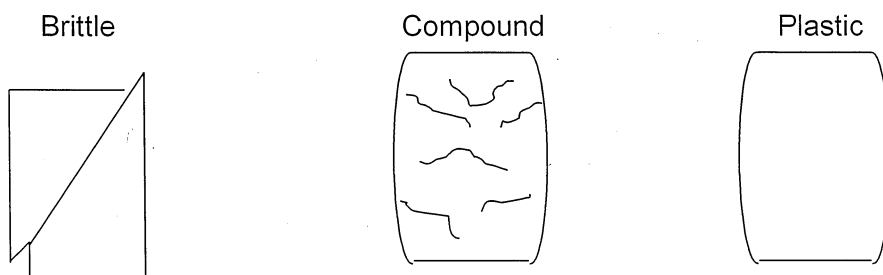
# LABORATORY REPORT CERTIFICATE

## ABBREVIATIONS

All the abbreviations used on the laboratory certificates are given below:

<b>Br</b>	Brittle	<b>PSD</b>	Particle Size Distribution by sieve analysis
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<b>CBR</b>	California Bearing Ratio	<b>SED</b>	Sedimentation Analysis
<b>CDT</b>	Consolidated Drained Triaxial	<b>SO4</b>	Sulphate (total, water extract, groundwater)
<b>CL</b>	Chloride content (water or soil)	<b>CP2</b>	Dry Density/Moisture Content 2.5kg rammer
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<b>UUT</b>	Undrained Unconsolidated Triaxial	<b>CPV</b>	As above using vibrating hammer
<b>HSV</b>	Vane Test	<b>CUT</b>	Consolidated Undrained Triaxial
<b>IS</b>	Insufficient sample for test	<b>R</b>	Remoulded
<b>LOI</b>	Loss On Ignition	<b>U</b>	Undisturbed
<b>M</b>	Multi-stage testing	<b>MC</b>	Moisture Content
<b>MCV</b>	Moisture Content Value	<b>PL</b>	Point Load
<b>NAT</b>	Natural preparation method	<b>NMC</b>	Natural (or as received) moisture content
<b>P</b>	Plastic	<b>PFH</b>	Permeability Falling Head Method
<b>OED</b>	Oedometer	<b>PTXL</b>	Permeability in Triaxial Cell
<b>OMC</b>	Optimum Moisture Content	<b>ORG</b>	Organic content
<b>B</b>	Large disturbed (bulk) sample	<b>PD</b>	Particle Density (SG)
<b>J</b>	Small disturbed (jar) sample	<b>PI</b>	Liquid limit, plastic limit and plasticity index

### Typical Mode of Failure for Triaxial Testing





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

## LABORATORY SAMPLE DESCRIPTION SHEET

Exploratory Hole No.	Sample Depth (m) ID	Description	Laboratory Tests/Remarks
SP012	0.00 B1	MADE GROUND (Dark grey clayey very sandy gravel including brick fragments).	PSD
SP012	0.00 B4	MADE GROUND (Brown clayey very sandy gravel including brick fragments).	PSD
SP012	0.00 B12	MADE GROUND (Brown clayey very sandy gravel including metal and plastic fragments).	PSD
SP014	0.00 B1	MADE GROUND (Brown clayey very sandy gravel with occasional rootlets).	PSD
SP015	0.00 B2	MADE GROUND (Brown clayey very sandy gravel with occasional rootlets).	PSD

Contract Title :- <p style="text-align: center;">Prairie Remediation</p>	Client :- <p style="text-align: center;">Seymour Civil Engineering</p>
-----------------------------------------------------------------------------	---------------------------------------------------------------------------

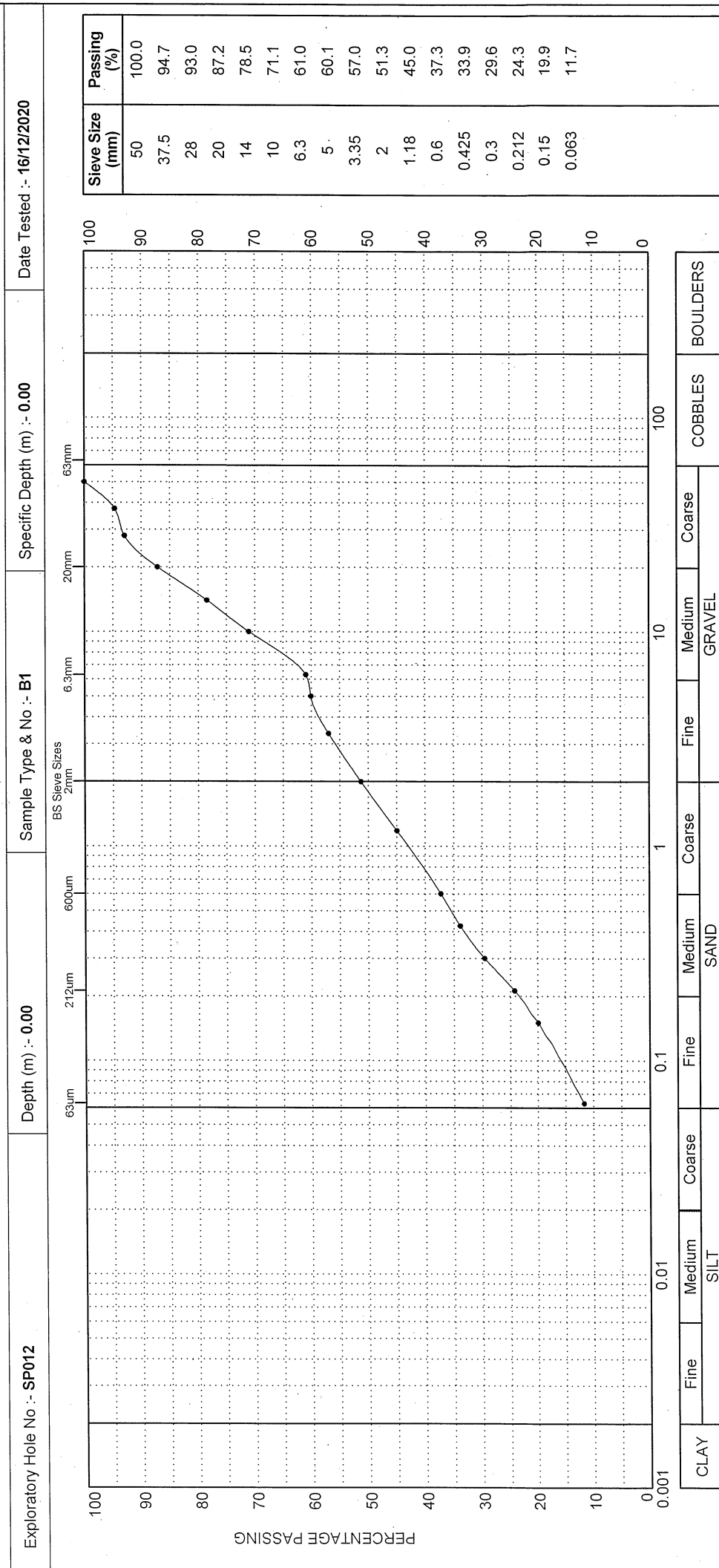
	Signed :- <i>msero</i>	Name :-	Page 1 of 1	
	Date of issue :- 23/12/2020	Certificate No :- SD/SLS1212/1	AEG Contract No. :- SLS1212	

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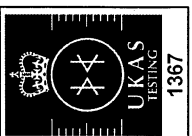
## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990



For description of sample please refer to the Laboratory Sample Description Sheet

<b>Date of issue :-</b> 22/12/2020	<b>Certificate No :-</b> PSD/SLS1212/SP012/B1/0.00	<b>Signed :-</b> <i>MSD</i>	<b>Name :-</b> AEG
<b>Client :-</b> Seymour Civil Engineering	<b>Contract Title :-</b> Prairie Remediation	<b>Page 1 of 1</b>	<b>AEG Contract No :-</b> SLS1212

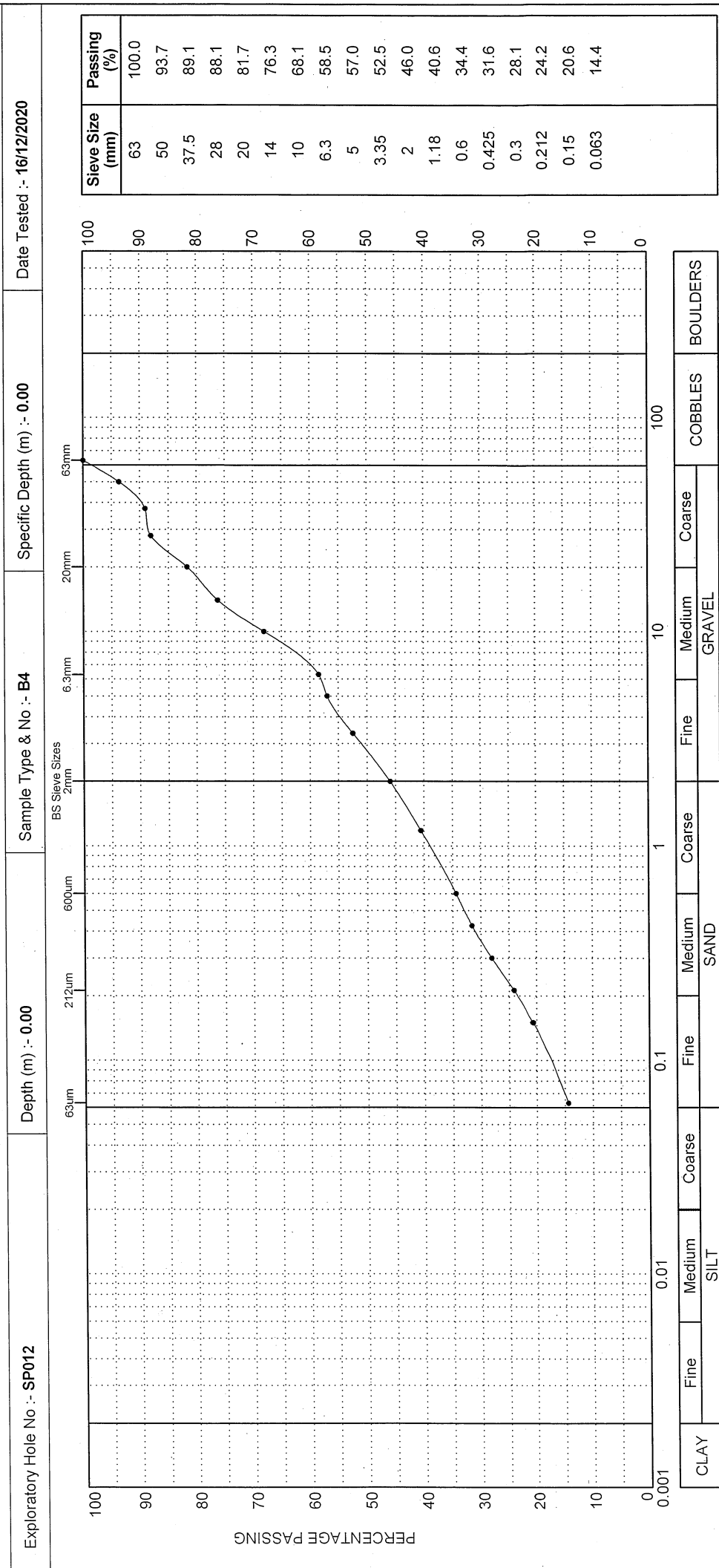


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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990



For description of sample please refer to the Laboratory Sample Description Sheet

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Client :- Seymour Civil Engineering		Contract Title :- Prairie Remediation	
Page 1 of 1		AEG Contract No :- SLS1212	

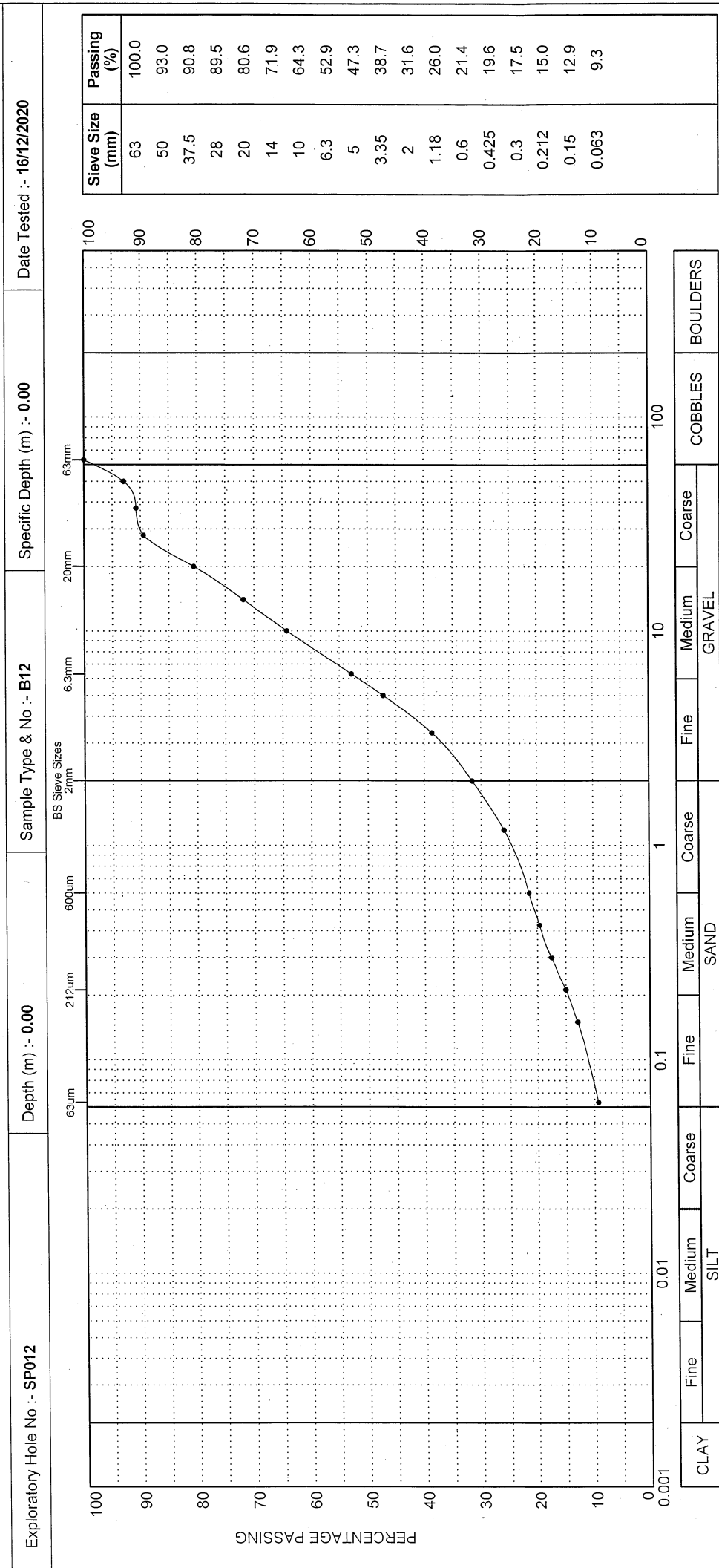


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## PARTICLE SIZE DISTRIBUTION

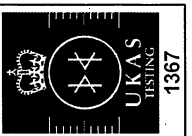
BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990



For description of sample please refer to the Laboratory Sample Description Sheet

Date of issue :- 22/12/2020	Certificate No :- PSD/SLS1212/SP012/B12/0.00	Signed :- <i>MSB</i>	Name :-
Client :- Seymour Civil Engineering	Contract Title :- Prairie Remediation		AEG Contract No :- SLS1212

Page 1 of 1

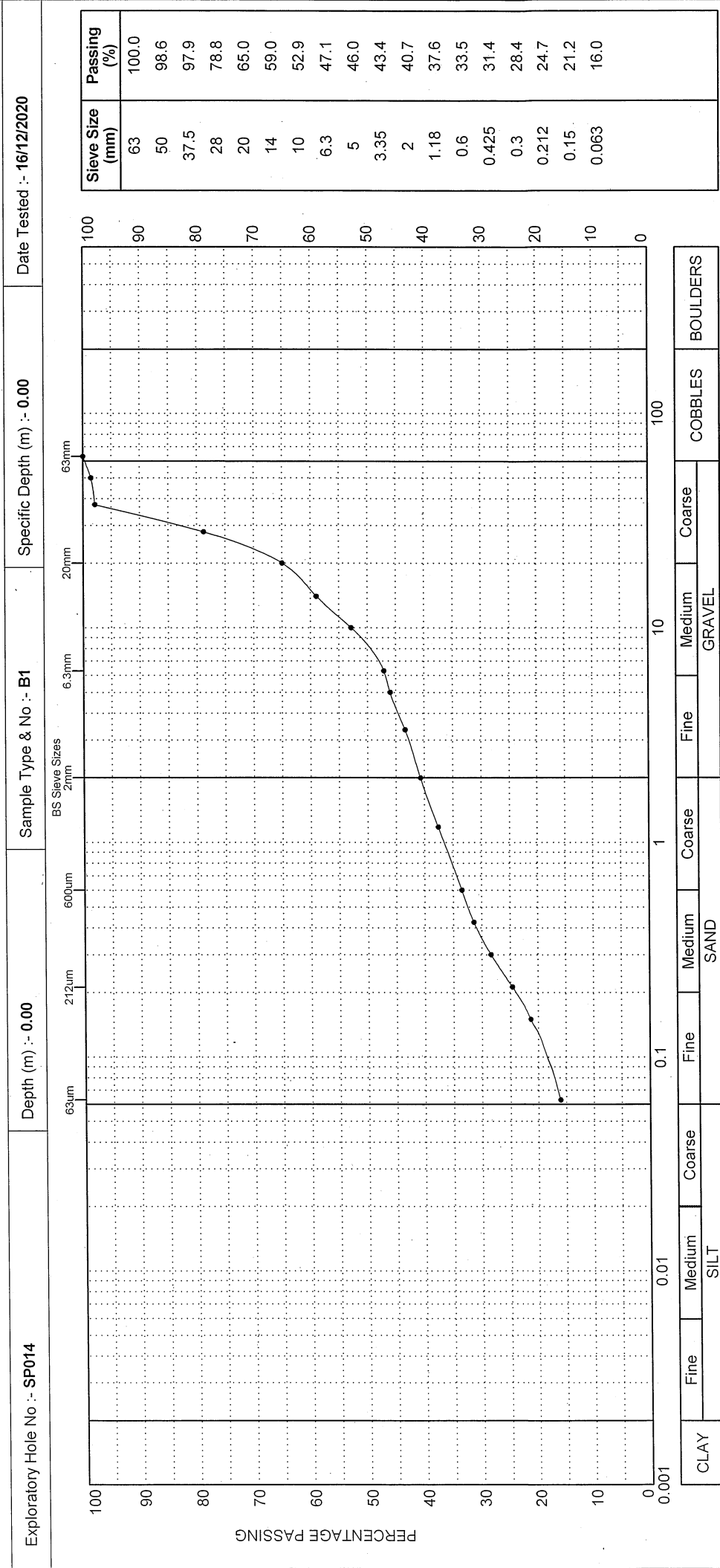


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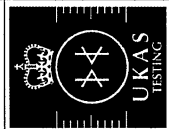
## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990



For description of sample please refer to the Laboratory Sample Description Sheet

<b>Date of issue :-</b> 22/12/2020	<b>Certificate No :-</b> PSD/SLS1212/SP014/B1/0.00	<b>Signed :-</b> <i>MSR</i>	<b>Name :-</b> Seymour Civil Engineering
<b>Client :-</b> Seymour Civil Engineering	<b>Contract Title :-</b> Prairie Remediation		<b>Contract No :-</b> SLS1212
<b>Page 1 of 1</b>		<b>AEG Contract No :-</b> SLS1212	



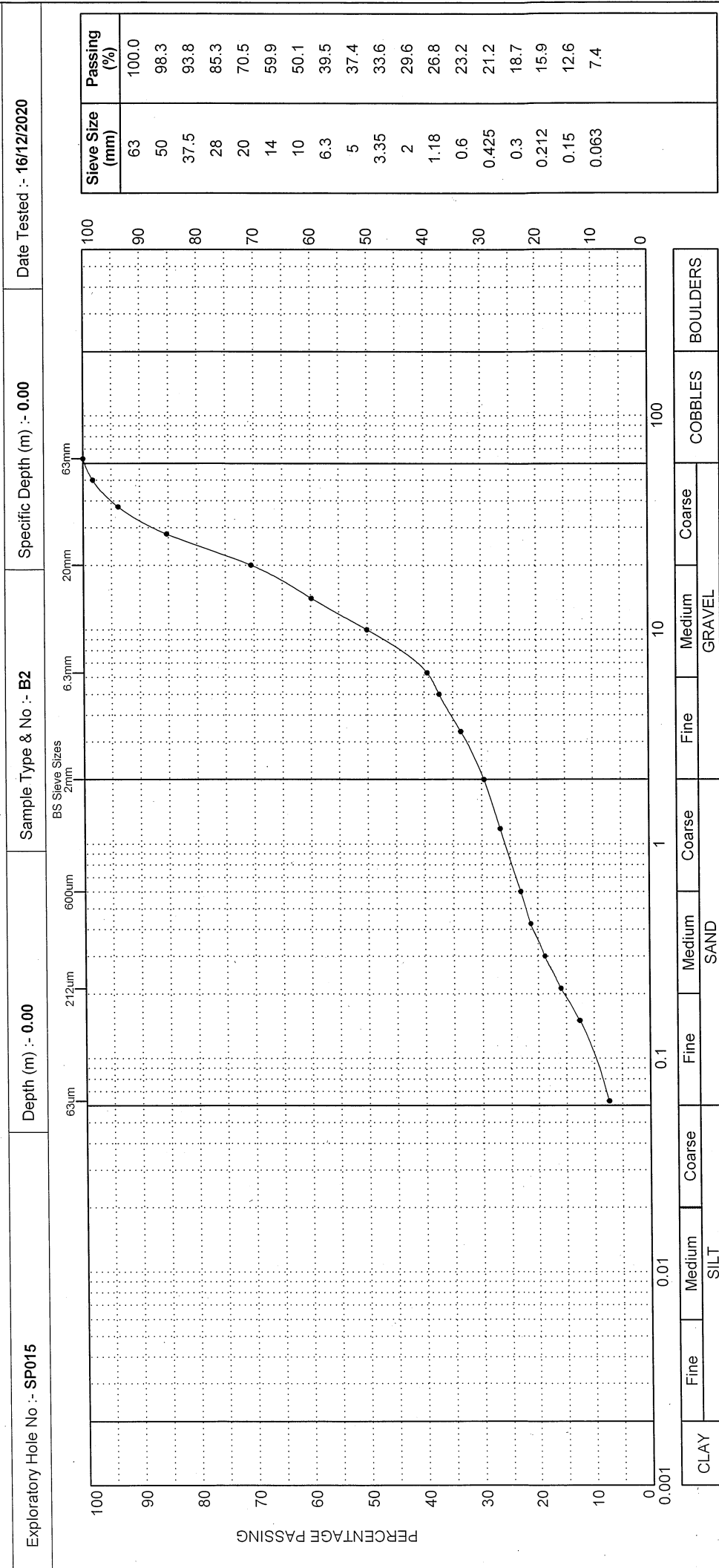
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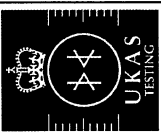
## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990



For description of sample please refer to the Laboratory Sample Description Sheet

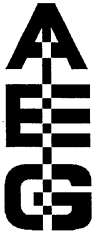
Date of issue :- 22/12/2020	Certificate No :- PSD/SLS1212/SP015/B2/0.00	Signed :- <i>MSA</i> Name :-	Page 1 of 1 AEG Contract No :- SLS1212
Client :- Seymour Civil Engineering	Contract Title :- Prairie Remediation		



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## LABORATORY REPORT CERTIFICATE



**Contract Title:** Prairie Phase 1 - Redcar

**AEG Reference:** SLS1223

**Client Address:** Seymour Civil Engineering  
Seymour House  
Harbour Walk  
Hartlepool  
TS24 0UX

We certify that Laboratory testing was carried out on samples from the above contract in accordance with techniques outlined in BS 1377: 1990, BS EN ISO 17892:2014 or other appropriate standards as quoted. The samples were received from February 2021 and the following results, given on the attached enclosures, were obtained.

The tests carried out are indicated in the attached table showing the enclosure number and the total number of pages.

For and on behalf of Allied Exploration & Geotechnics Limited

- Nick Vater (Managing Director)
- Kevin Warriner (HSE & Quality Director)
- Michelle Selkirk (Laboratory Manager)

Signed

  
\_\_\_\_\_

Date: 16 March 2021

Tests marked not UKAS accredited in this certificate are not included in the UKAS accreditation schedule for our laboratory. Any opinions and interpretations expressed herein are outside the scope of the laboratory's UKAS accreditation.

Please note the material was derived from samples taken outside the control of the laboratory.



# LABORATORY REPORT CERTIFICATE

## ENCLOSURES

Enclosure Number	Description	UKAS Accredited	Reference	No. of Pages
0	Laboratory Report Certificate	N/A		3
1	Sample Description Sheets	N/A		1
2	Moisture Content (Some tested externally)	Yes	BS 1377 Part 2 1990 (BS EN ISO 17892-1:2014)	2
2	Plasticity Index and Moisture Content	Yes	BS 1377 Part 2 1990 (BS EN ISO 17892-1:2014)	1
3	Particle Size Distribution Sieving (Some tested externally)	Yes	BS 1377 Part 2 1990	20
3	Particle Size Distribution Sedimentation (Some tested externally)	No	BS 1377 Part 2 1990	6
4	Determination of Organic Content (Tested externally)	No	See DETS certificates	3
5	Determination of Dry Density/Moisture Content Relationship (Some tested externally)	Yes	BS 1377 Part 4 1990	7
6	Resistance to Fragmentation by Los Angeles and Impact Methods (Tested externally)	No	BS 812 Part 112 1990	2

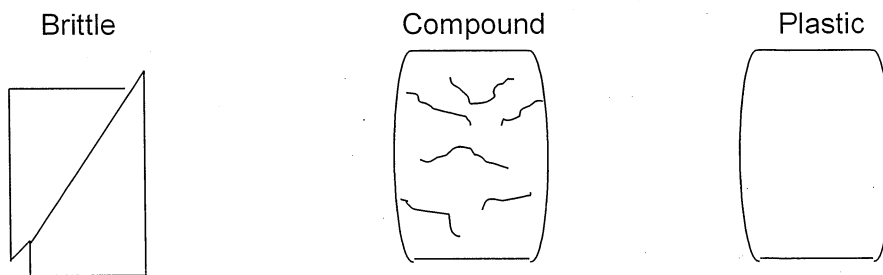
# LABORATORY REPORT CERTIFICATE

## ABBREVIATIONS

All the abbreviations used on the laboratory certificates are given below:

<b>Br</b>	Brittle	<b>PSD</b>	Particle Size Distribution by sieve analysis
<b>C</b>	Compound	<b>SB</b>	Shear Box
<b>CBR</b>	California Bearing Ratio	<b>SED</b>	Sedimentation Analysis
<b>CDT</b>	Consolidated Drained Triaxial	<b>SO4</b>	Sulphate (total, water extract, groundwater)
<b>CL</b>	Chloride content (water or soil)	<b>CP2</b>	Dry Density/Moisture Content 2.5kg rammer
<b>US</b>	Unsuitable sample for test	<b>CP4</b>	As above using 4.5kg rammer
<b>UUT</b>	Undrained Unconsolidated Triaxial	<b>CPV</b>	As above using vibrating hammer
<b>HSV</b>	Vane Test	<b>CUT</b>	Consolidated Undrained Triaxial
<b>IS</b>	Insufficient sample for test	<b>R</b>	Remoulded
<b>LOI</b>	Loss On Ignition	<b>U</b>	Undisturbed
<b>M</b>	Multi-stage testing	<b>MC</b>	Moisture Content
<b>MCV</b>	Moisture Content Value	<b>PL</b>	Point Load
<b>NAT</b>	Natural preparation method	<b>NMC</b>	Natural (or as received) moisture content
<b>P</b>	Plastic	<b>PFH</b>	Permeability Falling Head Method
<b>OED</b>	Oedometer	<b>PTXL</b>	Permeability in Triaxial Cell
<b>OMC</b>	Optimum Moisture Content	<b>ORG</b>	Organic content
<b>B</b>	Large disturbed (bulk) sample	<b>PD</b>	Particle Density (SG)
<b>J</b>	Small disturbed (jar) sample	<b>PI</b>	Liquid limit, plastic limit and plasticity index

### Typical Mode of Failure for Triaxial Testing



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## LABORATORY SAMPLE DESCRIPTION SHEET

Exploratory Hole No.	Sample Depth (m)	ID	Description	Laboratory Tests/Remarks
PRA-SP011	0.00	B1	MADE GROUND (Brown black silty very sandy gravel with brick, slag, concrete, plastic, wood and metal fragments).	MC PSD SED CP4
PRA-SP011	0.00	B2	MADE GROUND (Grey silty very sandy gravel with a medium cobble content and brick, concrete, glass and wood fragments).	MC PSD SED LA Coefficient
PRA-SP011	0.00	B3	MADE GROUND (Brown black silty very sandy gravel with a low cobble content and brick, concrete, slag and wood fragments. (Tested as silt of low plasticity)).	MC PI PSD ORG CP4
PRA-SP011	0.00	B4	MADE GROUND (Brown black silty very sandy gravel with a low cobble content and concrete, brick, wood and metal fragments).	MC PSD SED
PRA-SP011	0.00	B5	MADE GROUND (Brown black silty very sandy gravel with concrete, slag, metal and brick fragments. (Tested as silt of intermediate plasticity)).	MC PI PSD SED ORG
PRA-SP011	0.00	B6	MADE GROUND (Brown silty sandy gravel including brick, slag and leather fragments).	MC PSD SED CP4
PRA-SP011	0.00	B7	MADE GROUND (Brown black silty very sandy gravel with a medium cobble content and brick, slag, concrete and metal fragments).	MC PSD
PRA-SP011	0.00	B8	MADE GROUND (Brown silty very sandy gravel with a low cobble content and brick, slag and wood fragments. (Tested as silt of intermediate plasticity)).	MC PI PSD SED ORG CP4
PRA-SP011	0.00	B9	MADE GROUND (Grey silty very sandy gravel with a medium cobble content and brick, concrete, glass and wood fragments).	MC PSD SED LA Coefficient
PRA-SP011	0.00	B10	MADE GROUND (Brown silty very sandy gravel with a low cobble content and brick, slag and wood fragments. (Tested as silt of intermediate plasticity)).	MC PI PSD SED ORG
PRA-SP013	0.00	B1	MADE GROUND (Grey slightly silty sandy gravel and cobbles with brick, concrete, glass and wood fragments).	MC PSD CPV
PRA-SP013	0.00	B2	MADE GROUND (Brown black silty sandy gravel with a high cobble content and brick, concrete, wood, glass, wire, ceramic and metal fragments).	MC PSD
PRA-SP013	0.00	B3	MADE GROUND (Brown slightly silty sandy gravel with a high cobble content and slag and brick fragments).	MC PSD
PRA-SP013	0.00	B4	MADE GROUND (Brown silty sandy gravel with a high cobble content and slag, brick and wood fragments).	MC PSD
PRA-SP013	0.00	B5	MADE GROUND (Grey slightly silty sandy gravel with a high cobble content and slag, brick, concrete, glass and wood fragments).	MC PSD CPV LA Coefficient
PRA-SP013	0.00	B6	MADE GROUND (Brown silty very sandy gravel with a high cobble content and brick fragments).	MC PSD SED
PRA-SP013	0.00	B7	MADE GROUND (Brown black silty very sandy gravel with a high cobble content and metal, slag, brick wood and concrete fragments).	MC PSD
PRA-SP013	0.00	B8	MADE GROUND (Grey silty sandy gravel with a high cobble content and brick, concrete, glass and wood fragments).	MC PSD CPV LA Coefficient
PRA-SP013	0.00	B9	MADE GROUND (Brown silty sandy gravel with a high cobble content and brick and slag fragments).	MC PSD
PRA-SP013	0.00	B10	MADE GROUND (Brown black silty sandy gravel with a high cobble content and brick, slag and concrete fragments).	MC PSD

Contract Title :-

Prairie Phase 1 - Redcar

Client :-

Seymour Civil Engineering



Signed :-

*msore*

Name :-

*M. Sore*

Page 1 of 1

Date of issue :-

16/03/2021

Certificate No :-

SD/SLS1223/1

AEG Contract No. :-

SLS1223



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## MOISTURE CONTENT CERTIFICATE

BS 1377 : Part 2 : Clause 3.2

Exploratory Hole No.	Sample Depth (m)	Sample ID	Specific Depth (m)	Moisture Content (%)	Date Tested	Remarks
PRA-SP011	0.00	B1	0.00	16	25/02/2021	
PRA-SP011	0.00	B2	0.00	17	16/02/2021	
PRA-SP011	0.00	B4	0.00	19	24/02/2021	
PRA-SP011	0.00	B6	0.00	13	24/02/2021	
PRA-SP011	0.00	B7	0.00	14	24/02/2021	
PRA-SP011	0.00	B9	0.00	12	16/02/2021	
PRA-SP013	0.00	B1	0.00	12	16/02/2021	
PRA-SP013	0.00	B2	0.00	12	23/02/2021	
PRA-SP013	0.00	B3	0.00	12	17/02/2021	
PRA-SP013	0.00	B4	0.00	15	17/02/2021	
PRA-SP013	0.00	B5	0.00	10	16/02/2021	
PRA-SP013	0.00	B6	0.00	16	17/02/2021	
PRA-SP013	0.00	B7	0.00	12	23/02/2021	
PRA-SP013	0.00	B8	0.00	17	16/02/2021	
PRA-SP013	0.00	B9	0.00	11	23/02/2021	
PRA-SP013	0.00	B10	0.00	12	22/02/2021	

For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :- <b>Prairie Phase 1 - Redcar</b>	Client :- <b>Seymour Civil Engineering</b>
------------------------------------------------------	-----------------------------------------------

	Signed :- <i>msore</i>	Name :-	Page 1 of 1
	Date of issue :- 16/03/2021	Certificate No :- MC/SLS1223/1	AEG Contract No. :- <b>SLS1223</b>

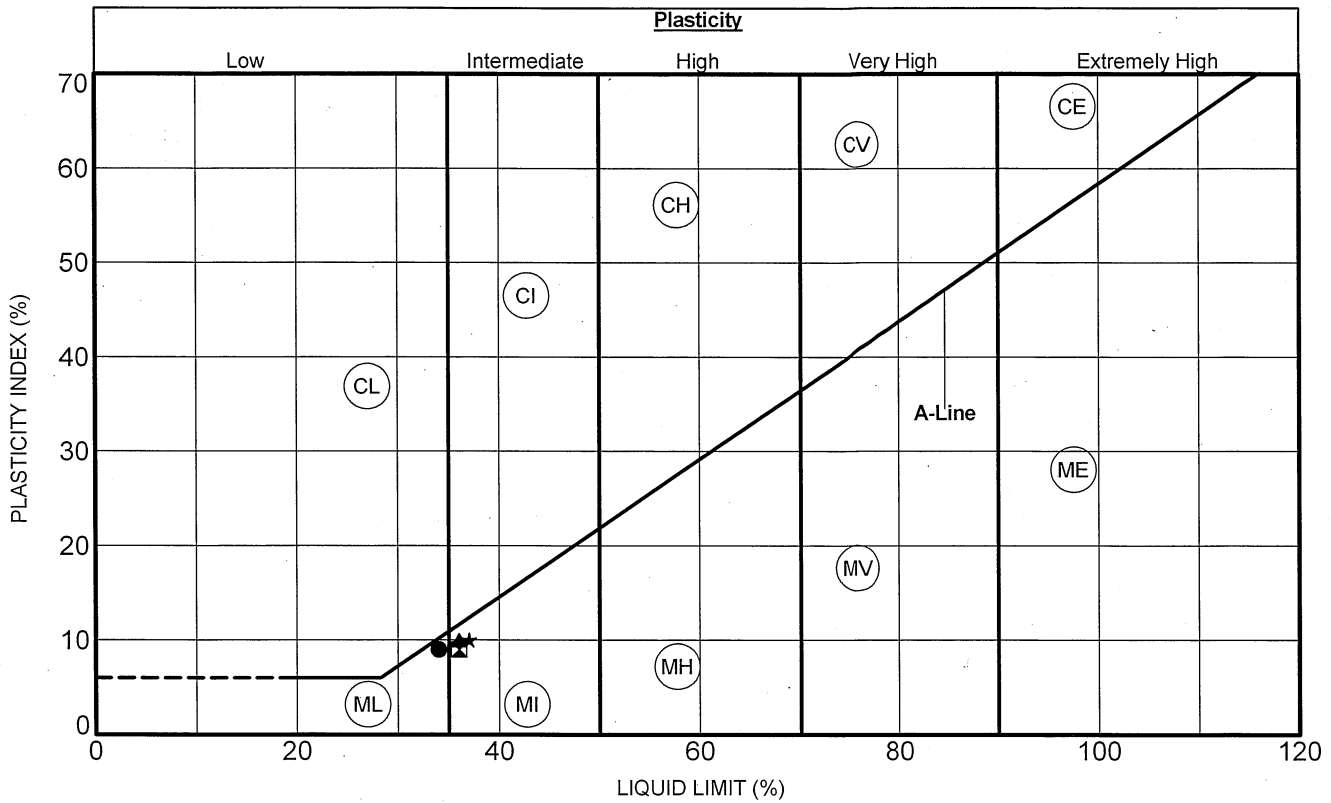


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## ATTERBERG LIMITS & NATURAL MOISTURE CONTENT


Test Method :- BS 1377 : Part 2 : Clause 3.2, 4.1 to 4.4 & 5 : 1990



Exploratory Hole No.	Depth (m)	Sample Type/Ref.	Specific Depth (m)	LL	PL	PI	L <sub>c</sub>	Preparation Method	<0.425mm (%)	m/c (%)	Date Tested
●PRA-SP011	0.00	B3	0.00	34	25	9	-0.89	Air Dried	25.0	17	24/02/2021
▣PRA-SP011	0.00	B5	0.00	36	27	9	-1.22	Air Dried	23.0	16	24/02/2021
▲PRA-SP011	0.00	B8	0.00	36	26	10	-0.60	Air Dried	30.0	20	24/02/2021
★PRA-SP011	0.00	B10	0.00	37	27	10	-0.90	Air Dried	36.0	18	23/02/2021

For description of sample please refer to the Laboratory Sample Description Sheet. # = Insufficient for 4 point PI  
If sample is prepared in the natural state we are unable to determine % retained on the 0.425mm test sieve.

Contract Title :- <b>Prairie Phase 1 - Redcar</b>	Client :- <b>Seymour Civil Engineering</b>
------------------------------------------------------	-----------------------------------------------

	Signed :- <i>msene</i>	Name :- <i>M. Seymour</i>	Page 1 of 1
	Date of issue :- 16/03/2021	Certificate No :- PI/SLS1223/1	AEG Contract No :- <b>SLS1223</b>





Site	PRAIRIE PHASE 1 - REDCAR	Contract No	<b>A13845</b>
Client	Seymour Civil Engineering	Hole	PRA-SP011
Engineer		Sample Ref	B2
		Depth (m)	0.00
		Sample Type	B

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	94
50.0 mm	86
37.5 mm	79
28.0 mm	77
20.0 mm	70
14.0 mm	59
10.0 mm	52
6.30 mm	45
5.00 mm	43
3.35 mm	38
2.00 mm	33
1.18 mm	28
630 µm	23
425 µm	22
300 µm	19
200 µm	17
150 µm	14
63 µm	12
20 µm	2
6 µm	1
2 µm	0

**Non Engineering Description**

MADE GROUND: Grey silty very sandy fine to coarse GRAVEL with cobbles, concrete, fragments of brick, wood and glass

**Sample Proportions - %**

Cobbles	7.4
Gravel	59.8
Sand	21.3
Silt	11.1
Clay	0.4

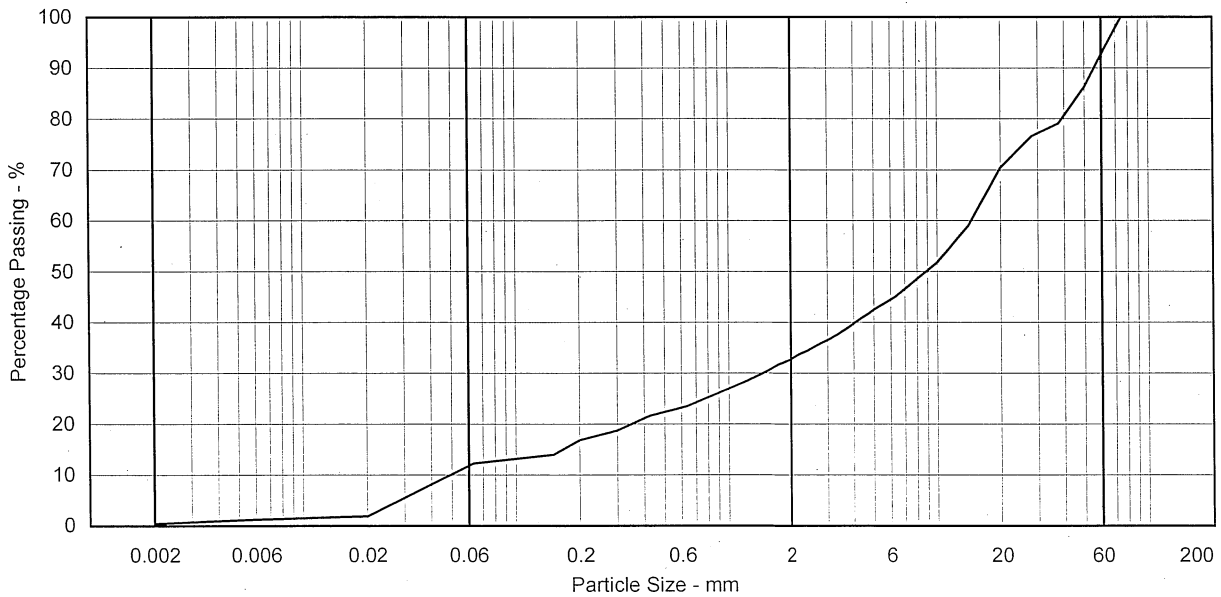
**Particle Diameter - mm**

D100	75
D60	14
D10	0.049
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>	285.7

**Notes**

Sedimentation sample not pre-treated

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator	Checked & Approved
DW	CD 09/03/2021

**PARTICLE SIZE DISTRIBUTION**  
 BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method  
 BS EN ISO 17892-4 2016 Clause 5.4 - Pipette Method



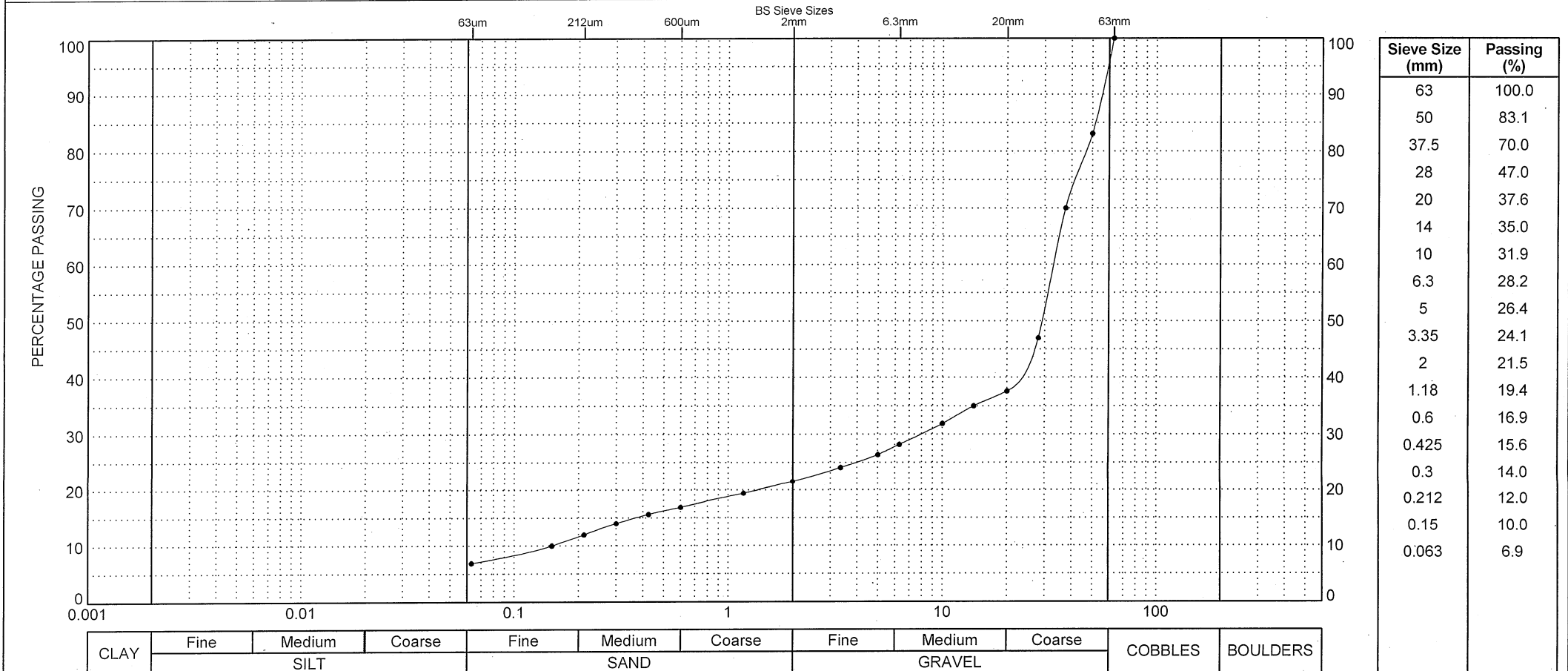
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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990



Exploratory Hole No :- PRA-SP011	Depth (m) :- 0.00	Sample Type & No :- B6	Specific Depth (m) :- 0.00	Date Tested :- 24/02/2021
----------------------------------	-------------------	------------------------	----------------------------	---------------------------



CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

For description of sample please refer to the Laboratory Sample Description Sheet

	Date of issue :- 16/03/2021	Certificate No :- PSD/SLS1223/PRA-SP011/B6/0.00	Signed :- <i>msere</i>	Name :-	Page 1 of 1
	Client :- Seymour Civil Engineering	Contract Title :- Prairie Phase 1 - Redcar		AEG Contract No :- SLS1223	

				Site PRAIRIE PHASE 1 - REDCAR Client Seymour Civil Engineering Engineer												Contract No <b>A13845</b> ~ Indicates test not carried out			
Sample Identification				Lab Sample ID	Non Engineering Sample Description	Moisture Content %	Atterberg limits					Particle Density Mg/m <sup>3</sup>	Density		Total Stress			Other Tests	
Exploratory Hole	Depth m	Sample Ref	Sample Type				Liquid Limit %	Plastic Limit %	Plasticity Index	Percentage retained 425µm %	Atterberg Classification		Bulk Mg/m <sup>3</sup>	Dry Mg/m <sup>3</sup>	Shear Strength kPa	Apparent Cohesion C kPa	Angle of Shearing Resistance Phi		
PRA-SP011	0.00-0.00	B2	B	184147	MADE GROUND: Grey silty very sandy fine to coarse GRAVEL with cobbles, concrete, fragments of brick, wood and glass	~		~	~	~	~	~	~	~	~	~	~	PSD LAC	
PRA-SP011	0.00-0.00	B9	B	184148	MADE GROUND: Grey silty very sandy fine to coarse GRAVEL with cobbles, concrete, fragments of brick, wood and glass	~		~	~	~	~	~	~	~	~	~	~	PSD LAC	
PRA-SP013	0.00-0.00	B1	B	184149	MADE GROUND: Grey slightly silty sandy fine to coarse GRAVEL with cobbles, concrete, fragments of brick, wood and glass	15		~	~	~	~	~	~	~	~	~	~	PSD Compaction	
PRA-SP013	0.00-0.00	B5	B	184150	MADE GROUND: Grey slightly silty sandy fine to coarse GRAVEL with cobbles, concrete, fragments of brick, wood and glass	17		~	~	~	~	~	~	~	~	~	~	PSD Compaction LAC	
PRA-SP013	0.00-0.00	B8	B	184151	MADE GROUND: Grey silty sandy fine to coarse GRAVEL with cobbles, concrete, fragments of brick, wood and glass	21		~	~	~	~	~	~	~	~	~	~	PSD Compaction LAC	
Notes				Opinions and interpretations are outside the scope of UKAS accreditation		UKAS Accredited Test Y/N		Test details are given on the 'Notes on Laboratory Procedures' sheet										See individual report sheets	
						Y		Y	Y	Y	Y	-	Y	Y	Y	Y	Y	Y	
Originator		Checked & Approved		<b>SUMMARY OF GEOTECHNICAL TESTS</b>														 Sheet 1 of 1	
SM		CD 09/03/2021																	

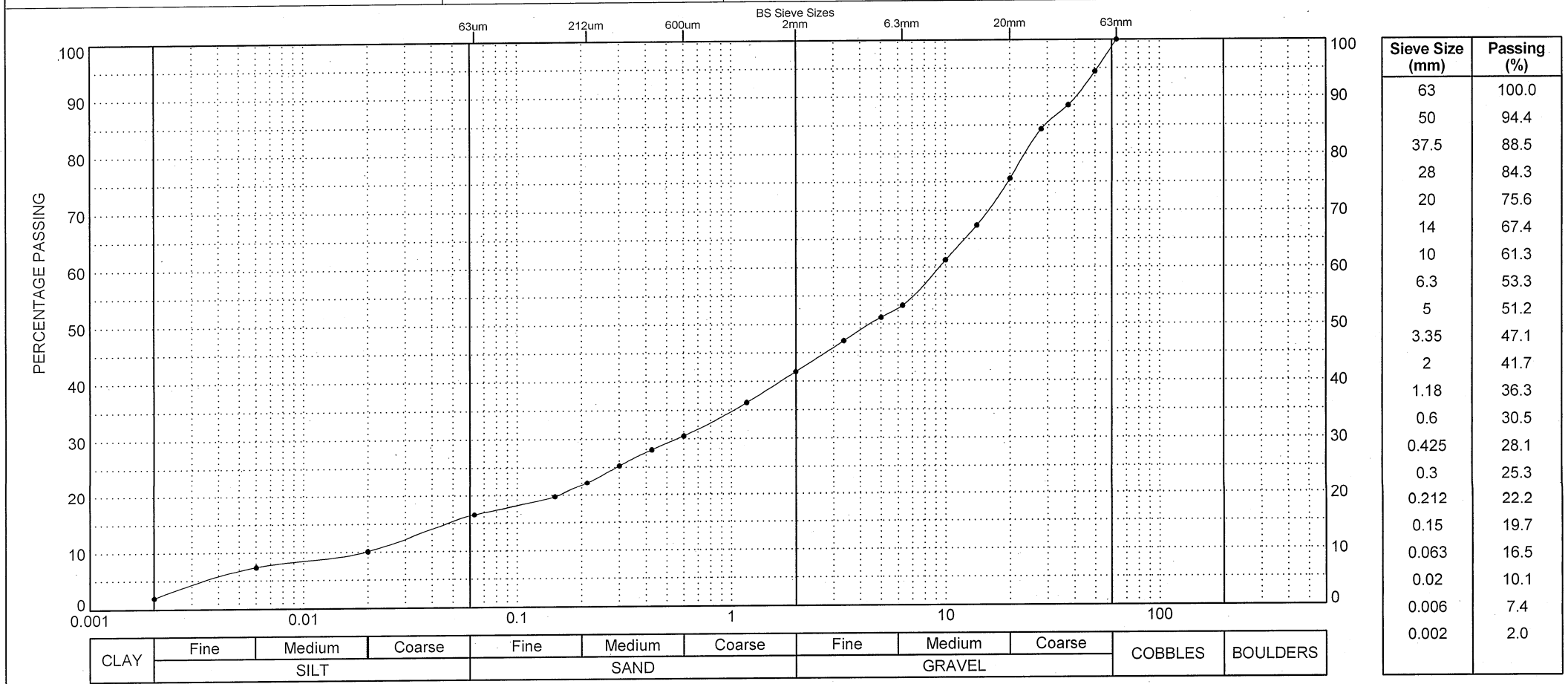


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## PARTICLE SIZE DISTRIBUTION BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

Exploratory Hole No :- PRA-SP011	Depth (m) :- 0.00	Sample Type & No :- B1	Specific Depth (m) :- 0.00	Date Tested :- 25/02/2021
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CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

For description of sample please refer to the Laboratory Sample Description Sheet

	Date of issue :- 16/03/2021	Certificate No :- PSD/SLS1223/PRA-SP011/B1/0.00	Signed :- <i>msone</i>	Name :-	Page 1 of 1
	Client :- Seymour Civil Engineering	Contract Title :- Prairie Phase 1 - Redcar		AEG Contract No :- SLS1223	



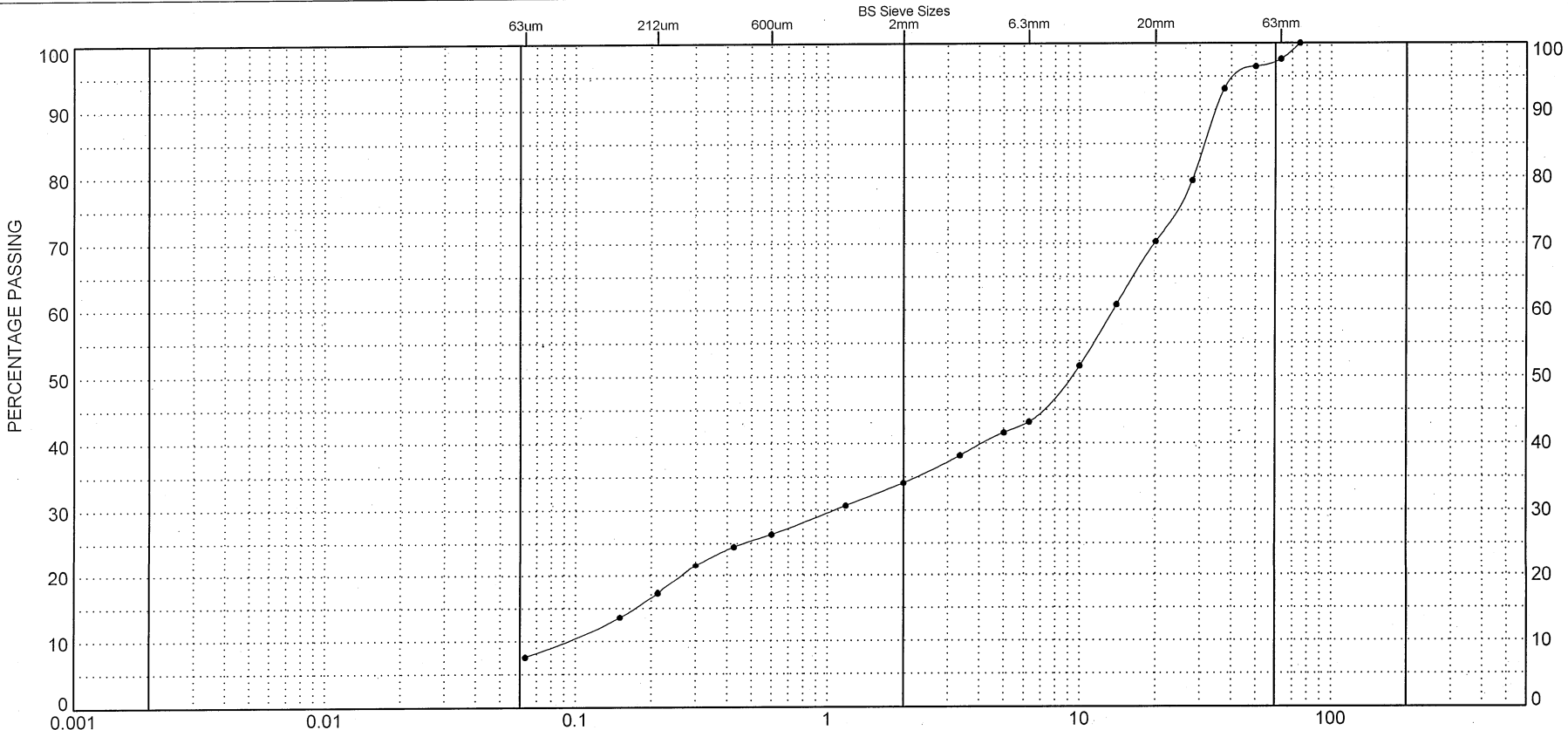
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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

Exploratory Hole No :- PRA-SP011	Depth (m) :- 0.00	Sample Type & No :- B3	Specific Depth (m) :- 0.00	Date Tested :- 25/02/2021
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Sieve Size (mm)	Passing (%)
75	100.0
63	97.6
50	96.5
37.5	93.2
28	79.5
20	70.3
14	60.8
10	51.6
6.3	43.2
5	41.6
3.35	38.2
2	34.1
1.18	30.7
0.6	26.4
0.425	24.5
0.3	21.5
0.212	17.3
0.15	13.6
0.063	7.6

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

For description of sample please refer to the Laboratory Sample Description Sheet

	Date of issue :- 16/03/2021	Certificate No :- PSD/SLS1223/PRA-SP011/B3/0.00	Signed :- <i>msere</i>	Name :-	Page 1 of 1	
	Client :- Seymour Civil Engineering	Contract Title :- Prairie Phase 1 - Redcar		AEG Contract No :- SLS1223		

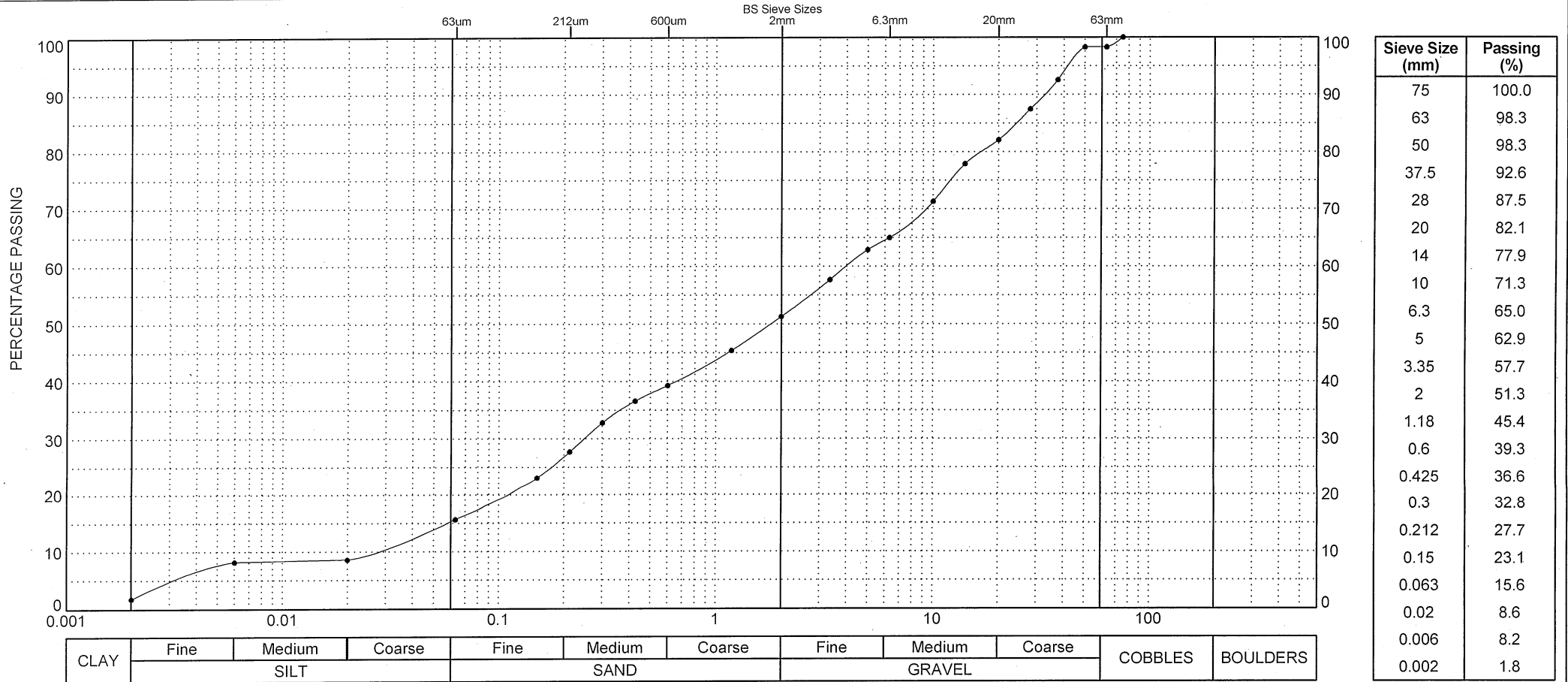
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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

Exploratory Hole No :- PRA-SP011	Depth (m) :- 0.00	Sample Type & No :- B4	Specific Depth (m) :- 0.00	Date Tested :- 24/02/2021
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CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

For description of sample please refer to the Laboratory Sample Description Sheet

	Date of issue :- 16/03/2021	Certificate No :- PSD/SLS1223/PRA-SP011/B4/0.00	Signed :- <i>msone</i>	Name :-	Page 1 of 1
	Client :- Seymour Civil Engineering	Contract Title :- Prairie Phase 1 - Redcar			AEG Contract No :- SLS1223

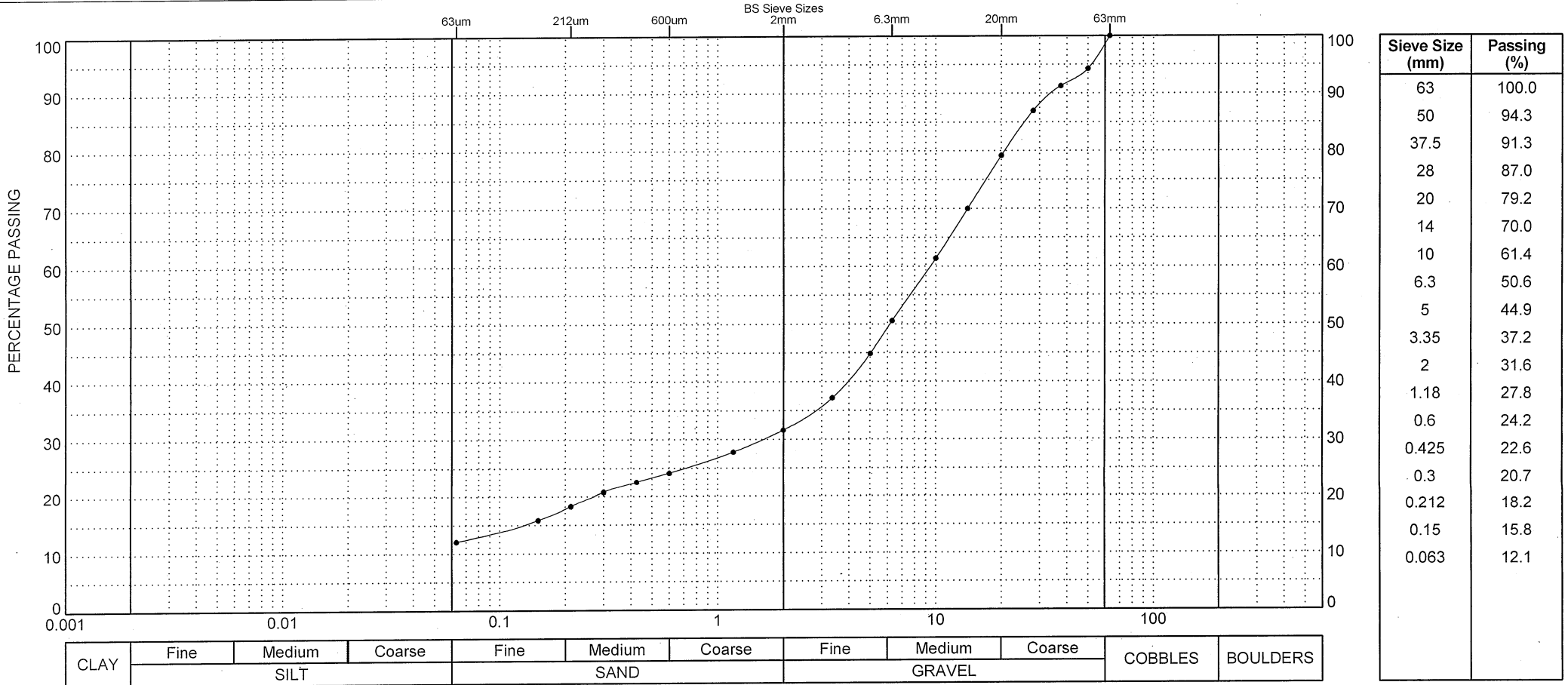
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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

Exploratory Hole No :- PRA-SP011	Depth (m) :- 0.00	Sample Type & No :- B5	Specific Depth (m) :- 0.00	Date Tested :- 24/02/2021
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CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

For description of sample please refer to the Laboratory Sample Description Sheet

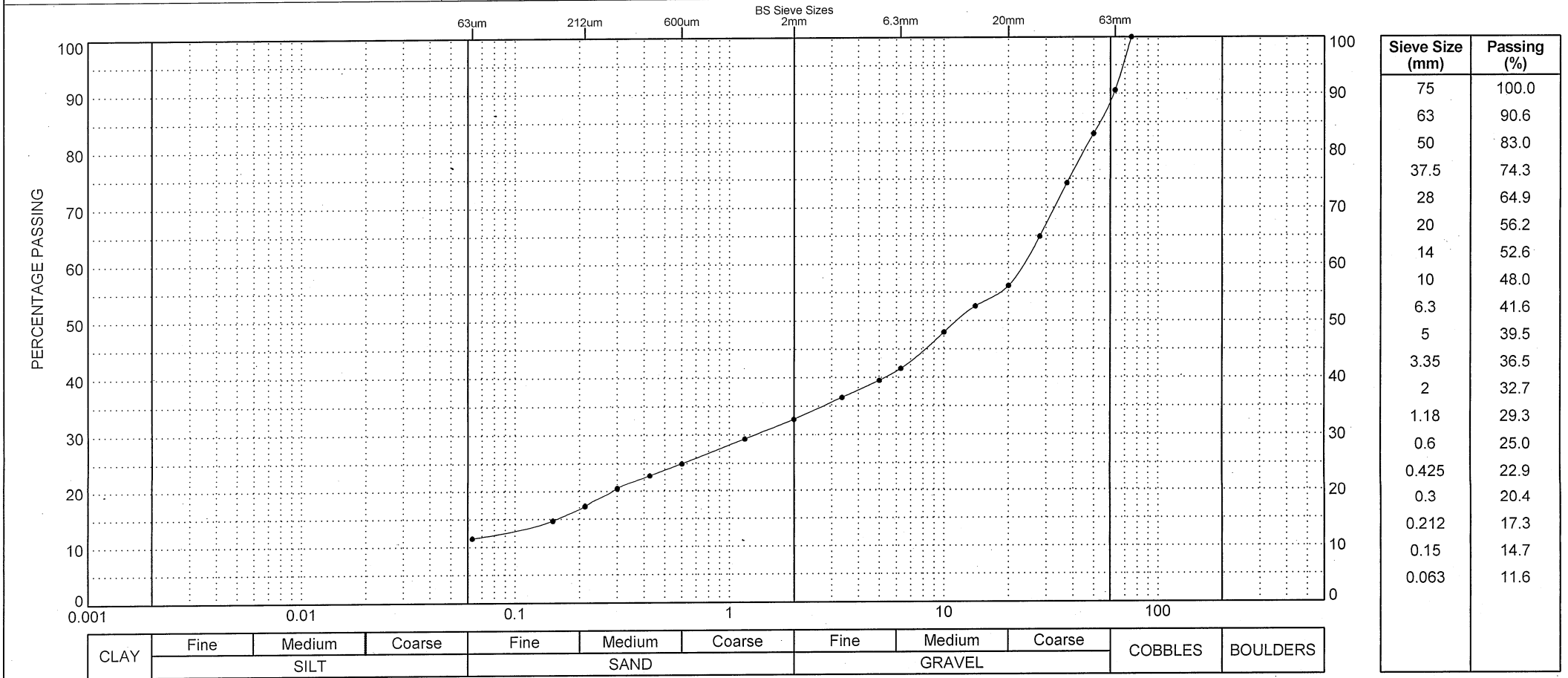
	Date of issue :- 16/03/2021	Certificate No :- PSD/SLS1223/PRA-SP011/B5/0.00	Signed :- <i>msere</i>	Name :-	Page 1 of 1	
	Client :- Seymour Civil Engineering	Contract Title :- Prairie Phase 1 - Redcar		AEG Contract No :- SLS1223		

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## PARTICLE SIZE DISTRIBUTION BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

Exploratory Hole No :- PRA-SP011	Depth (m) :- 0.00	Sample Type & No :- B7	Specific Depth (m) :- 0.00	Date Tested :- 24/02/2021
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For description of sample please refer to the Laboratory Sample Description Sheet

	Date of issue :- 16/03/2021	Certificate No :- PSD/SLS1223/PRA-SP011/B7/0.00	Signed :- <i>msene</i>	Name :-	Page 1 of 1
	Client :- Seymour Civil Engineering	Contract Title :- Prairie Phase 1 - Redcar		AEG Contract No :- SLS1223	



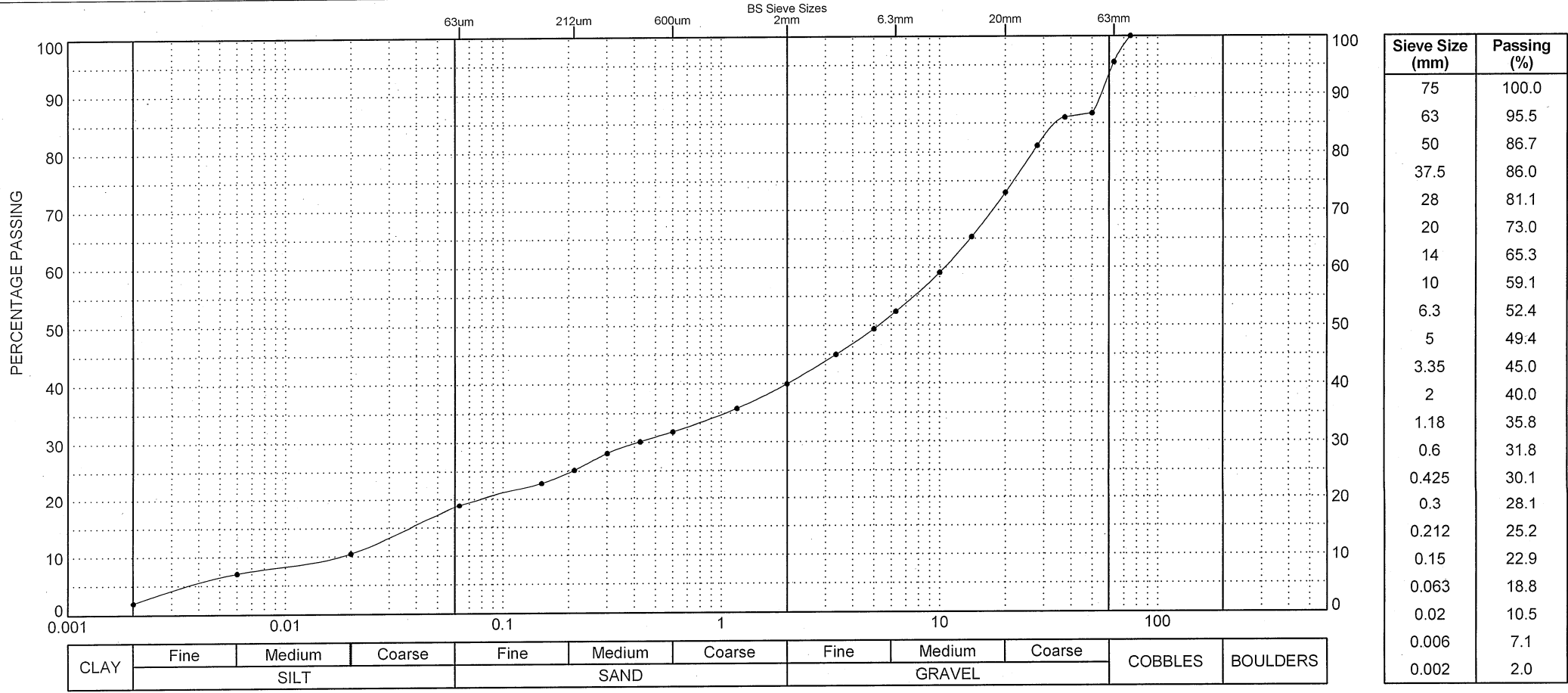
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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

Exploratory Hole No :- PRA-SP011	Depth (m) :- 0.00	Sample Type & No :- B8	Specific Depth (m) :- 0.00	Date Tested :- 24/02/2021
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For description of sample please refer to the Laboratory Sample Description Sheet

	Date of issue :- 16/03/2021	Certificate No :- PSD/SLS1223/PRA-SP011/B8/0.00	Signed :- <i>mson</i>	Name :-	Page 1 of 1
	Client :- Seymour Civil Engineering	Contract Title :- Prairie Phase 1 - Redcar		AEG Contract No :- SLS1223	



Site	PRAIRIE PHASE 1 - REDCAR
Client	Seymour Civil Engineering
Engineer	

Contract No	<b>A13845</b>
Hole	PRA-SP011
Sample Ref	B9
Depth (m)	0.00
Sample Type	B

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	91
50.0 mm	86
37.5 mm	81
28.0 mm	74
20.0 mm	68
14.0 mm	61
10.0 mm	55
6.30 mm	49
5.00 mm	46
3.35 mm	39
2.00 mm	33
1.18 mm	28
630 µm	23
425 µm	21
300 µm	17
200 µm	16
150 µm	12
63 µm	11
20 µm	2
6 µm	2
2 µm	1

**Non Engineering Description**

MADE GROUND: Grey silty very sandy fine to coarse GRAVEL with cobbles, concrete, fragments of brick, wood and glass

**Sample Proportions - %**

Cobbles	10.4
Gravel	56.8
Sand	22.4
Silt	9.8
Clay	0.7

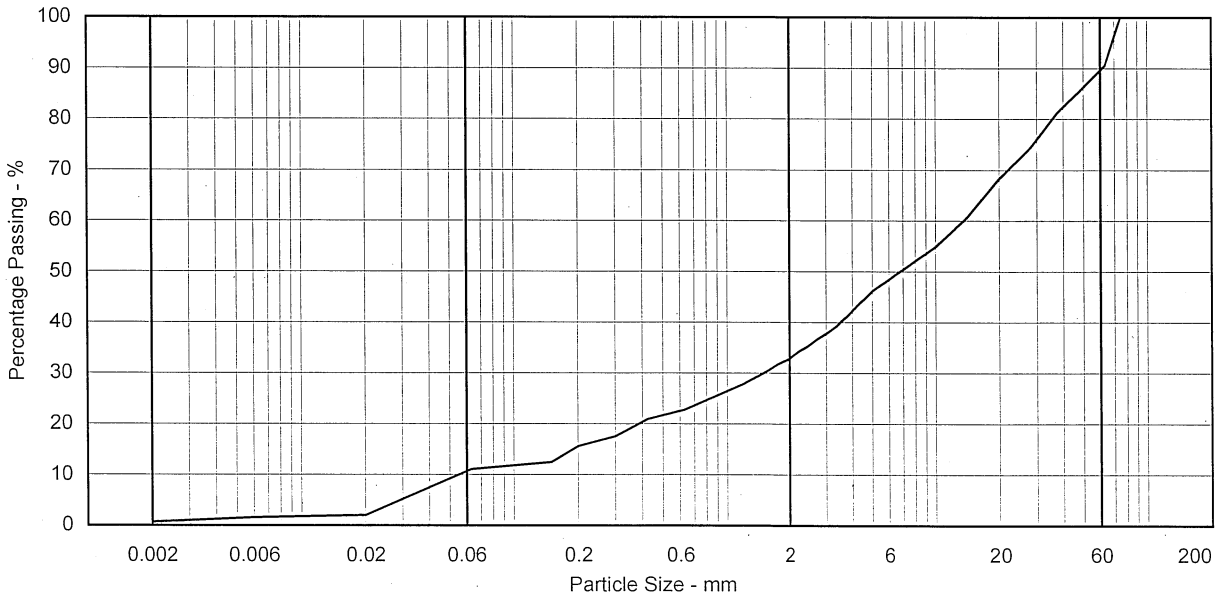
**Particle Diameter - mm**

D100	75
D60	13
D10	0.055
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>	236.4

**Notes**

Sedimentation sample not pre-treated

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator	Checked & Approved
DW	CD 09/03/2021

**PARTICLE SIZE DISTRIBUTION**  
 BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method  
 BS EN ISO 17892-4 2016 Clause 5.4 - Pipette Method

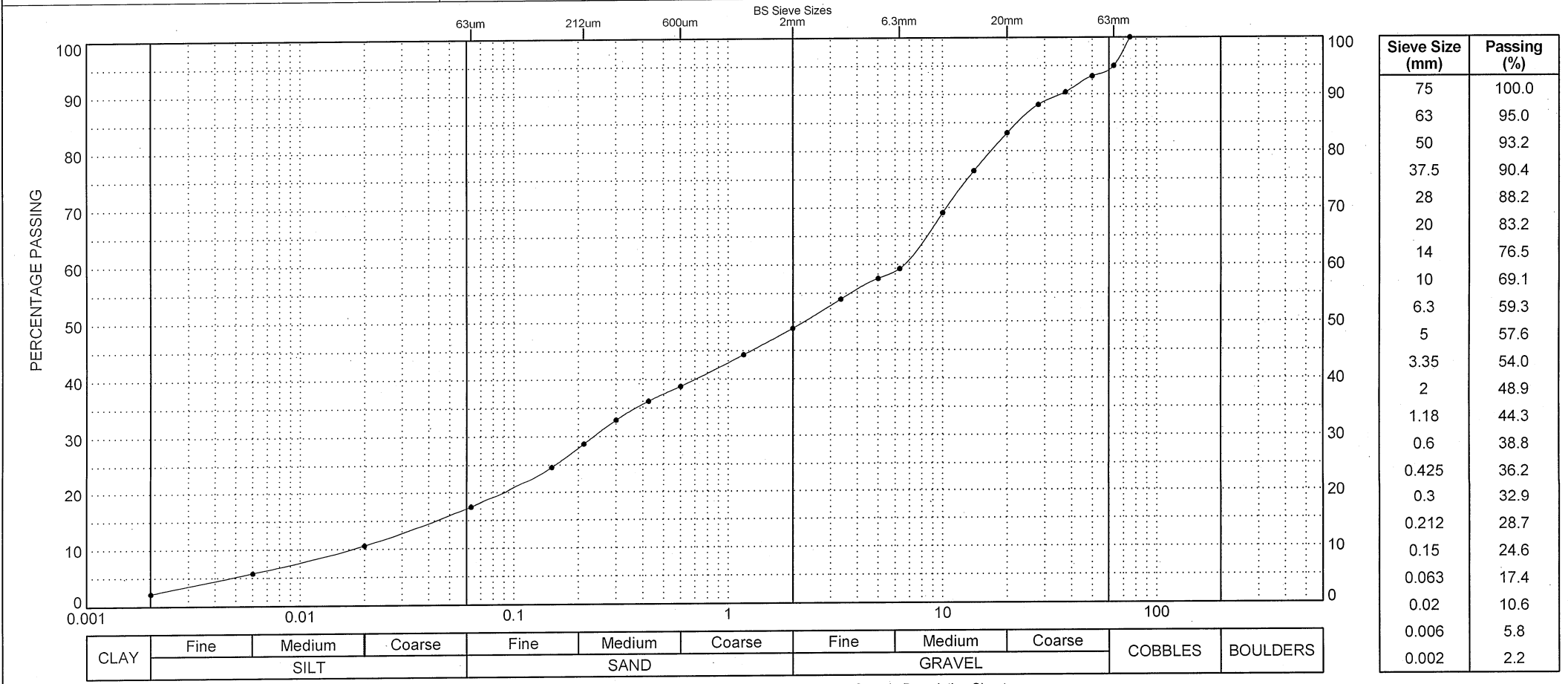
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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990

Exploratory Hole No :- PRA-SP011	Depth (m) :- 0.00	Sample Type & No :- B10	Specific Depth (m) :- 0.00	Date Tested :- 23/02/2021
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For description of sample please refer to the Laboratory Sample Description Sheet

	Date of issue :- 16/03/2021	Certificate No :- PSD/SLS1223/PRA-SP011/B10/0.00	Signed :- <i>msoro</i>	Name :-	Page 1 of 1
	Client :- Seymour Civil Engineering	Contract Title :- Prairie Phase 1 - Redcar		AEG Contract No :- SLS1223	





SITE INVESTIGATION AND LABORATORY SERVICES

Site PRAIRIE PHASE 1 - REDCAR

Contract No **A13845**

Client Seymour Civil Engineering

Hole PRA-SP013

Sample Ref B1

Depth (m) 0.00

Engineer

Sample Type B

Particle Size	% Passing
125.0 mm	100
90.0 mm	67
75.0 mm	60
63.0 mm	56
50.0 mm	39
37.5 mm	29
28.0 mm	25
20.0 mm	19
14.0 mm	17
10.0 mm	15
6.30 mm	13
5.00 mm	12
3.35 mm	11
2.00 mm	9
1.18 mm	8
630 µm	7
425 µm	6
300 µm	5
200 µm	4
150 µm	3
63 µm	3

**Non Engineering Description**

MADE GROUND: Grey slightly silty sandy fine to coarse GRAVEL with cobbles, concrete, fragments of brick, wood and glass

**Sample Proportions - %**

Cobbles	47.6
Gravel	42.9
Sand	6.4
Silt & Clay	3.1

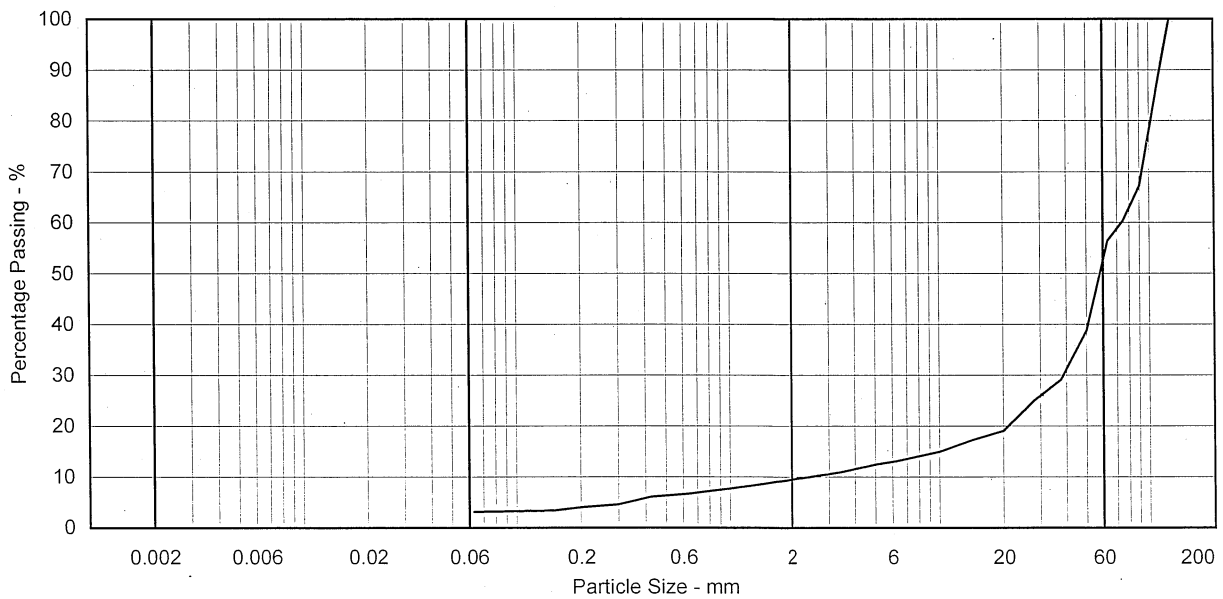
**Particle Diameter - mm**

D100	125
D60	74
D10	2.4
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	30.8

**Notes**

Sample does not comply with BS EN ISO 17892-4 minimum mass requirements

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator	Checked & Approved
DW	CD 09/03/2021

**PARTICLE SIZE DISTRIBUTION**  
 BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method



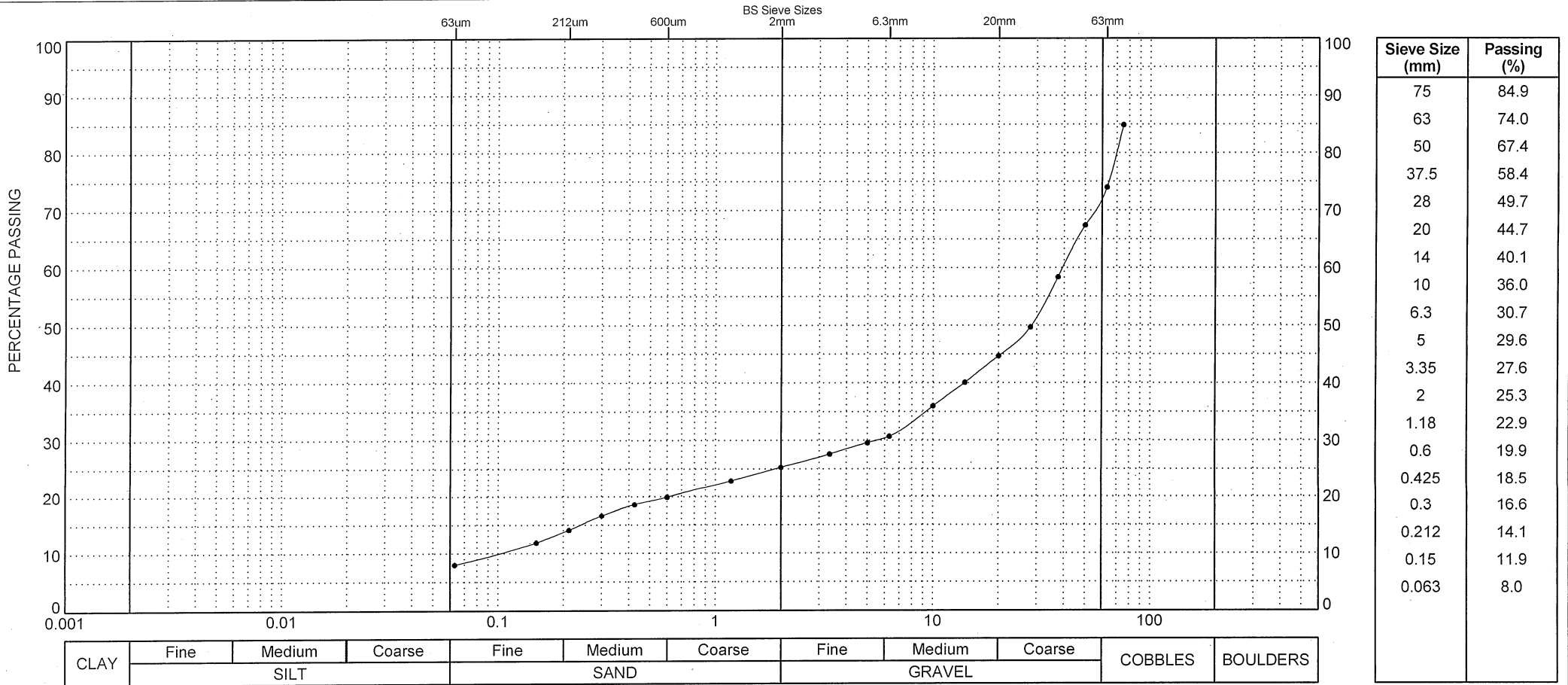
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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990  
(Test deviated from standard due to insufficient sample mass)

Exploratory Hole No :- PRA-SP013	Depth (m) :- 0.00	Sample Type & No :- B2	Specific Depth (m) :- 0.00	Date Tested :- 23/02/2021
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For description of sample please refer to the Laboratory Sample Description Sheet

	Date of issue :- 16/03/2021	Certificate No :- PSD/SLS1223/PRA-SP013/B2/0.00	Signed :- <i>msene</i>	Name :-	Page 1 of 1
	Client :- Seymour Civil Engineering	Contract Title :- Prairie Phase 1 - Redcar		AEG Contract No :- SLS1223	

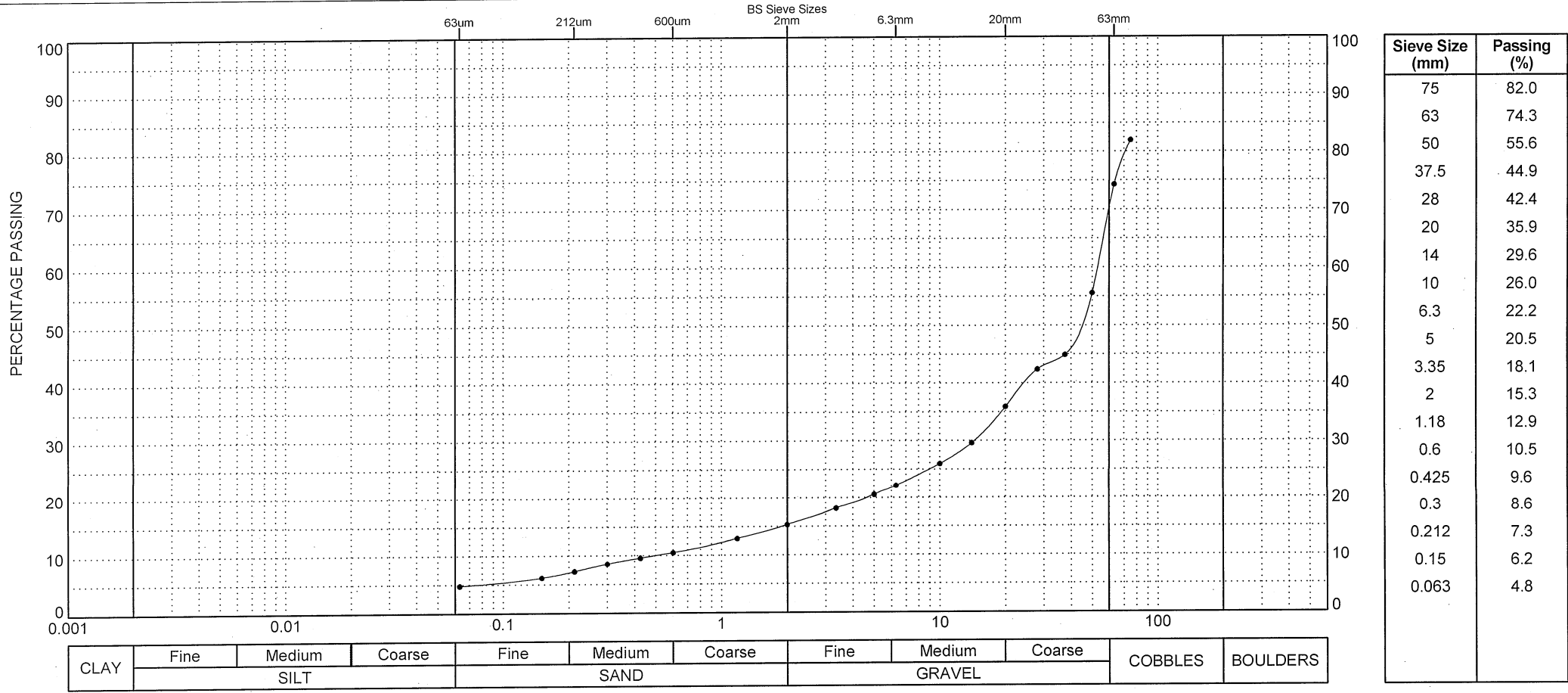
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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990  
(Test deviated from standard due to insufficient sample mass)

Exploratory Hole No :- PRA-SP013	Depth (m) :- 0.00	Sample Type & No :- B3	Specific Depth (m) :- 0.00	Date Tested :- 17/02/2021
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For description of sample please refer to the Laboratory Sample Description Sheet

	Date of issue :- 16/03/2021	Certificate No :- PSD/SLS1223/PRA-SP013/B3/0.00	Signed :- <i>msere</i>	Name :-	Page 1 of 1
	Client :- Seymour Civil Engineering	Contract Title :- Prairie Phase 1 - Redcar		AEG Contract No :- SLS1223	

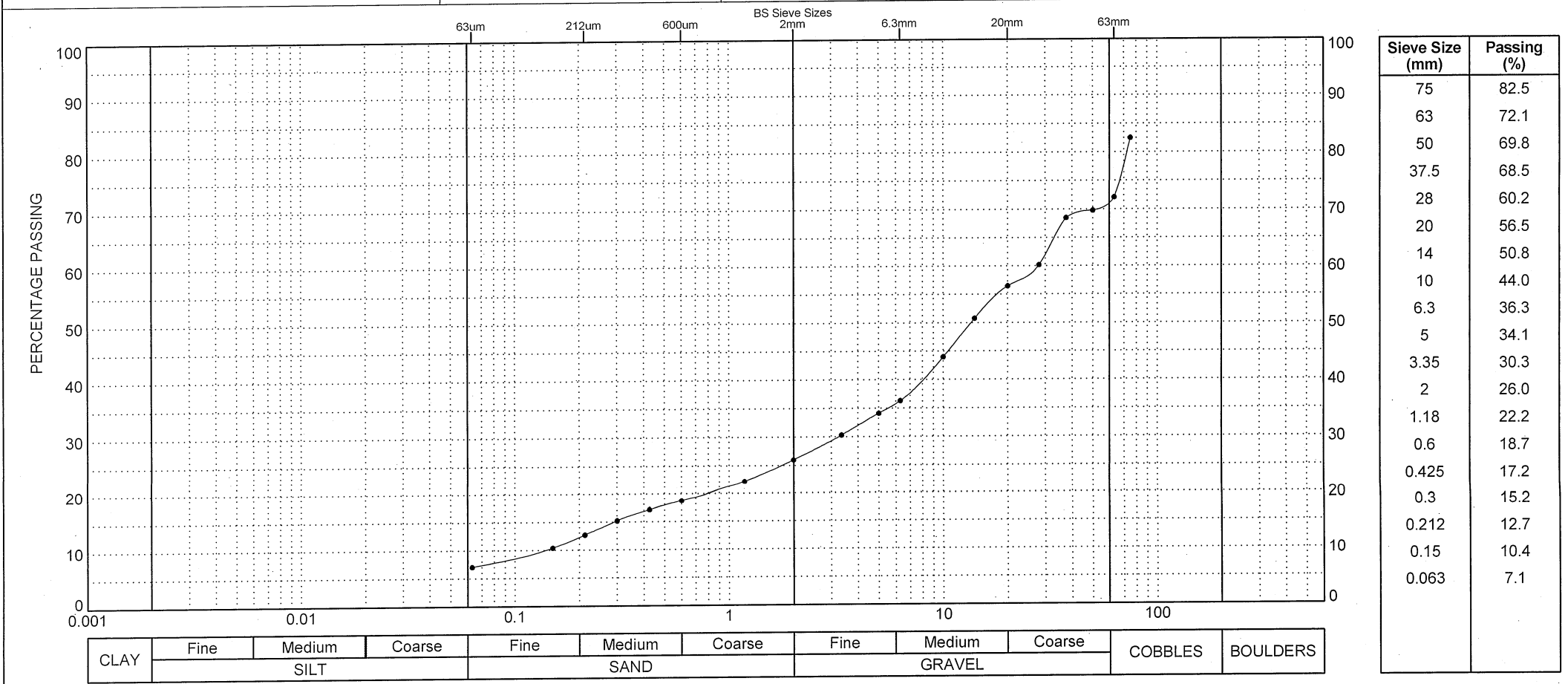
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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990  
(Test deviated from standard due to insufficient sample mass)

Exploratory Hole No :- PRA-SP013	Depth (m) :- 0.00	Sample Type & No :- B4	Specific Depth (m) :- 0.00	Date Tested :- 17/02/2021
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For description of sample please refer to the Laboratory Sample Description Sheet

	Date of issue :- 16/03/2021	Certificate No :- PSD/SLS1223/PRA-SP013/B4/0.00	Signed :- <i>msere</i>	Name :-	Page 1 of 1
	Client :- Seymour Civil Engineering	Contract Title :- Prairie Phase 1 - Redcar		AEG Contract No :- SLS1223	 1367



Site PRAIRIE PHASE 1 - REDCAR

Contract No **A13845**

Client Seymour Civil Engineering

Hole PRA-SP013

Engineer

Sample Ref B5

Depth (m) 0.00

Sample Type B

Particle Size	% Passing
125.0 mm	100
90.0 mm	81
75.0 mm	81
63.0 mm	68
50.0 mm	63
37.5 mm	55
28.0 mm	45
20.0 mm	37
14.0 mm	33
10.0 mm	27
6.30 mm	23
5.00 mm	21
3.35 mm	17
2.00 mm	14
1.18 mm	12
630 µm	10
425 µm	9
300 µm	8
200 µm	7
150 µm	5
63 µm	4

**Non Engineering Description**

MADE GROUND: Grey slightly silty sandy fine to coarse GRAVEL with cobbles, concrete, fragments of brick, wood and glass

**Sample Proportions - %**

Cobbles	33.1
Gravel	52.4
Sand	10.1
Silt & Clay	4.3

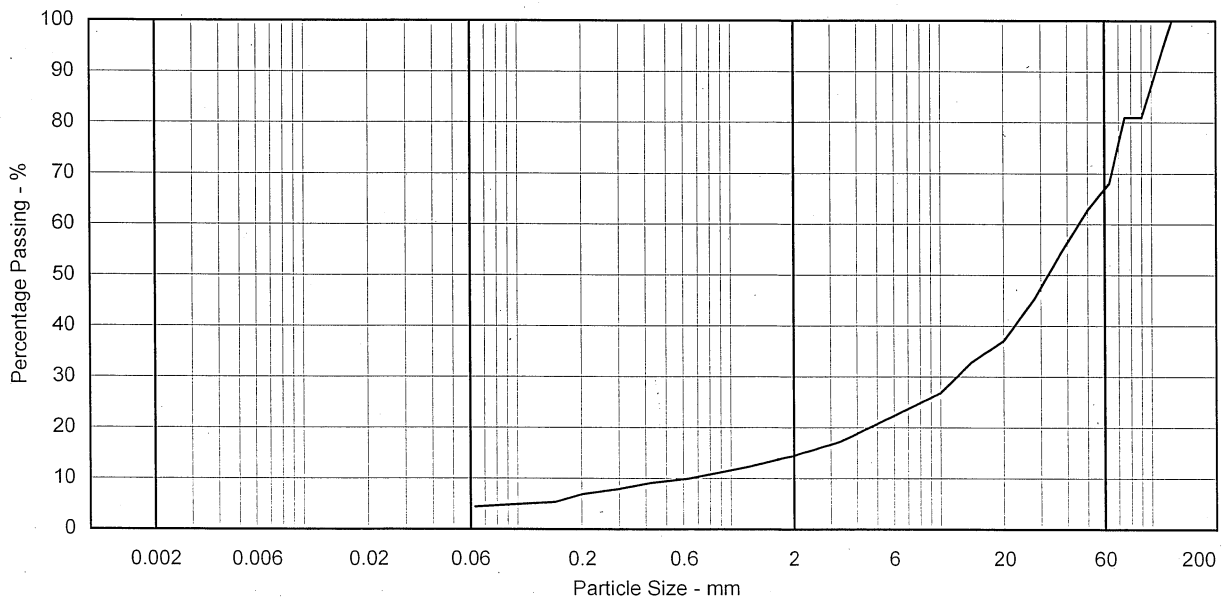
**Particle Diameter - mm**

D100	125
D60	45
D10	0.64
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>	70.3

**Notes**

Sample does not comply with BS EN ISO 17892-4 minimum mass requirements

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator

Checked & Approved

DW

CD  
09/03/2021

**PARTICLE SIZE DISTRIBUTION**

BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method



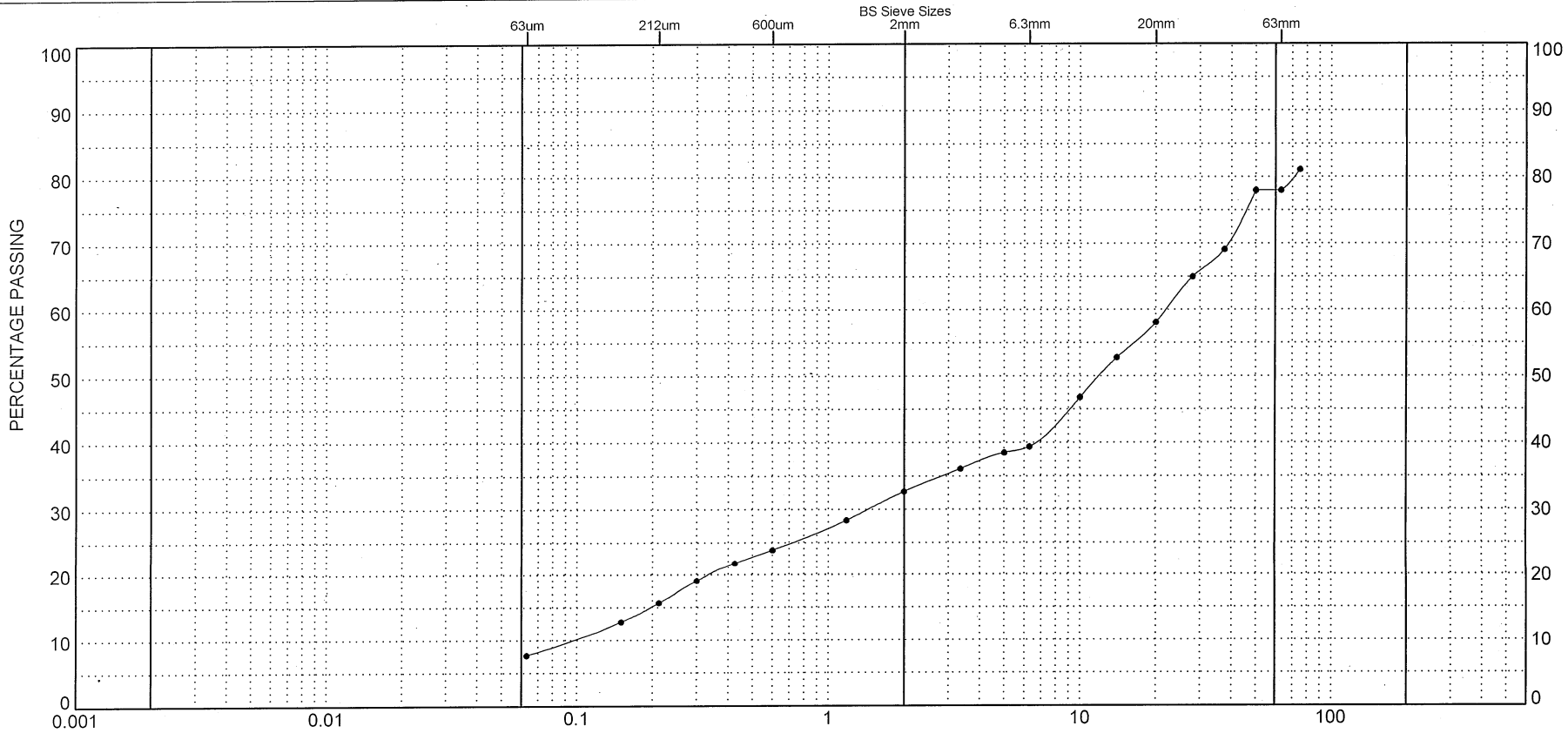
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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990  
(Test deviated from standard due to insufficient sample mass)

Exploratory Hole No :- PRA-SP013	Depth (m) :- 0.00	Sample Type & No :- B6	Specific Depth (m) :- 0.00	Date Tested :- 17/02/2021
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Sieve Size (mm)	Passing (%)
75	81.1
63	78.0
50	78.0
37.5	69.1
28	65.0
20	58.1
14	52.8
10	46.8
6.3	39.4
5	38.5
3.35	36.1
2	32.7
1.18	28.4
0.6	23.9
0.425	21.8
0.3	19.1
0.212	15.7
0.15	12.8
0.063	7.7

CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

For description of sample please refer to the Laboratory Sample Description Sheet

	Date of issue :- 16/03/2021	Certificate No :- PSD/SLS1223/PRA-SP013/B6/0.00	Signed :- <i>msere</i>	Name :-	Page 1 of 1
	Client :- Seymour Civil Engineering	Contract Title :- Prairie Phase 1 - Redcar		AEG Contract No :- SLS1223	



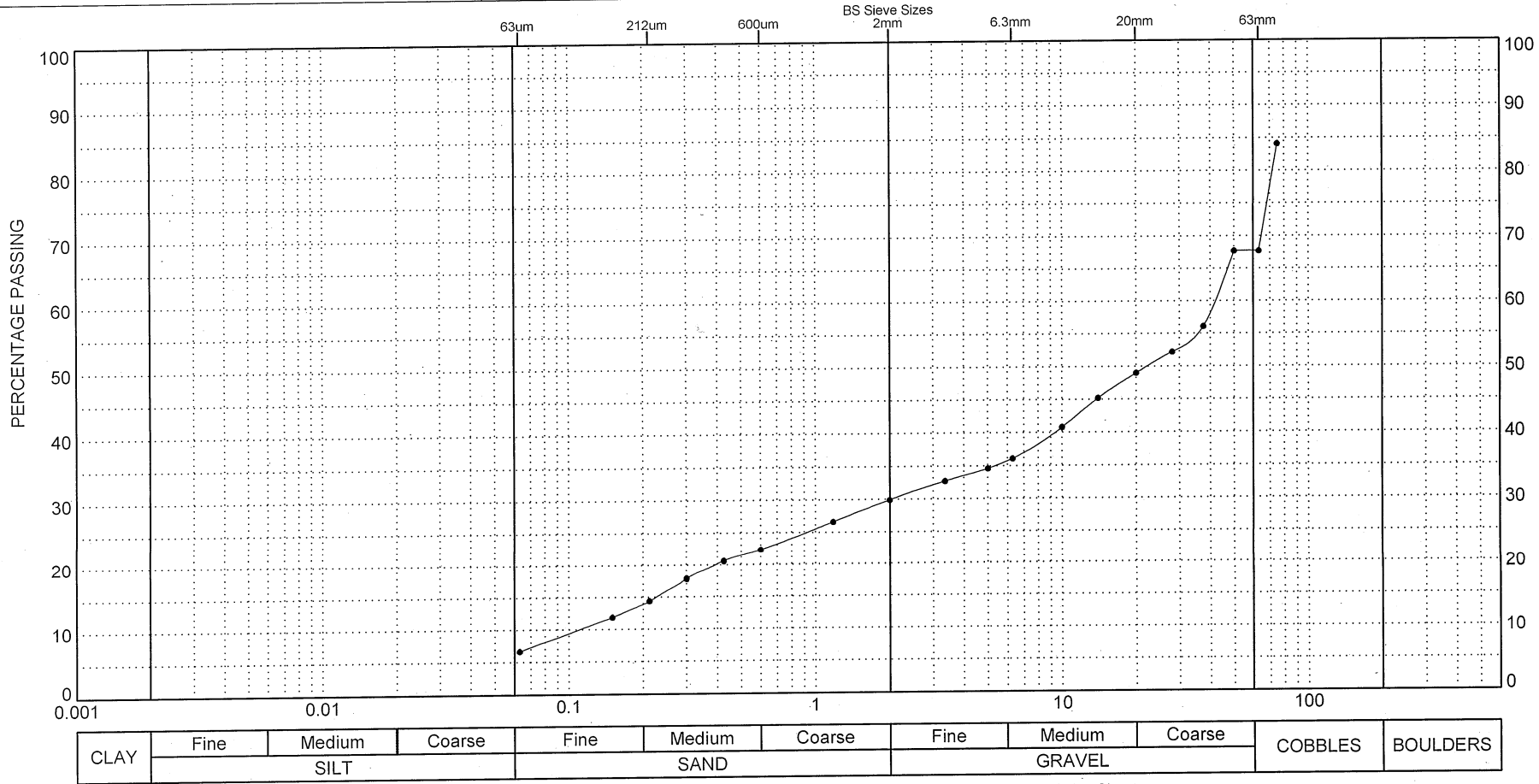
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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990  
(Test deviated from standard due to insufficient sample mass)

Exploratory Hole No :- PRA-SP013	Depth (m) :- 0.00	Sample Type & No :- B7	Specific Depth (m) :- 0.00	Date Tested :- 23/02/2021
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Sieve Size (mm)	Passing (%)
75	84.1
63	67.7
50	67.7
37.5	56.1
28	52.2
20	49.0
14	45.2
10	40.8
6.3	36.1
5	34.6
3.35	32.7
2	29.9
1.18	26.6
0.6	22.4
0.425	20.5
0.3	17.8
0.212	14.4
0.15	11.9
0.063	6.7

For description of sample please refer to the Laboratory Sample Description Sheet

	Date of issue :- 16/03/2021	Certificate No :- PSD/SLS1223/PRA-SP013/B7/0.00	Signed :- <i>msero</i>	Name :-	Page 1 of 1
	Client :- Seymour Civil Engineering	Contract Title :- Prairie Phase 1 - Redcar			AEG Contract No :- SLS1223



SITE INVESTIGATION AND LABORATORY SERVICES

Site PRAIRIE PHASE 1 - REDCAR

Contract No **A13845**

Hole PRA-SP013

Sample Ref B8

Depth (m) 0.00

Sample Type B

Client Seymour Civil Engineering

Engineer

Particle Size	% Passing
125.0 mm	100
90.0 mm	85
75.0 mm	85
63.0 mm	80
50.0 mm	70
37.5 mm	66
28.0 mm	62
20.0 mm	55
14.0 mm	45
10.0 mm	41
6.30 mm	35
5.00 mm	32
3.35 mm	27
2.00 mm	22
1.18 mm	18
630 µm	15
425 µm	14
300 µm	13
200 µm	11
150 µm	9
63 µm	8

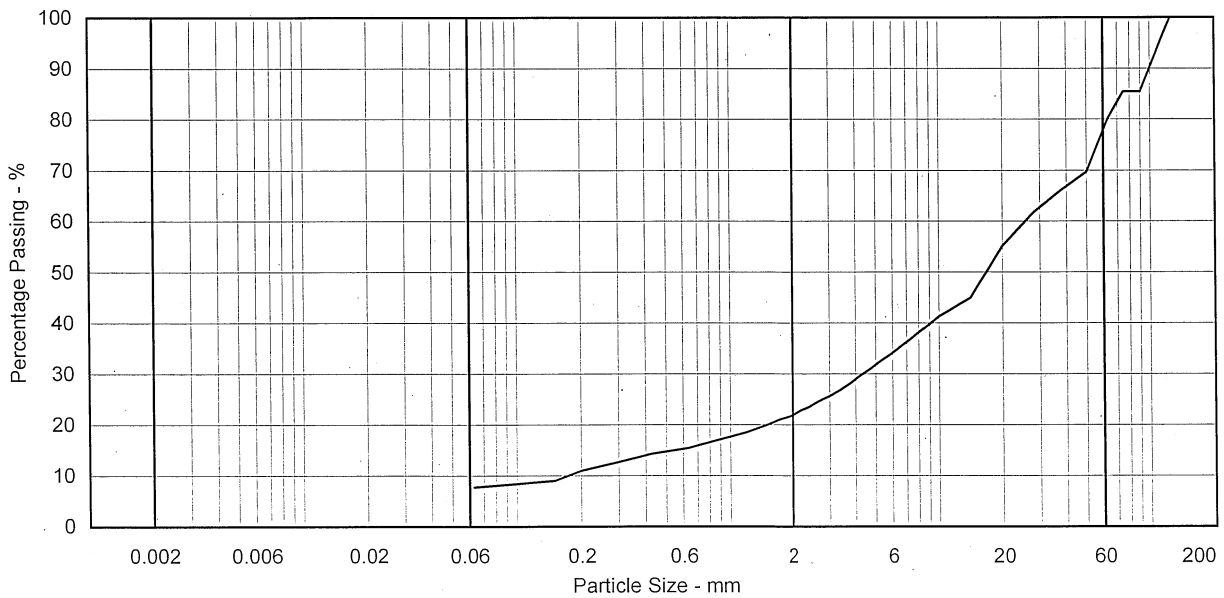
**Non Engineering Description**  
 MADE GROUND: Grey silty sandy fine to coarse GRAVEL with cobbles, concrete, fragments of brick, wood and glass

Sample Proportions - %	
Cobbles	22.2
Gravel	55.9
Sand	14.2
Silt & Clay	7.7

Particle Diameter - mm	
D100	125
D60	26
D10	0.17
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>	152.9

**Notes**  
 Sample does not comply with BS EN ISO 17892-4 minimum mass requirements

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator	Checked & Approved
DW	 09/03/2021

**PARTICLE SIZE DISTRIBUTION**  
 BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method





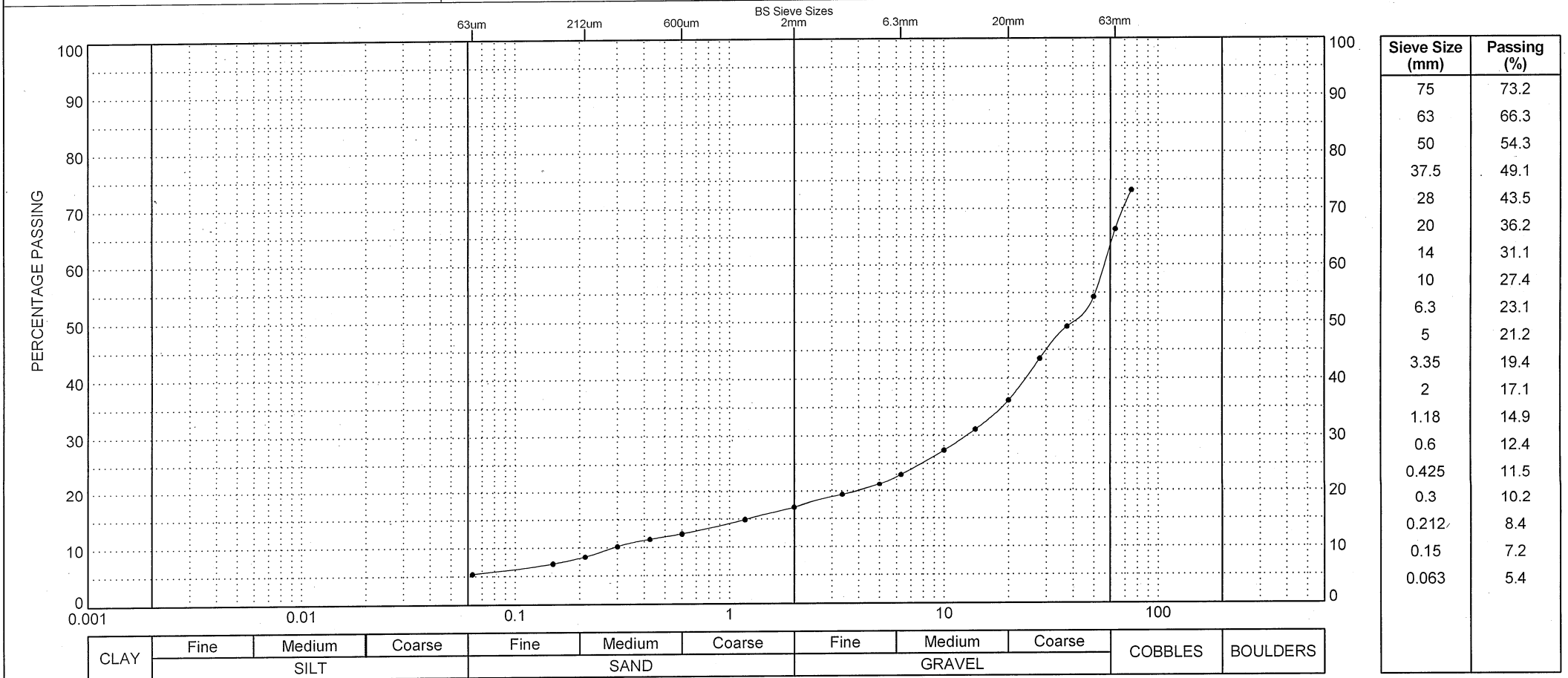
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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990  
(Test deviated from standard due to insufficient sample mass)

Exploratory Hole No :- PRA-SP013	Depth (m) :- 0.00	Sample Type & No :- B9	Specific Depth (m) :- 0.00	Date Tested :- 23/02/2021
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CLAY	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS
	SILT			SAND			GRAVEL				

For description of sample please refer to the Laboratory Sample Description Sheet

	Date of issue :- 16/03/2021	Certificate No :- PSD/SLS1223/PRA-SP013/B9/0.00	Signed :- <i>msere</i>	Name :- [Signature]	Page 1 of 1
	Client :- Seymour Civil Engineering	Contract Title :- Prairie Phase 1 - Redcar		AEG Contract No :- SLS1223	 1367

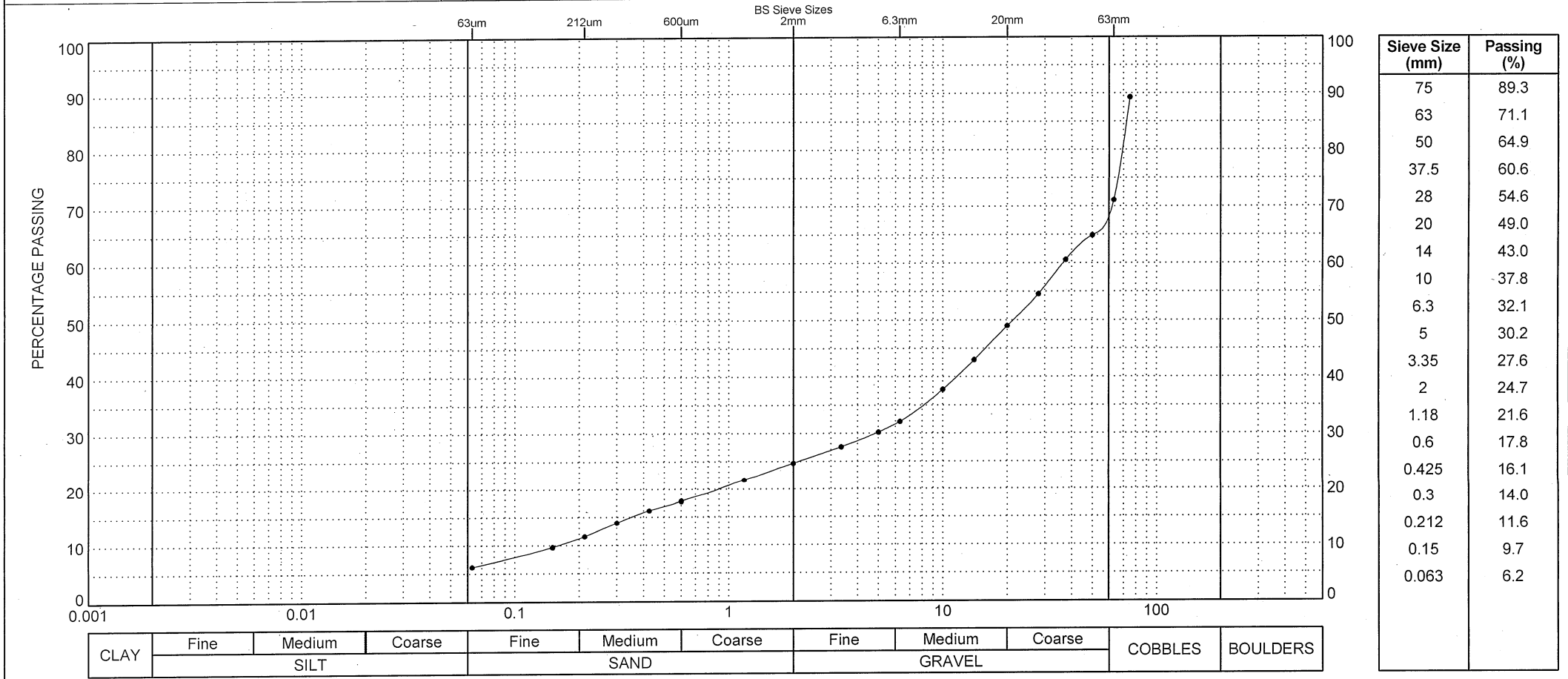
# ALLIED EXPLORATION & GEOTECHNICS LIMITED

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## PARTICLE SIZE DISTRIBUTION

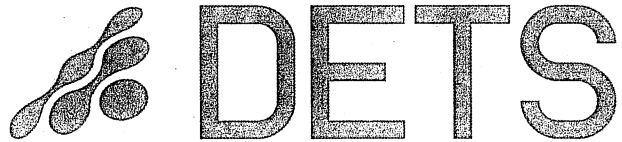
BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990  
(Test deviated from standard due to insufficient sample mass)

Exploratory Hole No :- PRA-SP013	Depth (m) :- 0.00	Sample Type & No :- B10	Specific Depth (m) :- 0.00	Date Tested :- 22/02/2021
----------------------------------	-------------------	-------------------------	----------------------------	---------------------------



For description of sample please refer to the Laboratory Sample Description Sheet

	Date of issue :- 16/03/2021	Certificate No :- PSD/SLS1223/PRA-SP013/B10/0.00	Signed :- <i>msene</i>	Name :-	Page 1 of 1
	Client :- Seymour Civil Engineering	Contract Title :- Prairie Phase 1 - Redcar		AEG Contract No :- SLS1223	



## Certificate of Analysis

*Certificate Number* 21-04684

*Issued:* 11-Mar-21

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

*Our Reference* 21-04684

*Client Reference* SLS1223

*Order No* LA2466

*Contract Title* Prairie Phase 1 - Redcar

*Description* 4 Soil samples.

*Date Received* 05-Mar-21

*Date Started* 05-Mar-21

*Date Completed* 11-Mar-21

*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



## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-04684

Client Ref SLS1223

Contract Title Prairie Phase 1 - Redcar

Lab No	1812674	1812675	1812676	1812677
Sample ID	PRA-SP011	PRA-SP011	PRA-SP011	PRA-SP011
Depth	0.00	0.00	0.00	0.00
Other ID	3	5	8	10
Sample Type	B	B	B	B
Sampling Date	n/s	n/s	n/s	n/s
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
<b>Inorganics</b>							
Organic matter	DETSC 2002#	0.1	%	2.3	2.4	2.2	2.4

## Information in Support of the Analytical Results

Our Ref 21-04684

Client Ref SLS1223

Contract Prairie Phase 1 - Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1812674	PRA-SP011 0.00 SOIL		PT 1L	Sample date not supplied, Organic Matter (Manual) (28 days)	
1812675	PRA-SP011 0.00 SOIL		PT 1L	Sample date not supplied, Organic Matter (Manual) (28 days)	
1812676	PRA-SP011 0.00 SOIL		PT 500ml	Sample date not supplied, Organic Matter (Manual) (28 days)	
1812677	PRA-SP011 0.00 SOIL		PT 500ml	Sample date not supplied, Organic Matter (Manual) (28 days)	

Key: P-Plastic 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

End of Report

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## MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990 (Test deviated from standard due to excessive coarse material)

### Specimen Identification

Exploratory Hole No :- PRA-SP011

Depth (m) :- 0.00

Sample Type & No :- B1

### Test Method

4.5kg Compaction

Separate Samples

### Test Results

Optimum Moisture Content (%) = 10

Particle Density (Assumed) = 2.90

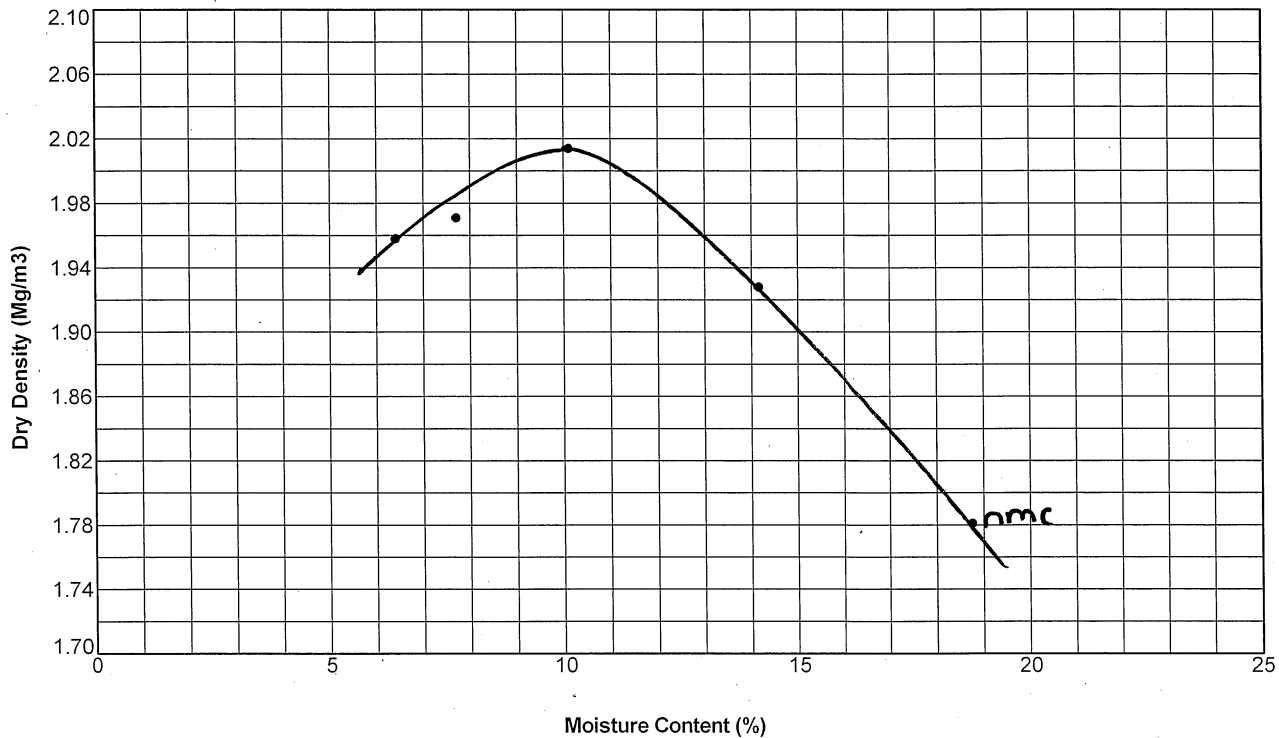
Maximum Dry Density (Mg/m<sup>3</sup>) = 2.01

Retained on 20mm Sieve (%) = 24.0

Date Tested = 25/02/2021

Retained on 37.5mm Sieve (%) = 11.0

### Remarks :



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Prairie Phase 1 - Redcar

Client :-

Seymour Civil Engineering



Signed :-

*msene*

Name :-

*msene*

Page 1 of 1

Date of issue :-

16/03/2021

Certificate No :-

COMP/SLS1223/1

AEG Contract No. :-

**SLS1223**



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## MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990 (Test deviated from standard due to excessive coarse material)

### Specimen Identification

Exploratory Hole No :- PRA-SP011

Depth (m) :- 0.00

Sample Type & No :- B3

### Test Method

4.5kg Compaction

Separate Samples

### Test Results

Optimum Moisture Content (%) = 14

Particle Density (Assumed) = 2.90

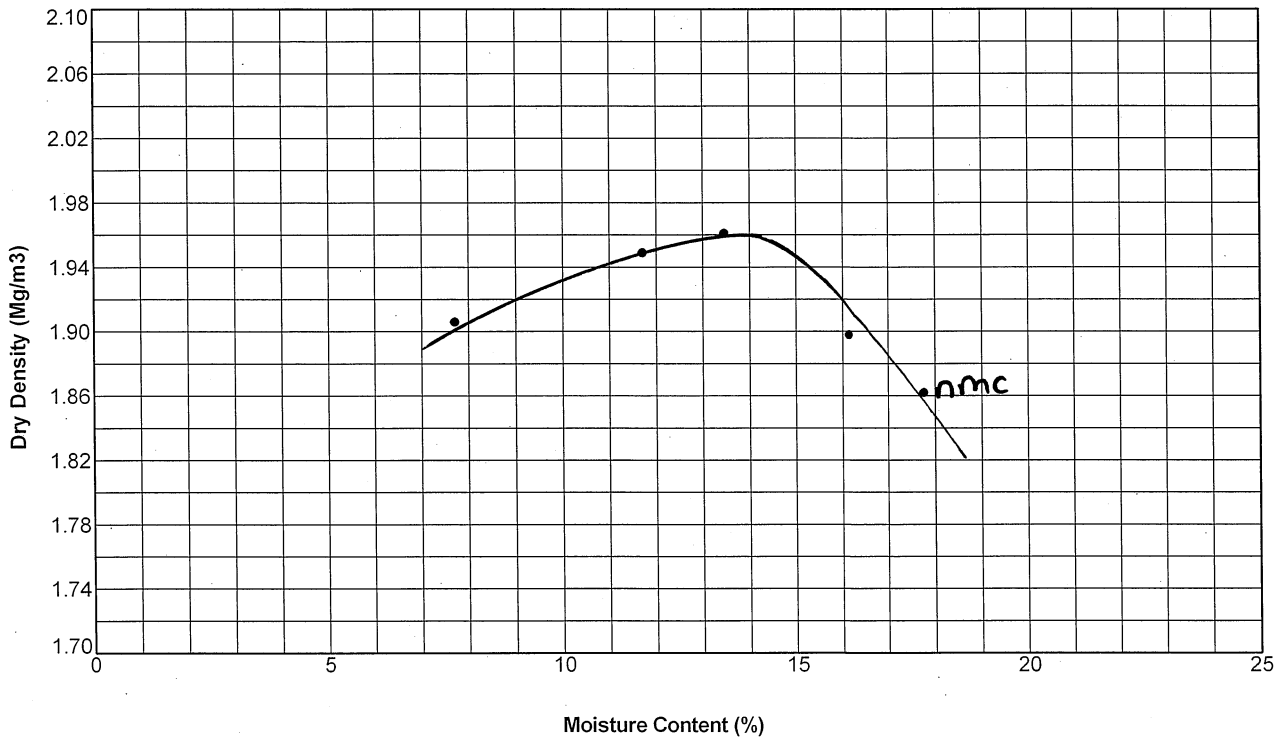
Maximum Dry Density (Mg/m<sup>3</sup>) = 1.96

Retained on 20mm Sieve (%) = 30.0

Date Tested = 25/02/2021

Retained on 37.5mm Sieve (%) = 7.0

### Remarks :



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Prairie Phase 1 - Redcar

Client :-

Seymour Civil Engineering



Signed :-

*msene*

Name :-

*[Signature]*

Page 1 of 1

Date of issue :-

16/03/2021

Certificate No :-

COMP/SLS1223/2

AEG Contract No. :-

**SLS1223**



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## MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990 (Test deviated from standard due to excessive coarse material)

### Specimen Identification

Exploratory Hole No :- PRA-SP011

Depth (m) :- 0.00

Sample Type & No :- B6

### Test Method

4.5kg Compaction

Separate Samples

### Test Results

Optimum Moisture Content (%) = 13

Particle Density (Assumed) = 2.90

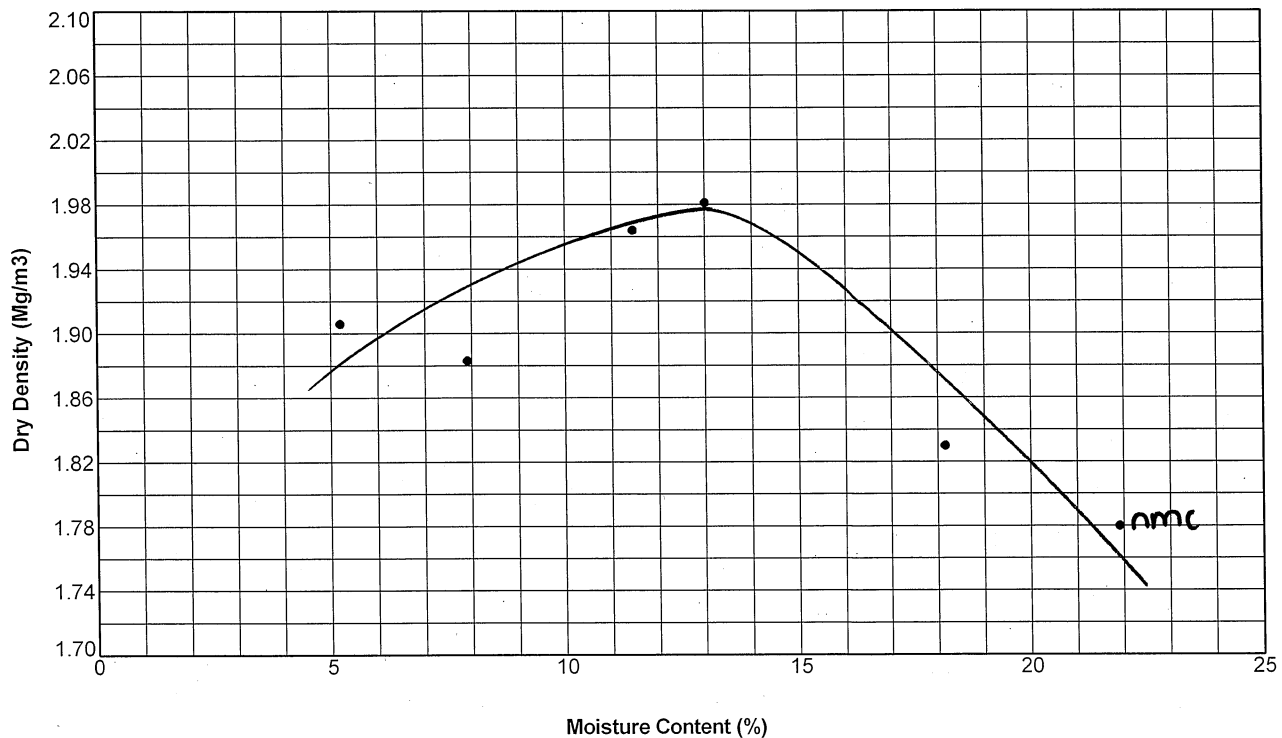
Maximum Dry Density (Mg/m<sup>3</sup>) = 1.98

Retained on 20mm Sieve (%) = 62.0

Date Tested = 24/02/2021

Retained on 37.5mm Sieve (%) = 30.0

### Remarks :



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Prairie Phase 1 - Redcar

Client :-

Seymour Civil Engineering



Signed :- *msene*

Name :-

Page 1 of 1

Date of issue :-  
16/03/2021

Certificate No :-  
COMP/SLS1223/3

AEG Contract No. :-  
**SLS1223**





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## MOISTURE CONTENT/DRY DENSITY RELATIONSHIP

BS 1377 : Part 4 : 1990 (Test deviated from standard due to excessive coarse material)

### Specimen Identification

Exploratory Hole No :- PRA-SP011

Depth (m) :- 0.00

Sample Type & No :- B8

### Test Method

4.5kg Compaction

Separate Samples

### Test Results

Optimum Moisture Content (%) = 15

Particle Density (Assumed) = 2.90

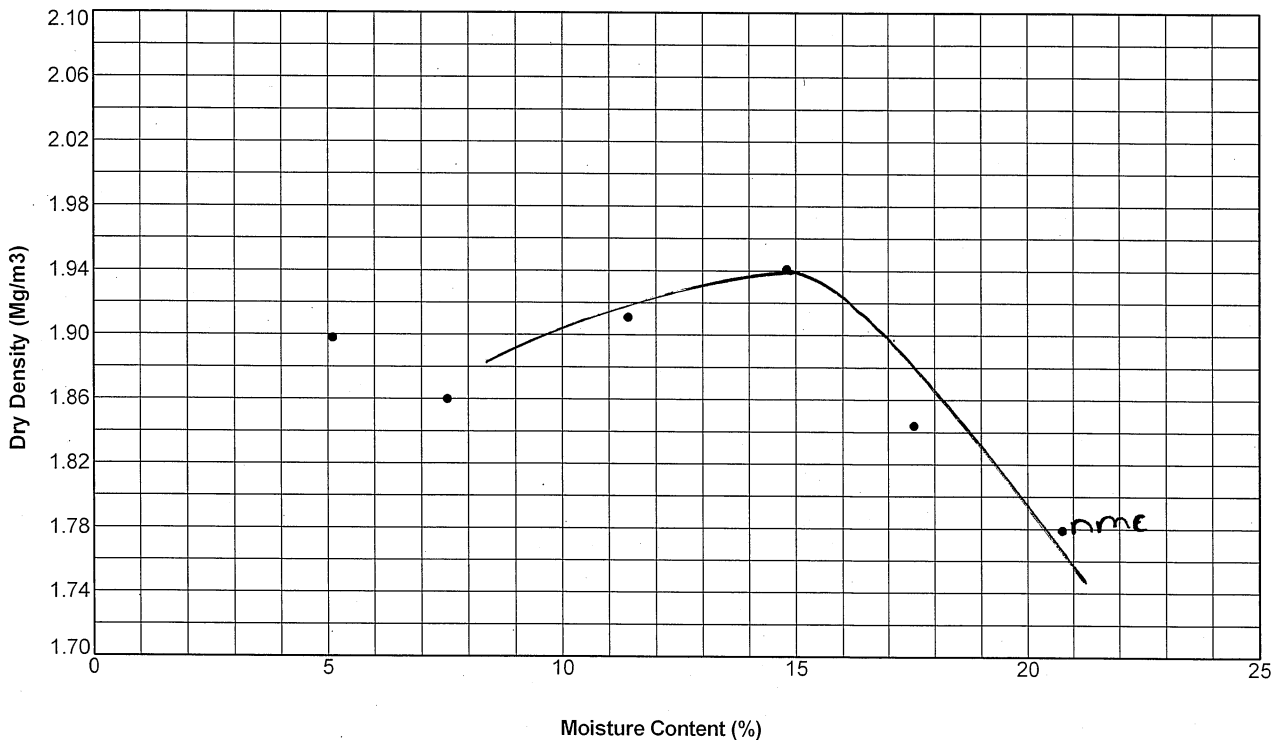
Maximum Dry Density (Mg/m<sup>3</sup>) = 1.94

Retained on 20mm Sieve (%) = 27.0

Date Tested = 24/02/2021

Retained on 37.5mm Sieve (%) = 14.0

### Remarks :



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Prairie Phase 1 - Redcar

Client :-

Seymour Civil Engineering



Signed :-

*msene*

Name :-

*M. Sene*

Page 1 of 1

Date of issue :-

16/03/2021

Certificate No :-

COMP/SLS1223/4

AEG Contract No. :-

**SLS1223**





Site PRAIRIE PHASE 1 - REDCAR

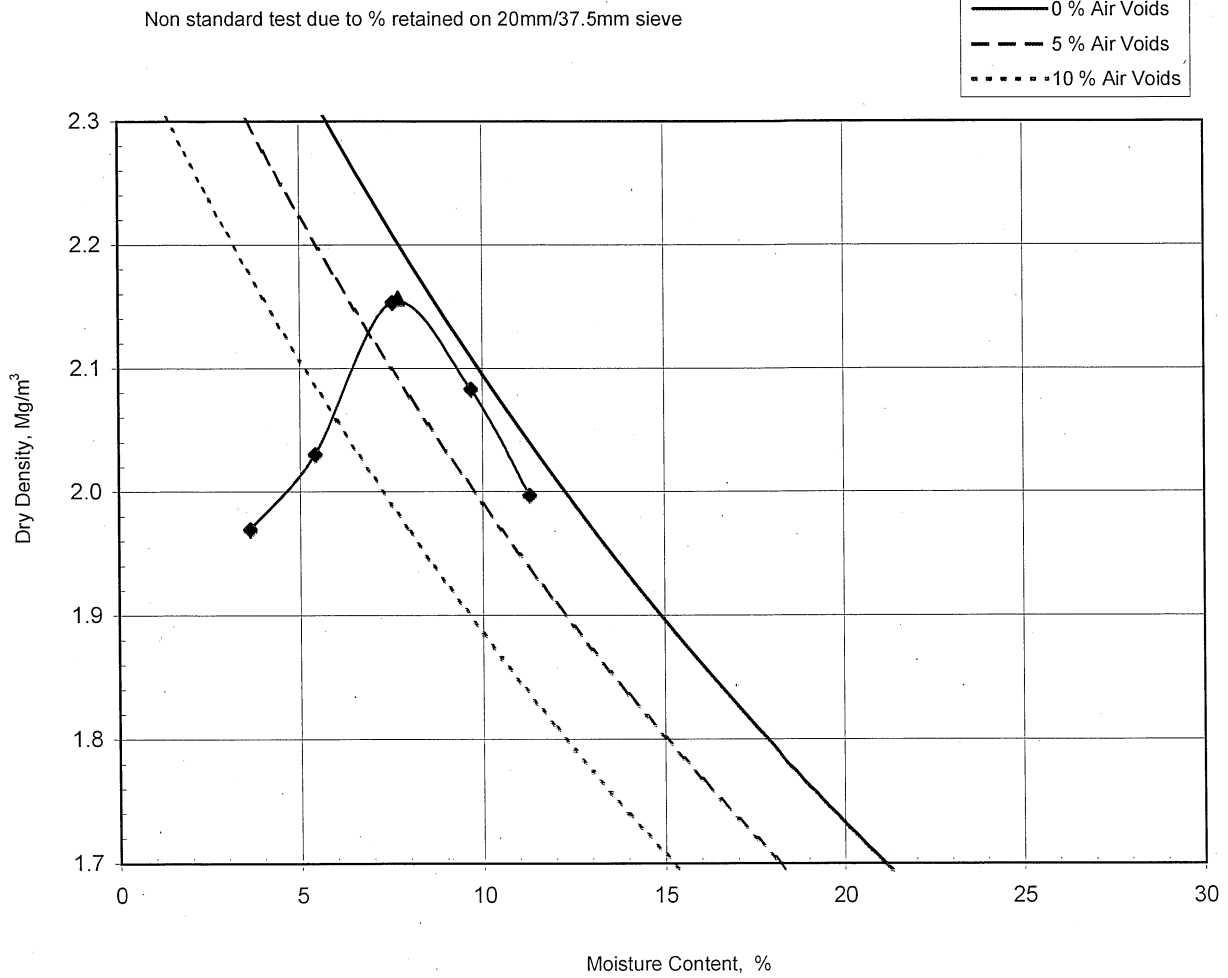
Contract No **A13845**

Client Seymour Civil Engineering

Hole PRA-SP013

Engineer

Sample Ref B1  
Depth (m) 0.00  
Sample Type B



Non Engineering Description	MADE GROUND: Grey slightly silty sandy fine to coarse GRAVEL with cobbles, concrete, fragments of brick, wood and glass
Preparation	Oven dried
Test Method	Vibrating Hammer
Samples Used	Single
Mass Retained on 37.5 mm Sieve	% 55
Mass Retained on 20.0 mm Sieve	% 68
Particle Density - Assumed	Mg/m³ 2.65
Natural Moisture Content	% 15
Maximum Dry Density	Mg/m³ 2.16
Optimum Moisture Content	% 7.7

Originator	Checked & Approved
BJ	CD 09/03/2021

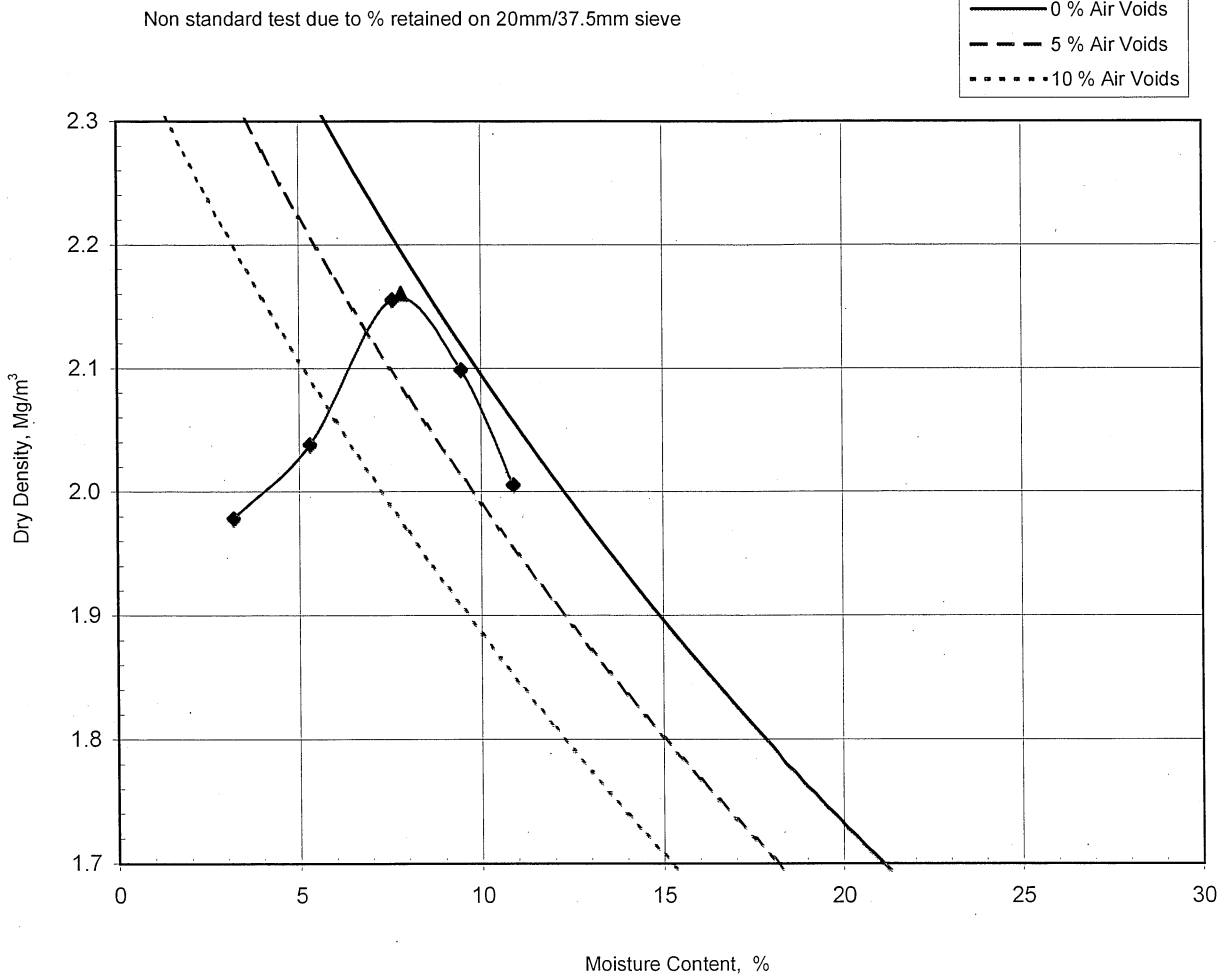
**Moisture Content / Dry Density Relationship**  
BS1377:Part 4:1990 Clause 3.7





Site	PRAIRIE PHASE 1 - REDCAR
Client	Seymour Civil Engineering
Engineer	


Contract No	<b>A13845</b>
Hole	PRA-SP013
Sample Ref	B5
Depth (m)	0.00
Sample Type	B



Non Engineering Description	MADE GROUND: Grey slightly silty sandy fine to coarse GRAVEL with cobbles, concrete, fragments of brick, wood and glass	
Preparation	Oven dried	
Test Method	Vibrating Hammer	
Samples Used	Single	
Mass Retained on 37.5 mm Sieve	%	55
Mass Retained on 20.0 mm Sieve	%	64
Particle Density - Assumed	Mg/m³	2.65
Natural Moisture Content	%	17
Maximum Dry Density	Mg/m³	2.16
Optimum Moisture Content	%	7.8

Originator	Checked & Approved
BJ	CD 09/03/2021

**Moisture Content / Dry Density Relationship**  
BS1377:Part 4:1990 Clause 3.7



Sheet 1 of 1



Site PRAIRIE PHASE 1 - REDCAR

Client Seymour Civil Engineering

Engineer

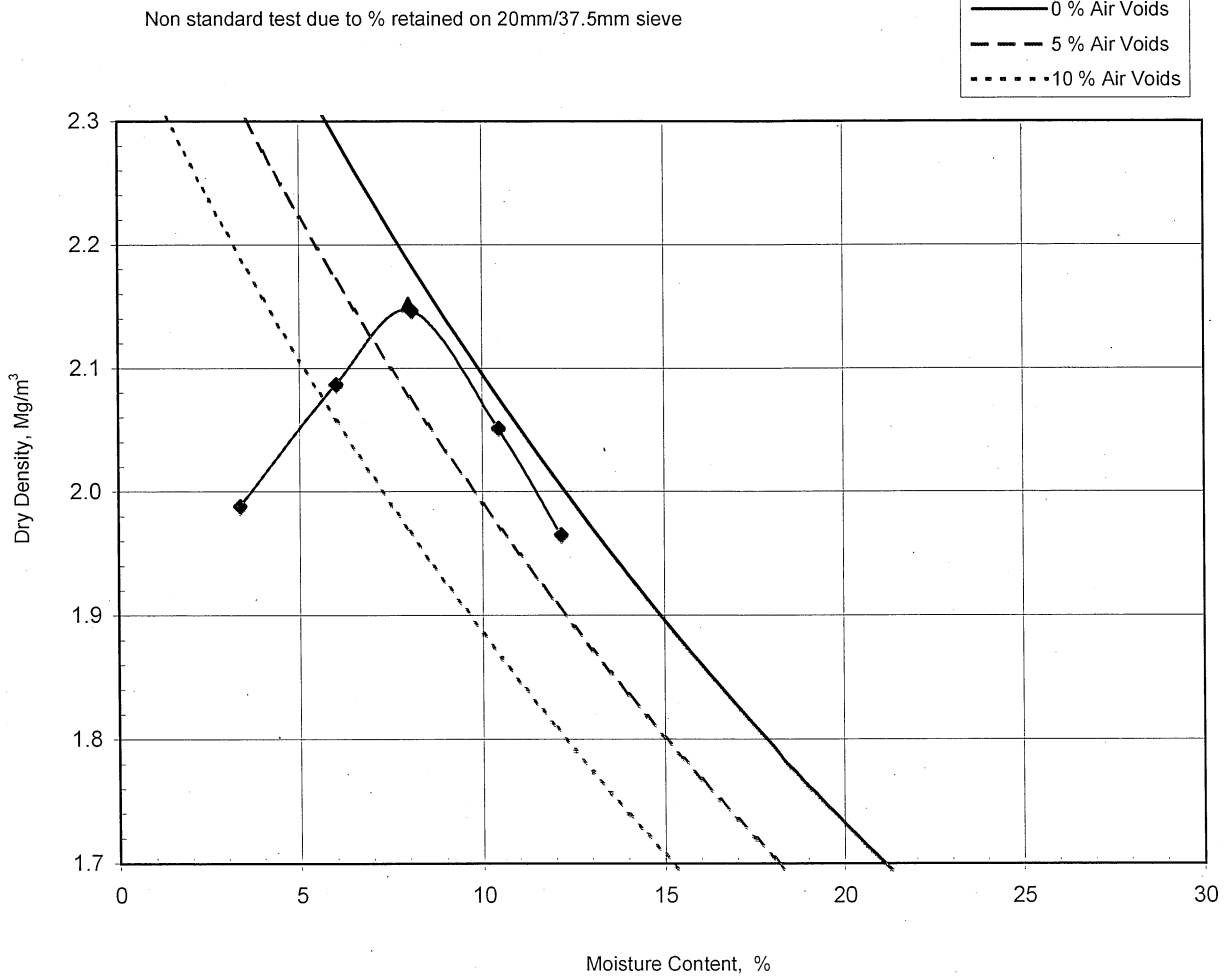
Contract No **A13845**

Hole PRA-SP013

Sample Ref B8

Depth (m) 0.00

Sample Type B



Non Engineering Description	MADE GROUND: Grey silty sandy fine to coarse GRAVEL with cobbles, concrete, fragments of brick, wood and glass
Preparation	Oven dried
Test Method	Vibrating Hammer
Samples Used	Single
Mass Retained on 37.5 mm Sieve	% 35
Mass Retained on 20.0 mm Sieve	% 44
Particle Density - Assumed	Mg/m <sup>3</sup> 2.65
Natural Moisture Content	% 21
Maximum Dry Density	Mg/m <sup>3</sup> 2.15
Optimum Moisture Content	% 8.0

Originator

BJ


Checked & Approved

CD  
09/03/2021

**Moisture Content / Dry Density Relationship**

BS1377:Part 4:1990 Clause 3.7




 SITE INVESTIGATION AND LABORATORY SERVICES	Site	PRAIRIE PHASE 1 - REDCAR	Contract No <b>A13845</b>
	Client	Seymour Civil Engineering	
	Engineer		

Sample Identification				Lab Sample ID	10-14mm Size Fraction Passing 11.2mm Sieve	Particle Density (8-12.5 mm)	Los Angeles Coefficient	Aggregate Impact Value	Comments
Hole ID	Depth m	Sample Ref	Sample Type						
PRA-SP011	0.00-0.00	B2	B	184147	35	~	40	~	~
PRA-SP011	0.00-0.00	B9	B	184148	35	~	42	~	~
PRA-SP013	0.00-0.00	B5	B	184150	35	~	42	~	~
PRA-SP013	0.00-0.00	B8	B	184151	35	~	43	~	~

UKAS accredited test      Yes      No

Notes      Opinions and interpretations are outside the scope of UKAS accreditation.

Originator	Approved	<b>RESISTANCE TO FRAGMENTATION BY LOS ANGELES AND IMPACT TEST METHODS</b> BS 812: Part 112:1990 & BS EN 1097-2:2020	
SM	CD 09/03/2021		

## NOTES ON LABORATORY PROCEDURES

Samples of soil and rock taken during the site works are examined in the laboratory and assessments of their characteristics used to supplement field observations, and in-situ and laboratory test results, in the preparation of the borehole records. Preparation and testing is carried out to the requirements of British or other international Standards where applicable, or otherwise in accordance with good practice. UKAS accredited tests are indicated thus : (U). All other tests reported or opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

### LABORATORY TESTING (SOILS) CLASSIFICATION TESTS

Determination of moisture content (U)  
 Determination of liquid limit (U)  
 Determination of plastic limit and plasticity index (U)  
 Determination of bulk density (U)  
 Determination of particle density (U)  
 Sieve analysis (wet or dry sieving) (U)  
 Sedimentation analysis (pipette or hydrometer) (U)

### STANDARD

BS 1377 : Part 2 : 1990, Section 3.2  
 BS 1377 : Part 2 : 1990, Section 4.2 and 4.3  
 BS 1377 : Part 2 : 1990, Section 5  
 BS 1377 : Part 2 : 1990, Section 7.2  
 BS 1377 : Part 2 : 1990, Section 8.2 and 8.3  
 BS 1377 : Part 2 : 1990, Section 9.2 and 9.3  
 BS 1377 : Part 2 : 1990, Section 9.4 and 9.5

### CHEMICAL AND CONTAMINATION TESTS

An extensive range of UKAS and MCERTS chemical and contamination test procedures is available for the identification and quantification of levels of contamination in the ground. Selection of the test methodology and suite of contaminants to be determined is based upon site history, conditions revealed in the course of the investigation, and intended future use. Procedures are described and referenced as appropriate in the text of this report.

### COMPACTION RELATED TESTS

Determination of dry density/moisture content relationship (U)  
 Determination of minimum & maximum density  
 Determination of moisture condition value (MCV) (U)  
 Determination of MCV/moisture content relationship (U)  
 Determination of California Bearing Ratio (U)

BS 1377 : Part 4 : 1990, Section 3  
 BS 1377 : Part 4 : 1990, Section 4  
 BS 1377 : Part 4 : 1990, Section 5  
 BS 1377 : Part 4 : 1990, Section 5  
 BS 1377 : Part 4 : 1990, Section 7

### CONSOLIDATION AND STRENGTH TESTS

Determination of one-dimensional consolidation properties (U)  
 Determination of shear strength by direct shear (small shearbox) (U)  
 Determination of shear strength by direct shear (large shearbox) (U)  
 Determination of undrained shear strength in triaxial compression (U)  
 Determination of shear strength  
 with pore water pressure measurements (U)  
 Hand Shear Vane (U)

BS 1377 : Part 5 : 1990, Section 3  
 BS 1377 : Part 7 : 1990, Section 4  
 BS 1377 : Part 7 : 1990, Section 5  
 BS 1377 : Part 7 : 1990, Section 8 and 9  
 BS 1377 : Part 8 : 1990  
 NZ Geotechnical Society Inc Aug 2001

### AGGREGATE TESTS

Particle size distribution (U)  
 Particle size distribution (U)  
 Flakiness Index (U)  
 Ten percent fines value (dry and soaked) (U)  
 Resistance to fragmentation by Los Angeles method (U)

BS 812 : Part 103 : 1985, Section 103.1  
 BS EN 933-1 : 2012  
 BS EN 933-3 : 2012  
 BS 812 : Part 111 : 1990  
 BS EN 1097-2 : 2010

### LABORATORY TESTING (ROCKS)

The laboratory testing of rock specimens has not reached the degree of standardisation achieved for soils testing. A wide range of test procedures are described in the relevant literature. All these methods are to a greater or lesser degree unique to particular contexts (ie, relative to a specific rock type or individual project design requirements).

### TEST

Determination of point load strength (U)  
 End preparation of Rock Specimens (U)  
 Determination of unconfined compressive strength (U)  
 Determination of unconfined compressive strength (U)  
 Determination of dry density and porosity (U)  
 Determination of water content (U)  
 Stake Durability Index (U)

ISRM Commission on Testing Methods, 1985  
 ASTM Testing method D4543-08  
 ISRM Commission on Testing Methods, 1985  
 ASTM Testing method D7012-14  
 ISRM Commission on Testing Methods, 1985  
 ISRM Commission on Testing Methods, 1985  
 ISRM Commission on Testing Methods, 1985

### LABORATORY TESTING (CONCRETE)

Samples of concrete taken during the site works are examined in the laboratory and testing is carried out to the requirements of British or other international Standards where applicable, or otherwise in accordance with good practice.

### CONCRETE RELATED TESTS

Determination of unconfined compressive strength  
 Determination of shape, dimensions and other requirements for specimens and moulds  
 Estimated Actual Strength & Estimated Potential Strength

### SOIL DESCRIPTION

Laboratory (non-engineering) soil descriptions are generally given in accordance with Clause 41 of BS 5930 : 1999

Originator

Checked &  
Approved

DM

GW

## SOIL, AGGREGATE, ROCK CONCRETE TESTING



Appendix X

Sheet 1 of 2

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## LABORATORY SAMPLE DESCRIPTION SHEET

Exploratory Hole No.	Sample Depth (m)	ID	Description	Laboratory Tests/Remarks
PRA-BC027	6.60	J5	Brown with grey mottling silty CLAY of high plasticity.	MC PI PSD SED BRE ORG
PRA-SP002	0.00	B9	MADE GROUND (Brown clayey/silty very sandy gravel including brick and slag fragments).	MC PSD
PRA-SP002	0.00	B10	MADE GROUND (Brown clayey/silty very sandy gravel including brick, slag, plastic, rubber and leather fragments and a medium cobble content).	MC PI(NP) PSD PD CP4
PRA-SP003	0.00	B10		MC PSD SED LA Coefficient
PRA-SP003	0.00	B11	MADE GROUND (Brown sand and gravel including metal, brick and slag fragments with clay pockets and a medium cobble content).	MC PSD CBR US for PI
PRA-SP004	0.00	B10	MADE GROUND (Brown clayey very sandy gravel including slag, brick, plastic and tile fragments with clay pockets and a medium cobble content).	MC PI(NP) PSD CP4
PRA-SP004	0.00	B11	MADE GROUND (Brown clayey very sandy gravel including brick and slag fragments).	MC PSD
PRA-SP005	0.00	B12	MADE GROUND (Brown clayey very sandy gravel including slag and brick fragments with clay pockets and a low cobble content).	MC PSD CP4
PRA-SP005	0.00	B13	MADE GROUND (Brown silty sand and gravel (Tested as silt of low to intermedediate plasticity)).	MC PI PSD LA Coefficient
PRA-SP007	0.00	B17		MC PSD SED LA Coefficient
PRA-SP007	0.00	B18	MADE GROUND (Brown clayey very sandy gravel including brick, slag and plastic fragments).	MC PI(NP) PSD CP4
PRA-SP007	0.00	B19	MADE GROUND (Brown clayey very sandy gravel including brick, slag and metal fragments).	MC PSD
PRA-SP007	0.00	B20	MADE GROUND (Brown clayey/silty very asndy gravel including brick, slag and plastic fragments with a low cobble content).	MC PI (NP) PSD
PRA-SP008	0.00	B14	MADE GROUND (Brown slightly sandy gravelly clay of intermediate plasticity. Gravel includes brick and slag fragments).	MC PI PSD SED CBR
PRA-SP008	0.00	B15	MADE GROUND (Brown slightly sandy slightly gravelly clay of high plasticity. Gravel includes brick fragments).	MC PI PSD SED CP4 MCV
PRA-SP008	0.00	B16	MADE GROUND (Brown slightly sandy gravelly clay of intermediate plasticity. Gravel includes brick and ceramic fragments).	MC PI PSD SED MCV
PRA-SP009	0.00	B13	MADE GROUND (Brown slightly clayey sandy gravel and cobbles including brick and slag fragments).	MC PSD MCV
PRA-SP009	0.00	B14		MC PSD CPV LA Coefficient
PRA-SP009	0.00	B15		MC PSD CPV LA Coefficient
PRA-SP009	0.00	B16	MADE GROUND (Brown slightly clayey sandy gravel including brick and slag fragmnts with clay pockets and a high cobble content).	MC PSD
PRA-SP009	0.00	B17	MADE GROUND (Brown clayey very sandy gravel including brick and slag fragments).	MC PSD

Contract Title :-

Prairie Phase 1 - Redcar

Client:-

Seymour Civil Engineering



Signed :-

Name :-

Page 1 of 2

Date of issue :-

26/03/2021

Certificate No :-

SD/SLS1223/1

AEG Contract No. :-

SLS1223




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## LABORATORY SAMPLE DESCRIPTION SHEET

Exploratory Hole No.	Sample Depth (m) ID	Description	Laboratory Tests/Remarks
PRA-SP010	0.00 B19		MC PSD CPV
PRA-SP010	0.00 B20		MC PSD LA Coefficient
PRA-SP010	0.00 B21	MADE GROUND (Brown slightly clayey sandy gravel and cobbles including brick, slag, concrete, metal and wire fragments).	MC PSD US for CBR
PRA-SP010	0.00 B22		MC PSD CPV
PRA-SP010	0.00 B23	MADE GROUND (Brown clayey very sandy gravel including brick and slag fragments and a high cobble content).	MC PSD

Contract Title :- <p style="text-align: center;">Prairie Phase 1 - Redcar</p>	Client :- <p style="text-align: center;">Seymour Civil Engineering</p>
----------------------------------------------------------------------------------	---------------------------------------------------------------------------

	Signed :-	Name :-	Page 2 of 2
	Date of issue :- <p style="text-align: center;">26/03/2021</p>	Certificate No :- <p style="text-align: center;">SD/SLS1223/2</p>	AEG Contract No. :- <p style="text-align: center;">SLS1223</p>





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## MOISTURE CONTENT CERTIFICATE

BS 1377 : Part 2 : Clause 3.2

Exploratory Hole No.	Sample Depth (m)	Sample ID	Specific Depth (m)	Moisture Content (%)	Date Tested	Remarks
PRA-SP002	0.00	B9	0.00	12	11/03/2021	
PRA-SP003	0.00	B10	0.00	13	08/03/2021	
PRA-SP003	0.00	B11	0.00	13	16/03/2021	
PRA-SP004	0.00	B11	0.00	11	12/03/2021	
PRA-SP005	0.00	B12	0.00	13	12/03/2021	
PRA-SP007	0.00	B17	0.00	8.0	08/03/2021	
PRA-SP007	0.00	B19	0.00	8.6	13/03/2021	
PRA-SP009	0.00	B13	0.00	11	12/03/2021	
PRA-SP009	0.00	B14	0.00	8.8	08/03/2021	
PRA-SP009	0.00	B15	0.00	12	08/03/2021	
PRA-SP009	0.00	B16	0.00	15	12/03/2021	
PRA-SP009	0.00	B17	0.00	17	11/03/2021	
PRA-SP010	0.00	B19	0.00	8.0	08/03/2021	
PRA-SP010	0.00	B20	0.00	4.6	08/03/2021	
PRA-SP010	0.00	B21	0.00	8.4	16/03/2021	
PRA-SP010	0.00	B22	0.00	9.8	08/03/2021	
PRA-SP010	0.00	B23	0.00	12	11/03/2021	

For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :- <b>Prairie Phase 1 - Redcar</b>	Client :- <b>Seymour Civil Engineering</b>
------------------------------------------------------	-----------------------------------------------

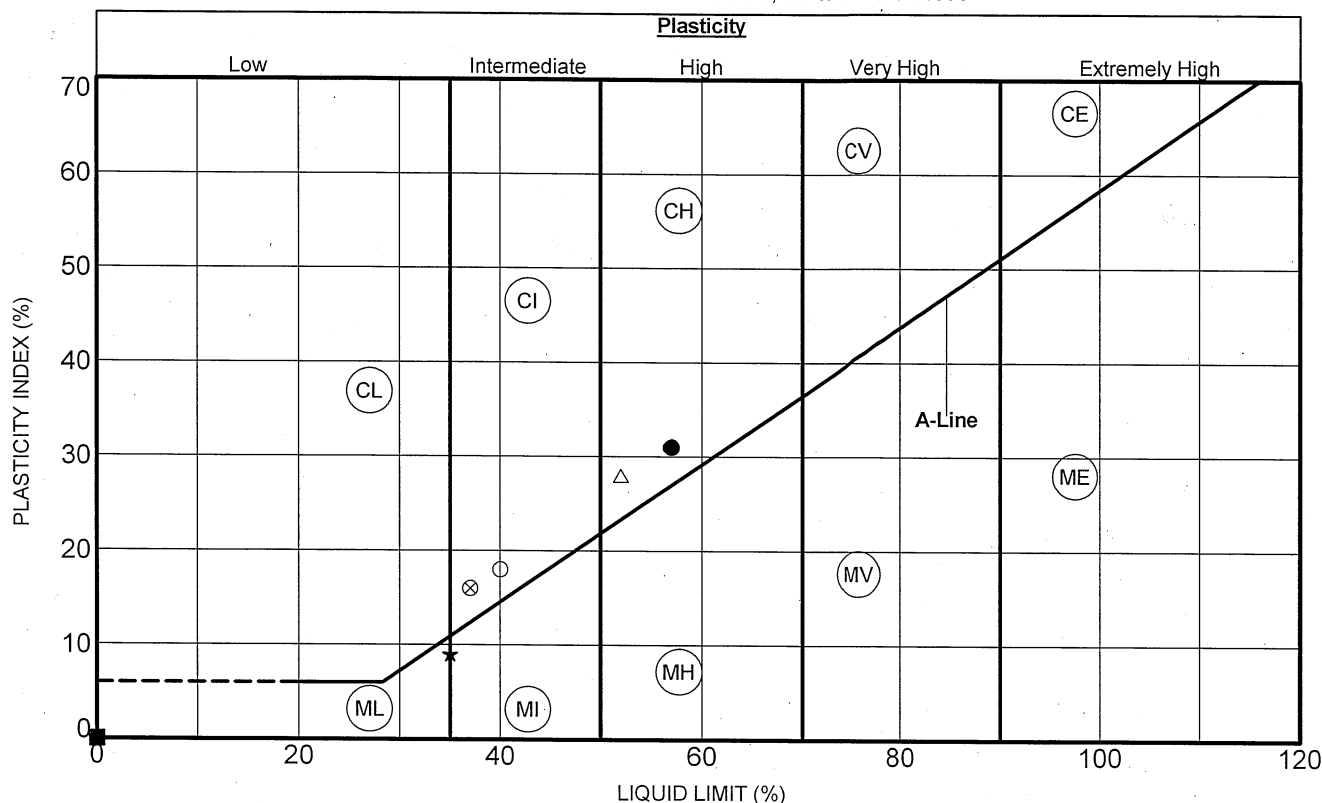
	Signed :- <i>msero</i>	Name :-	Page 1 of 1	
	Date of issue :- 26/03/2021	Certificate No :- MC/SLS1223/1	AEG Contract No. :- <b>SLS1223</b>	

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## ATTERBERG LIMITS & NATURAL MOISTURE CONTENT

Test Method :- BS 1377 : Part 2 : Clause 3.2, 4.1 to 4.4 & 5 : 1990



Exploratory Hole No.	Depth (m)	Sample Type/Ref.	Specific Depth (m)	LL	PL	PI	L <sub>c</sub>	Preparation Method	<0.425mm (%)	m/c (%)	Date Tested
●PRA-BC027	6.60	J5	6.60	57	26	31	0.23	Natural	100.0	33	15/03/2021
⊠PRA-SP002	0.00	B10	0.00	NP	NP	NP		Natural	21.0	11	13/03/2021
▲PRA-SP004	0.00	B10	0.00	NP	NP	NP		Natural	20.0	16	15/03/2021
★PRA-SP005	0.00	B13	0.00	35	26	9	-1.67	Natural	29.0	11	08/03/2021
⊙PRA-SP007	0.00	B18	0.00	NP	NP	NP		Natural	27.0	8.6	15/03/2021
⊕PRA-SP007	0.00	B20	0.00	NP	NP	NP		Natural	24.0	10	12/03/2021
○PRA-SP008	0.00	B14	0.00	40	22	18	-0.17	Natural	57.0	19	16/03/2021
△PRA-SP008	0.00	B15	0.00	52	24	28	0.07	Natural	89.2	26	12/03/2021
⊗PRA-SP008	0.00	B16	0.00	37	21	16	-0.25	Natural	62.0	17	12/03/2021

For description of sample please refer to the Laboratory Sample Description Sheet. # = Insufficient for 4 point PI  
If sample is prepared in the natural state we are unable to determine % retained on the 0.425mm test sieve.

Contract Title :-

Prairie Phase 1 - Redcar

Client :-

Seymour Civil Engineering



Signed :-

*msero*

Name :-

Page 1 of 1

Date of issue :-

26/03/2021

Certificate No :-

PI/SLS1223/1

AEG Contract No. :-

SLS1223



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## DETERMINATION OF PARTICLE DENSITY

BS1377 : Part 2 : Clause 8.2 : 1990

Exploratory Hole No.	Depth (m)	Sample Type & No.	Specific Depth (m)	Particle Density (Mg/m <sup>3</sup> )	Date Tested
PRA-SP002	0.00	B10	0.00	2.74	15/03/2021

For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :- Prairie Phase 1 - Redcar	Client :- Seymour Civil Engineering
-----------------------------------------------	----------------------------------------

	Signed :- <i>mserle</i>	Name :-	Page 1 of 1
	Date of issue :- 26/03/2021	Certificate No :- PD/SLS1223/1	AEG Contract No. :- <b>SLS1223</b>

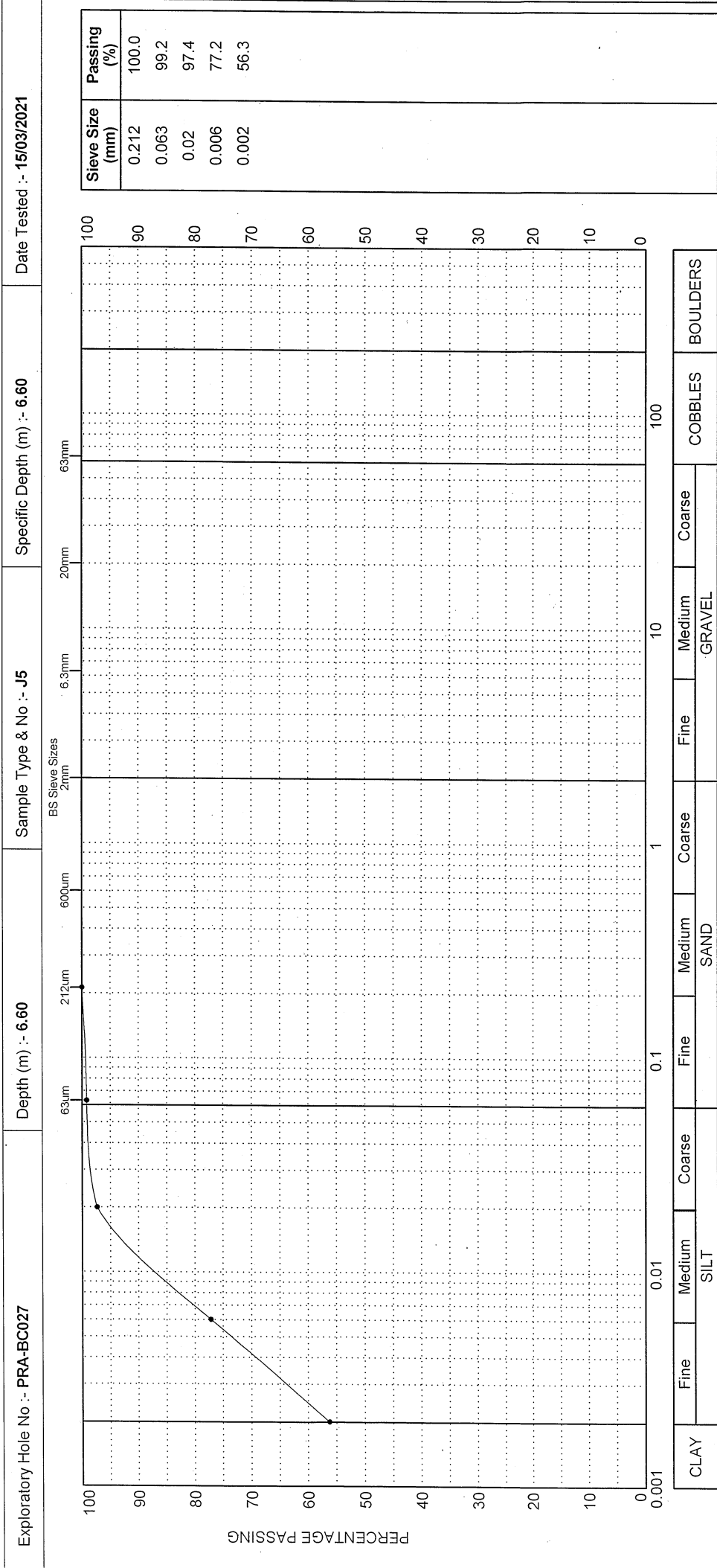


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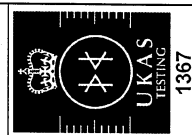
## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990



For description of sample please refer to the Laboratory Sample Description Sheet

Date of issue :- 26/03/2021	Certificate No :- PSD/SLS1223/PRA-BC027/J5/6.60	Signed :- <i>M. Sene</i>	Name :-
Client :- Seymour Civil Engineering		Contract Title :- Prairie Phase 1 - Redcar	
Page 1 of 1		AEG Contract No :- SLS1223	

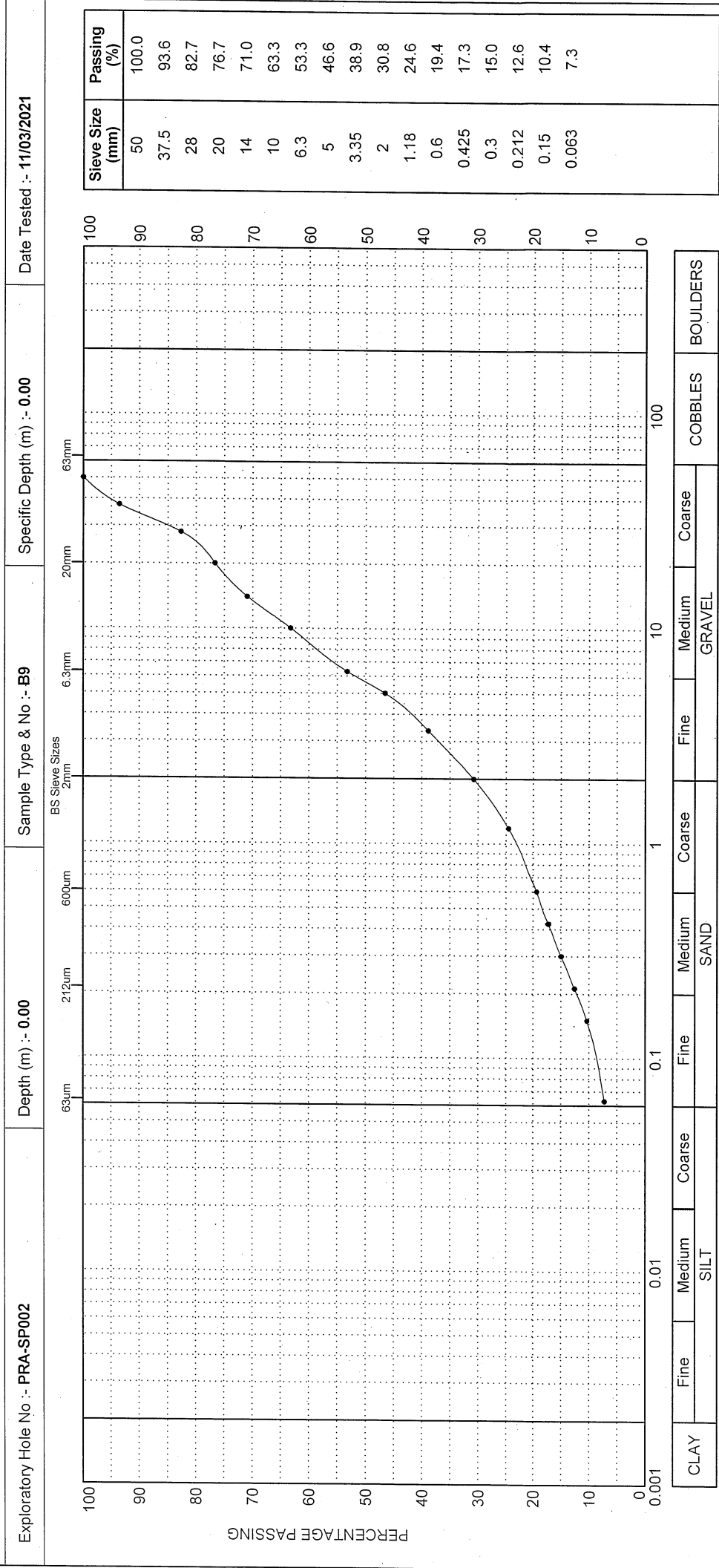


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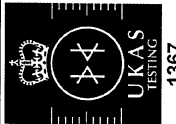
## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990



For description of sample please refer to the Laboratory Sample Description Sheet

<b>EG</b>	Date of issue :- 26/03/2021	Certificate No :- PSD/SLS1223/PRA-SP002/B9/0.00	Signed :- <i>msw</i>	Name :-	
	Client :- Seymour Civil Engineering	Contract Title :- Prairie Phase 1 - Redcar	Page 1 of 1		
			AEG Contract No :- SLS1223		



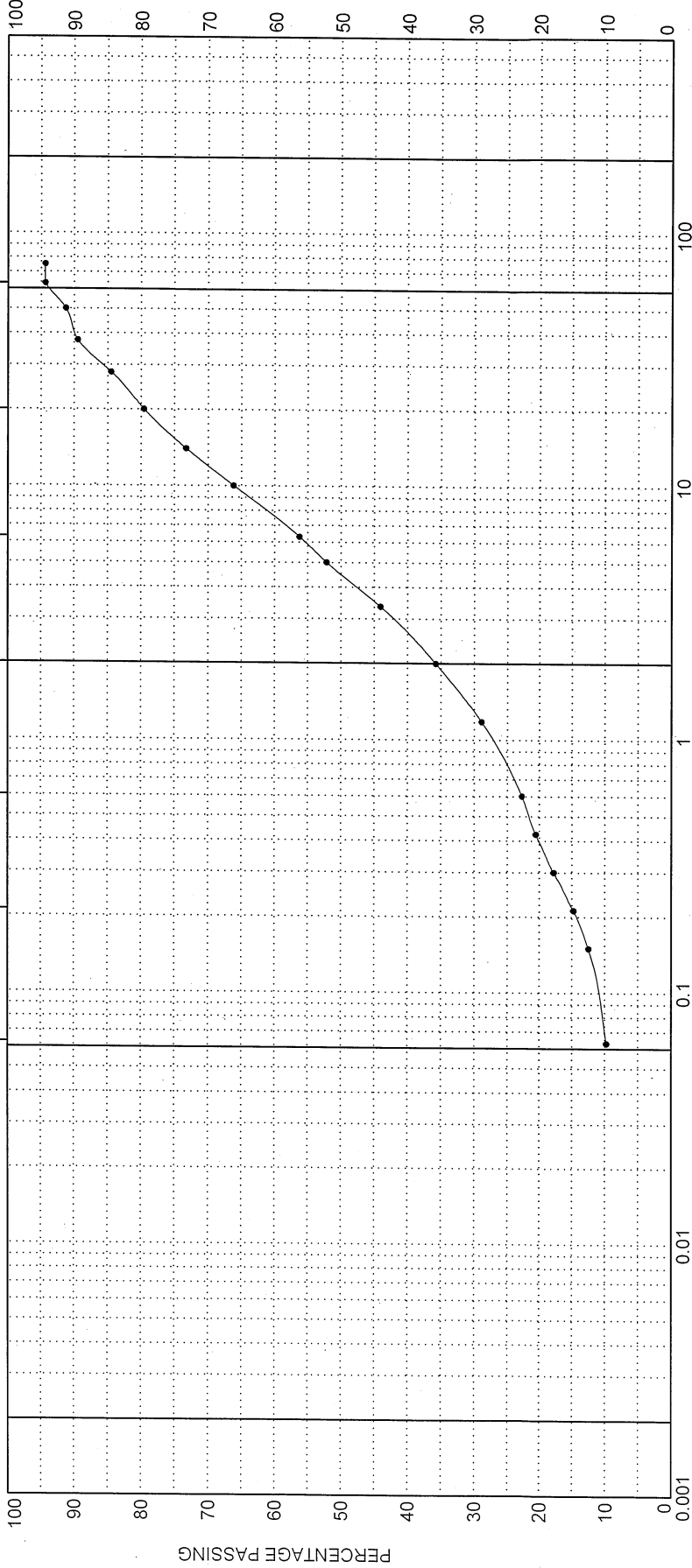
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 Regional Office: Unit 20, Business Development Centre, Easing Wharf, Blackburn, BB1 5BL. Tel: 01772 735 300 Fax: 01772 735 999

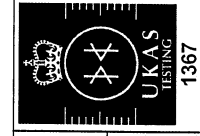
## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990  
 (Test deviated from standard due to insufficient sample mass)

Exploratory Hole No :- PRA-SP002      Depth (m) :- 0.00      Sample Type & No :- B10      Specific Depth (m) :- 0.00      Date Tested :- 13/03/2021



CLAY			SAND			GRAVEL			BOULDERS		
Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	COBBLES	BOULDERS	



Date of issue :- 26/03/2021      Certificate No :- PSD/SLS1223/PRA-SP002/B10/0.00      Name :-

Client :- Seymour Civil Engineering      Contract Title :- Prairie Phase 1 - Redcar      AEG Contract No :- SLS1223

Page 1 of 1



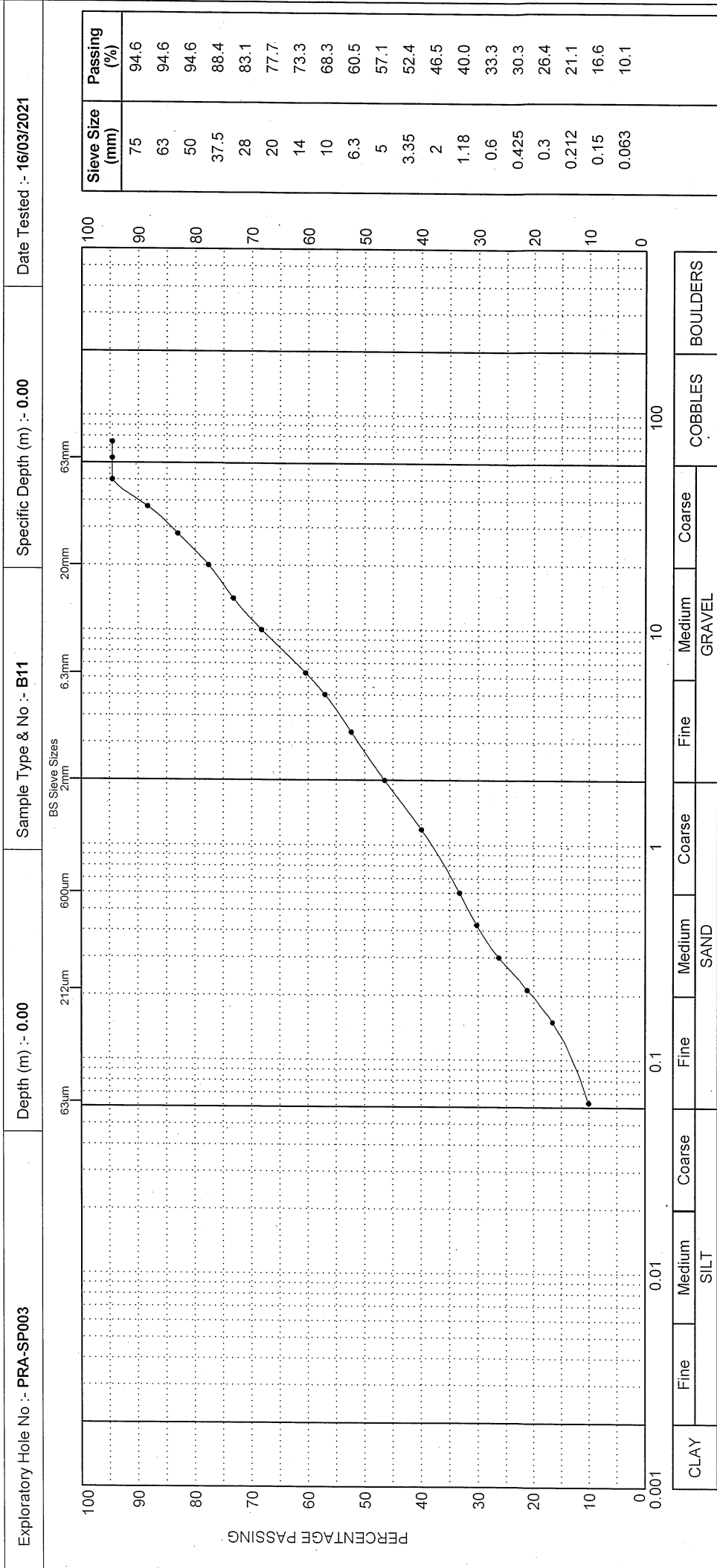
For description of sample please refer to the Laboratory Sample Description Sheet

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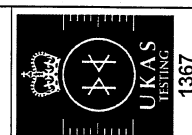
## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990



For description of sample please refer to the Laboratory Sample Description Sheet

<b>Date of issue :-</b> 26/03/2021	<b>Certificate No :-</b> PSD/SLS1223/PRA-SP003/B11/0.00	<b>Signed :-</b> <i>Mason</i>	<b>Name :-</b> Prairie Phase 1 - Redcar
<b>Client :-</b> Seymour Civil Engineering		<b>Contract Title :-</b> Prairie Phase 1 - Redcar	
<b>Page 1 of 1</b>		<b>AEG Contract No :-</b> SLS1223	

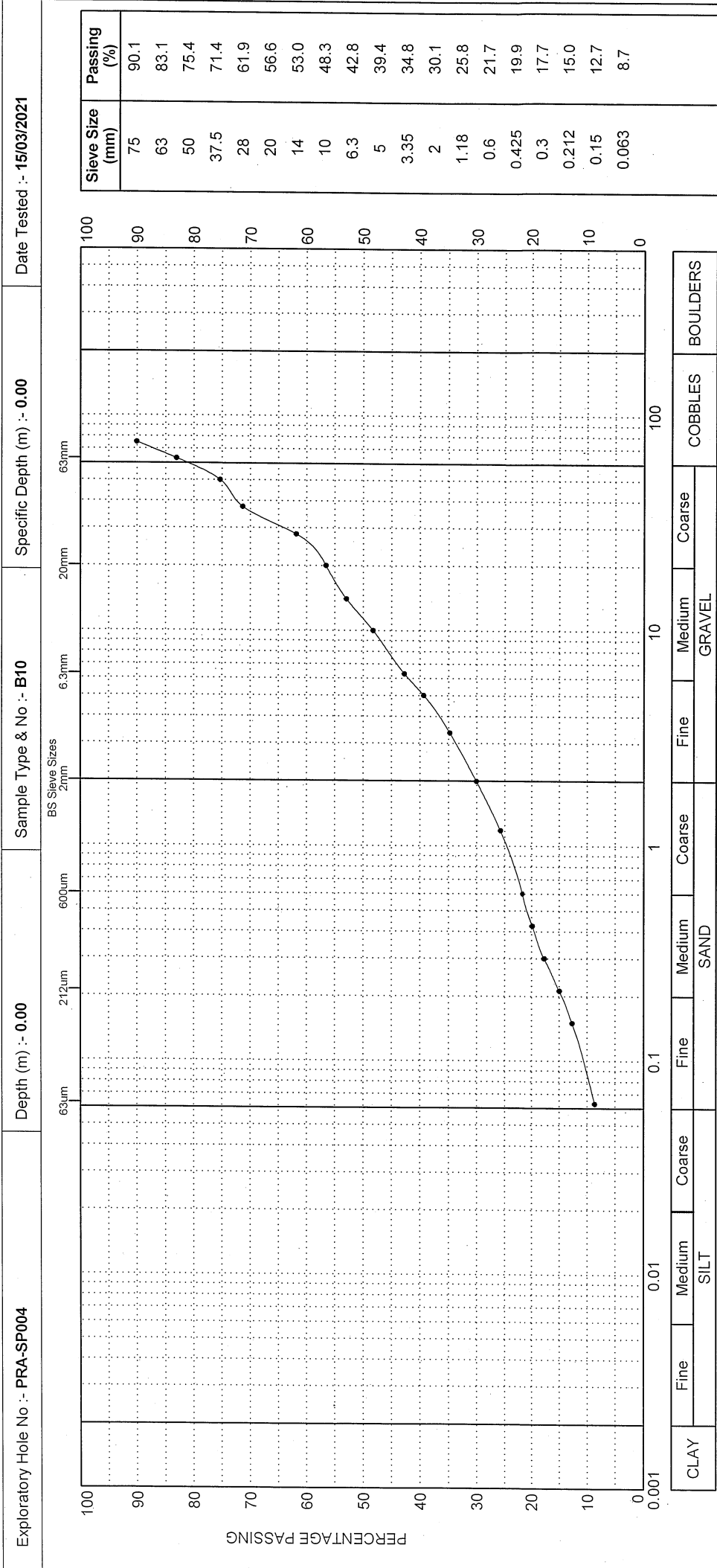


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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990  
(Test deviated from standard due to insufficient sample mass)



For description of sample please refer to the Laboratory Sample Description Sheet



Date of issue :- 26/03/2021

Certificate No :- PSD/SLS1223/PRA-SP004/B10/0.00

Signed :- *M. Sore* Name :-

Page 1 of 1

Client :-

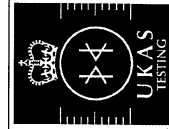
Seymour Civil Engineering

Contract Title :-

Prairie Phase 1 - Redcar

AEG Contract No :-

SLS1223



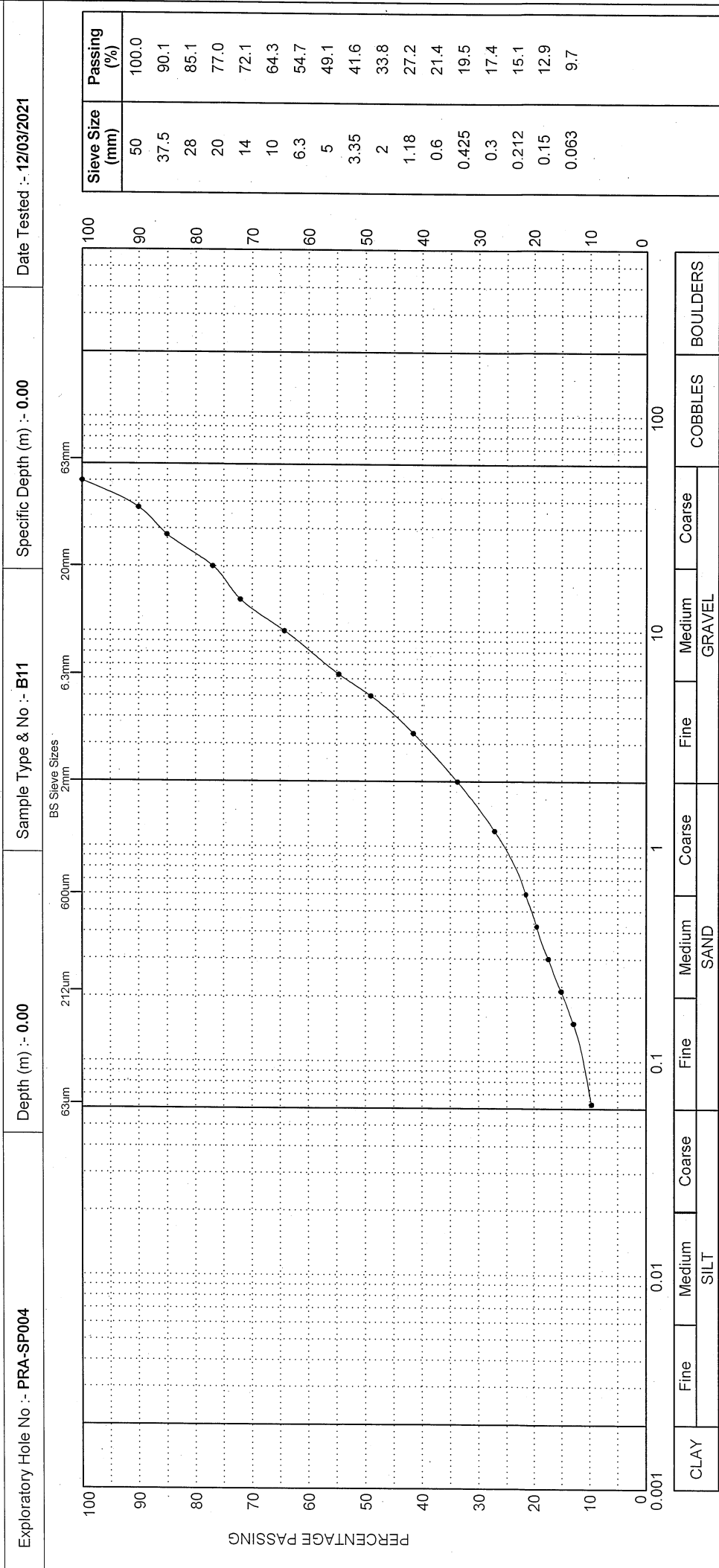


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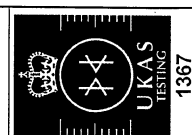
## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990  
(Test deviated from standard due to insufficient sample mass)



For description of sample please refer to the Laboratory Sample Description Sheet

	Date of issue :- 26/03/2021	Certificate No :- PSD/SLS1223/PRA-SP004/B11/0.00	Signed :- <i>Mason</i>	Name :-	Page 1 of 1
	Client :- Seymour Civil Engineering	Contract Title :- Prairie Phase 1 - Redcar	AEG Contract No :- SLS1223		

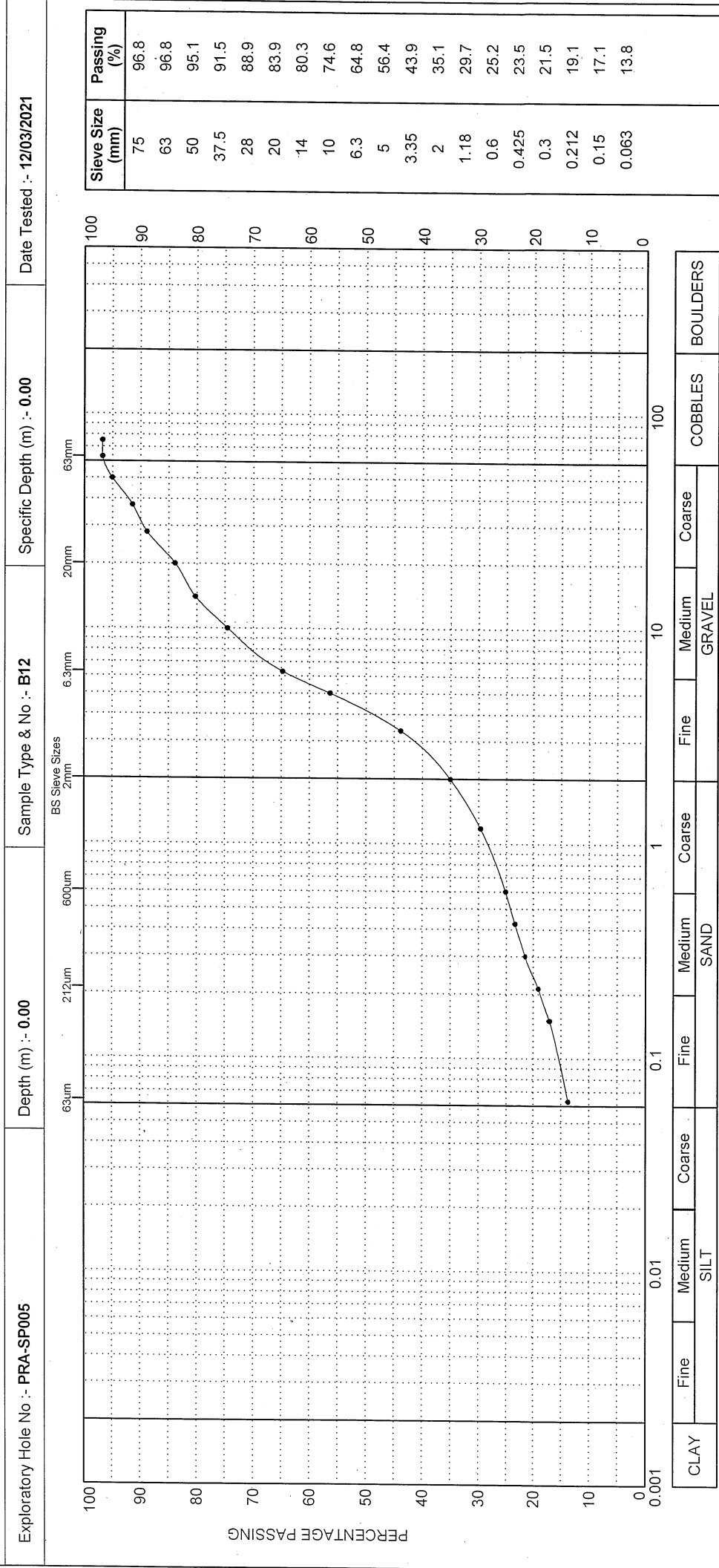


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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990



For description of sample please refer to the Laboratory Sample Description Sheet

Date of issue :- 26/03/2021	Certificate No :- PSD/SLS1223/PRA-SP005/B12/0.00	Signed :- <i>msone</i>	Name :-
Client :- Seymour Civil Engineering		Contract Title :- Prairie Phase 1 - Redcar	

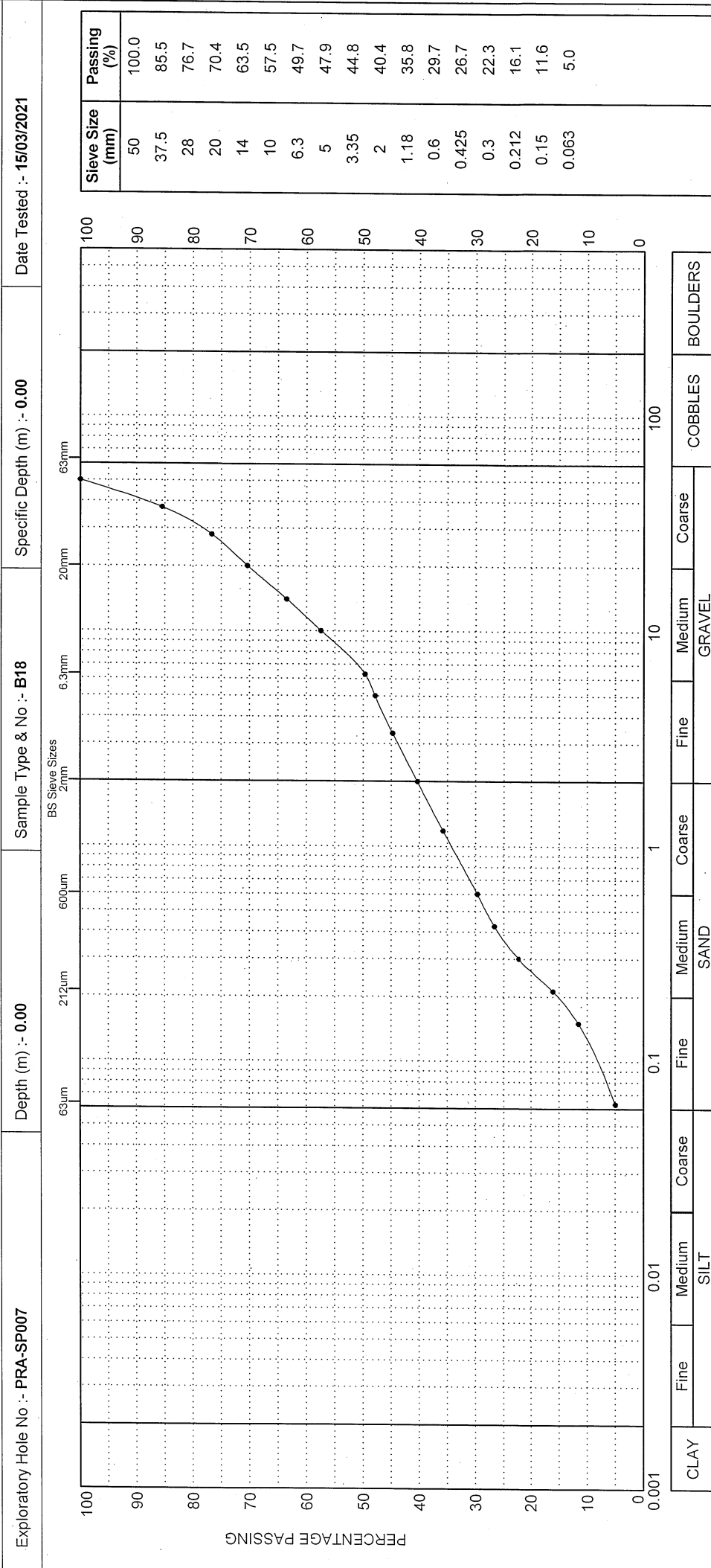
Page 1 of 1  
AEG Contract No :- SLS1223

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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990  
(Test deviated from standard due to insufficient sample mass)



For description of sample please refer to the Laboratory Sample Description Sheet

<b>Date of issue :-</b> 26/03/2021	<b>Certificate No :-</b> PSD/SLS1223/PRA-SP007/B18/0.00	<b>Signed :-</b> <i>M. Sene</i>	<b>Name :-</b> M. Sene
<b>Client :-</b> Seymour Civil Engineering		<b>Contract Title :-</b> Prairie Phase 1 - Redcar	
<b>Page 1 of 1</b>		<b>AEG Contract No :-</b> SLS1223	

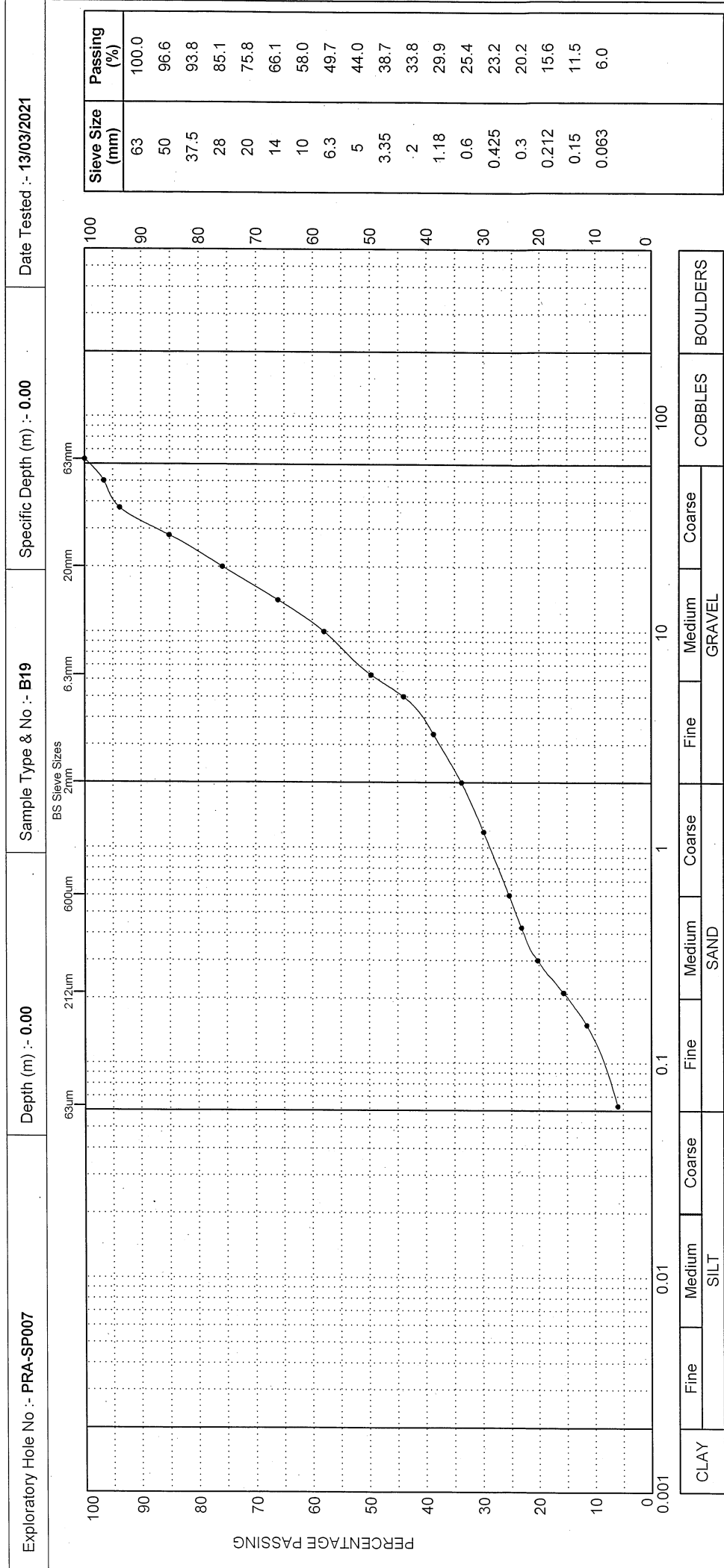


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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990



For description of sample please refer to the Laboratory Sample Description Sheet

<b>Client :-</b> Seymour Civil Engineering	<b>Contract Title :-</b> Prairie Phase 1 - Redcar	<b>Signed :-</b> <i>M. Sore</i>	<b>Name :-</b>
<b>Date of issue :-</b> 26/03/2021	<b>Certificate No :-</b> PSD/SLS1223/PRA-SP007/B19/0.00	<b>Page 1 of 1</b>	
		<b>AEG Contract No :-</b> SLS1223	

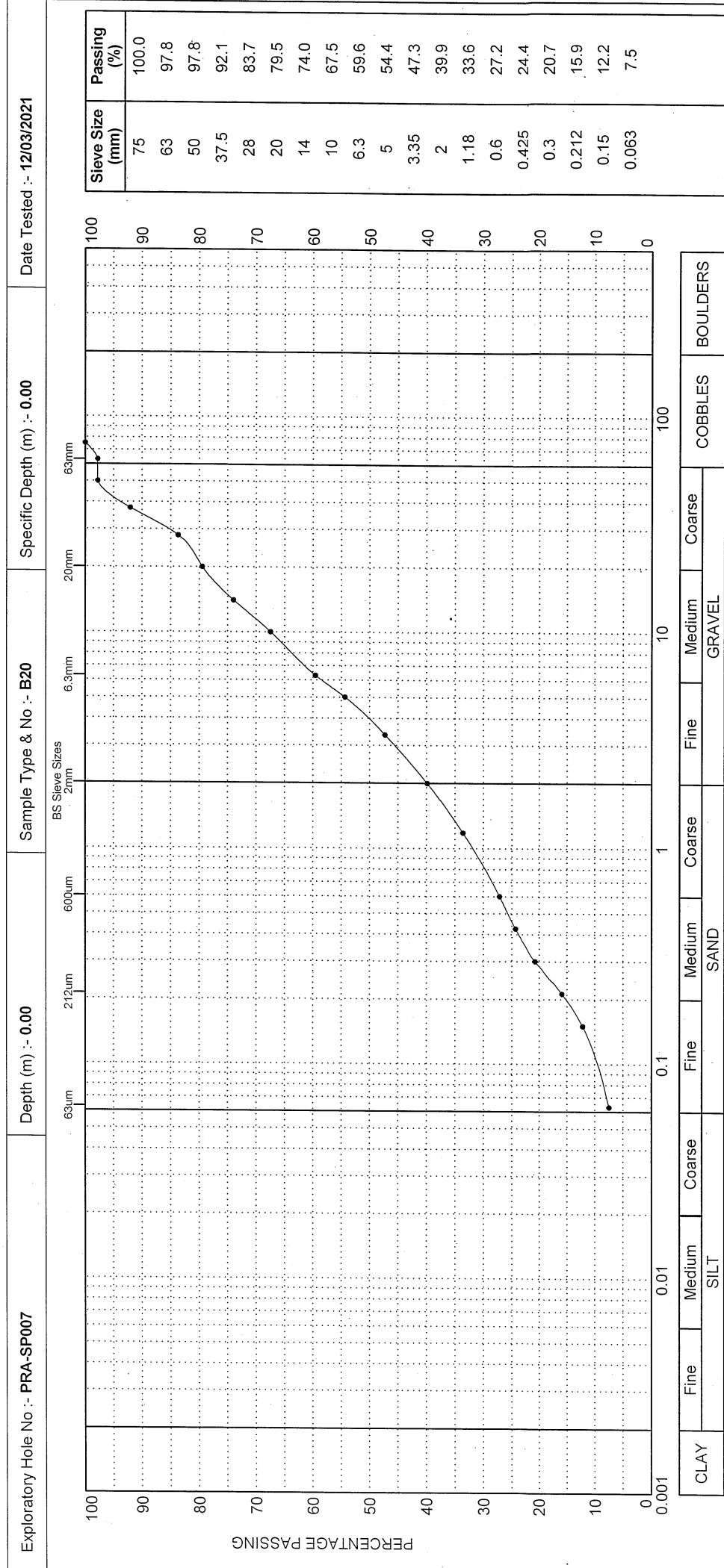


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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990



For description of sample please refer to the Laboratory Sample Description Sheet

Date of issue :- 26/03/2021	Certificate No :- PSD/SLS1223/PRA-SP007/B20/0.00	Signed :- <i>Mason</i>	Name :-
Client :- Seymour Civil Engineering	Contract Title :- Prairie Phase 1 - Redcar	Page 1 of 1	
		AEG Contract No :- SLS1223	

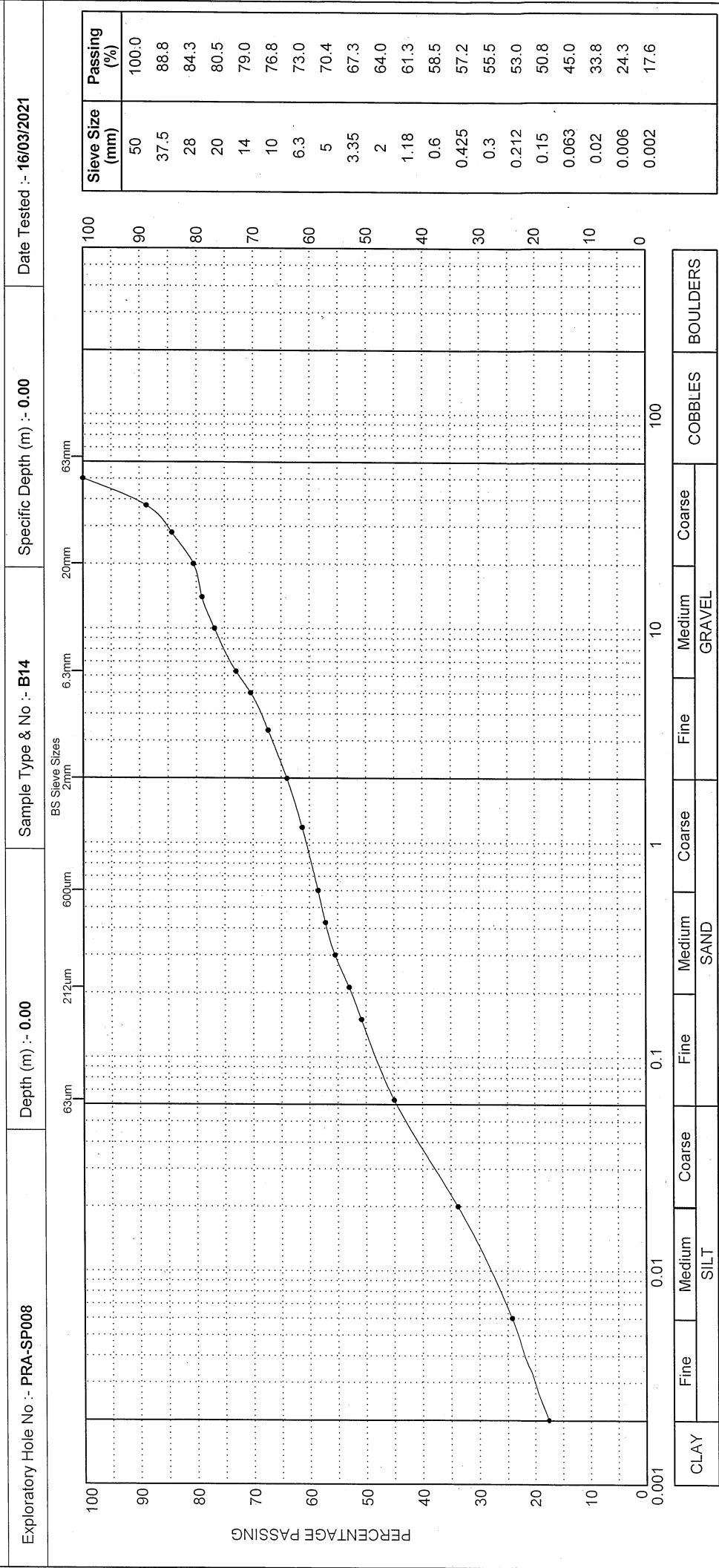


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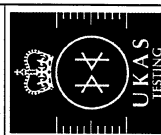
## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990



For description of sample please refer to the Laboratory Sample Description Sheet

Date of issue :- 26/03/2021	Certificate No :- PSD/SLS1223/PRA-SP008/B14/0.00	Signed :- <i>MSE</i>	Name :-
Client :- Seymour Civil Engineering	Contract Title :- Prairie Phase 1 - Redcar	Page 1 of 1 AEG Contract No :- SLS1223	



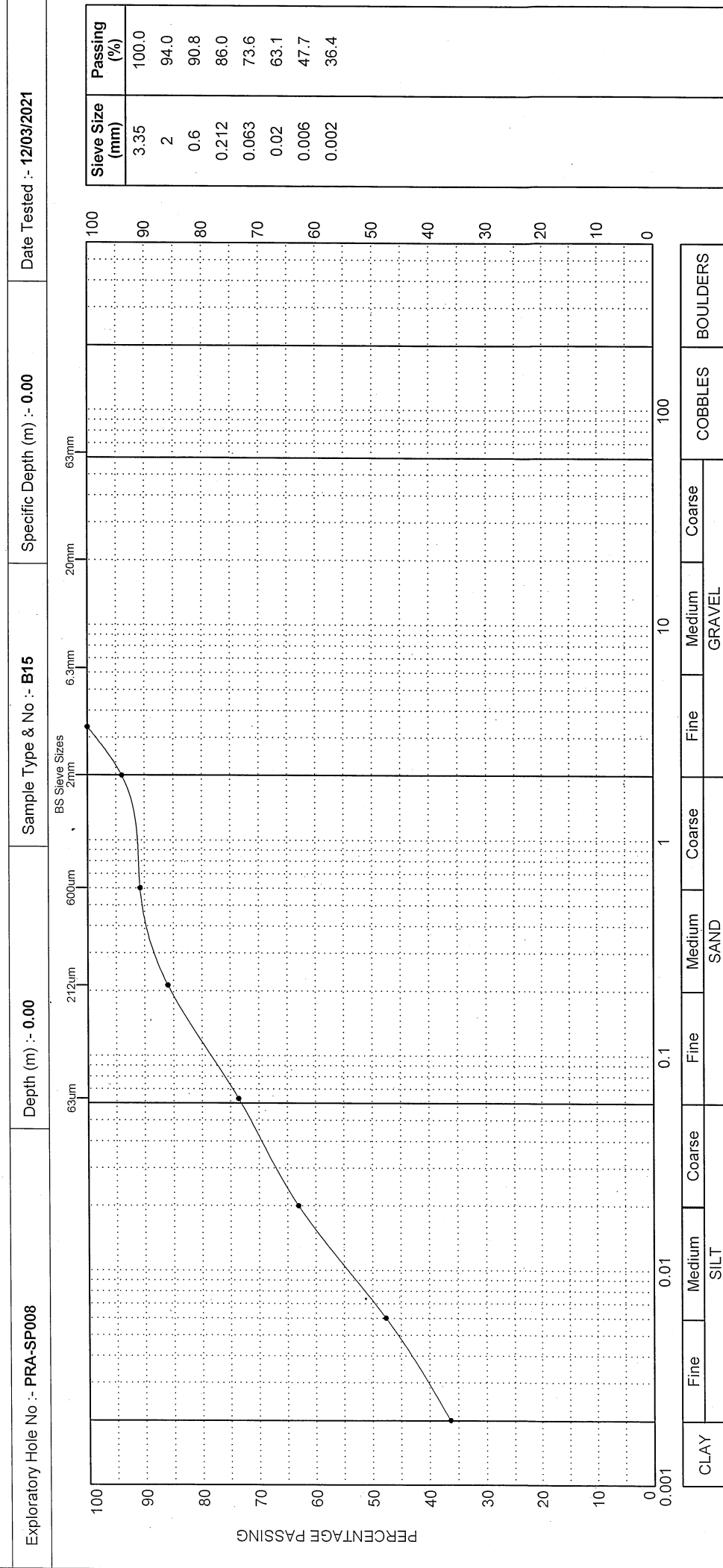
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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990



For description of sample please refer to the Laboratory Sample Description Sheet

<b>Date of issue :-</b> 26/03/2021	<b>Certificate No :-</b> PSD/SLS1223/PRA-SP008/B15/0.00	<b>Signed :-</b> <i>M.S. Rao</i>	<b>Name :-</b> 
<b>Client :-</b> Seymour Civil Engineering	<b>Contract Title :-</b> Prairie Phase 1 - Redcar		
<b>Page 1 of 1</b>		<b>AEG Contract No :-</b> SLS1223	



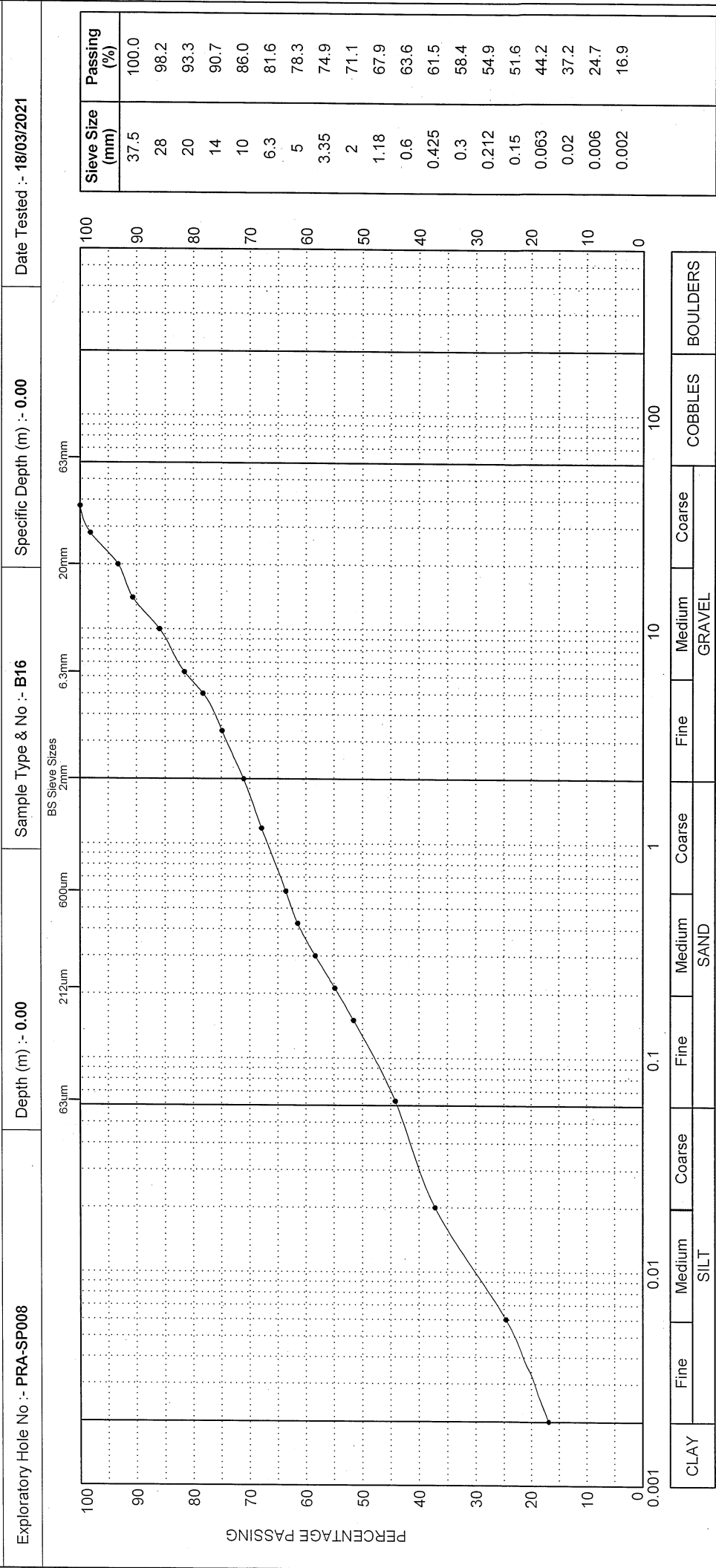
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 Regional Office: Unit 20, Business Development Centre, Eanan Wharf, Blackburn, BB1 5BL - Tel: 01772 735 300 Fax: 01772 735 999

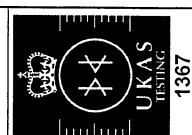
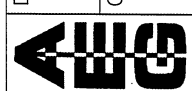
## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990



For description of sample please refer to the Laboratory Sample Description Sheet

<b>Date of issue :-</b> 26/03/2021	<b>Certificate No :-</b> PSD/SLS1223/PRA-SP008/B16/0.00	<b>Signed :-</b> <i>M802</i>	<b>Name :-</b> M802
<b>Client :-</b> Seymour Civil Engineering		<b>Contract Title :-</b> Prairie Phase 1 - Redcar	
<b>Page 1 of 1</b>		<b>AEG Contract No :-</b> SLS1223	



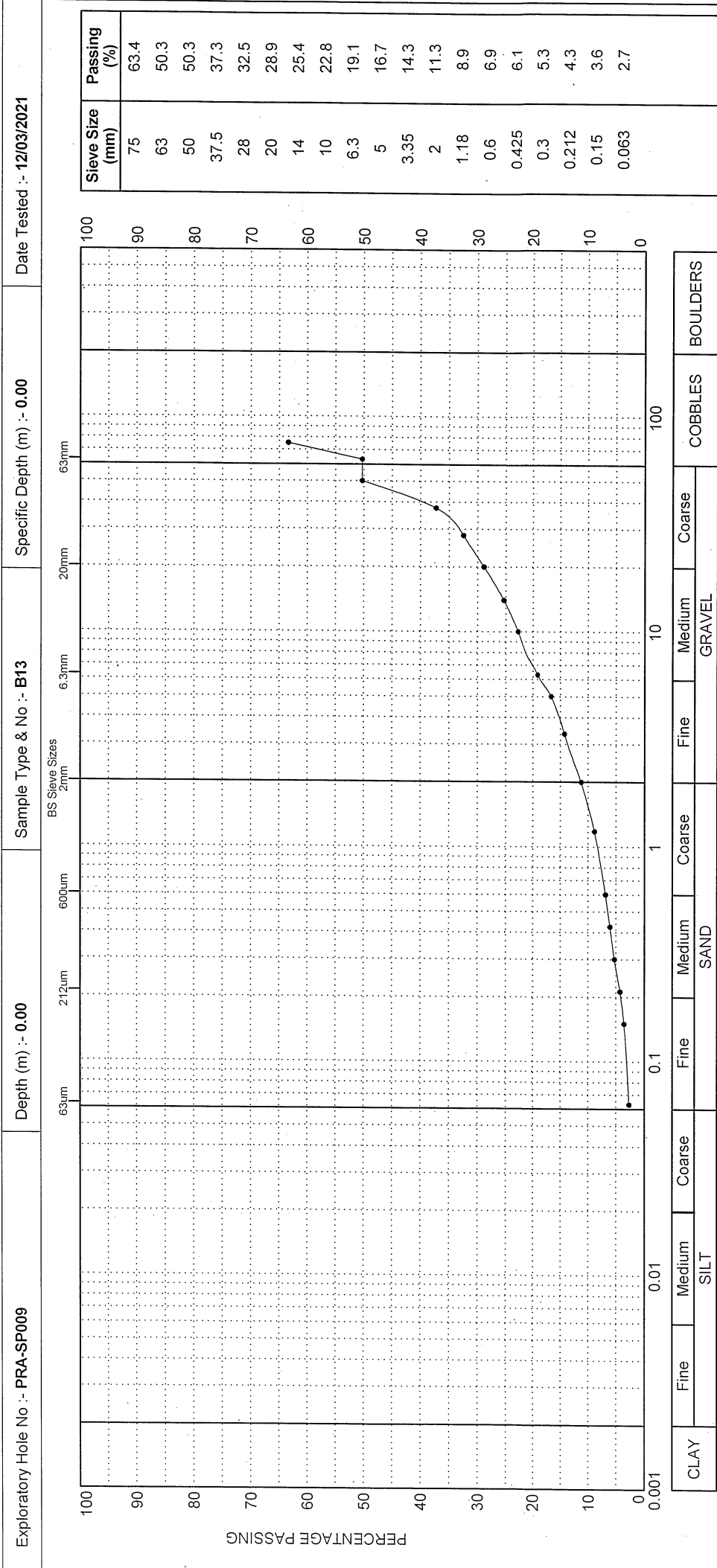


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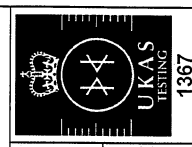
## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990  
(Test deviated from standard due to insufficient sample mass)



For description of sample please refer to the Laboratory Sample Description Sheet

	Date of issue :- 26/03/2021	Certificate No :- PSD/SLS1223/PRA-SP009/B13/0.00	Signed :- <i>msone</i>	Name :- msone	Page 1 of 1
	Client :- Seymour Civil Engineering	Contract Title :- Prairie Phase 1 - Redcar	AEG Contract No :- SLS1223		

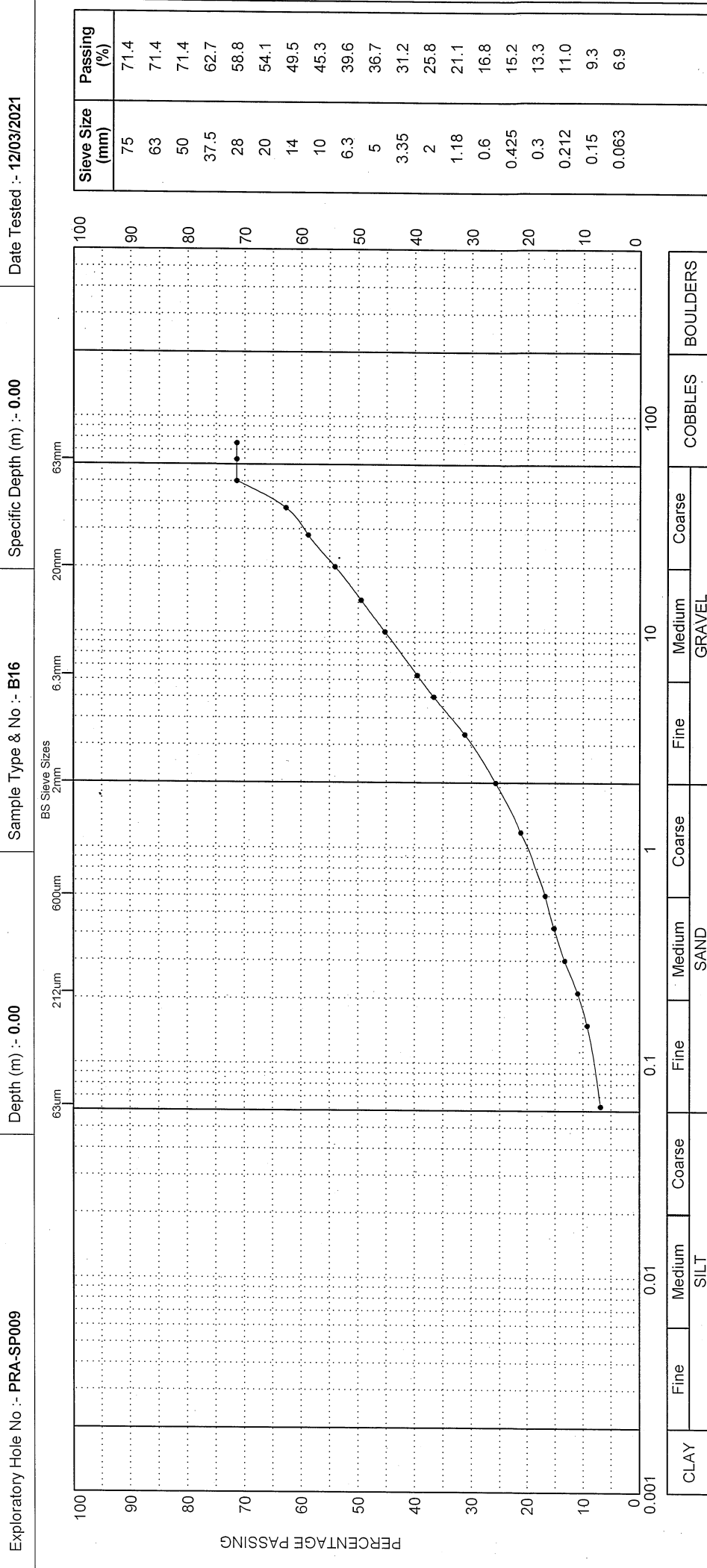


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## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990  
(Test deviated from standard due to insufficient sample mass)



For description of sample please refer to the Laboratory Sample Description Sheet

<b>DATE</b>	Date of issue :- 26/03/2021	<b>SIGNED</b>	Signed :- <i>Mason</i>
<b>CERTIFICATE NO</b>	Certificate No :- PSD/SLS1223/PRA-SP009/B16/0.00	<b>NAME</b>	Name :-
<b>CLIENT</b>	Seymour Civil Engineering	<b>CONTRACT TITLE</b>	Contract Title :- Prairie Phase 1 - Redcar
<b>CONTRACT NO</b>	AEG Contract No :- SLS1223	<b>PAGE</b>	Page 1 of 1

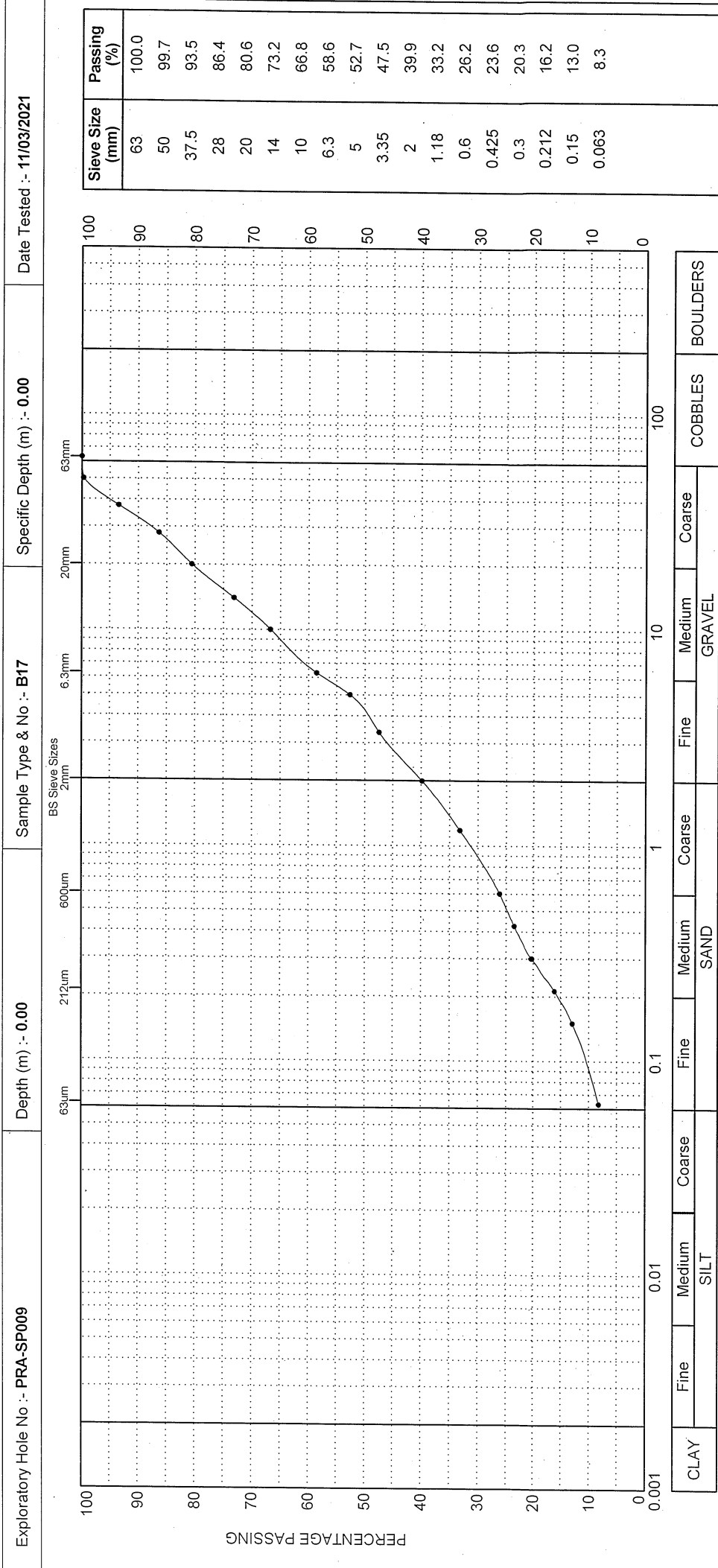


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Regional Office: Unit 20, Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL. Tel: 01772 735 300 Fax: 01772 735 959

## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990



For description of sample please refer to the Laboratory Sample Description Sheet



Date of issue :- 26/03/2021

Certificate No :- PSD/SLS1223/PRA-SP009/B17/0.00

Signed :- *MSO*

Page 1 of 1

Client :-

Seymour Civil Engineering

Contract Title :-

Prairie Phase 1 - Redcar

AEG Contract No :-

SLS1223

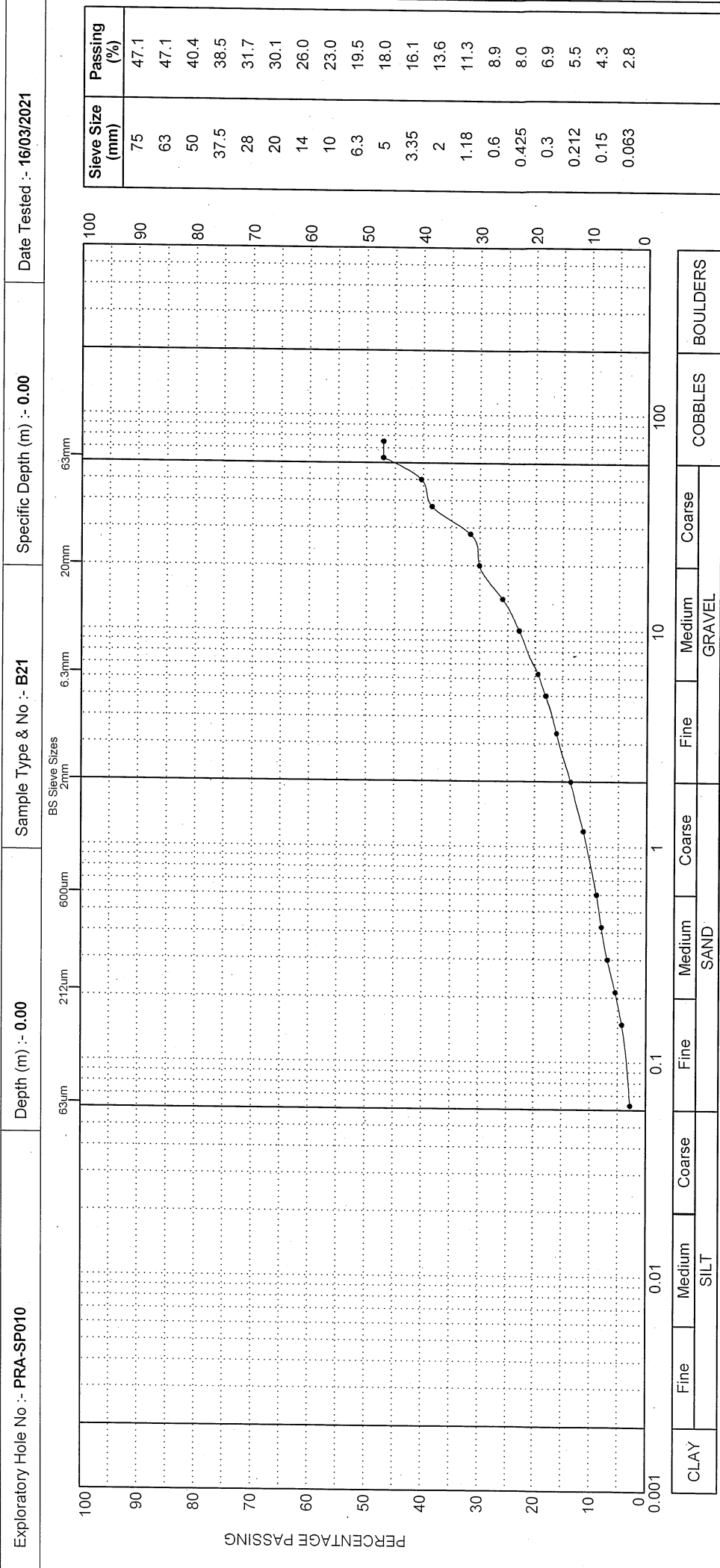


# ALLIED EXPLORATION & GEOTECHNICS LIMITED

Head Office: Unit 25 Stella Cill Industrial Estate, Pellon Fell, Chesicle-Street, Co. Durham, DH2 2EG - 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

## PARTICLE SIZE DISTRIBUTION

BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990  
 (Test deviated from standard due to insufficient sample mass)



For description of sample please refer to the Laboratory Sample Description Sheet

Date of issue :- 26/03/2021	Certificate No :- PSD/SLS1223/PRA-SP010/B21/0.00	Signed :- <i>M. Sore</i>	Name :- AEG
Client :- Seymour Civil Engineering		Contract Title :- Prairie Phase 1 - Redcar	

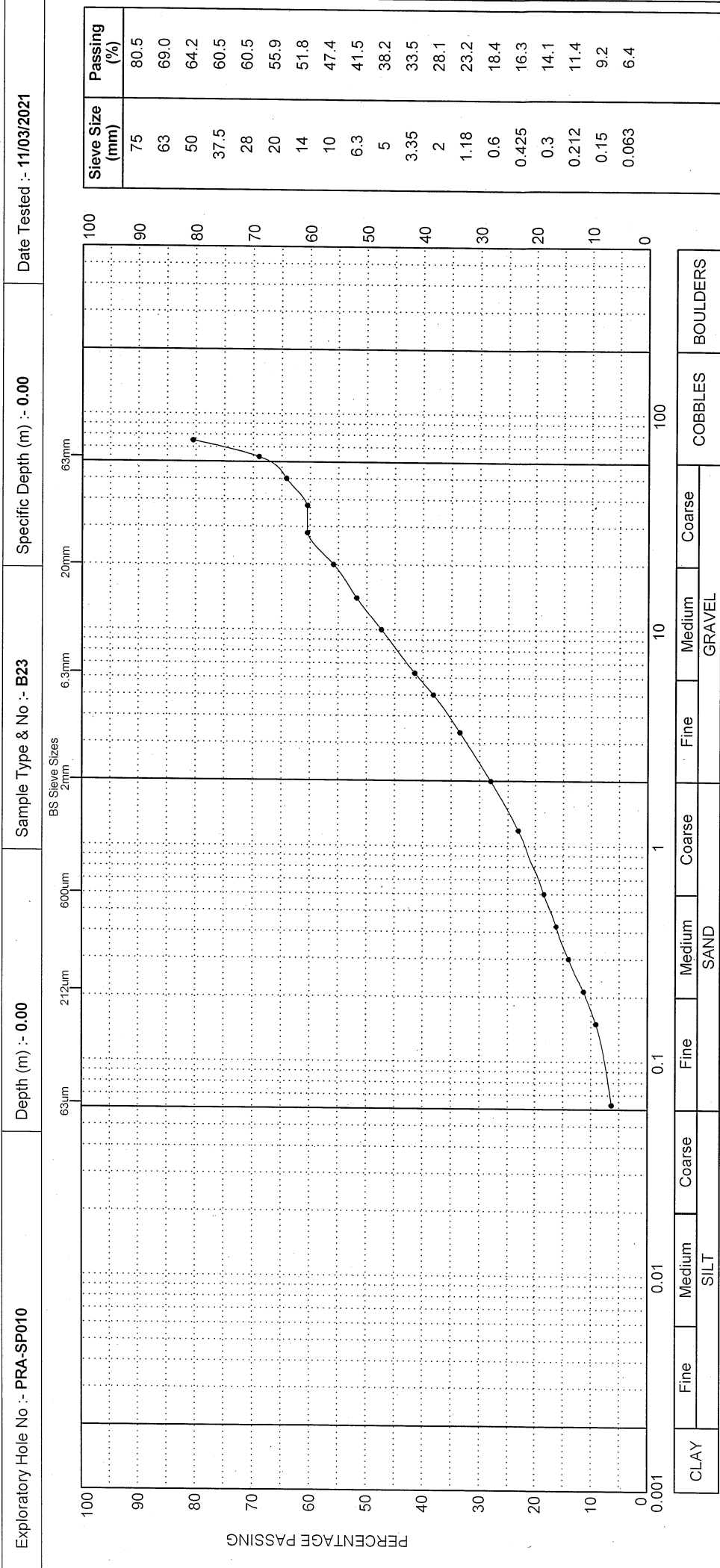
Page 1 of 1  
AEG Contract No :- SLS1223  
1367

# 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 367 4710  
Regional Office: Unit 20, Business Development Centre, Eanam Wharf, Blackburn, BB1 5BL. Tel: 01772 735 300 Fax: 01772 735 999

## PARTICLE SIZE DISTRIBUTION

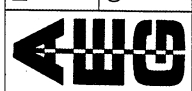
BS1377 : Part 2 : Clause 9.2 & 9.4 : 1990  
(Test deviated from standard due to insufficient sample mass)

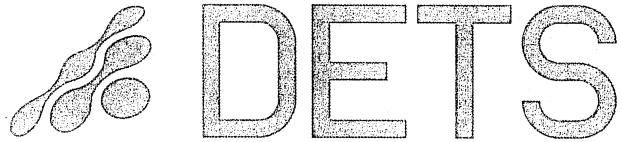


For description of sample please refer to the Laboratory Sample Description Sheet

Date of issue :- 26/03/2021	Certificate No :- PSD/SLS1223/PRA-SP010/B23/0.00	Signed :- <i>M. Sero</i>	Name :-
Client :- Seymour Civil Engineering	Contract Title :- Prairie Phase 1 - Redcar	AEG Contract No :- SLS1223	

Page 1 of 1





## Certificate of Analysis

*Certificate Number* 21-05616

*Issued:* 23-Mar-21

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

*Our Reference* 21-05616

*Client Reference* SLS1223

*Order No* LA2466

*Contract Title* Prairie Phase 1 - Redcar

*Description* One Soil sample.

*Date Received* 17-Mar-21

*Date Started* 17-Mar-21

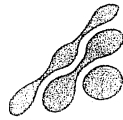
*Date Completed* 23-Mar-21

*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



# DETS

## Summary of Chemical Analysis

### Soil Samples

Our Ref 21-05616

Client Ref SLS1223

Contract Title Prairie Phase 1 - Redcar

Lab No	1818245
Sample ID	PRA-BC027
Depth	6.60
Other ID	5
Sample Type	J
Sampling Date	n/s
Sampling Time	n/s

Test	Method	LOD	Units	
<b>Inorganics</b>				
pH	DETSC 2008#		pH	8.6
Organic matter	DETSC 2002#	0.1	%	1.2
Sulphate Aqueous Extract as SO <sub>4</sub>	DETSC 2076#	10	mg/l	110

## Information in Support of the Analytical Results

Our Ref 21-05616  
 Client Ref SLS1223  
 Contract Prairie Phase 1 - Redcar

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1818245	PRA-BC027 6.60 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Organic Matter (Manual) (28 days), pH + Conductivity (7 days)	

Key: P-Plastic 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

End of Report



## DETERMINATION OF THE CALIFORNIA BEARING RATIO

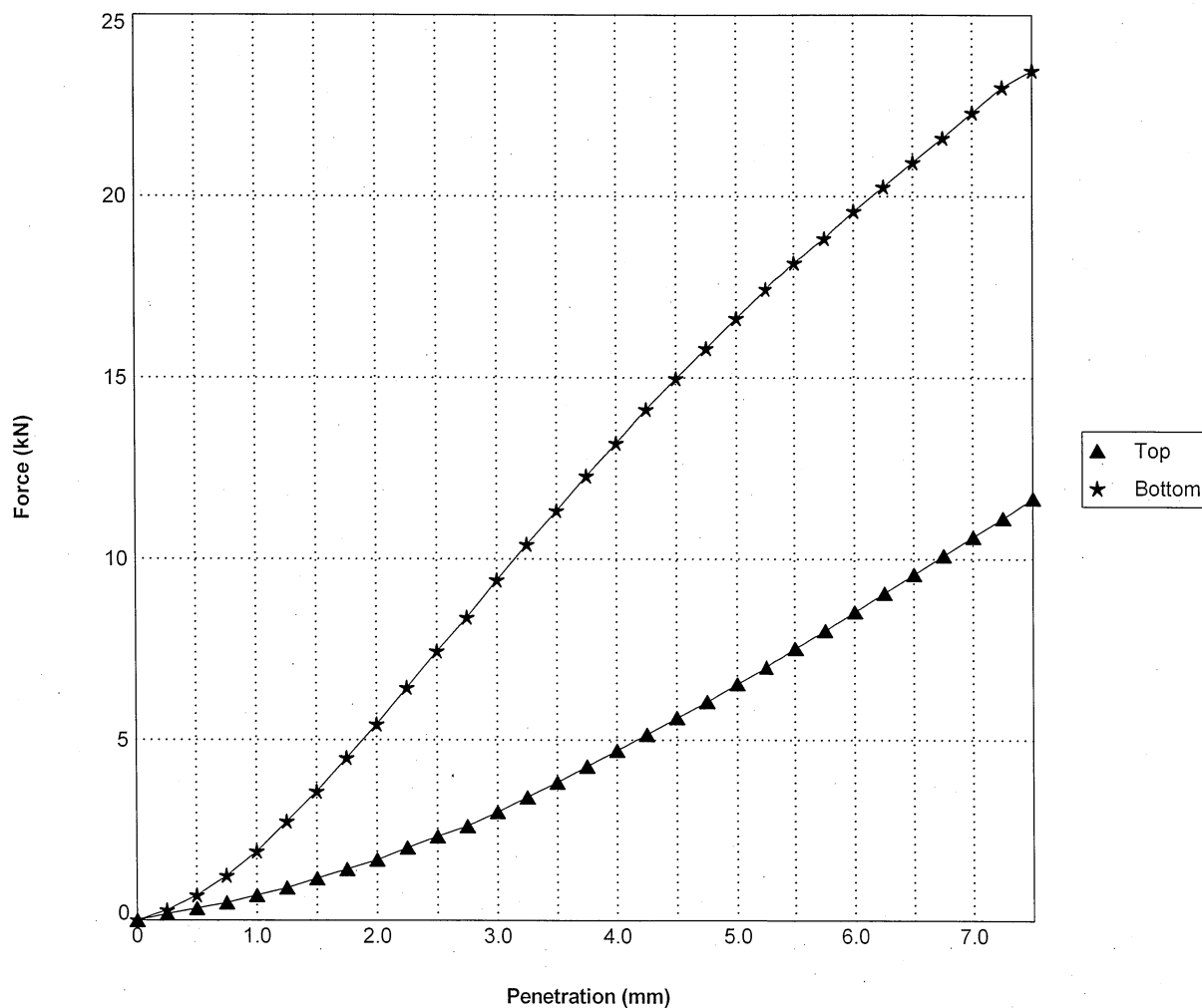
BS 1377 : Part 4 : 1990 and Part 2 : Clause 3.2 : 1990

Exploratory Hole No.- **PRA-SP003**

Sample No.- **B11**

Depth (m)- **0.00**

"As Received" Moisture Content (%) :		Surcharge (Kg) :	6
Retained on 20mm (%) :	22.0	Seating Load (N) :	Top 250 / Bottom 250
Correction Needed :	No	Test Moisture Content (%) :	Top 14 / Bottom 14
Soaking Time (Days) :	N/A	Bulk Density (Mg/m <sup>3</sup> ) :	2.25
Swelling (mm) :	N/A	Dry Density (Mg/m <sup>3</sup> ) :	1.98
Date Tested :	16/03/2021	CBR Value (%) :	Top 33 / Bottom 83
Preparation Method :	4.5kg Compaction		
Remarks :			



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

**Prairie Phase 1 - Redcar**

Client :-

**Seymour Civil Engineering**



Signed :-

*msene*

Name :-

*[Signature]*

Page 1 of 1

Date of issue :-

26/03/2021

Certificate No :-

CBR/SLS1223/PRA-SP003/B11/0.00/1

AEG Contract No. :-

**SLS1223**



# 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

## DETERMINATION OF THE CALIFORNIA BEARING RATIO

BS 1377 : Part 4 : 1990 and Part 2 : Clause 3.2 : 1990

Exploratory Hole No.- PRA-SP008

Sample No.- B14

Depth (m)- 0.00

"As Received" Moisture Content (%) :

Surcharge (Kg) : 6

Retained on 20mm (%) :

19.0

Seating Load (N) :

Top 10 / Bottom 10

Correction Needed :

No

Test Moisture Content (%) : Top 19 / Bottom 17

Soaking Time (Days) :

N/A

Bulk Density (Mg/m<sup>3</sup>) : 2.11

Swelling (mm) :

N/A

Dry Density (Mg/m<sup>3</sup>) : 1.79

Date Tested :

16/03/2021

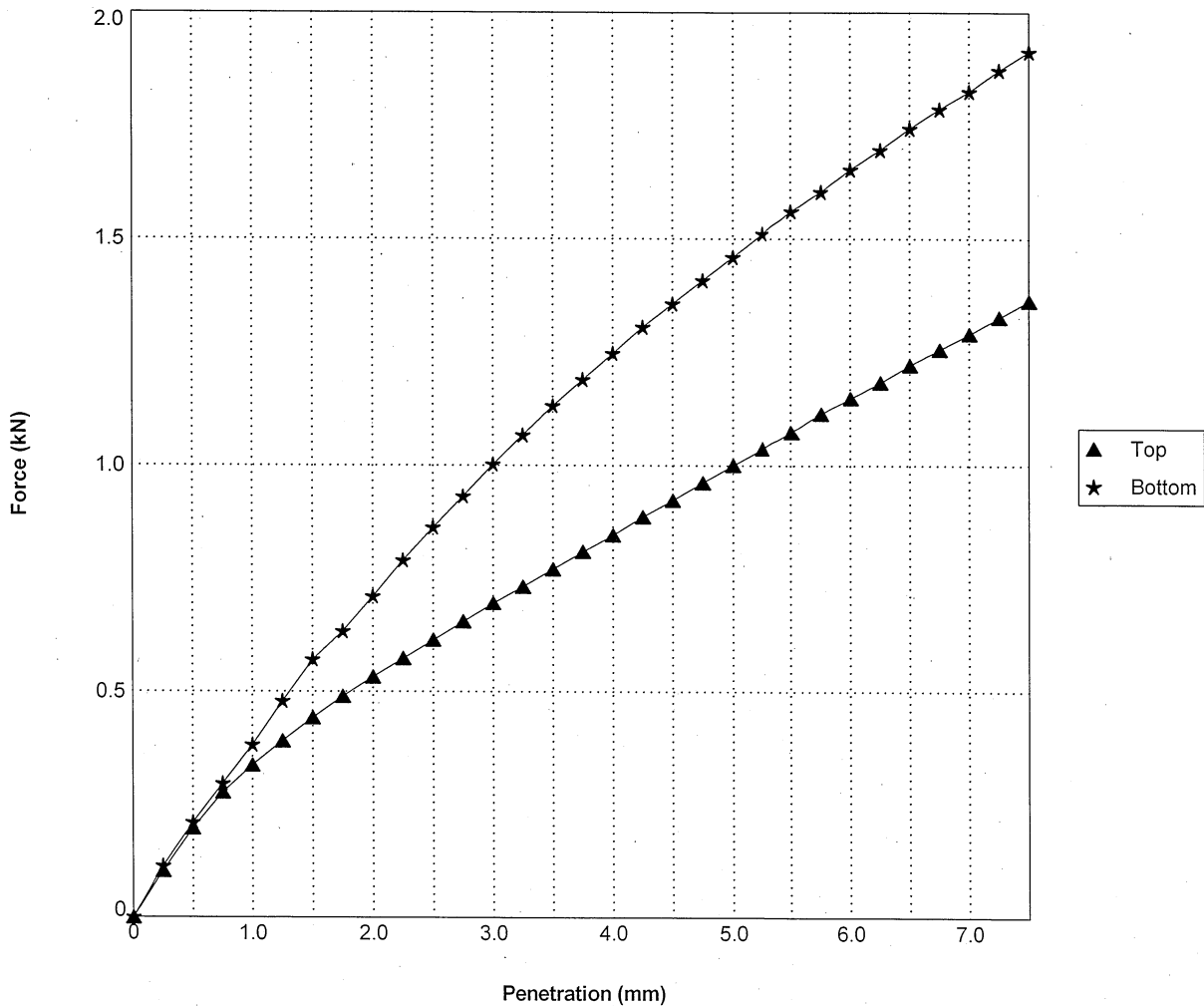
CBR Value (%) :

Top 5.0 / Bottom 7.3

Preparation Method :

4.5kg Compaction

Remarks :



For description of sample please refer to the Laboratory Sample Description Sheet

Contract Title :-

Prairie Phase 1 - Redcar

Client :-

Seymour Civil Engineering



Signed :-

*msere*

Name :-

Page 1 of 1

Date of issue :-

26/03/2021

Certificate No :-

CBR/SLS1223/PRA-SP008/B14/0.00/1

AEG Contract No. :-

**SLS1223**



1367





**ALLIED EXPLORATION & GEOTECHNICS LIMITED**

Unit 25 Stella Gill Industrial Estate , Pelton Fell  
 Chester-le-Street , Co Durham DH2 2RG  
 a UKAS Testing Laboratory No.1367



**MOISTURE CONDITION VALUE (BS 1377:PART4:1990 CLAUSE 5)**

No. 1367

**SITE:** Prairie Phase 1 - Redcar

**JOB No:** SLS1223

**CLIENT:** Seymour Civil Engineering

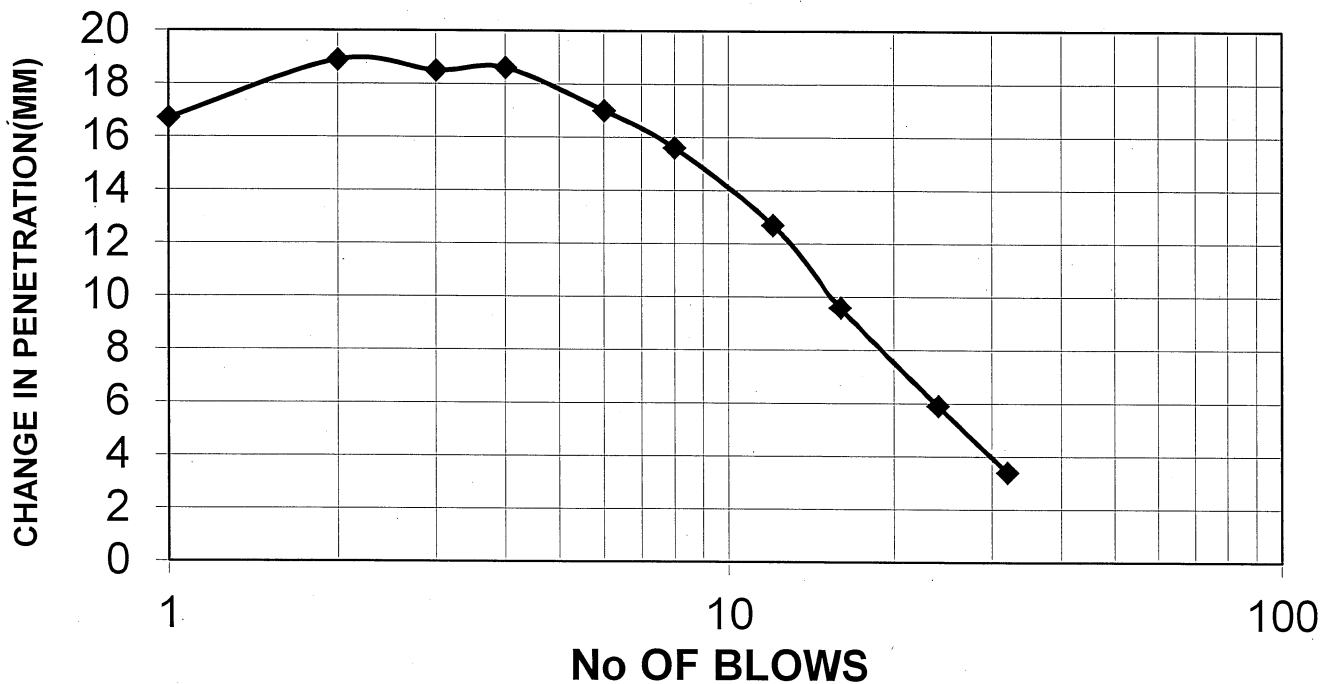
**Depth:** 0.00m

**Sample No:** PRA-SP008 B16

**Specific Depth:** N/A

**For sample description please refer to sample description sheet.**

**CHANGE IN PENETRATION PLOT**



Sample	NAT
MCV	14.2
M.C.(%)	17
<b>MCV = 10 Log No. OF BLOWS @ 5MM PENETRATION</b>	

**Remarks:** 22.0% Retained on 20mm sieve

**DATE TESTED:** 13/03/2021

**DATE OF ISSUE:** 18/03/2021

**APPROVED BY:**

*msore*

**NAME:** Michelle Selkirk



## ALLIED EXPLORATION & GEOTECHNICS LIMITED

Unit 25 Stella Gill Industrial Estate , Pelton Fell

Chester-le-Street , Co Durham DH2 2RG

a UKAS Testing Laboratory No.1367

**MOISTURE CONDITION VALUE (BS 1377:PART4:1990 CLAUSE 5)**



No. 1367

**SITE:** Prairie Phase 1 - Redcar

**JOB No:** SLS1223

**CLIENT:** Seymour Civil Engineering

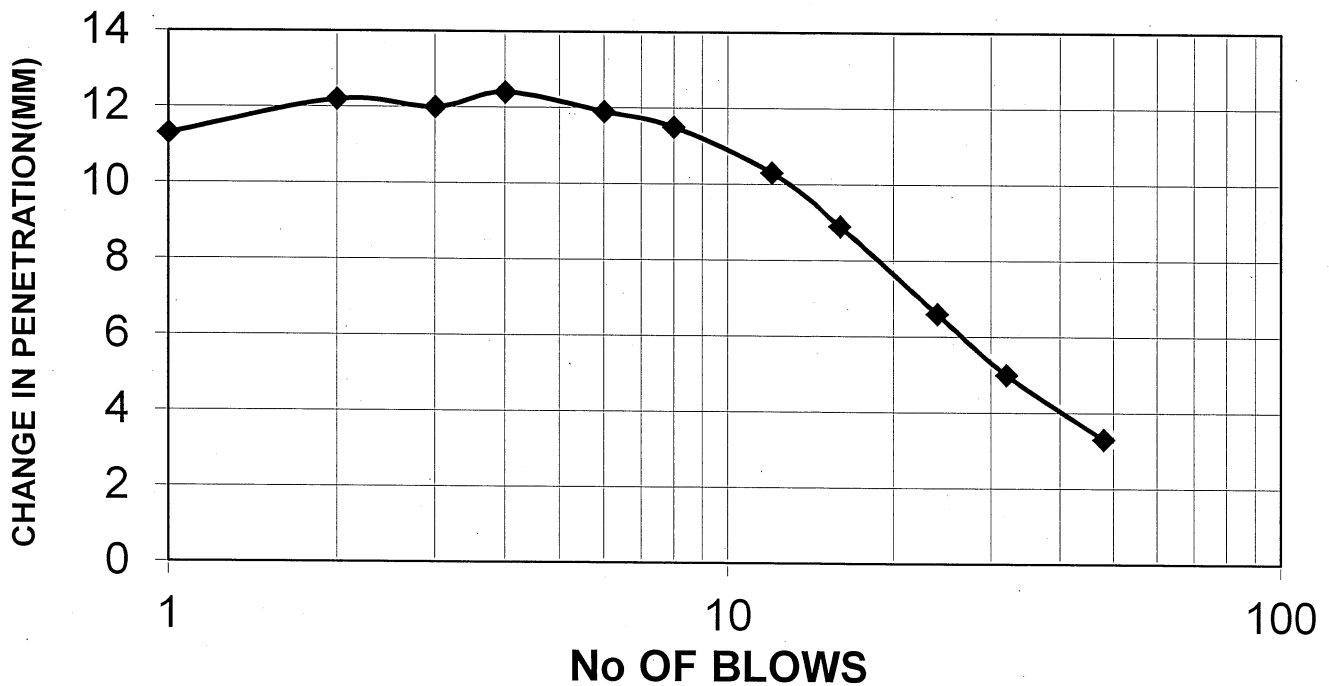
**Depth:** 0.00m

**Sample No:** PRA-SP009 B13

**Specific Depth:** N/A

For sample description please refer to sample description sheet.

### CHANGE IN PENETRATION PLOT



Sample	NAT
MCV	15
M.C.(%)	17
<b>MCV = 10 Log No. OF BLOWS @ 5MM PENETRATION</b>	

**Remarks:** 69.7% Retained on 20mm sieve

**DATE TESTED:** 13/03/2021

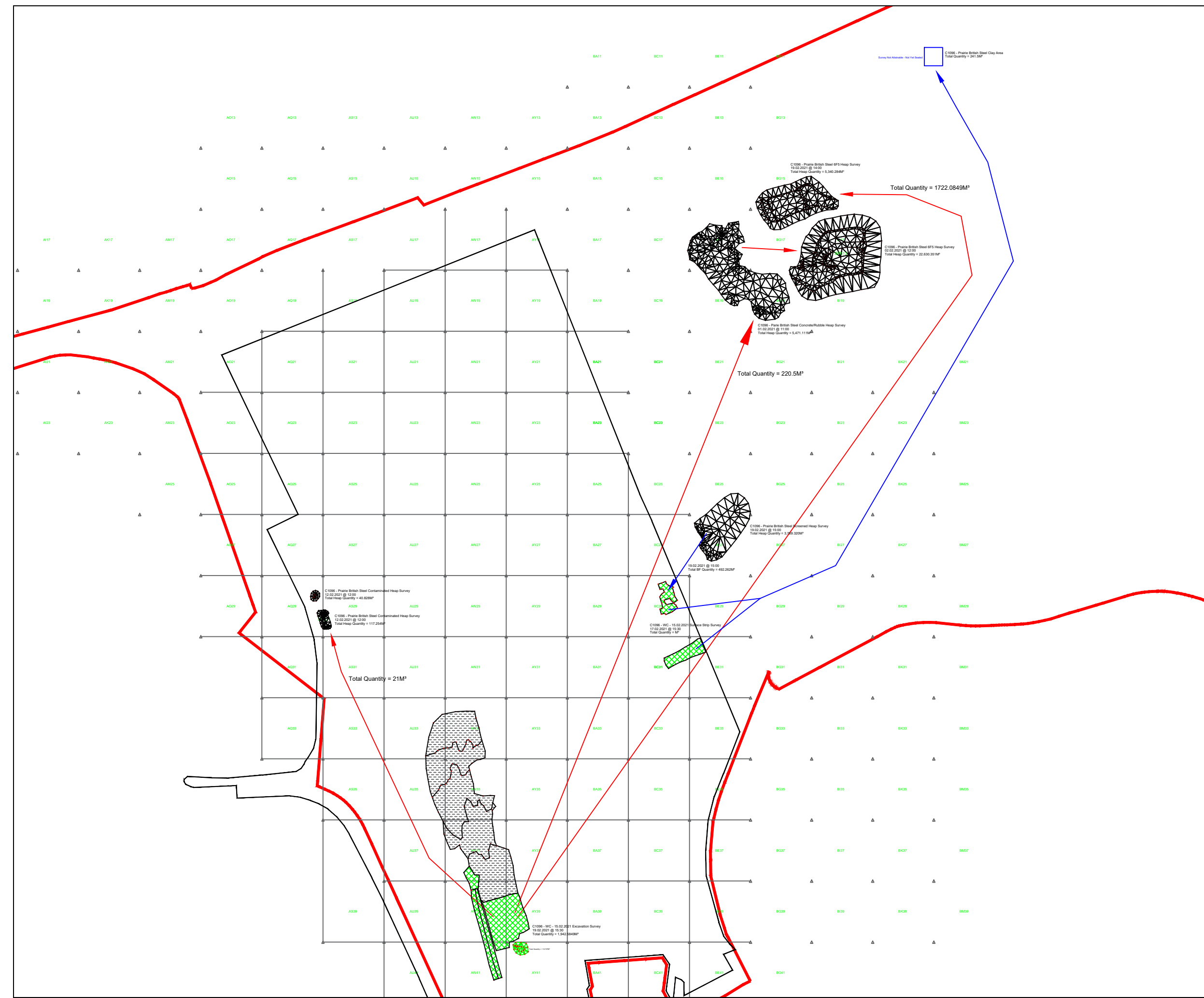
**DATE OF ISSUE:** 18/03/2021

**APPROVED BY:**

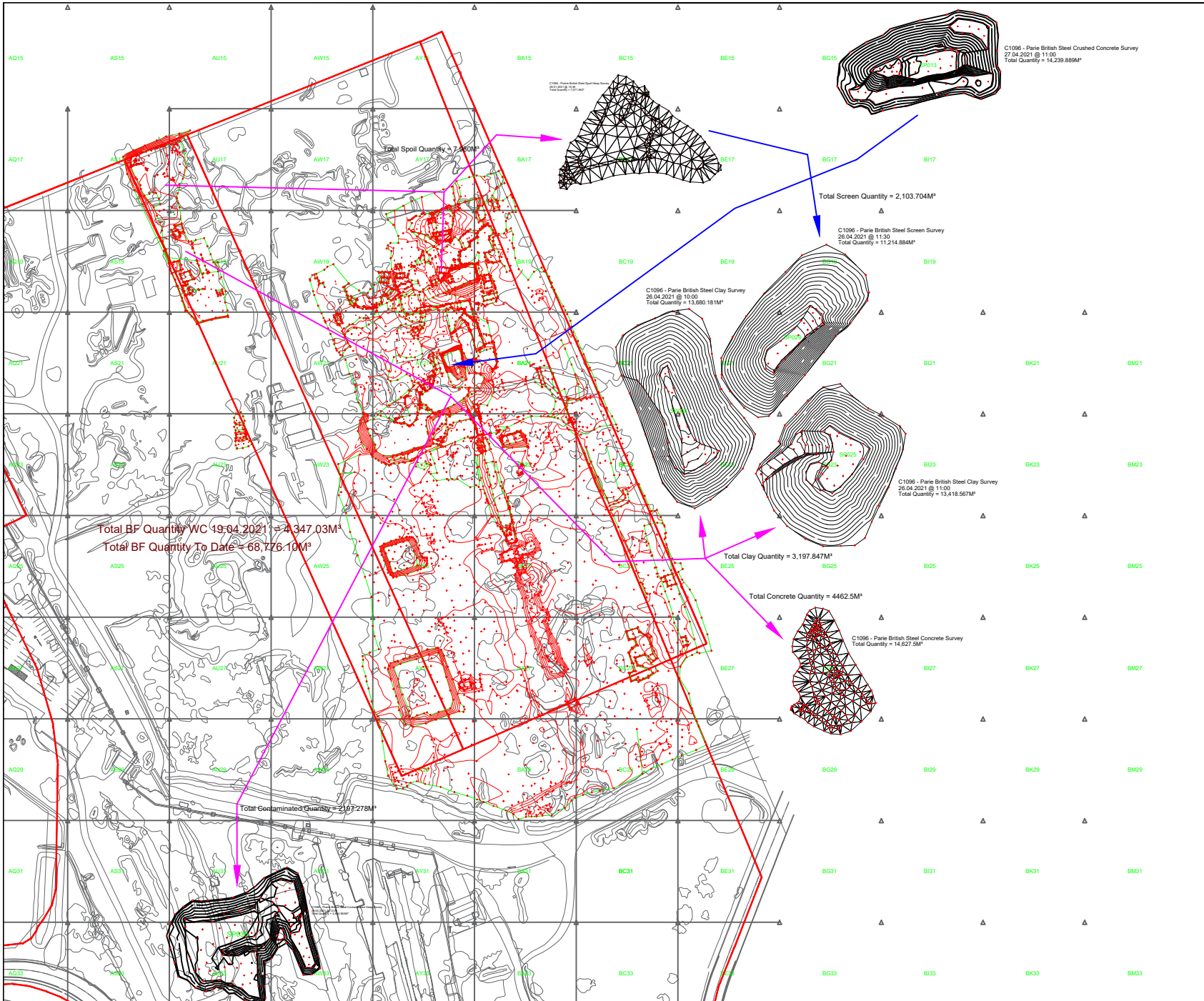
**NAME:** Michelle Selkirk

**APPENDIX G**

**Contractor Material Tracking Drawings**



Client STDC Teesside Management Office, Redcar, TS10 5QW
Project Title Prairie Enabling Work
Drawing Title SEY CEC Weekly Tracking Prairie Enabling Work Phase 1 WC 15.02.2021

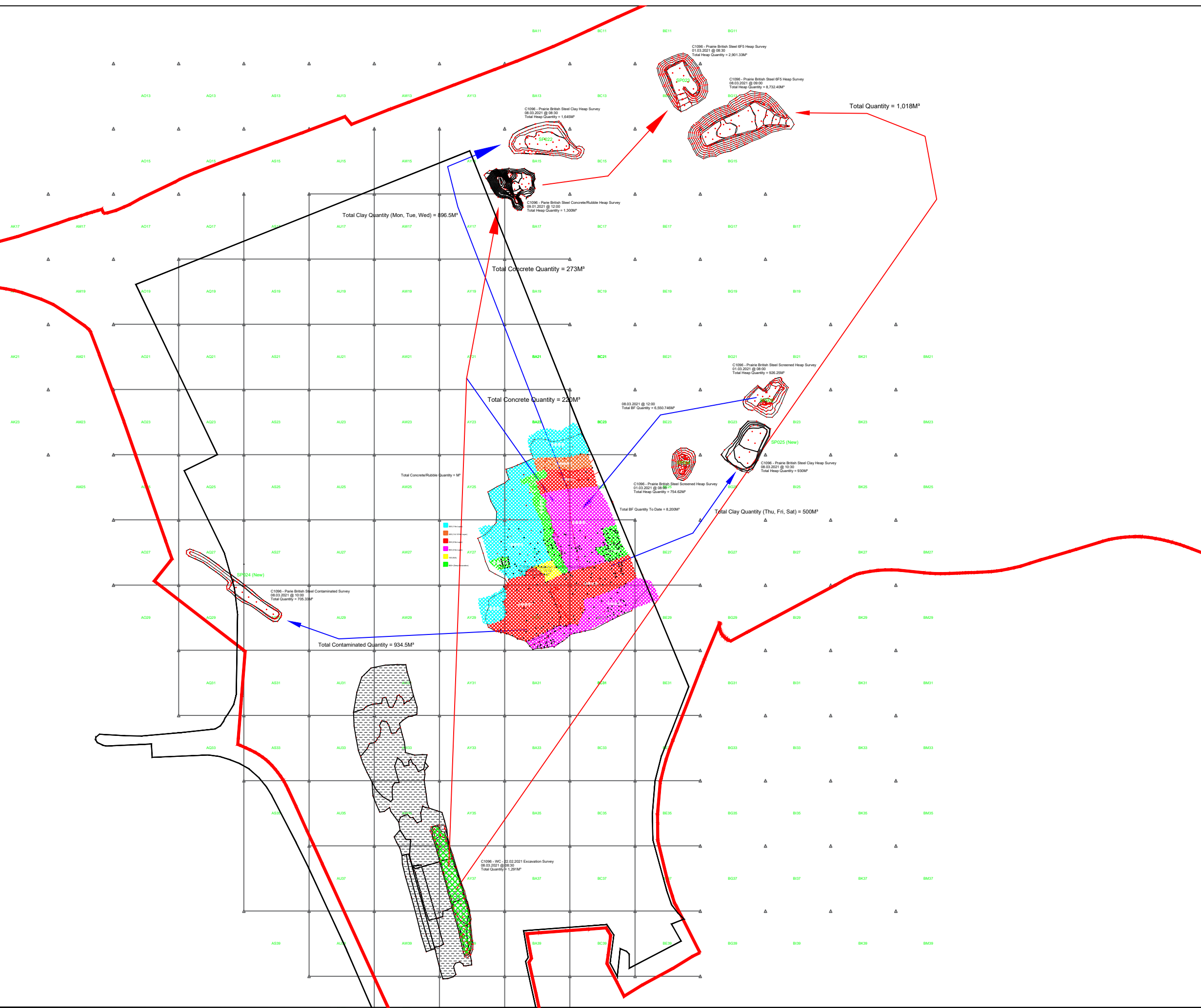


Client  
 STDC  
 Teesside Management  
 Office,  
 Redcar, TS10 5QW

Project Title  
 Prairie Enabling Work

Drawing Title  
 SEY CEC Weekly Tracking  
 Prairie Enabling Work  
 Phase 1  
 WC 19.04.2021

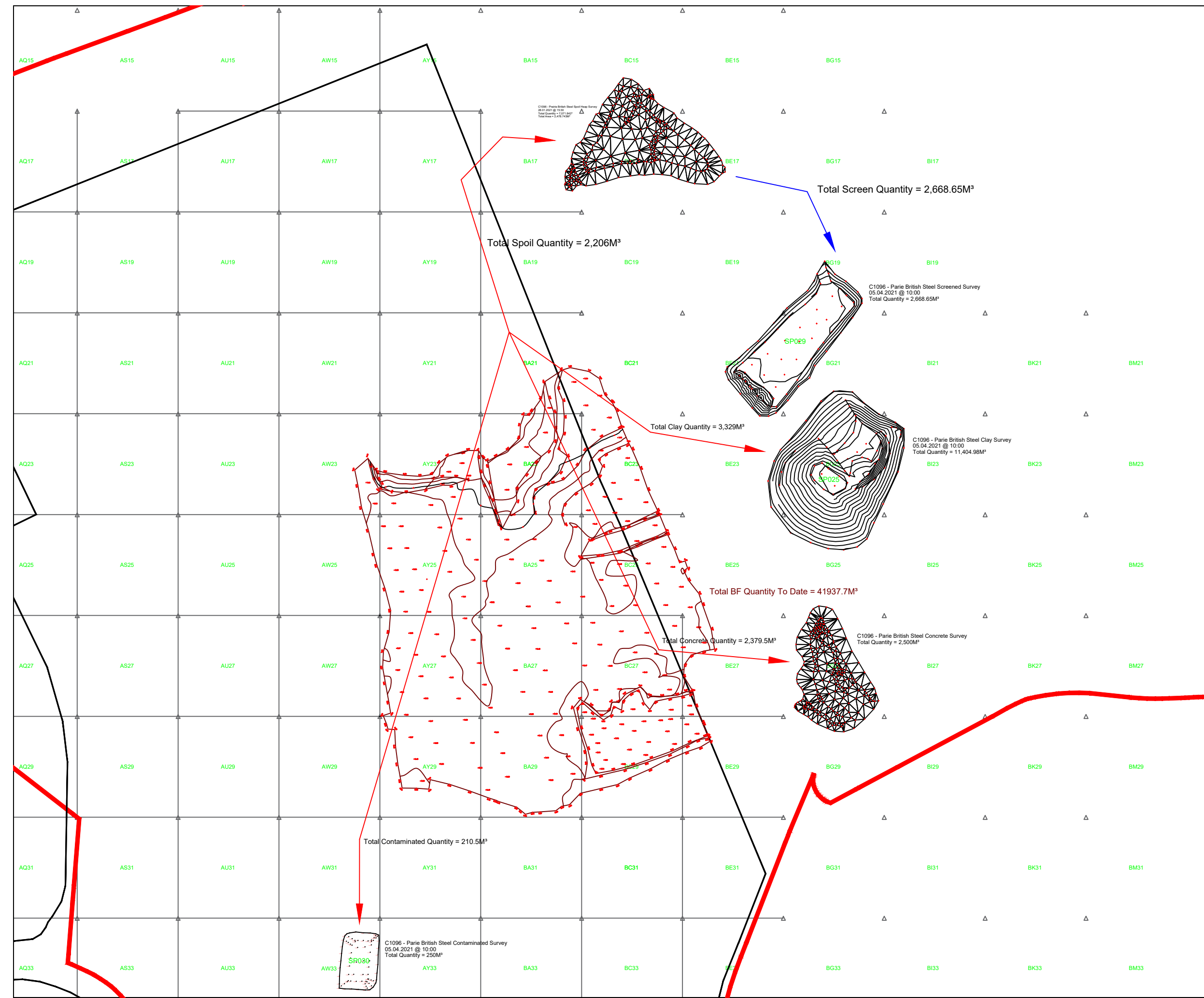




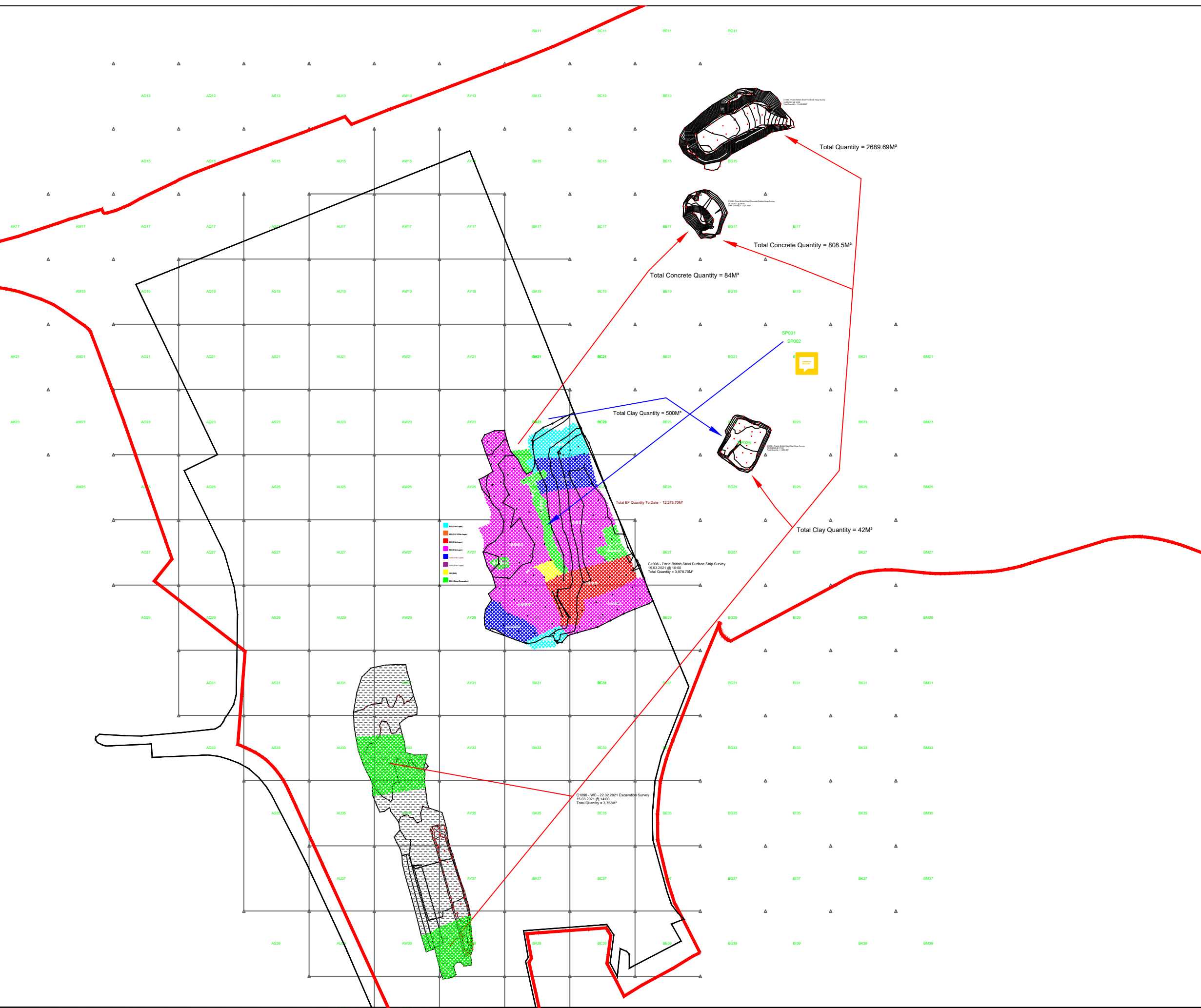
Client  
 STDC  
 Teesside Management  
 Office,  
 Redcar, TS10 5QW

Project Title  
 Prairie Enabling Work

Drawing Title  
 SEY CEC Weekly Tracking  
 Prairie Enabling Work  
 Phase 1  
 WC 01.03.2021



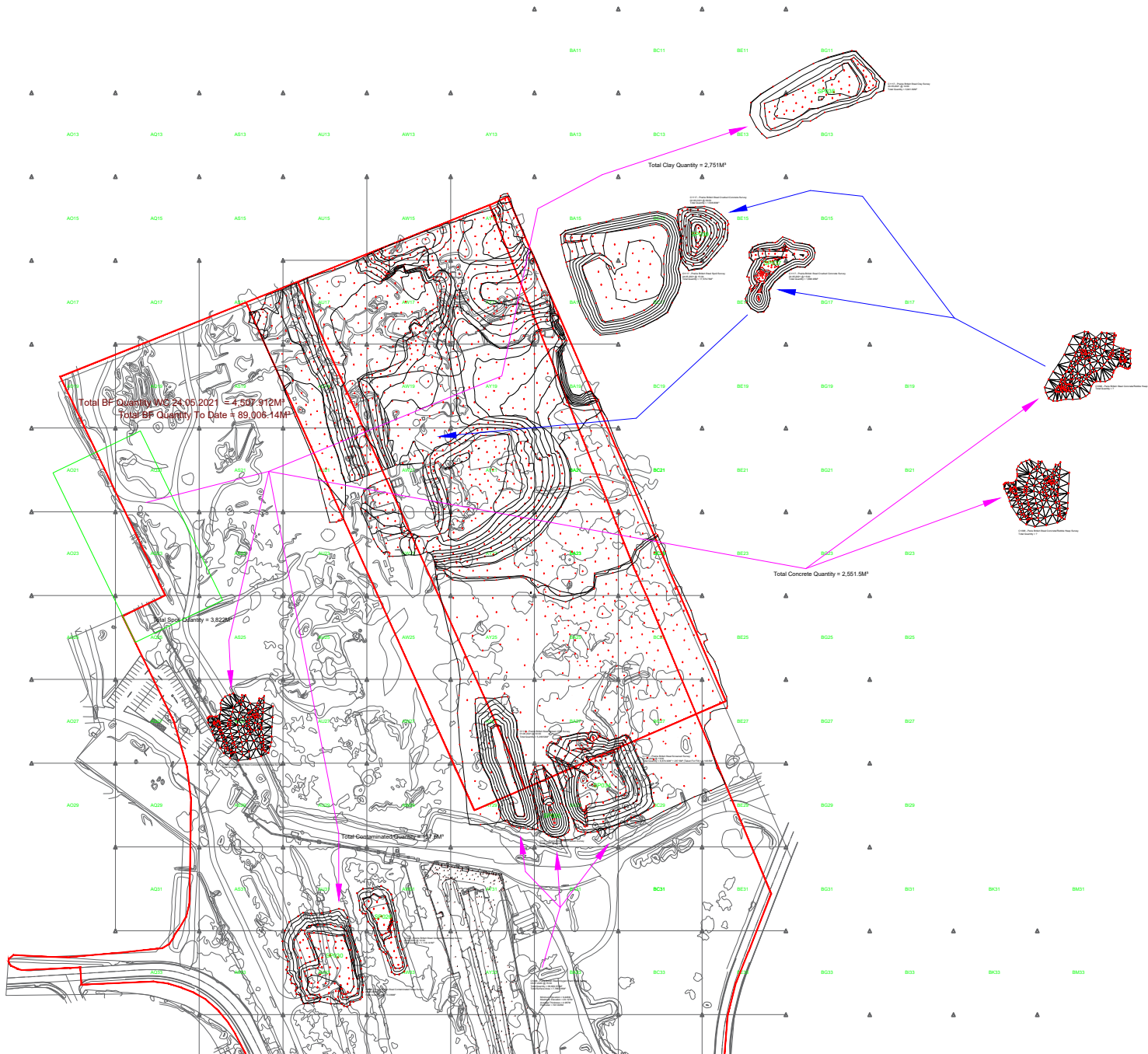
Client STDC Teesside Management Office, Redcar, TS10 5QW
Project Title Prairie Enabling Work
Drawing Title SEY CEC Weekly Tracking Prairie Enabling Work Phase 1 WC 29.03.2021



Client  
 STDC  
 Teesside Management  
 Office,  
 Redcar, TS10 5QW

Project Title  
 Prairie Enabling Work

Drawing Title  
 SEY CEC Weekly Tracking  
 Prairie Enabling Work  
 Phase 1  
 WC 08.03.2021

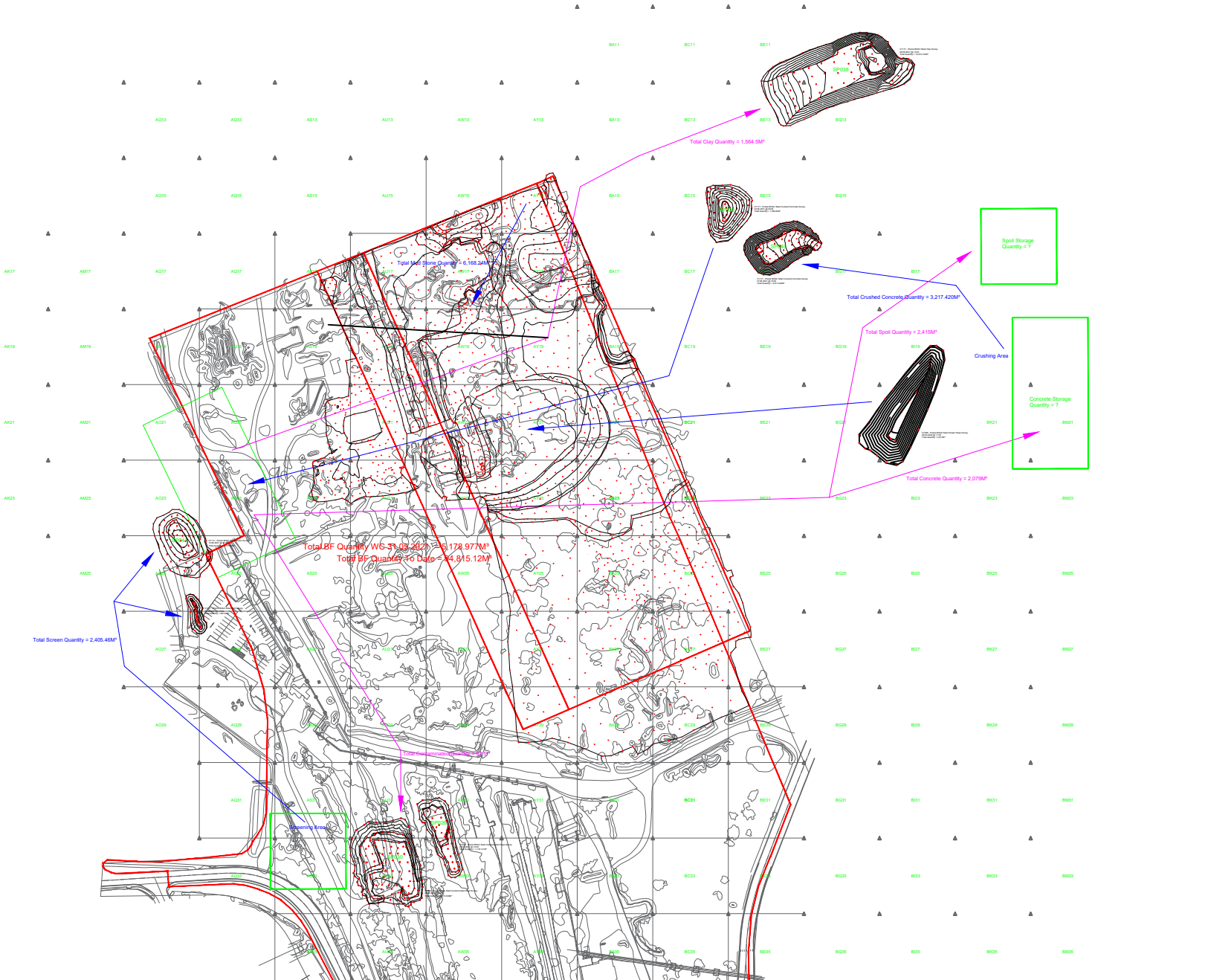


Client:  
 STDC  
 Teeside Management  
 Office,  
 Redcar, TS10 5QW

Project Title  
 Prairie Enabling Work

Drawing Title  
 SEY CEC Weekly Tracking  
 Prairie Enabling Work  
 Phase 1  
 WC 24.05.2021

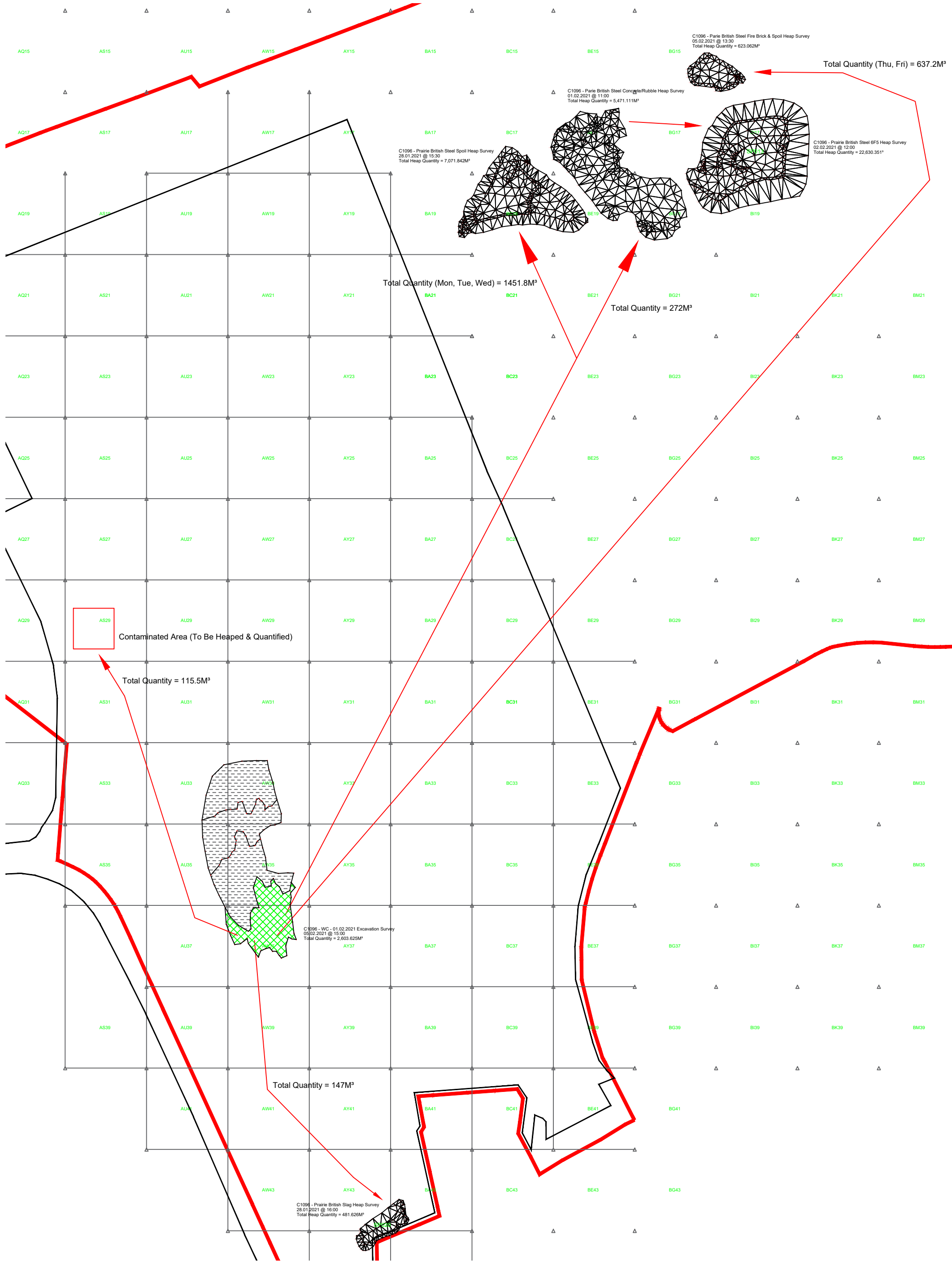




Client  
 STDC  
 Teesside Management  
 Office,  
 Redcar, TS10 5QW

Project Title  
 Prairie Enabling Work

Drawing Title  
 SEY CEC Weekly Tracking  
 Prairie Enabling Work  
 Phase 1  
 WC 31.05.2021



AS29

Contaminated Area (To Be Heaped & Quantified)

Total Quantity = 115.5M³

Total Quantity (Mon, Tue, Wed) = 1451.8M³

Total Quantity = 272M³

Total Quantity = 147M³

C1096 - Prairie British Slag Heap Survey  
28.01.2021 @ 16:00  
Total Heap Quantity = 481.626M³

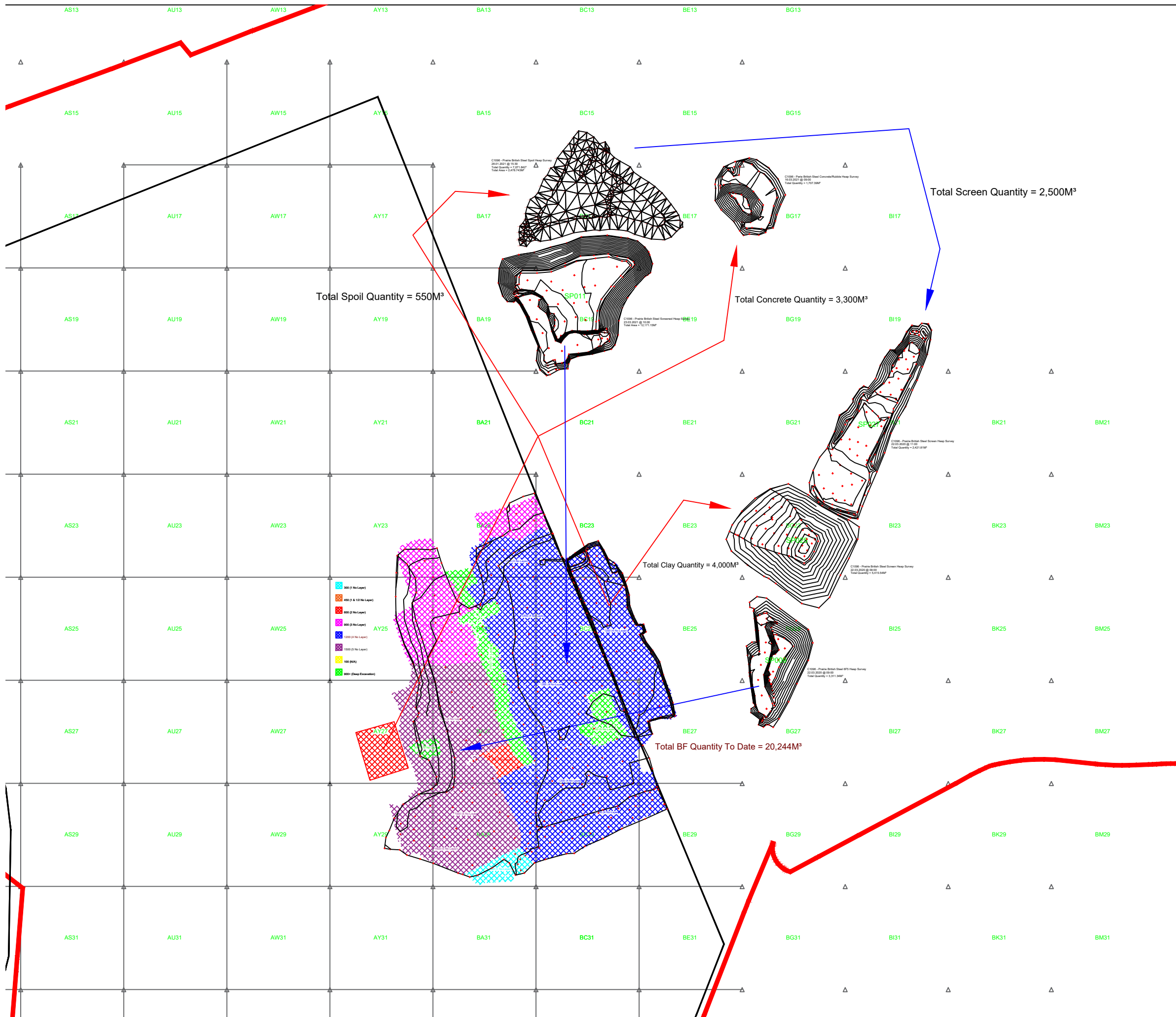
C1096 - Prairie British Steel Spoil Heap Survey  
28.01.2021 @ 15:30  
Total Heap Quantity = 7,071.842M³

C1096 - Prairie British Steel Concrete/Rubble Heap Survey  
01.02.2021 @ 11:00  
Total Heap Quantity = 5,471.111M³

C1096 - Prairie British Steel Fire Brick & Spoil Heap Survey  
05.02.2021 @ 13:30  
Total Heap Quantity = 623.062M³

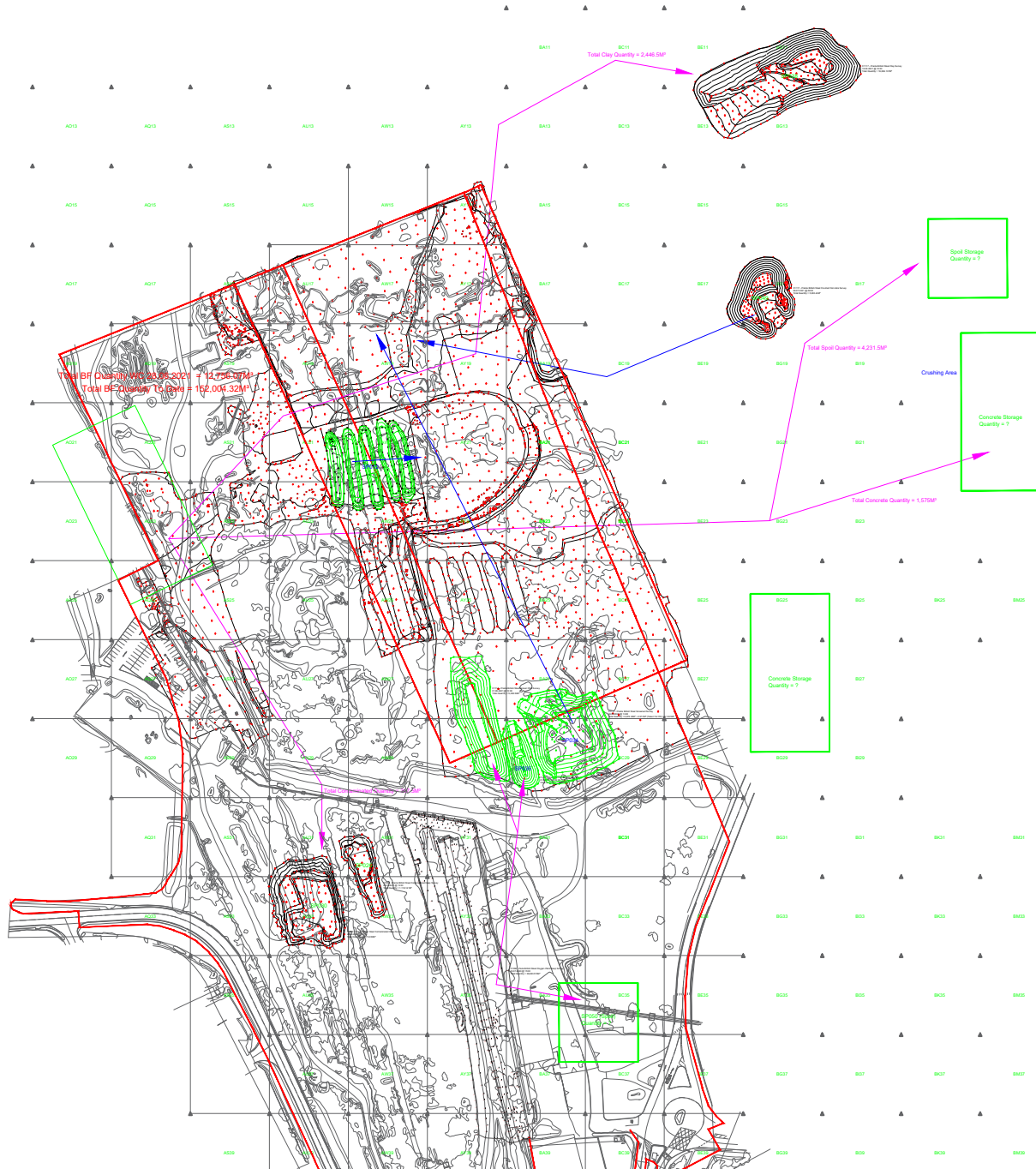
Total Quantity (Thu, Fri) = 637.2M³

C1096 - Prairie British Steel GF5 Heap Survey  
02.02.2021 @ 12:00  
Total Heap Quantity = 22,630.351M³



Client STDC Teesside Management Office, Redcar, TS10 5QW
Project Title Prairie Enabling Work
Drawing Title SEY CEC Weekly Tracking Prairie Enabling Work Phase 1 WC 15.03.2021



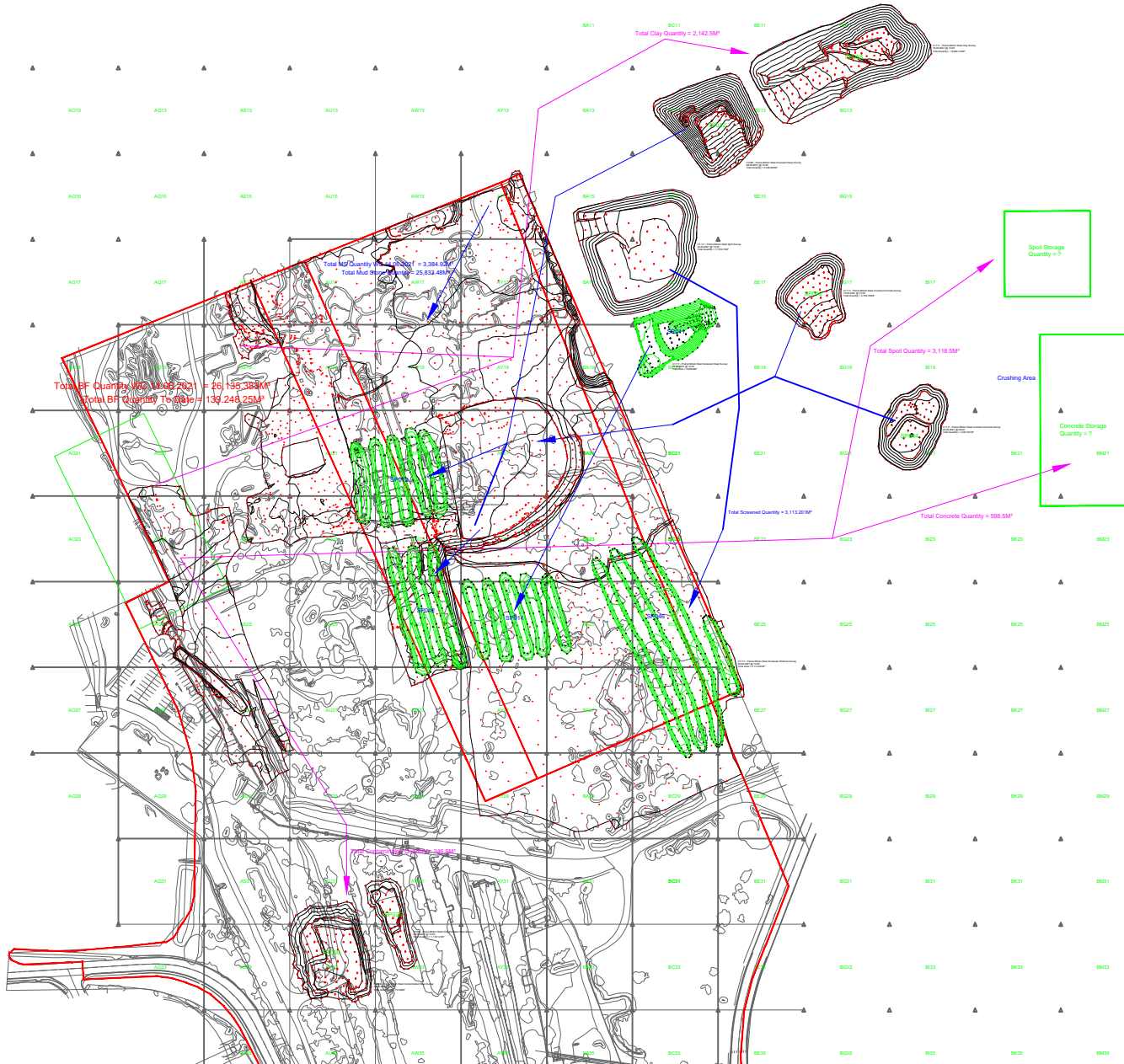


Client  
 STDC  
 Teeside Management  
 Office,  
 Redcar, TS10 5QW

Project Title  
 Prairie Enabling Work

Drawing Title  
 SEY CEC Weekly Tracking  
 Prairie Enabling Work  
 Phase 1  
 WC 28.06.2021





Client  
 STDC  
 Teeside Management  
 Office,  
 Redcar, TS10 5QW

Project Title  
 Prairie Enabling Work

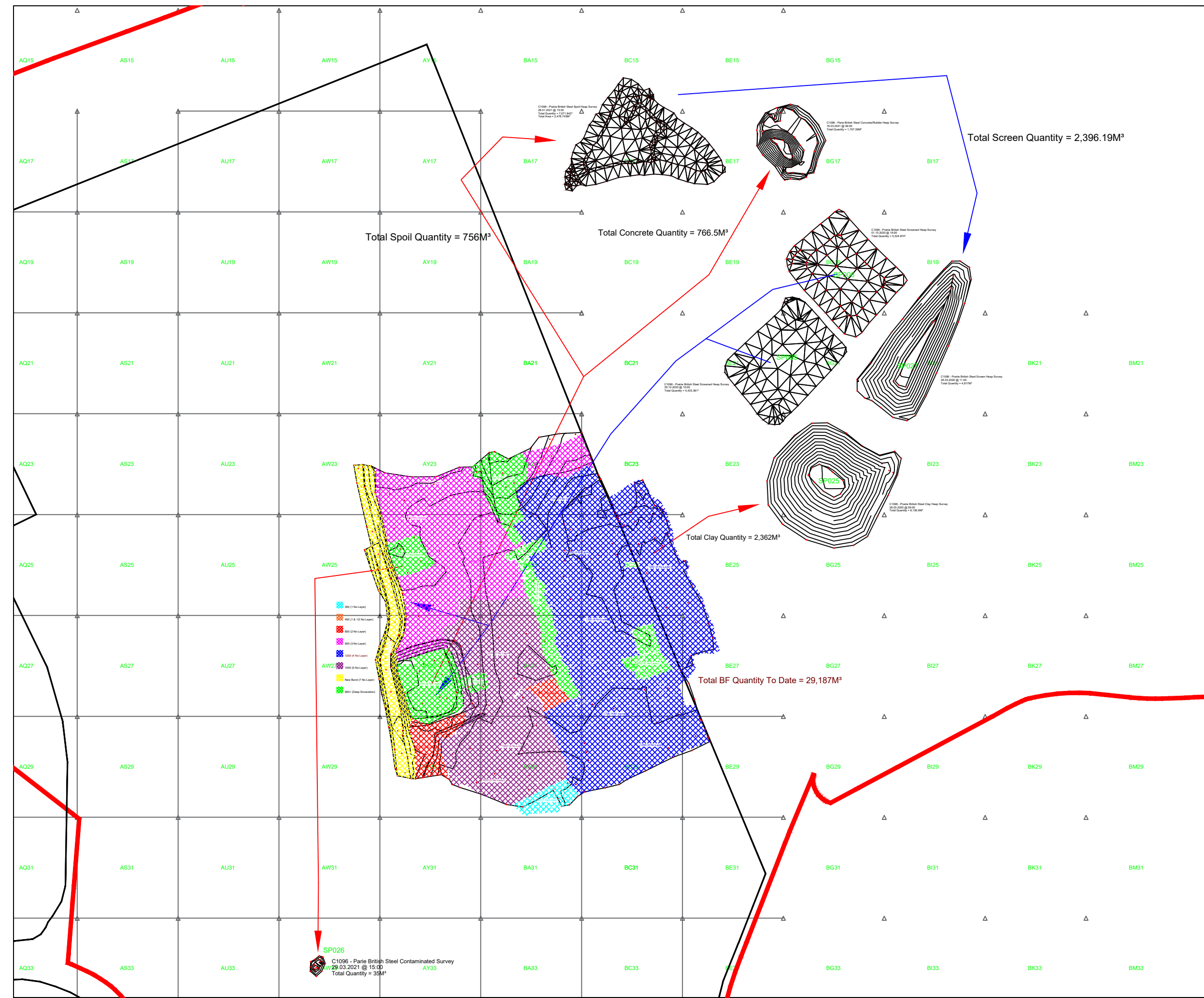
Drawing Title  
 SEY CEC Weekly Tracking  
 Prairie Enabling Work  
 Phase 1  
 WC 21.06.2021



Client  
STDC  
Teesside Management  
Office,  
Redcar, TS10 5QW

Project Title  
Prairie Enabling Work

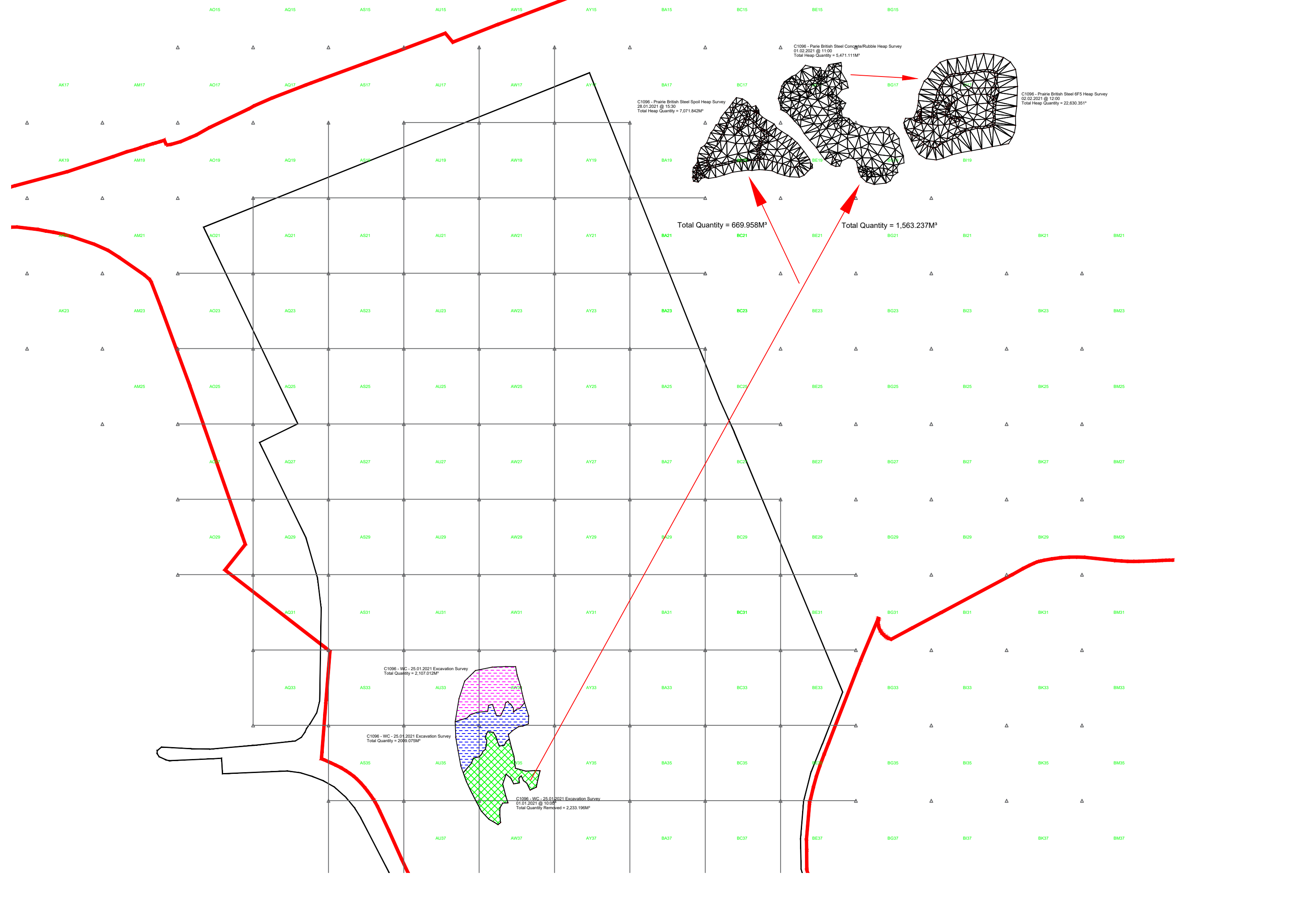
Drawing Title  
SEY CEC Weekly Tracking  
Prairie Enabling Work  
Phase 1  
WC 22.02.2021



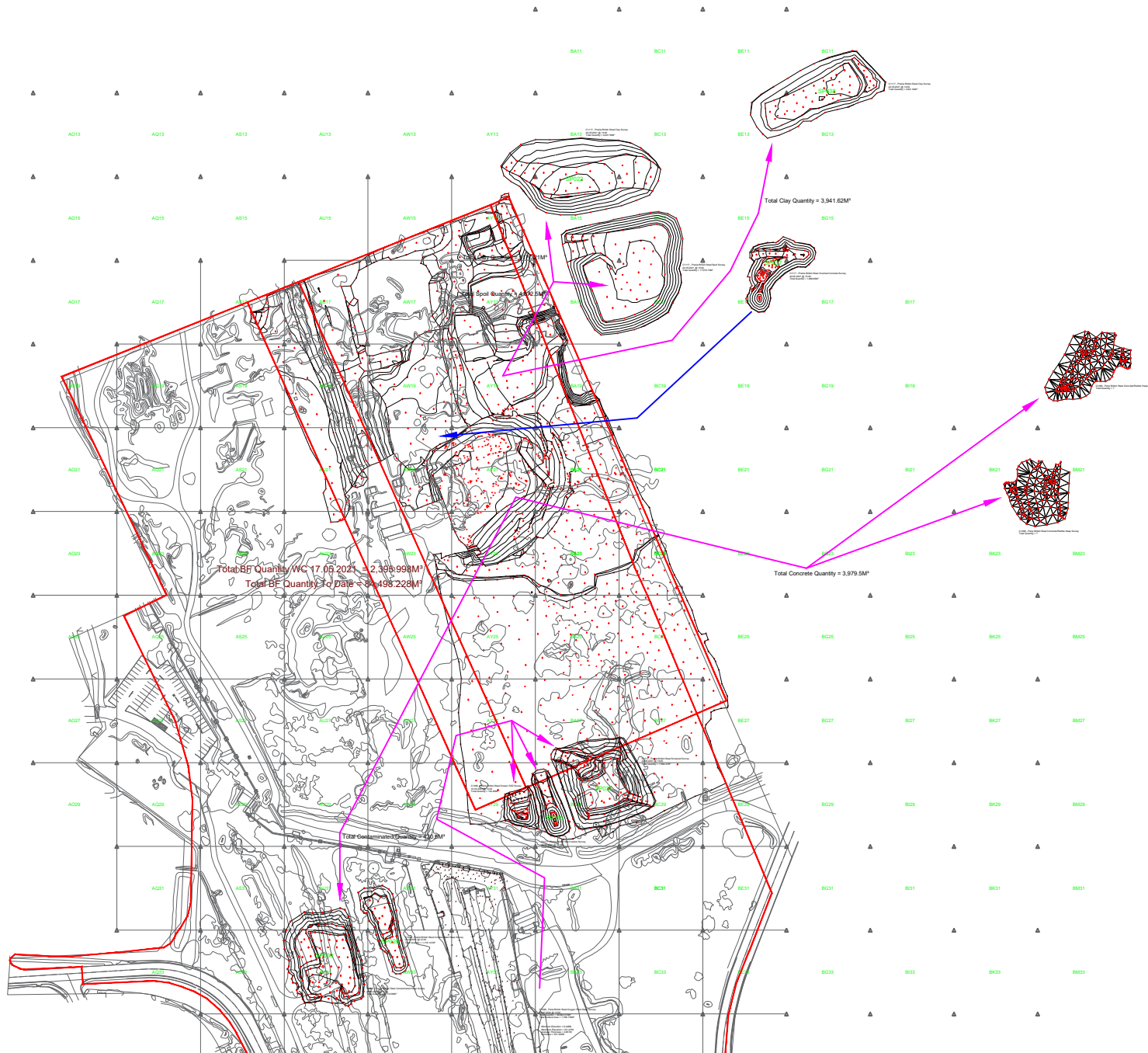
- SP01 (No Layer)
- SP02 (1 & 1/2 No Layer)
- SP03 (2 No Layer)
- SP04 (3 No Layer)
- SP05 (4 No Layer)
- SP06 (5 No Layer)
- SP07 (6 No Layer)
- SP08 (7 No Layer)
- SP09 (Clamp Excavation)



Client STDC Teesside Management Office, Redcar, TS10 5QW
Project Title Prairie Enabling Work
Drawing Title SEY CEC Weekly Tracking Prairie Enabling Work Phase 1 WC 22.03.2021



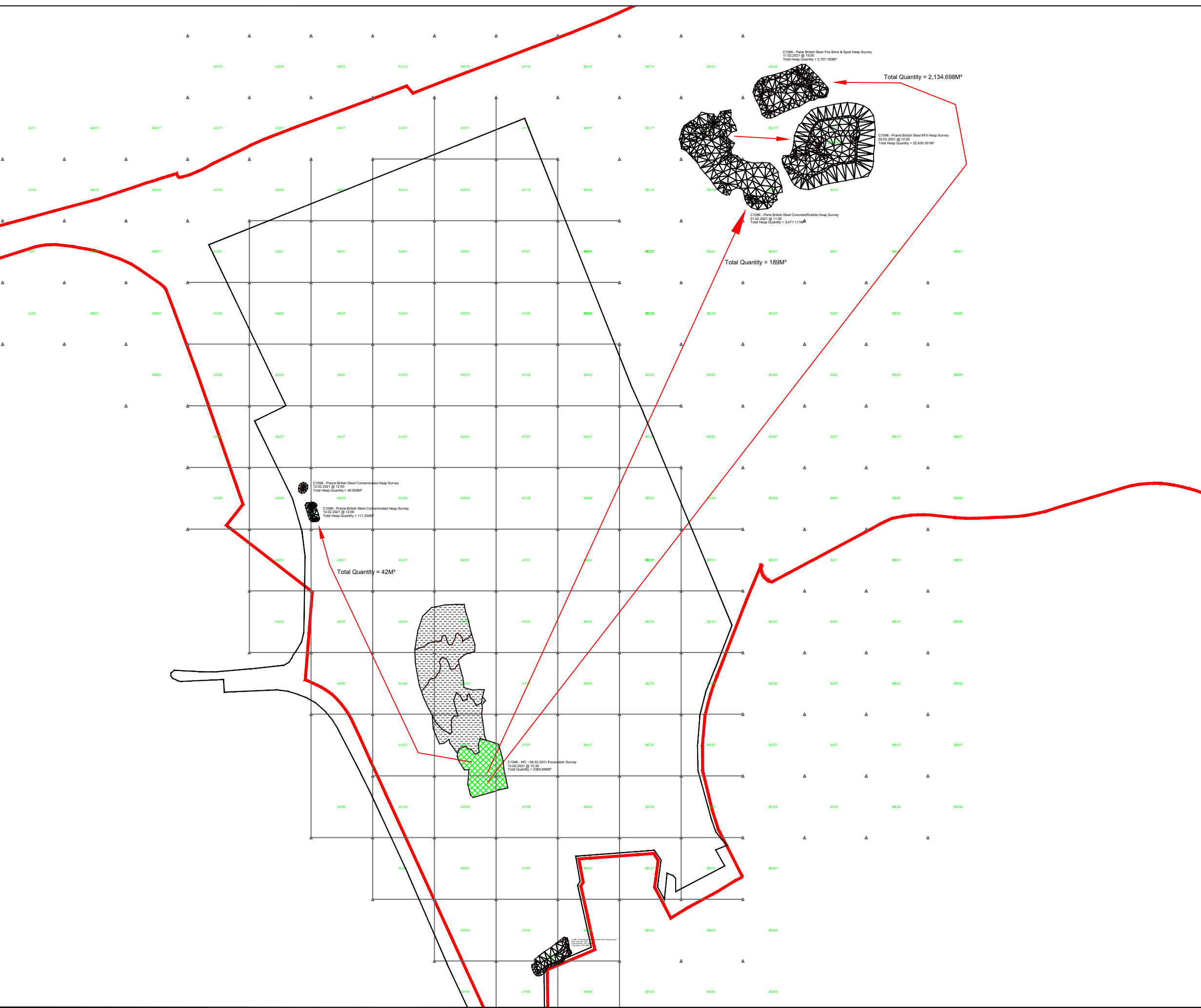




Client  
 STDC  
 Teeside Management  
 Office,  
 Redcar, TS10 5QW

Project Title  
 Prairie Enabling Work

Drawing Title  
 SEY CEC Weekly Tracking  
 Prairie Enabling Work  
 Phase 1  
 WC 17.05.2021



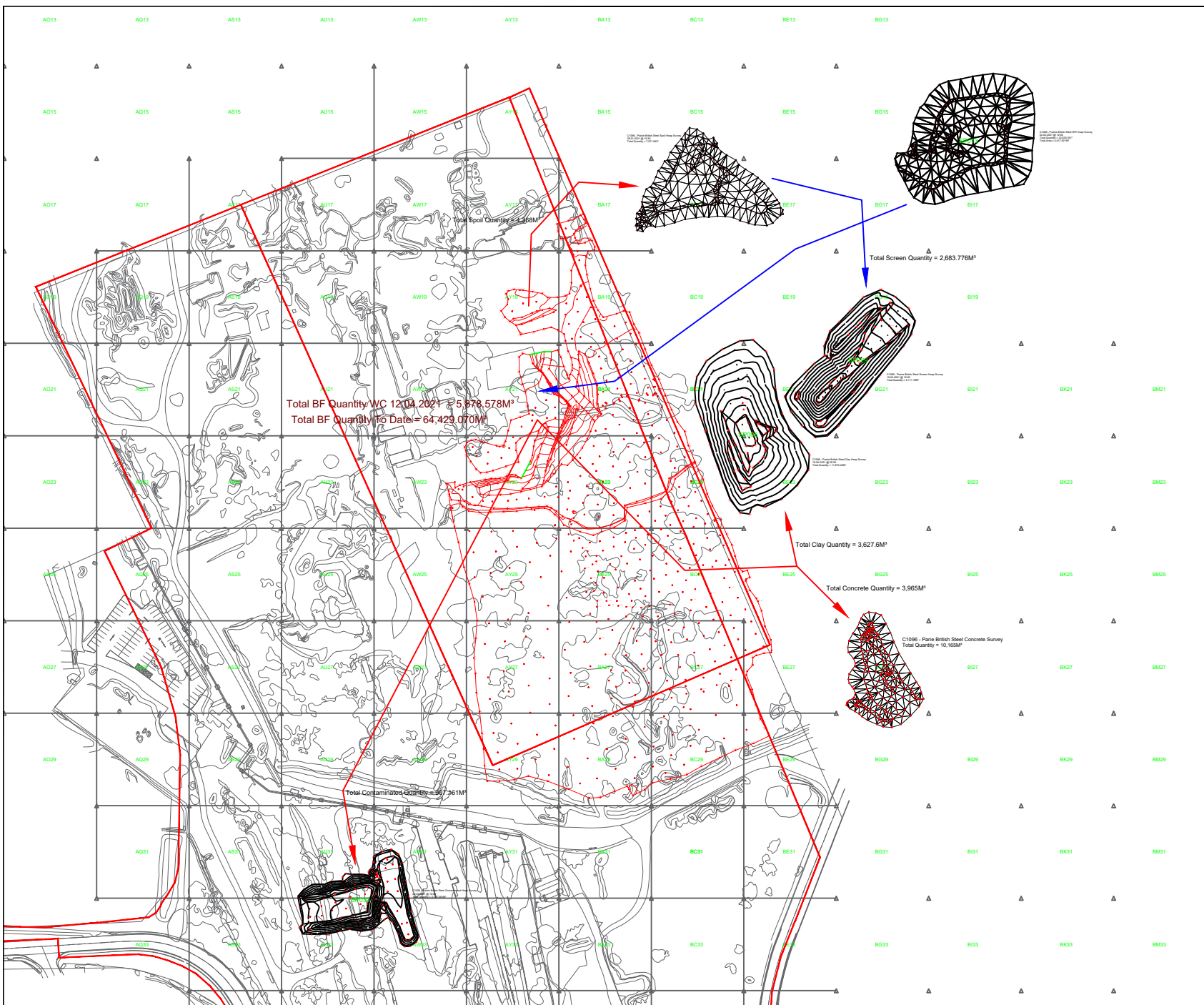
Client  
STDC  
Teesside Management  
Office,  
Redcar, TS10 5QW

Project Title  
Prairie Enabling Work

Drawing Title  
SEY CEC Weekly Tracking  
Prairie Enabling Work  
Phase 1  
WC 08.02.2021





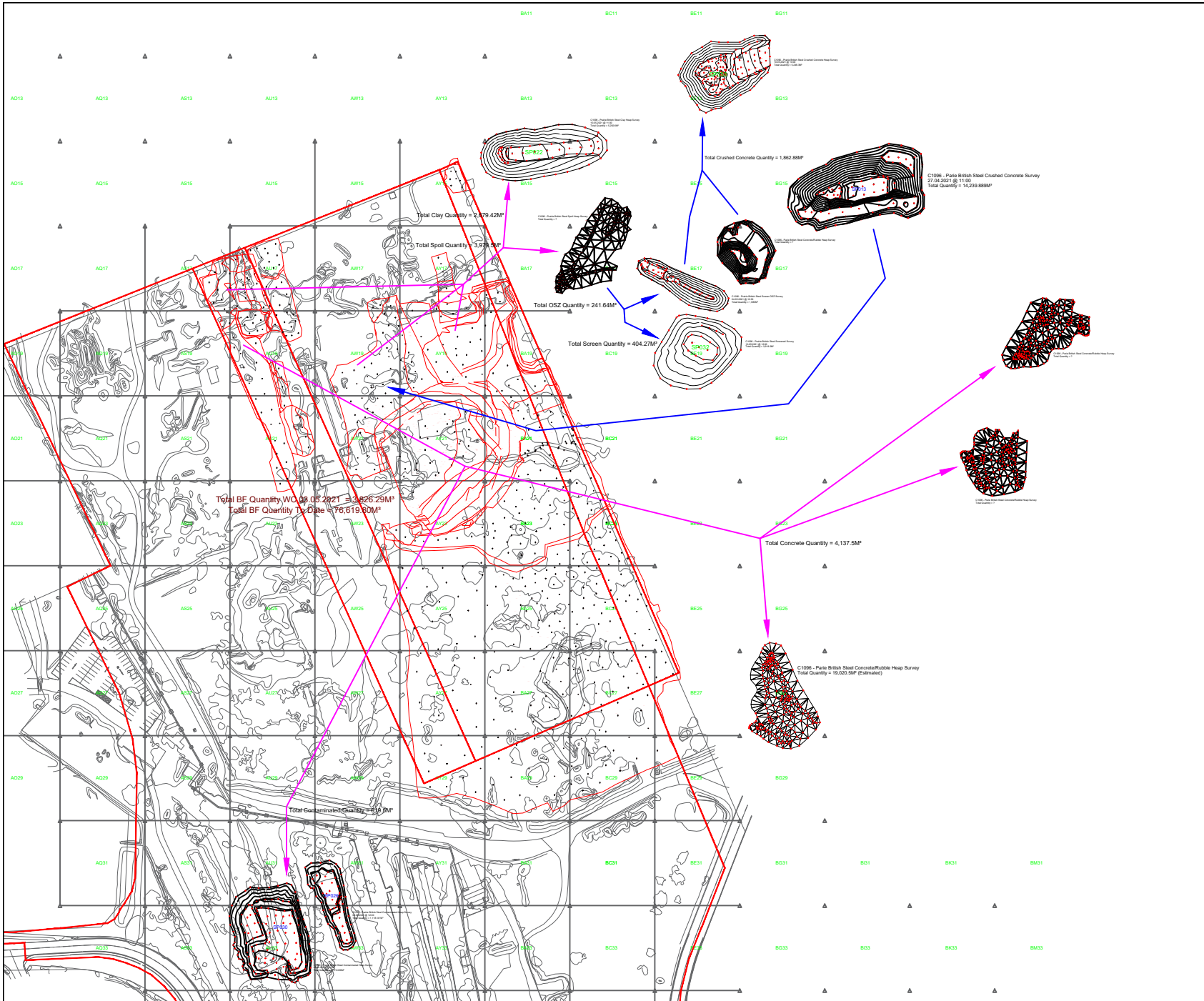


Client:  
 STDC  
 Teesside Management  
 Office,  
 Redcar, TS10 5QW

Project Title  
 Prairie Enabling Work

Drawing Title  
 SEY CEC Weekly Tracking  
 Prairie Enabling Work  
 Phase 1  
 WC 12.04.2021

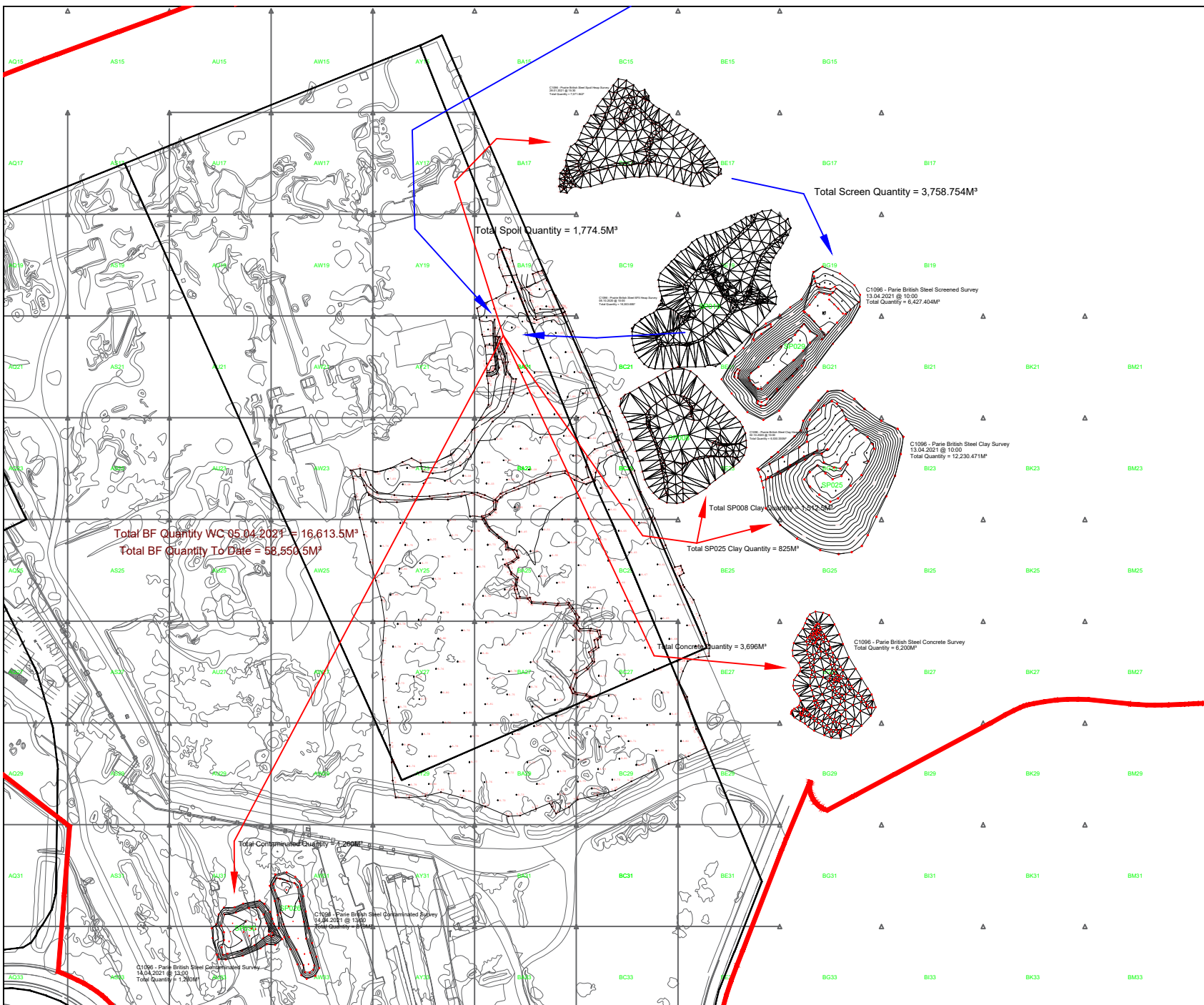




Client  
 STDC  
 Teeside Management  
 Office,  
 Redcar, TS10 5QW

Project Title  
 Prairie Enabling Work

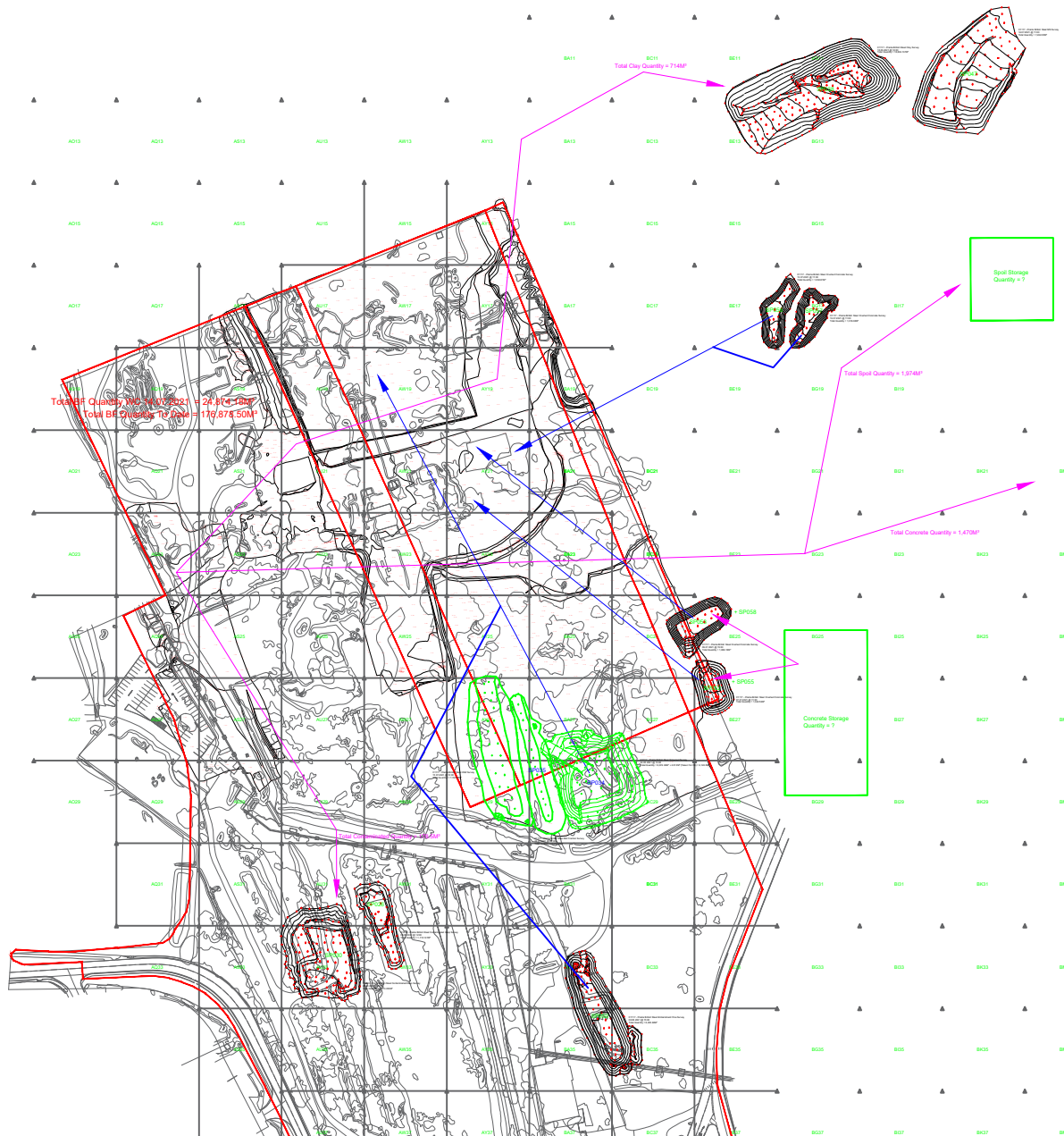
Drawing Title  
 SEY CEC Weekly Tracking  
 Prairie Enabling Work  
 Phase 1  
 WC 03.05.2021



Client  
 STDC  
 Teeside Management  
 Office,  
 Redcar, TS10 5QW

Project Title  
 Prairie Enabling Work

Drawing Title  
 SEY CEC Weekly Tracking  
 Prairie Enabling Work  
 Phase 1  
 WC 05.04.2021

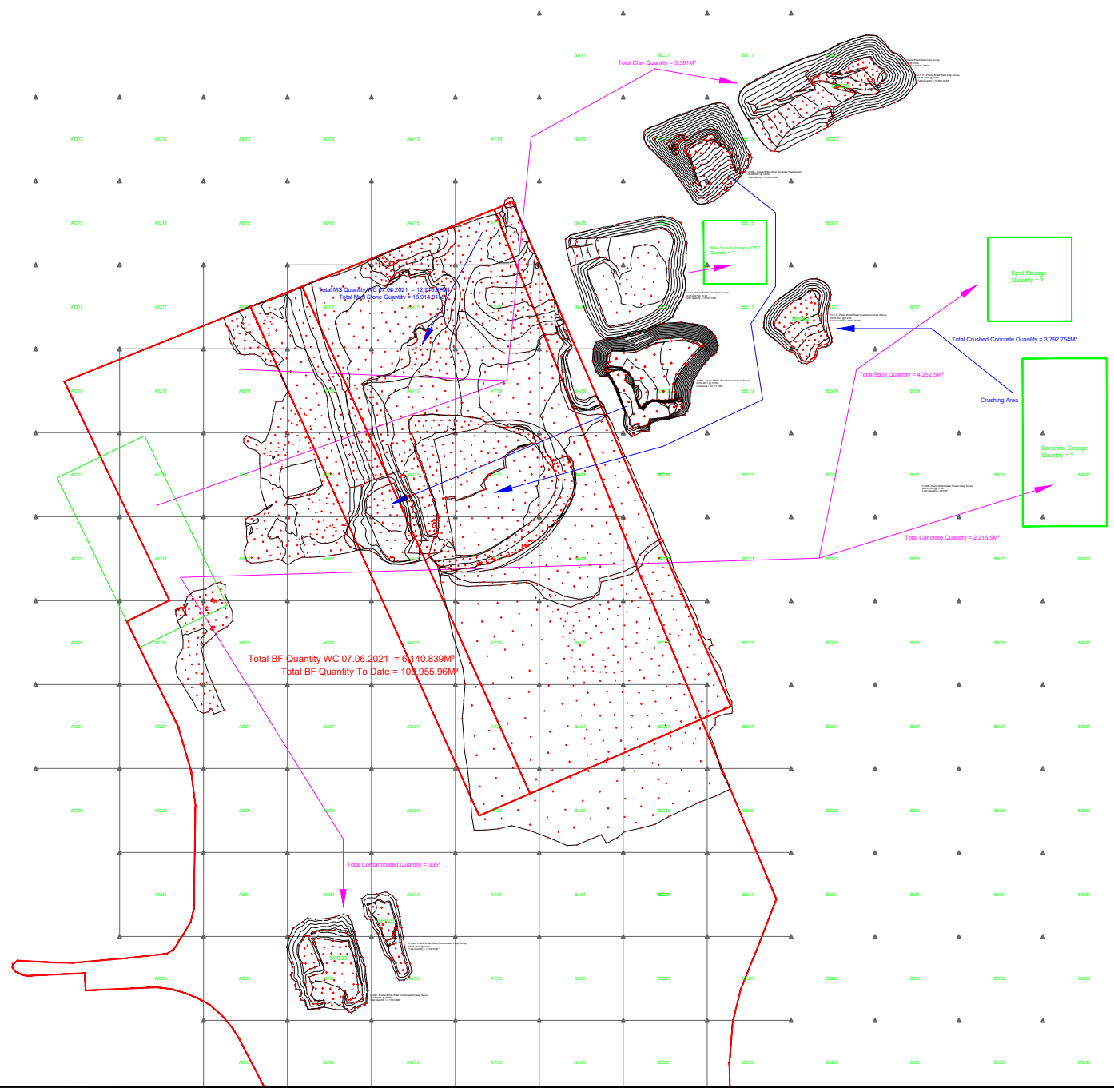


Client  
 STDC  
 Teeside Management  
 Office,  
 Redcar, TS10 5QW

Project Title  
 Prairie Enabling Work

Drawing Title  
 SEY CEC Weekly Tracking  
 Prairie Enabling Work  
 Phase 1  
 WC 05.07.2021

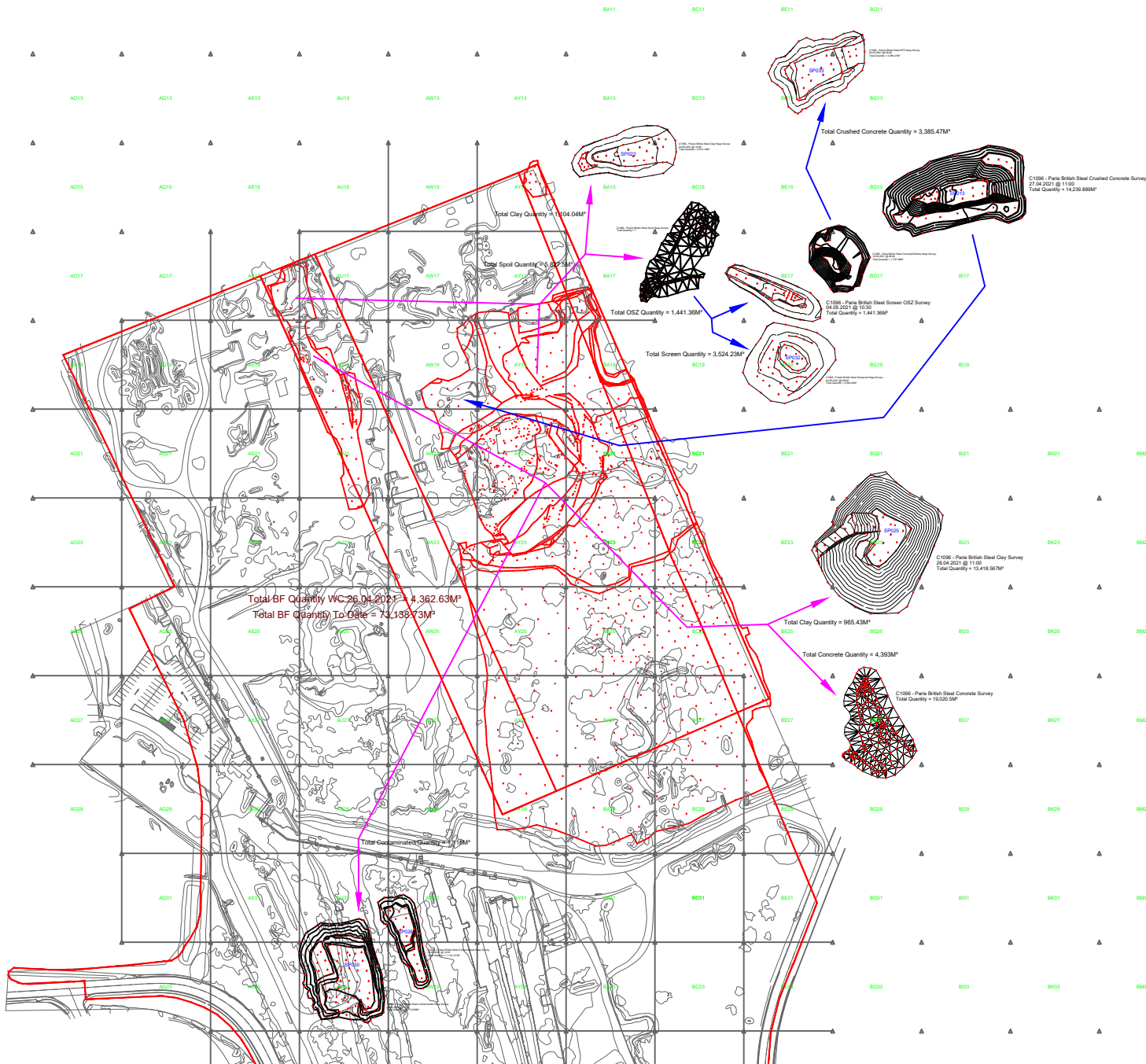




Client  
 STDC  
 Teeside Management  
 Office,  
 Redcar, TS10 5QW

Project Title  
 Prairie Enabling Work

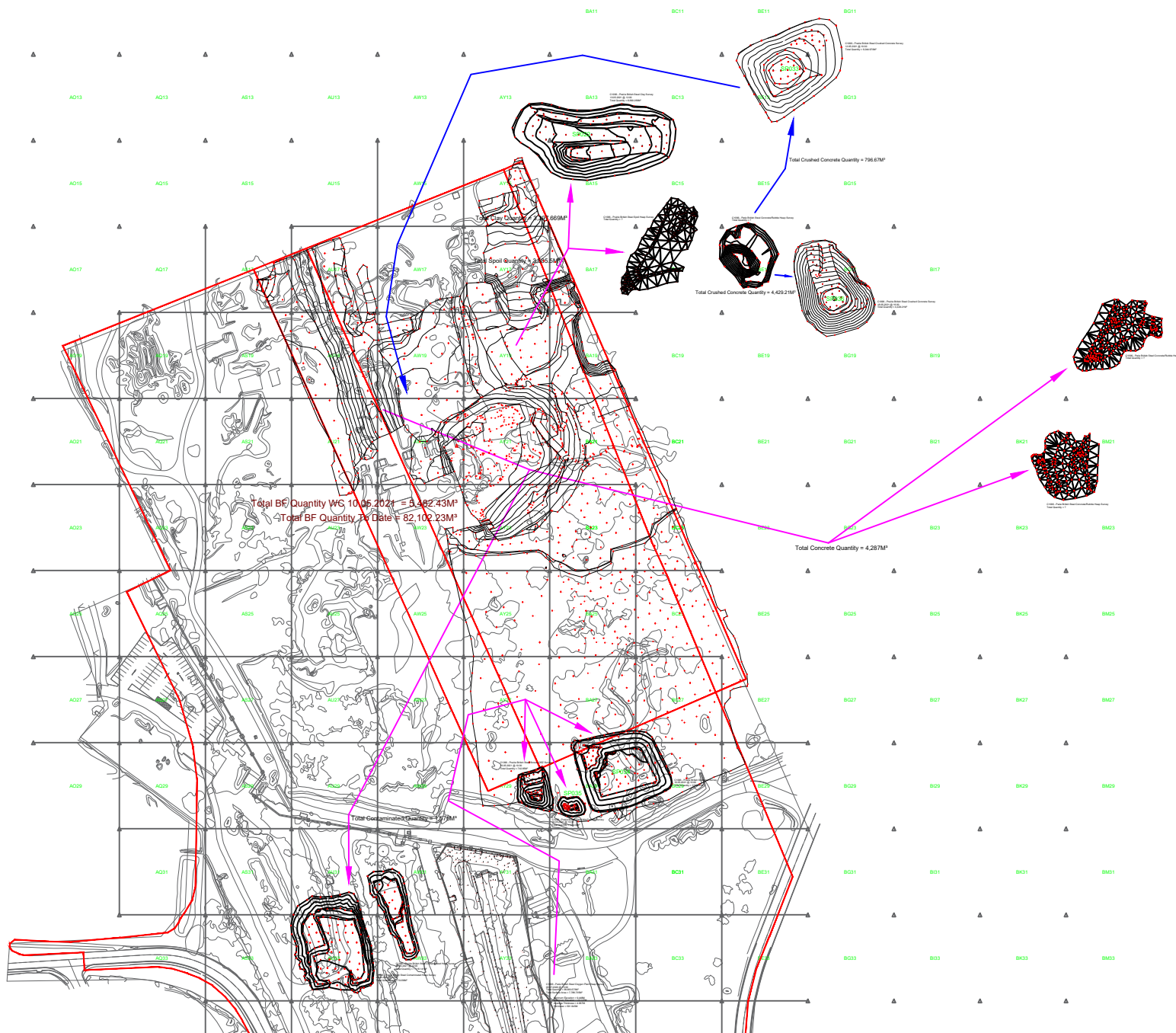
Drawing Title  
 SEY CEC Weekly Tracking  
 Prairie Enabling Work  
 Phase 1  
 WC 07.06.2021



Client  
 STDG  
 Teeside Management  
 Office,  
 Redcar, TS10 5QW

Project Title  
 Prairie Enabling Work

Drawing Title  
 SEY CEC Weekly Tracking  
 Prairie Enabling Work  
 Phase 1  
 WC 26.04.2021



Client:  
 STDC  
 Teesside Management  
 Office,  
 Redcar, TS10 5QW

Project Title  
 Prairie Enabling Work

Drawing Title  
 SEY CEC Weekly Tracking  
 Prairie Enabling Work  
 Phase 1  
 WC 10.05.2021





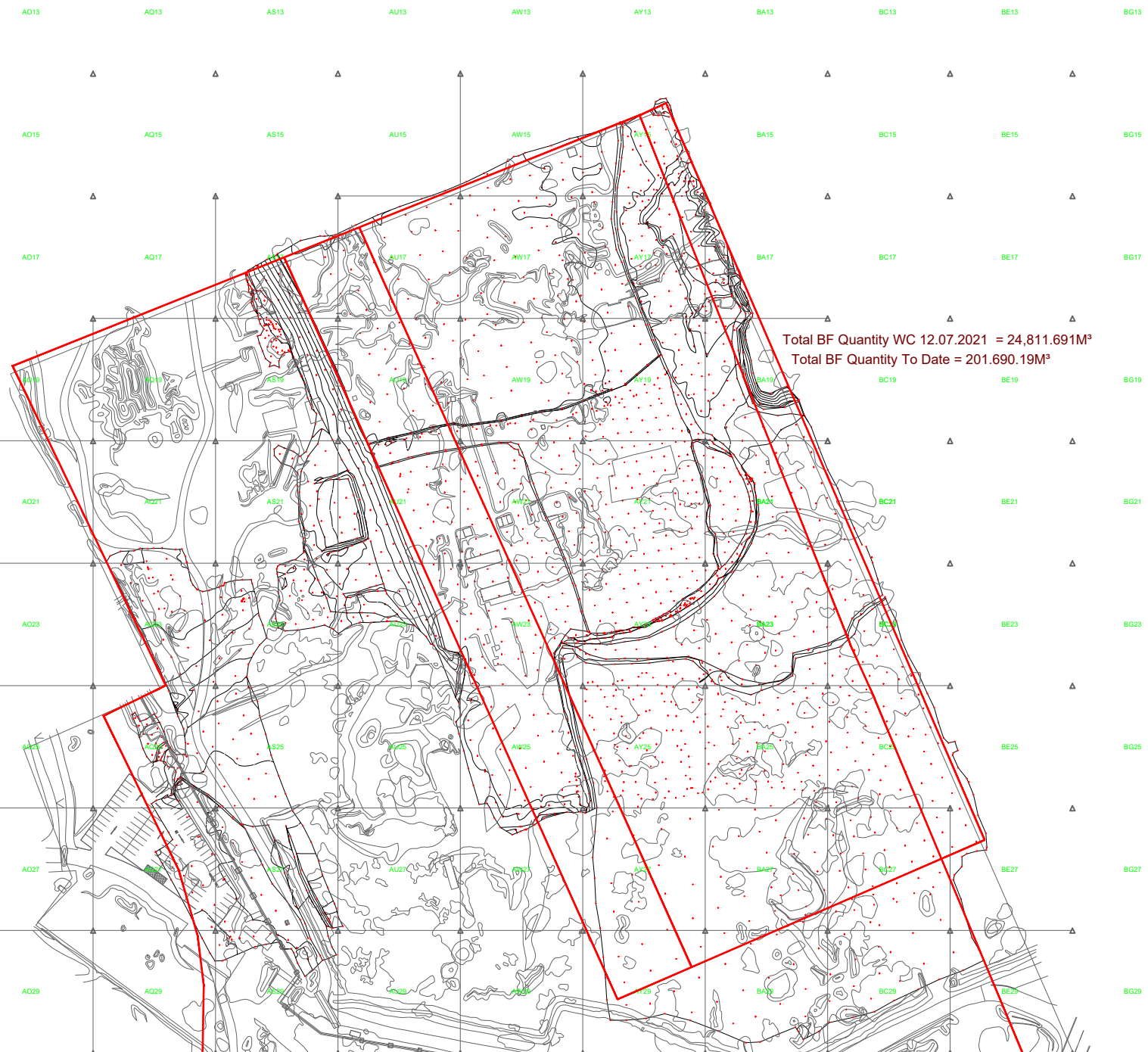
Total Cut Quantity WC 12.07.2021 = 6,233.437M<sup>3</sup>  
 Total Cut Quantity To Date = 140,721.76M<sup>3</sup>



Client  
 STDC  
 Teeside Management  
 Office,  
 Redcar, TS10 5QW

Project Title  
 Prairie Enabling Work

Drawing Title  
 SEY CEC Weekly Tracking  
 Prairie Enabling Work  
 Phase 1  
 WC 12.07.2021



Total BF Quantity WC 12.07.2021 = 24,811.691M<sup>3</sup>  
 Total BF Quantity To Date = 201.690.19M<sup>3</sup>

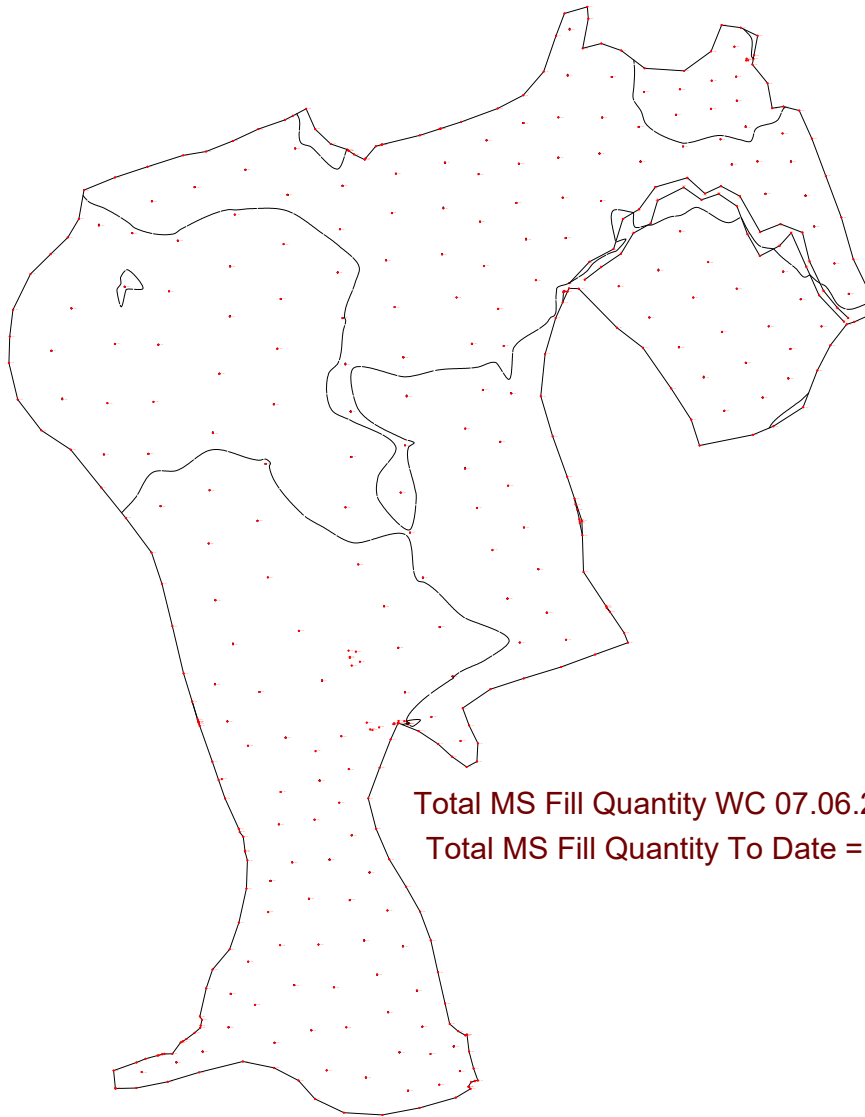


Client  
 STDC  
 Teeside Management  
 Office,  
 Redcar, TS10 5QW

Project Title  
 Prairie Enabling Work

Drawing Title  
 SEY CEC Weekly Tracking  
 Prairie Enabling Work  
 Phase 1  
 WC 12.07.2021





Total MS Fill Quantity WC 07.06.2021 = 12,746.67M<sup>3</sup>

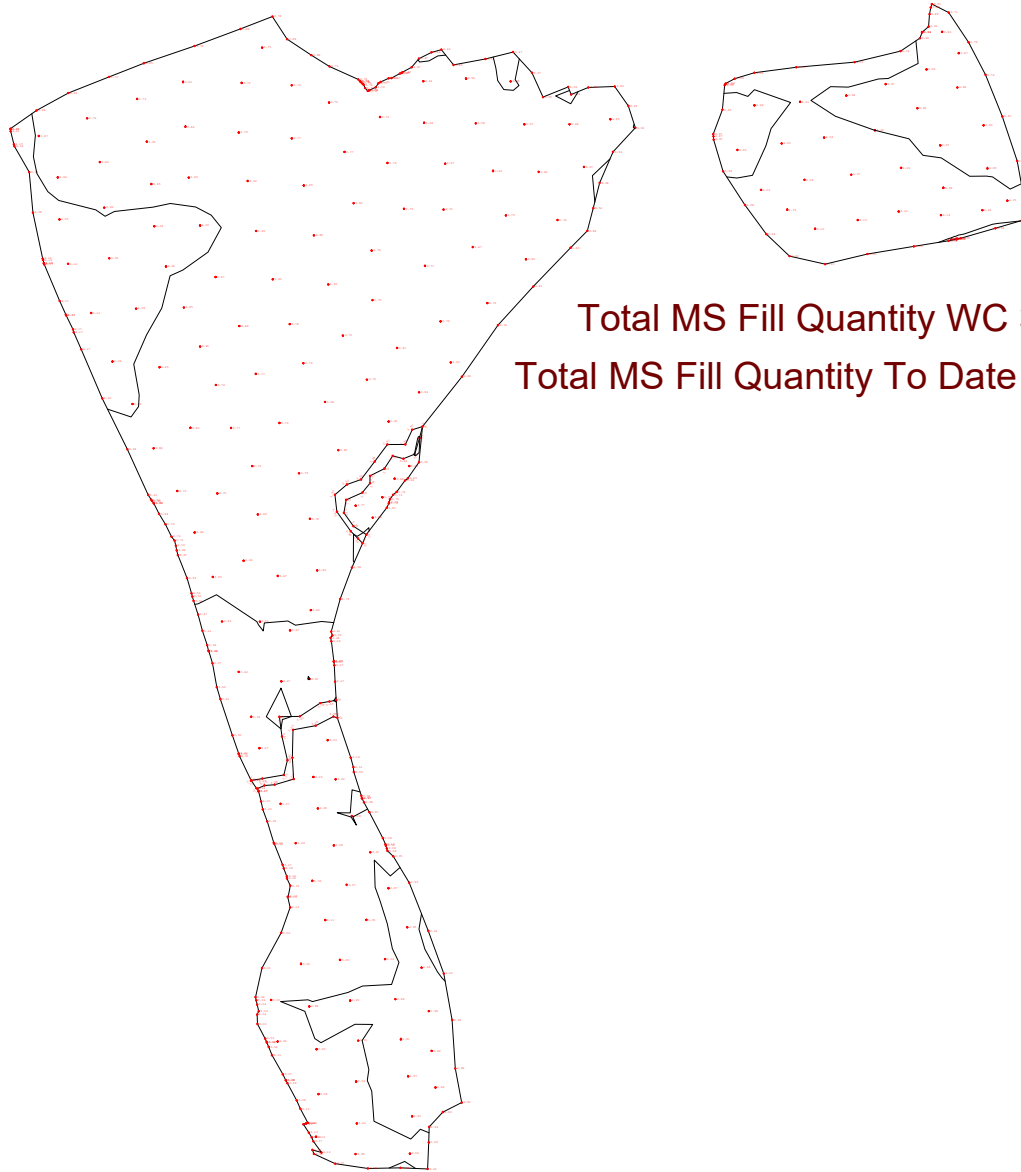
Total MS Fill Quantity To Date = 18,914.91M<sup>3</sup>



Client  
STDC  
Teesside Management  
Office,  
Redcar, TS10 5QW

Project Title  
Prairie Enabling Work

Drawing Title  
SEY CEC Weekly Tracking  
Prairie Enabling Work  
Phase 1  
WC 07.06.2021



Total MS Fill Quantity WC 31.05.2021 = 6,168.24M<sup>3</sup>  
Total MS Fill Quantity To Date = 6,168.24M<sup>3</sup>



SP008  
SP017, SP018, SP019 (See TWR\_RP1\_012)

Site Plan Number: SP008  
Building Footprint: [Detailed description of building footprint]

Site Plan Number: SP007  
Building Footprint: [Detailed description of building footprint]

Site Plan Number: SP006  
Building Footprint: [Detailed description of building footprint]

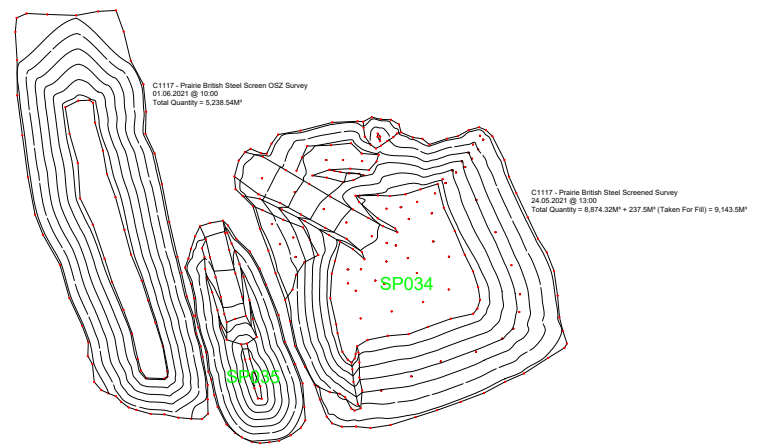
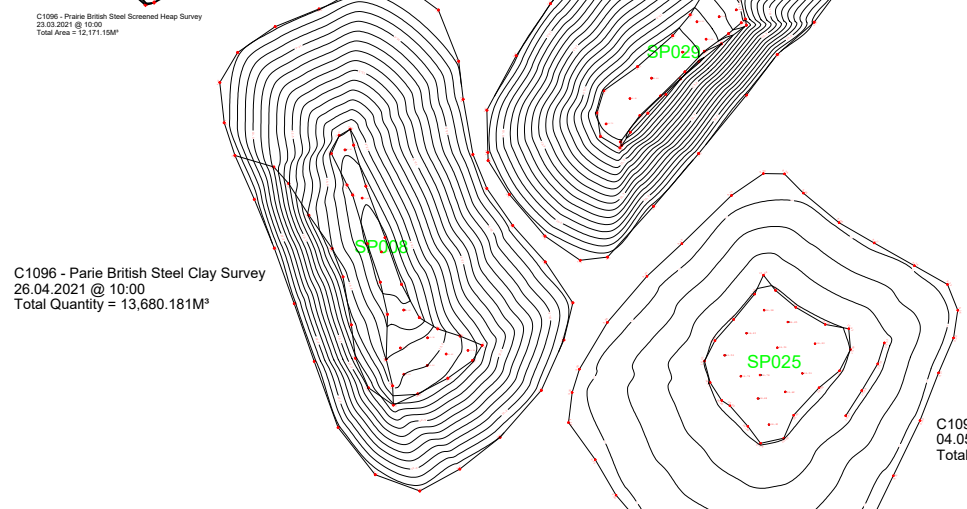
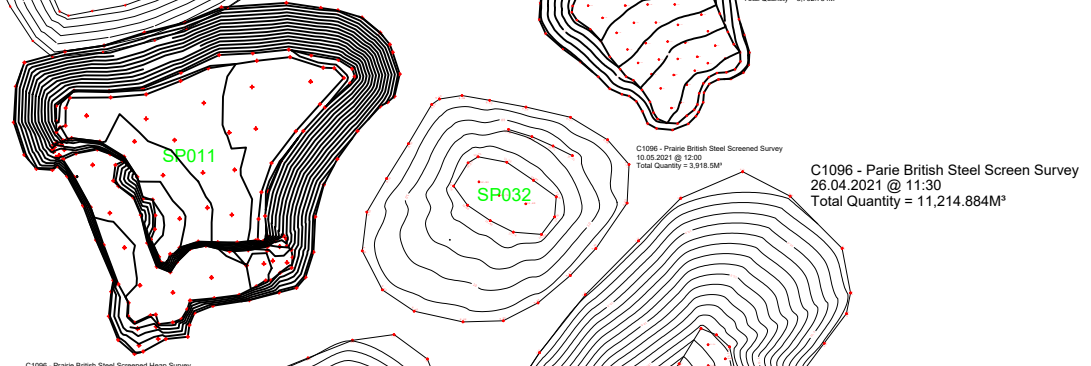
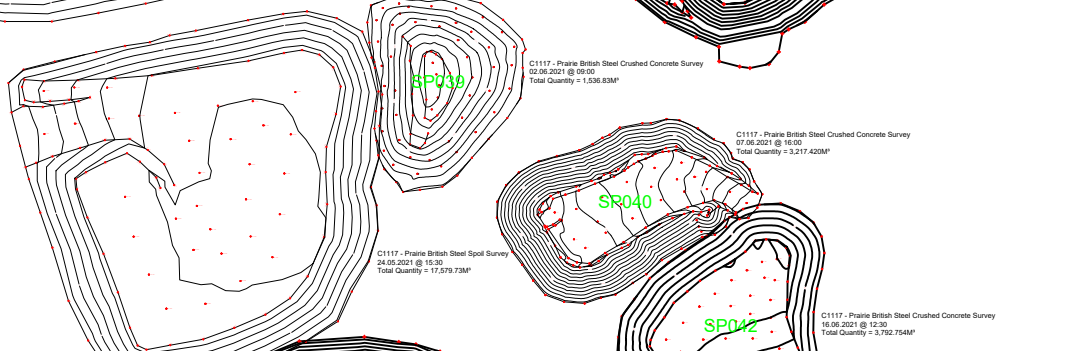
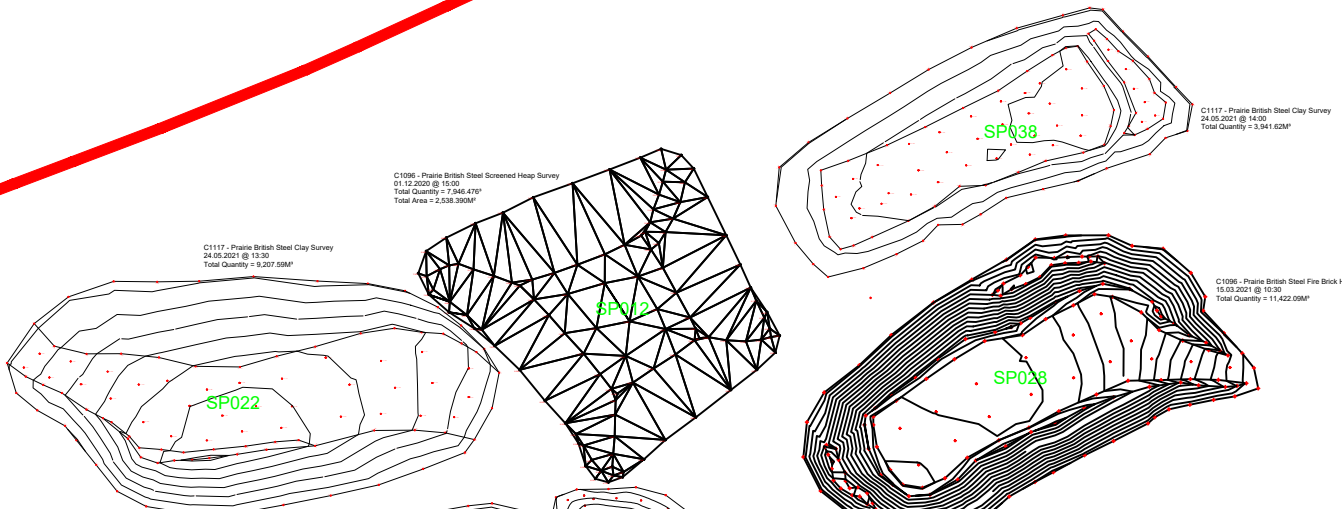
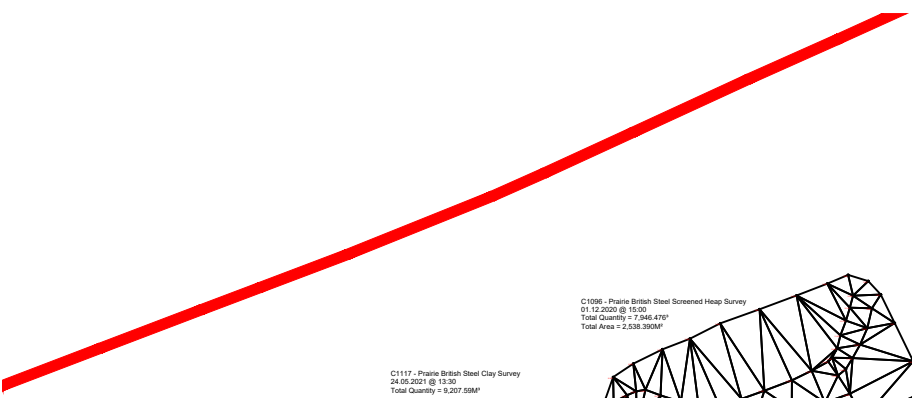
Site Plan Number: SP005  
Building Footprint: [Detailed description of building footprint]

Site Plan Number: SP004  
Building Footprint: [Detailed description of building footprint]

Site Plan Number: SP003  
Building Footprint: [Detailed description of building footprint]

Site Plan Number: SP002  
Building Footprint: [Detailed description of building footprint]

Site Plan Number: SP001  
Building Footprint: [Detailed description of building footprint]

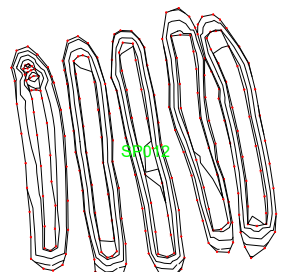
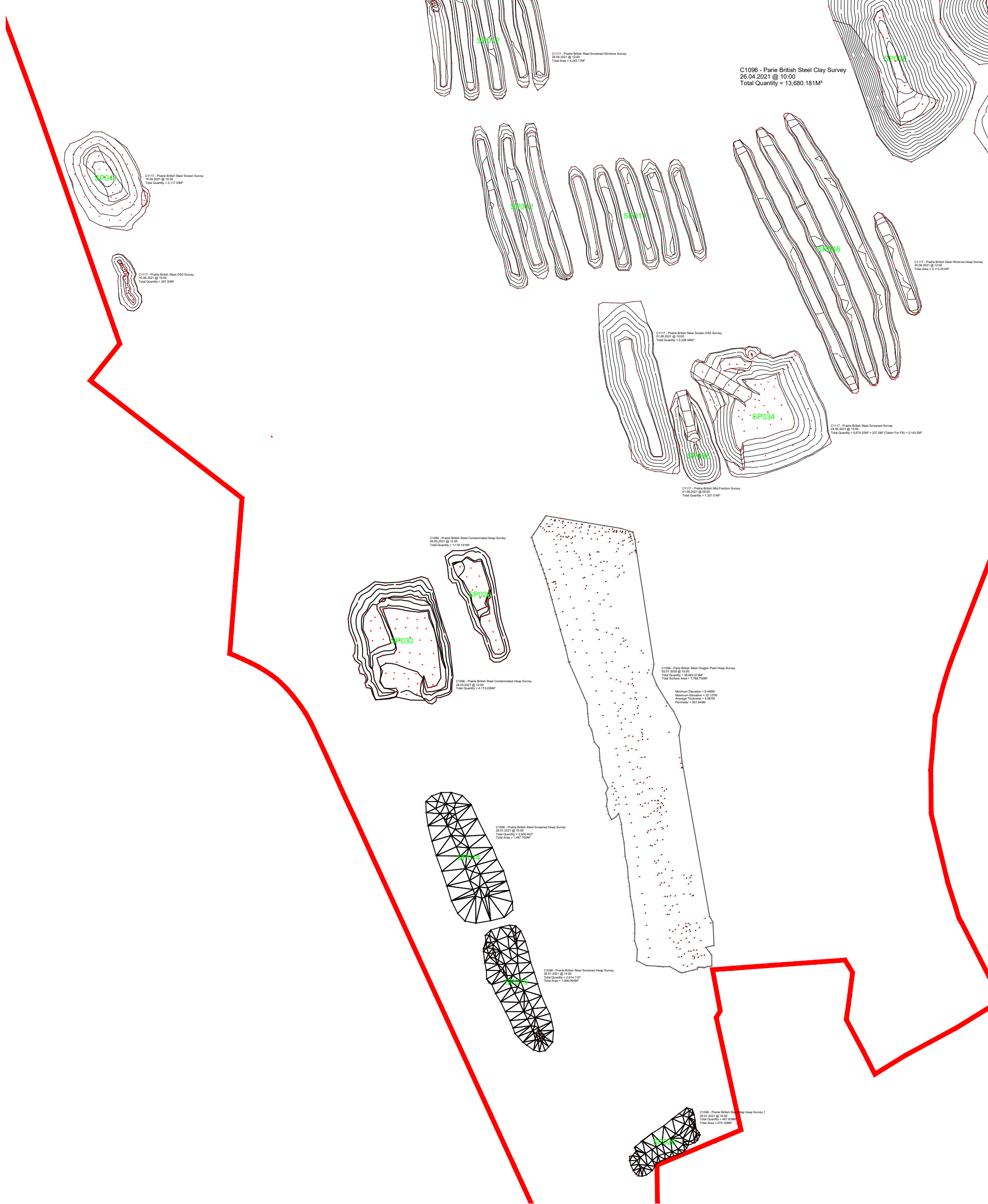


Spoil Storage  
Quantity = ?

Concrete Storage  
Quantity = ?

Concrete Storage  
Quantity = ?



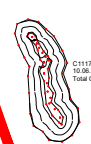


C1117 - Parie British Steel Screened Window Survey  
28.08.2021 @ 13:00  
Total Area = 4,242.17M<sup>2</sup>

C1096 - Parie British Steel Clay Survey  
26.04.2021 @ 10:00  
Total Quantity = 13,680.181M<sup>2</sup>



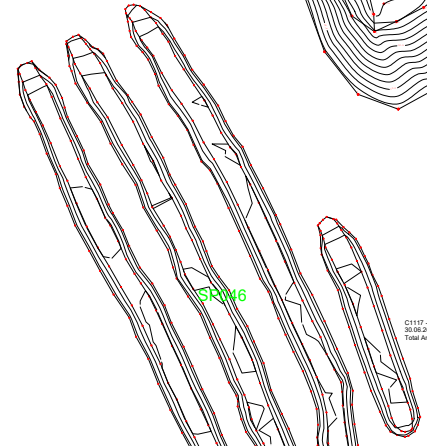
C1117 - Parie British Steel Screen Survey  
10.08.2021 @ 15:30  
Total Quantity = 2,117.58M<sup>2</sup>



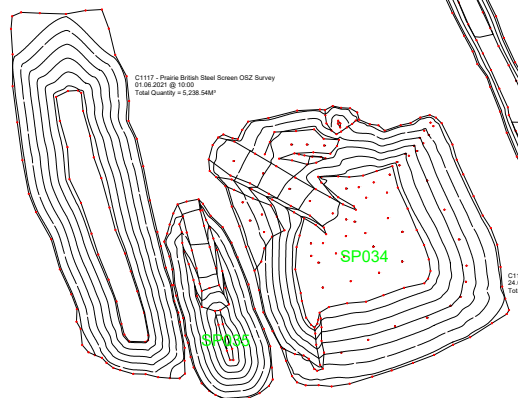
C1117 - Parie British Steel OSZ Survey  
10.08.2021 @ 15:30  
Total Quantity = 287.93M<sup>2</sup>



SP007



C1117 - Parie British Steel Window Heap Survey  
26.04.2021 @ 12:00  
Total Area = 3,113.20M<sup>2</sup>

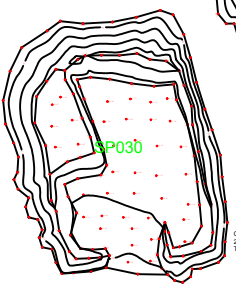


C1117 - Parie British Steel Screen OSZ Survey  
01.08.2021 @ 15:30  
Total Quantity = 5,238.54M<sup>2</sup>

C1117 - Parie British Steel Screened Survey  
24.05.2021 @ 13:00  
Total Quantity = 8,874.20M<sup>2</sup> - 237.9M<sup>2</sup> (Clean For PFI) = 8,636.30M<sup>2</sup>

C1117 - Parie British Steel Mod-Fraction Survey  
01.08.2021 @ 09:30  
Total Quantity = 1,320.61M<sup>2</sup>

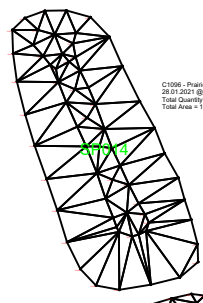
C1096 - Parie British Steel Contaminated Heap Survey  
05.05.2021 @ 12:00  
Total Quantity = 1,178.141M<sup>2</sup>



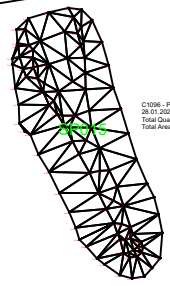
C1096 - Parie British Steel Contaminated Heap Survey  
28.04.2021 @ 12:00  
Total Quantity = 4,173.12M<sup>2</sup>



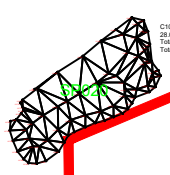
C1096 - Parie British Steel Oxygen Plant Heap Survey  
05.07.2020 @ 15:00  
Total Quantity = 38,693.57M<sup>2</sup>  
Total Surface Area = 7,788.72M<sup>2</sup>  
Minimum Elevation = 9.448M  
Maximum Elevation = 23.127M  
Average Thickness = 4.967M  
Perimeter = 921.840M



C1096 - Parie British Steel Screened Heap Survey  
28.07.2021 @ 15:30  
Total Quantity = 3,300.411M<sup>2</sup>  
Total Area = 1,482.702M<sup>2</sup>

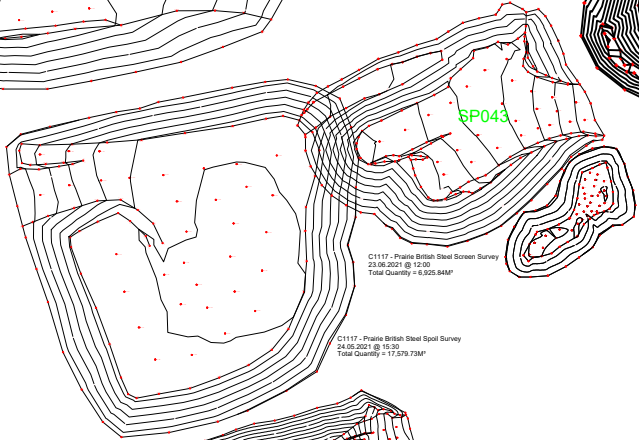
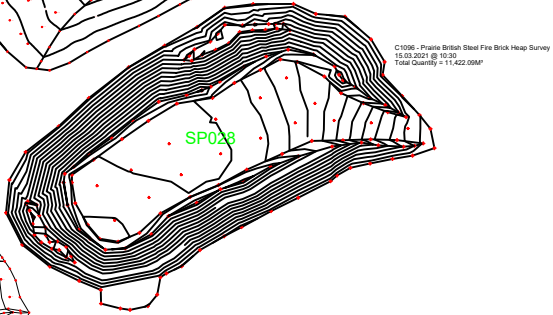
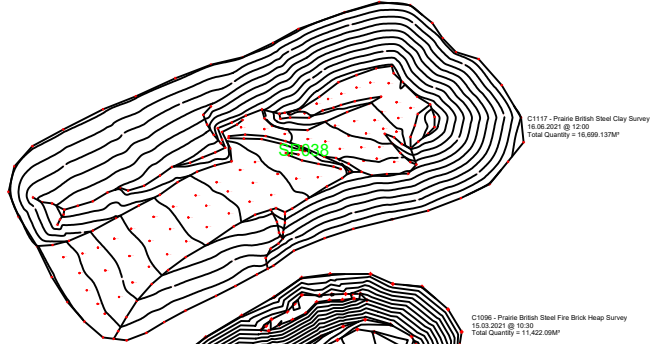
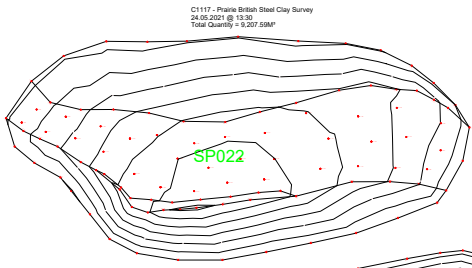
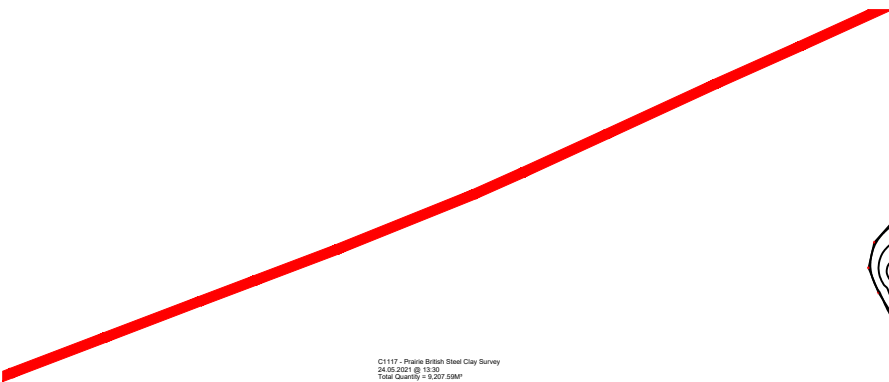


C1096 - Parie British Steel Screened Heap Survey  
28.07.2021 @ 15:30  
Total Quantity = 2,114.111M<sup>2</sup>  
Total Area = 1,080.646M<sup>2</sup>



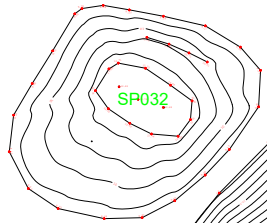
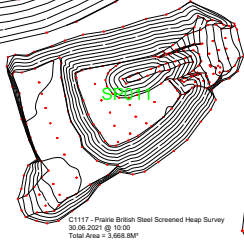
C1096 - Parie British Steel Screened Heap Survey 1  
28.07.2021 @ 16:00  
Total Quantity = 421.626M<sup>2</sup>  
Total Area = 470.158M<sup>2</sup>





C1117 - Parie British Steel OSZ Survey  
26.04.2021 @ 10:00  
Total Quantity = 7,26.883M³

C1117 - Parie British Steel Spoil Survey  
24.06.2021 @ 11:30  
Total Quantity = 17,279.73M³



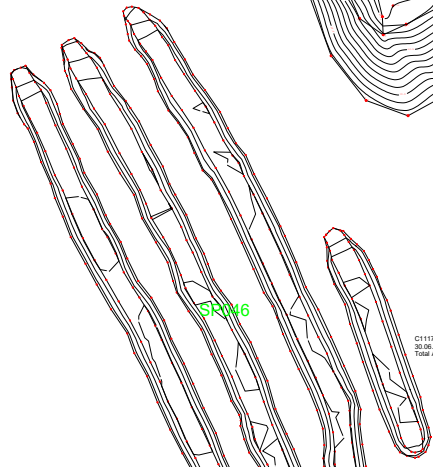
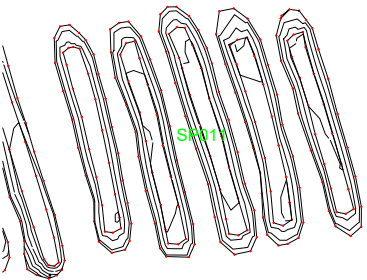
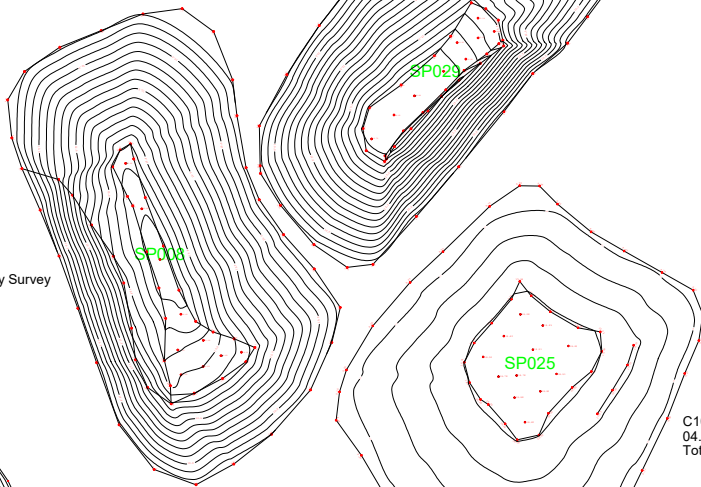
C1096 - Parie British Steel Screen Survey  
26.04.2021 @ 11:30  
Total Quantity = 11,214.884M³

Spoil Storage  
Quantity = ?

Concrete Storage  
Quantity = ?

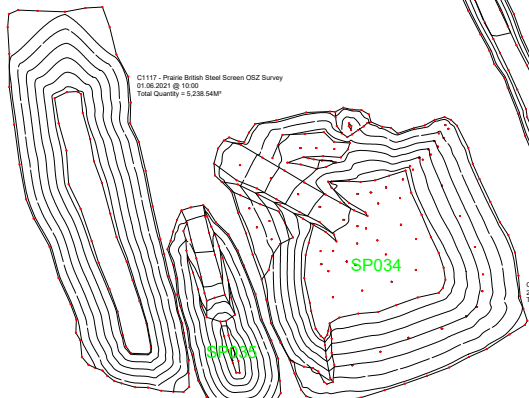
C1117 - Parie British Steel Screened Window Survey  
28.06.2021 @ 12:00  
Total Area = 242.17M²

C1096 - Parie British Steel Clay Survey  
26.04.2021 @ 10:00  
Total Quantity = 13,680.181M³



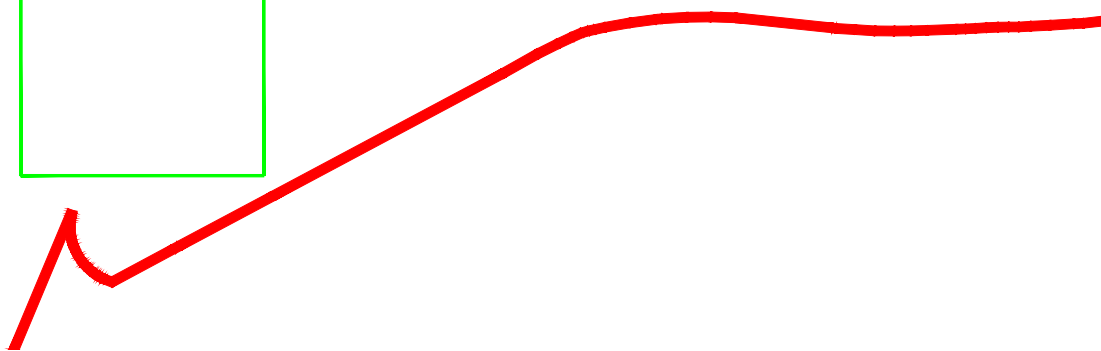
C1117 - Parie British Steel Window Heap Survey  
30.06.2021 @ 12:00  
Total Area = 3,112.20M²

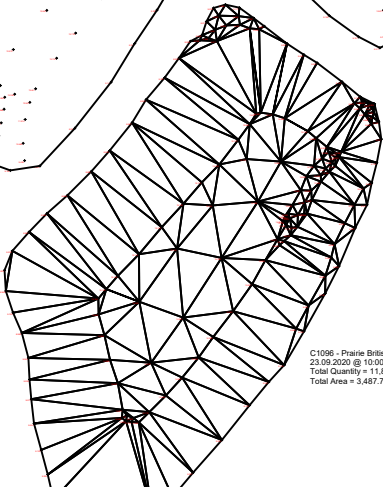
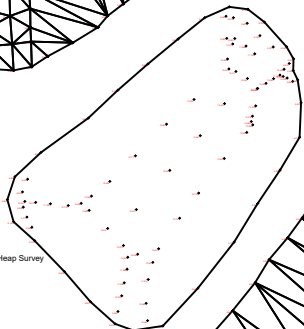
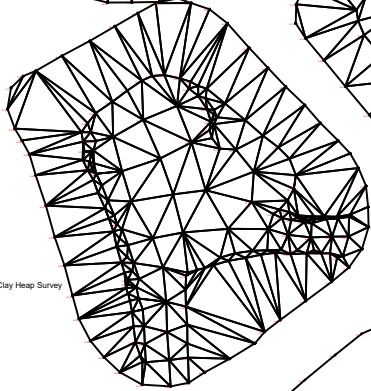
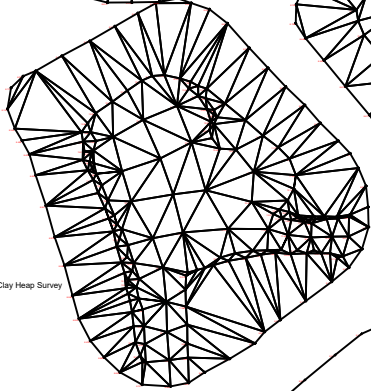
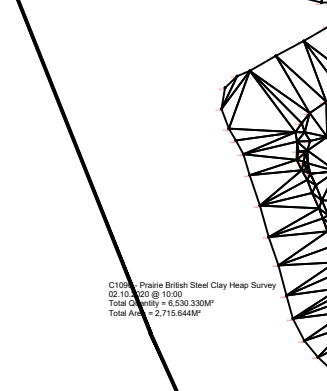
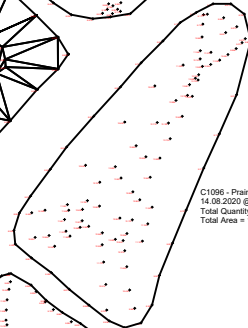
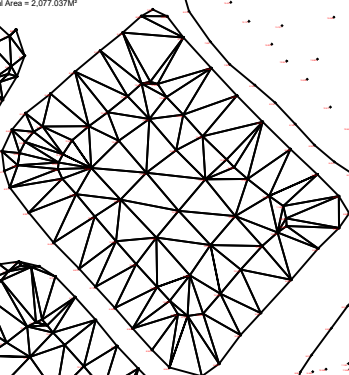
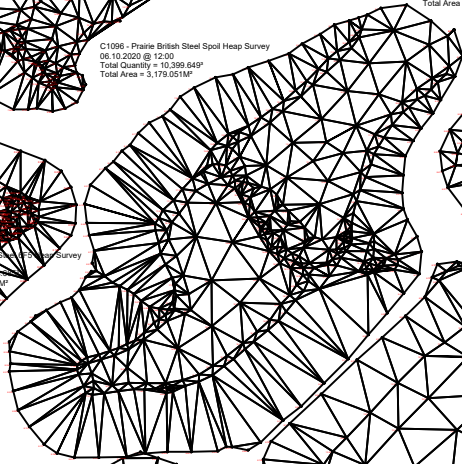
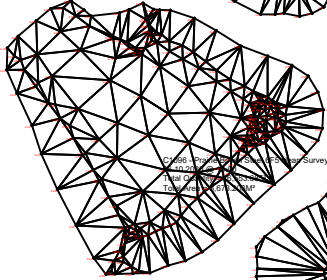
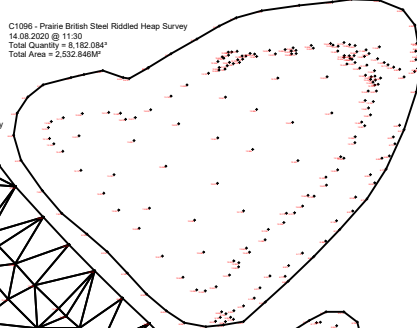
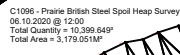
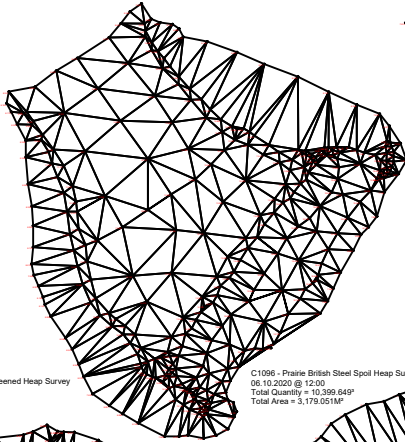
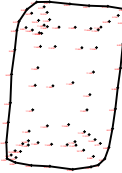
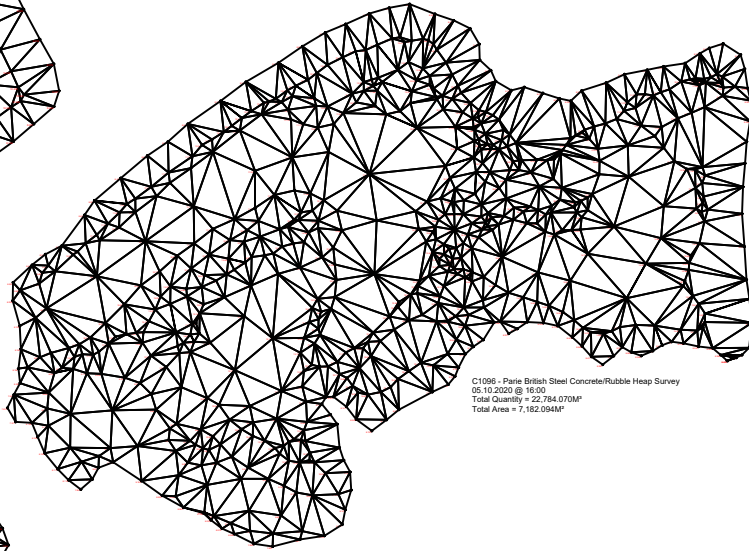
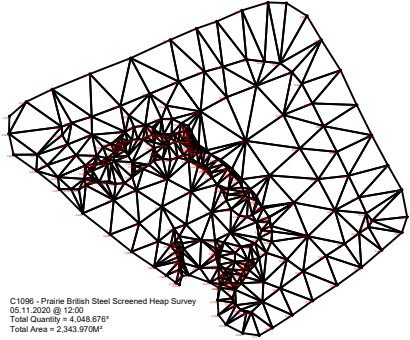
Concrete Storage  
Quantity = ?

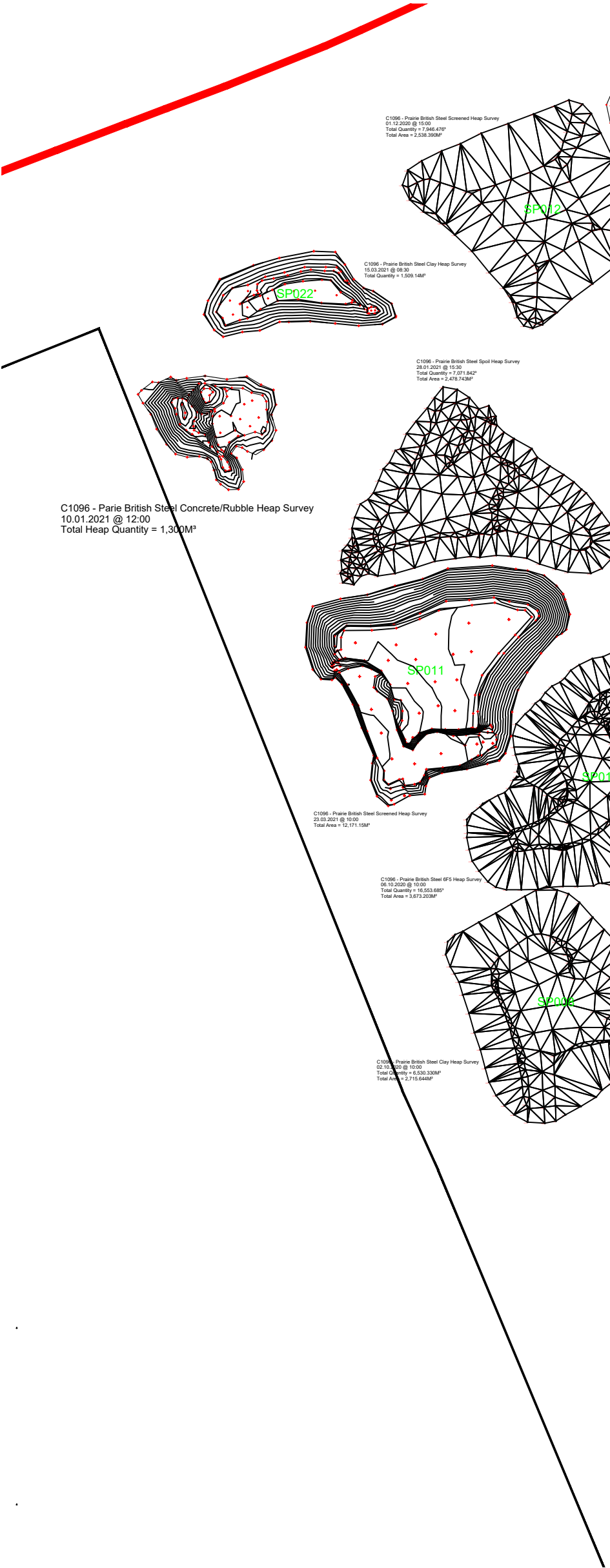


C1117 - Parie British Steel Screened Survey  
24.06.2021 @ 12:00  
Total Quantity = 8,874.32M³ + 237.9M³ (Taken For Fill) = 9,112.22M³

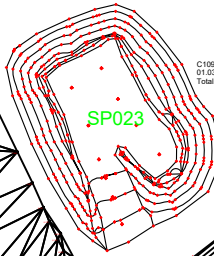
C1117 - Parie British MS-Fraction Survey  
01.06.2021 @ 09:00  
Total Quantity = 1,321.01M³



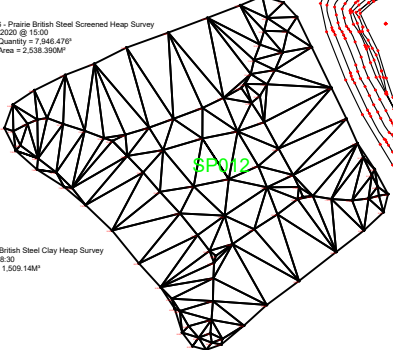




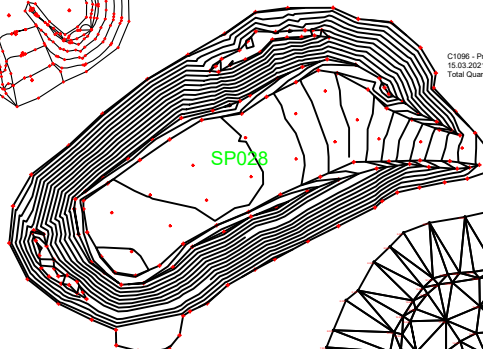
C1096 - Prairie British Steel Screened Heap Survey  
01.12.2020 @ 15:50  
Total Quantity = 7,546.47M³  
Total Area = 2,538.368M²



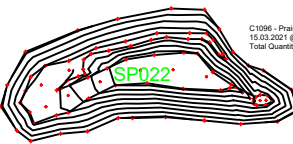
C1096 - Prairie British Steel BFS Heap Survey  
01.02.2021 @ 08:50  
Total Quantity = 2,901.33M³



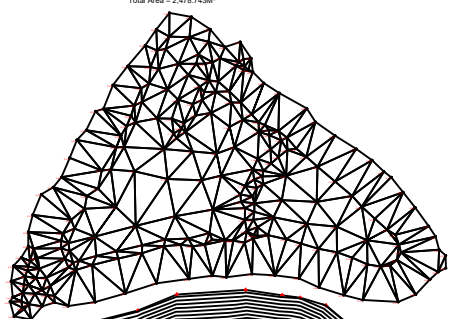
C1096 - Prairie British Steel Fire Brick Heap Survey  
15.02.2021 @ 10:30  
Total Quantity = 11,422.08M³



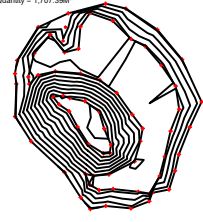
C1096 - Prairie British Steel Clay Heap Survey  
15.03.2021 @ 09:50  
Total Quantity = 1,509.14M³



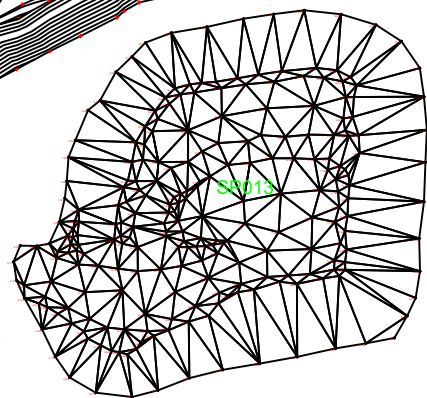
C1096 - Prairie British Steel Spoil Heap Survey  
28.01.2021 @ 15:30  
Total Quantity = 7,261.84M³  
Total Area = 2,478.743M²



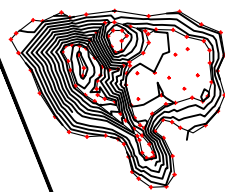
C1096 - Prairie British Steel Concrete/Rubble Heap Survey  
16.03.2021 @ 09:00  
Total Quantity = 1,707.38M³



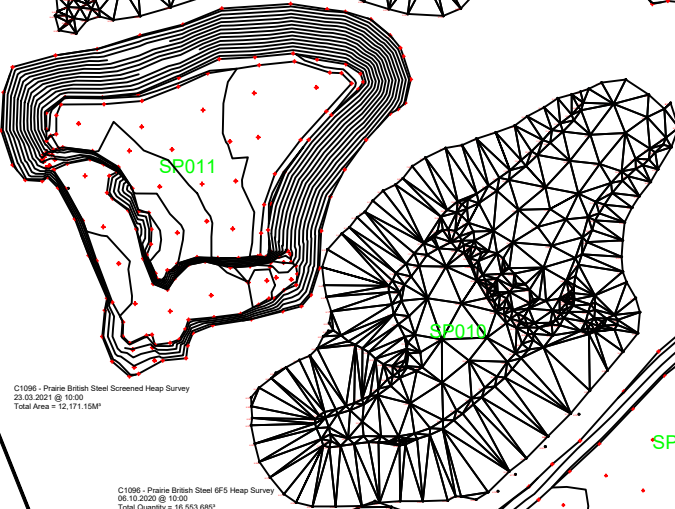
C1096 - Prairie British Steel BFS Heap Survey  
02.02.2021 @ 12:00  
Total Quantity = 22,026.301M³  
Total Area = 4,017.927M²



C1096 - Prairie British Steel Concrete/Rubble Heap Survey  
10.01.2021 @ 12:00  
Total Heap Quantity = 1,300M³

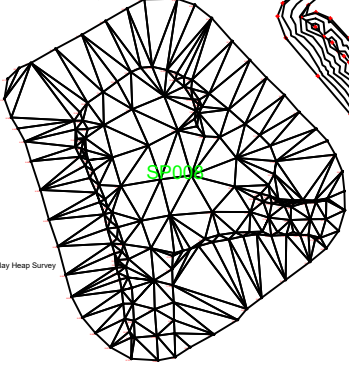


C1096 - Prairie British Steel Screened Survey  
05.04.2021 @ 10:00  
Total Quantity = 2,668.65M³



C1096 - Prairie British Steel Screened Heap Survey  
23.03.2021 @ 10:00  
Total Area = 12,171.15M²

C1096 - Prairie British Steel BFS Heap Survey  
06.10.2020 @ 10:00  
Total Quantity = 16,563.68M³  
Total Area = 5,673.203M²



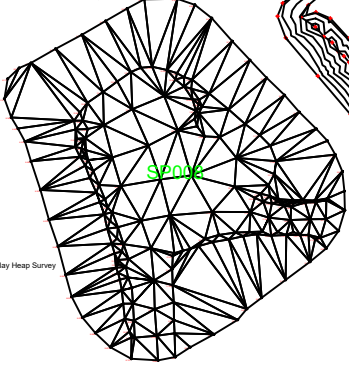
C1096 - Prairie British Steel Screen Heap Survey  
28.03.2020 @ 11:00  
Total Quantity = 4,817M³



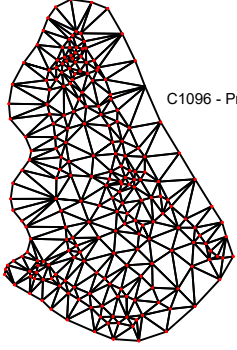
C1096 - Prairie British Steel Clay Survey  
05.04.2021 @ 10:00  
Total Quantity = 11,404.98M³



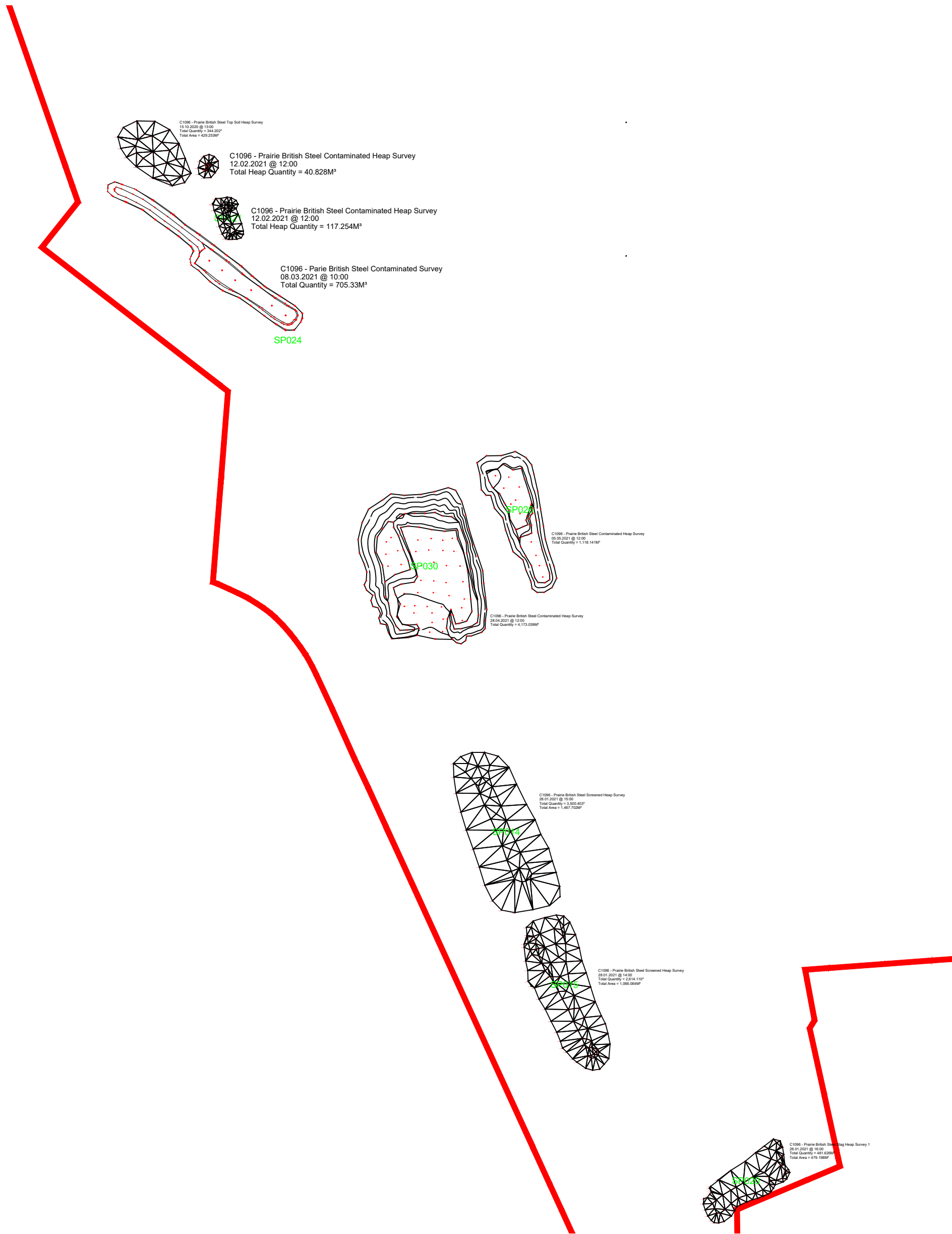
C1096 - Prairie British Steel Clay Heap Survey  
02.11.2020 @ 10:00  
Total Quantity = 6,530.330M³  
Total Area = 2,715.646M²



C1096 - Prairie British Steel Concrete Survey







C1096 - Prairie British Steel Top Soil Heap Survey  
15.10.2020 @ 13:00  
Total Quantity = 344.202³  
Total Area = 429.253M²

C1096 - Prairie British Steel Contaminated Heap Survey  
12.02.2021 @ 12:00  
Total Heap Quantity = 40.828M³

C1096 - Prairie British Steel Contaminated Heap Survey  
12.02.2021 @ 12:00  
Total Heap Quantity = 117.254M³

C1096 - Prairie British Steel Contaminated Survey  
08.03.2021 @ 10:00  
Total Quantity = 705.33M³

SP024

C1096 - Prairie British Steel Contaminated Heap Survey  
08.03.2021 @ 12:00  
Total Quantity = 1,118,141M³

SP030

C1096 - Prairie British Steel Contaminated Heap Survey  
28.04.2021 @ 12:00  
Total Quantity = 4,173,039M³

C1096 - Prairie British Steel Screened Heap Survey  
28.01.2021 @ 15:00  
Total Quantity = 3,500,403³  
Total Area = 1,487,702M²

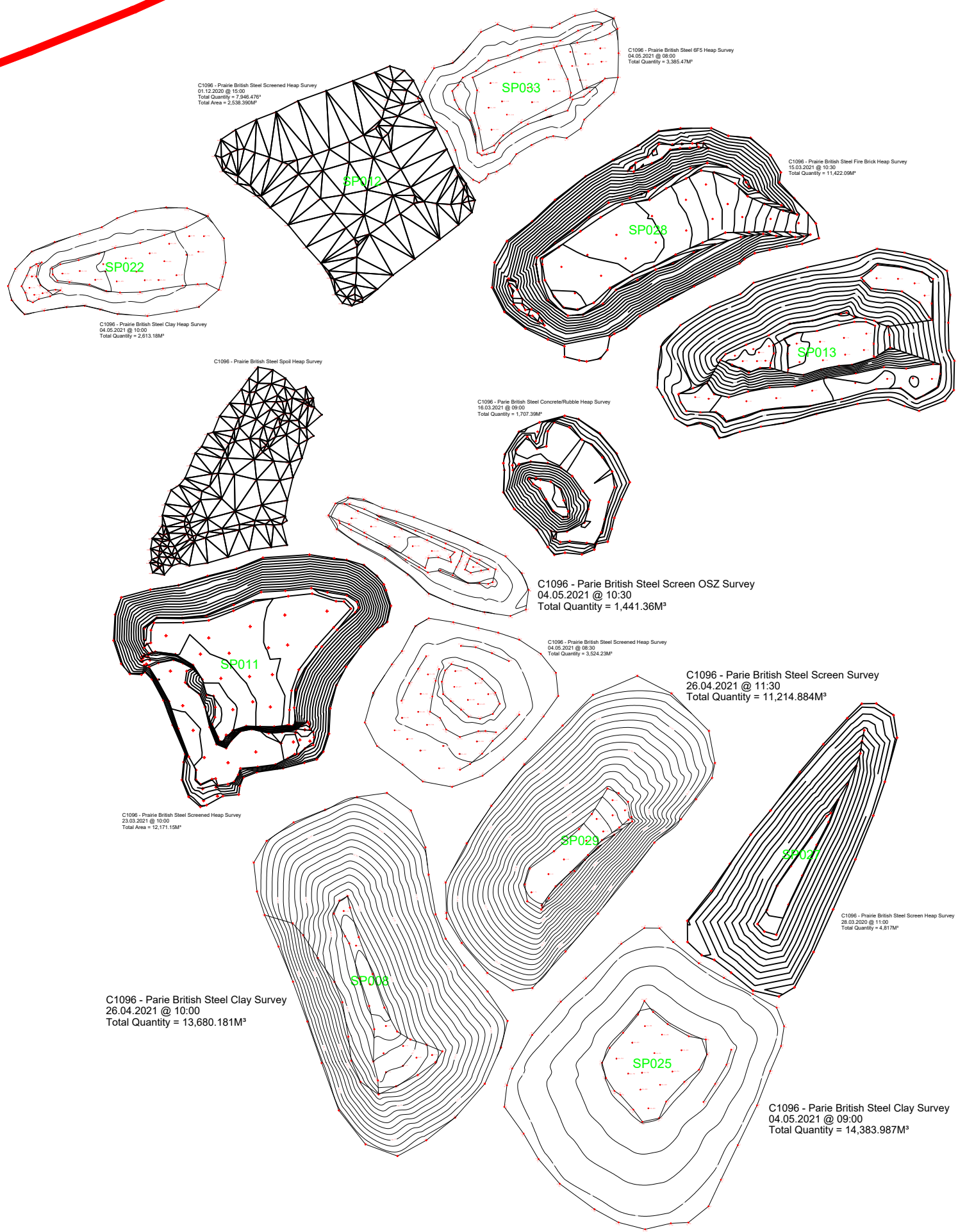
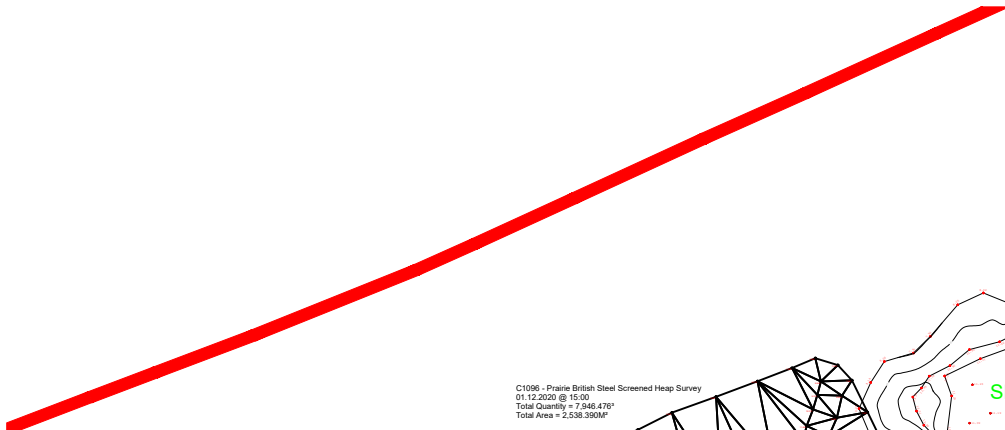
SP031

C1096 - Prairie British Steel Screened Heap Survey  
28.01.2021 @ 14:00  
Total Quantity = 2,214,110³  
Total Area = 1,066,064M²

SP032

C1096 - Prairie British Steel Screened Heap Survey 1  
28.01.2021 @ 16:00  
Total Quantity = 481,820M³  
Total Area = 478,195M²

SP033



C1096 - Prairie British Steel Screened Heap Survey  
01.12.2020 @ 15:00  
Total Quantity = 7,946.47M<sup>3</sup>  
Total Area = 2,538.59M<sup>2</sup>

C1096 - Prairie British Steel BFS Heap Survey  
04.05.2021 @ 08:00  
Total Quantity = 3,385.47M<sup>3</sup>

C1096 - Prairie British Steel Fire Brick Heap Survey  
15.03.2021 @ 10:30  
Total Quantity = 11,422.09M<sup>3</sup>

C1096 - Prairie British Steel Clay Heap Survey  
04.05.2021 @ 10:00  
Total Quantity = 2,613.18M<sup>3</sup>

C1096 - Prairie British Steel Spoil Heap Survey

C1096 - Prairie British Steel Concrete/Rubble Heap Survey  
18.03.2021 @ 09:00  
Total Quantity = 1,707.39M<sup>3</sup>

C1096 - Prairie British Steel Crushed Concrete Survey  
27.04.2021 @ 11:00  
Total Quantity = 14,239.88M<sup>3</sup>

C1096 - Prairie British Steel Screen OSZ Survey  
04.05.2021 @ 10:30  
Total Quantity = 1,441.36M<sup>3</sup>

C1096 - Prairie British Steel Screened Heap Survey  
04.05.2021 @ 09:30  
Total Quantity = 3,524.23M<sup>3</sup>

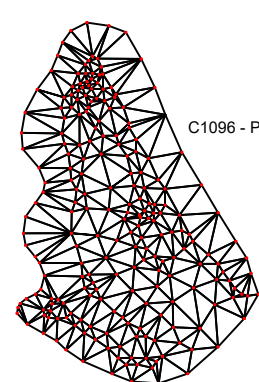
C1096 - Prairie British Steel Screen Survey  
26.04.2021 @ 11:30  
Total Quantity = 11,214.88M<sup>3</sup>

C1096 - Prairie British Steel Screened Heap Survey  
23.03.2021 @ 10:00  
Total Area = 12,171.15M<sup>2</sup>

C1096 - Prairie British Steel Screen Heap Survey  
26.03.2020 @ 11:00  
Total Quantity = 4,817M<sup>3</sup>

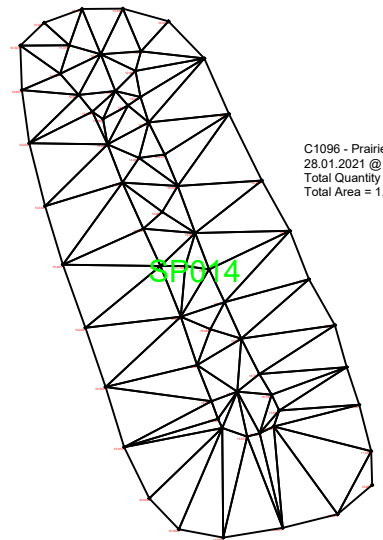
C1096 - Prairie British Steel Clay Survey  
26.04.2021 @ 10:00  
Total Quantity = 13,680.181M<sup>3</sup>

C1096 - Prairie British Steel Clay Survey  
04.05.2021 @ 09:00  
Total Quantity = 14,383.987M<sup>3</sup>



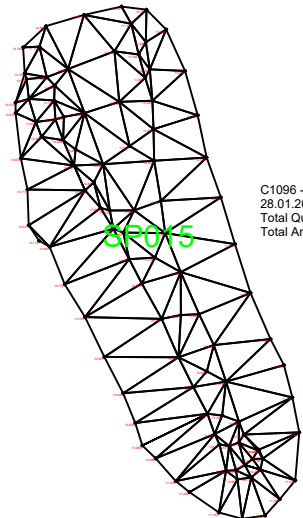
C1096 - Prairie British Steel Concrete Survey





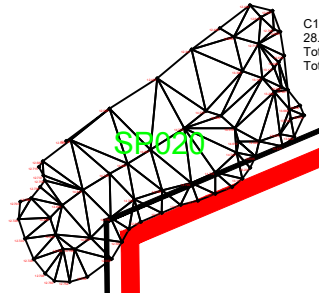
C1096 - Prairie British Steel Screened Heap Survey  
28.01.2021 @ 15:00  
Total Quantity = 3,500.403³  
Total Area = 1,467.702M²

SF014



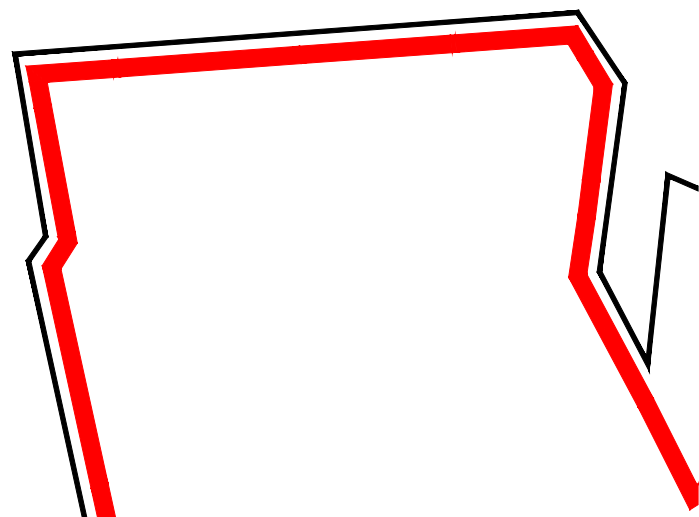
C1096 - Prairie British Steel Screened Heap Survey  
28.01.2021 @ 14:00  
Total Quantity = 2,614.110³  
Total Area = 1,066.064M²

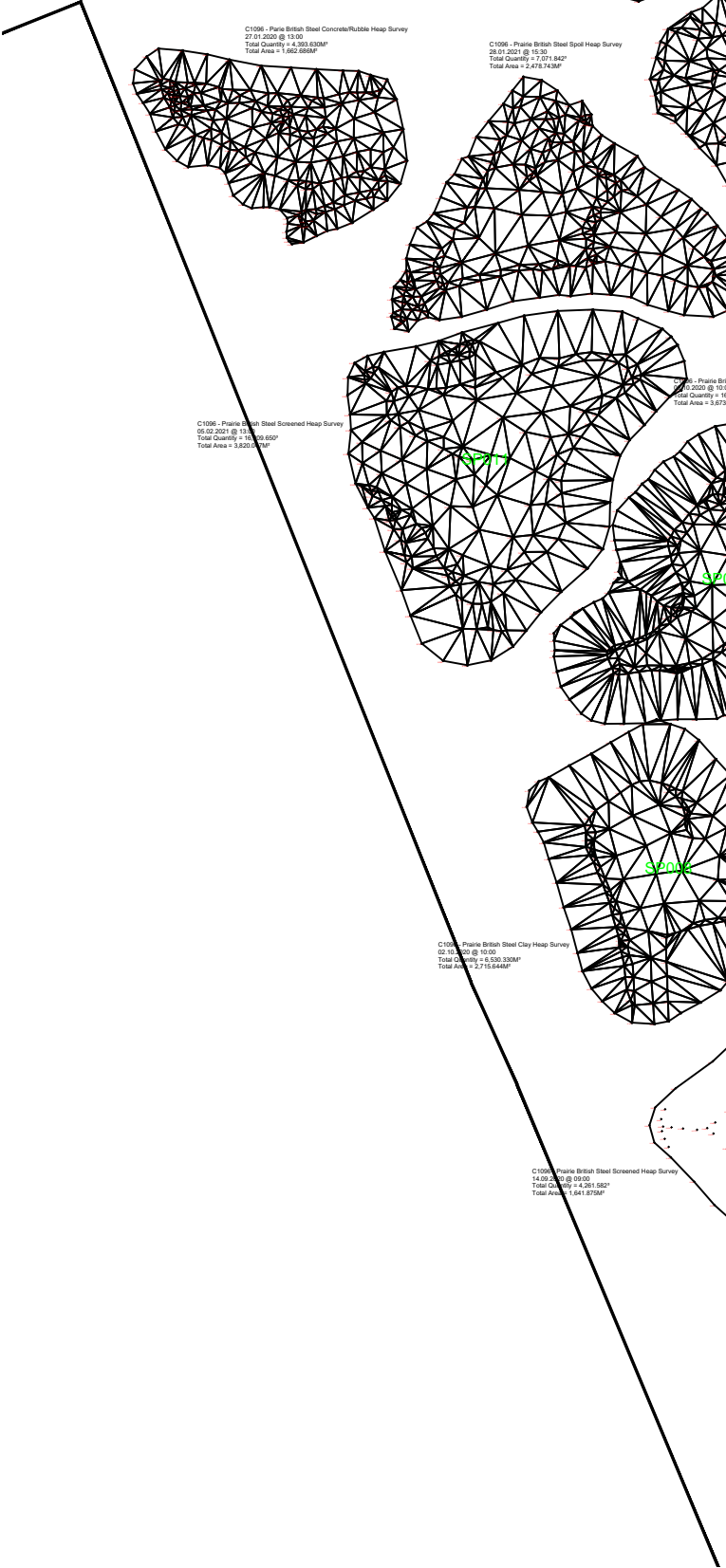
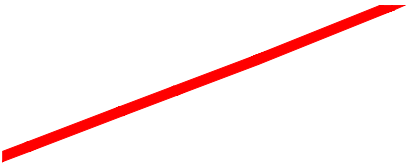
SF015



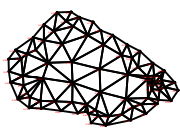
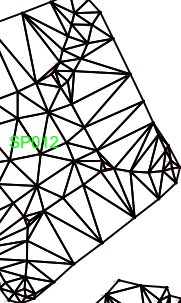
C1096 - Prairie British Steel Slag Heap Survey 1  
28.01.2021 @ 16:00  
Total Quantity = 481.628M³  
Total Area = 479.198M²

SF020

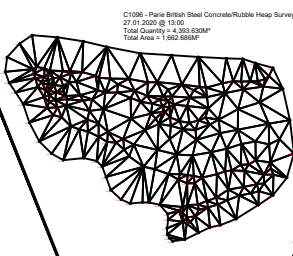




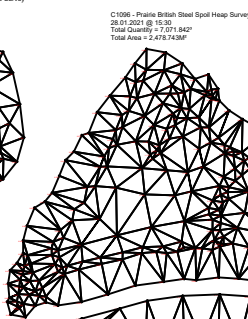
C1096 - Prairie British Steel Screened Heap Survey  
01.12.2020 @ 15:00  
Total Quantity = 7,964,419#  
Total Area = 2,538,300M<sup>2</sup>



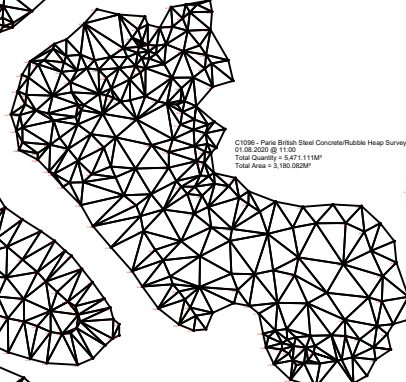
C1096 - Prairie British Steel Fire Brick Heap Survey  
06.02.2021 @ 13:30  
Total Quantity = 623,062#  
Total Area = 629,994M<sup>2</sup>



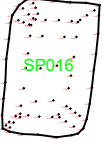
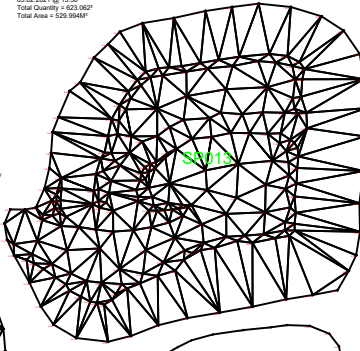
C1096 - Prairie British Steel Concrete/Rubble Heap Survey  
27.01.2020 @ 13:00  
Total Quantity = 4,393,833M<sup>3</sup>  
Total Area = 1,462,098M<sup>2</sup>



C1096 - Prairie British Steel Spill Heap Survey  
28.01.2021 @ 15:20  
Total Quantity = 7,071,842#  
Total Area = 2,478,243M<sup>2</sup>

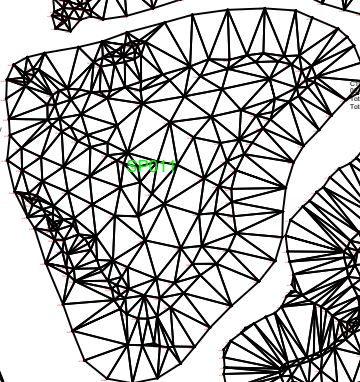


C1096 - Prairie British Steel Concrete/Rubble Heap Survey  
01.08.2020 @ 11:00  
Total Quantity = 8,471,111M<sup>3</sup>  
Total Area = 2,180,292M<sup>2</sup>

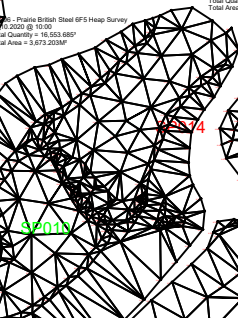


C1096 - Prairie British Steel Contaminated Heap 1 Survey  
26.08.2020 @ 10:00  
Total Quantity = 194,555M<sup>3</sup>  
Total Area = 505,958M<sup>2</sup>  
SP017, SP018, SP019 (See TWR\_RP1\_012)

C1096 - Prairie British Steel Off's Heap Survey  
02.02.2021 @ 13:00  
Total Quantity = 57,838,291#  
Total Area = 4,017,301M<sup>2</sup>

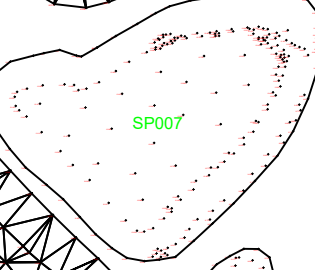


C1096 - Prairie British Steel Screened Heap Survey  
05.02.2021 @ 13:00  
Total Quantity = 10,039,650#  
Total Area = 3,820,076M<sup>2</sup>

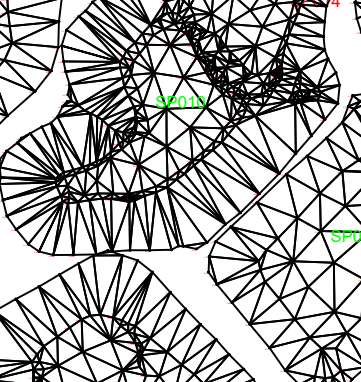


C1096 - Prairie British Steel Off's Heap Survey  
01.08.2020 @ 11:00  
Total Quantity = 16,953,980#  
Total Area = 3,870,203M<sup>2</sup>

C1096 - Prairie British Steel Screened Heap Survey  
01.08.2020 @ 11:00  
Total Quantity = 8,326,874#  
Total Area = 3,077,107M<sup>2</sup>

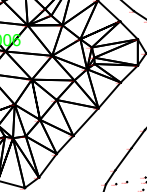


C1096 - Prairie British Steel Ribbed Heap Survey  
14.08.2020 @ 11:00  
Total Quantity = 8,192,284#  
Total Area = 2,332,848M<sup>2</sup>

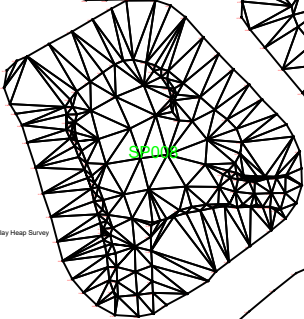


C1096 - Prairie British Steel Screened Heap Survey  
03.02.2020 @ 10:00  
Total Quantity = 5,532,341#  
Total Area = 2,127,381M<sup>2</sup>

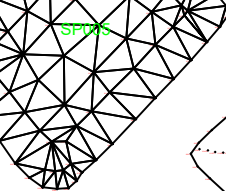
C1096 - Prairie British Steel Screened Heap Survey  
03.02.2020 @ 10:00  
Total Quantity = 5,532,341#  
Total Area = 2,127,381M<sup>2</sup>



C1096 - Prairie British Steel Screened Heap Survey  
14.08.2020 @ 11:00  
Total Quantity = 2,161,330#  
Total Area = 1,128,188M<sup>2</sup>

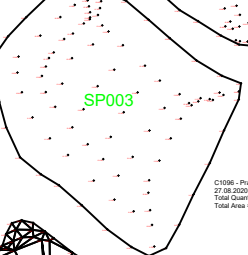
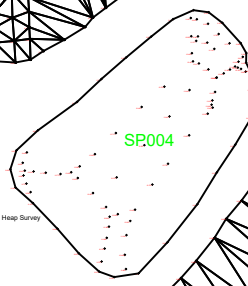


C1096 - Prairie British Steel Screened Heap Survey  
03.02.2020 @ 10:00  
Total Quantity = 5,532,341#  
Total Area = 2,127,381M<sup>2</sup>

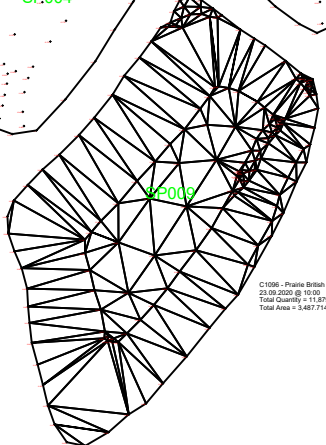


C1096 - Prairie British Steel Screened Heap Survey  
04.08.2020 @ 09:00  
Total Quantity = 9,716,400#  
Total Area = 1,382,049M<sup>2</sup>

C1096 - Prairie British Steel Clay Heap Survey  
05.10.2021 @ 10:00  
Total Quantity = 6,036,339M<sup>3</sup>  
Total Area = 2,718,648M<sup>2</sup>



C1096 - Prairie British Steel Screened Heap Survey  
14.02.2021 @ 09:00  
Total Quantity = 4,261,682#  
Total Area = 1,641,879M<sup>2</sup>



C1096 - Prairie British Steel Crushed Concrete Heap Survey  
01.09.2020 @ 10:00  
Total Quantity = 11,870,748M<sup>3</sup>  
Total Area = 3,487,748M<sup>2</sup>



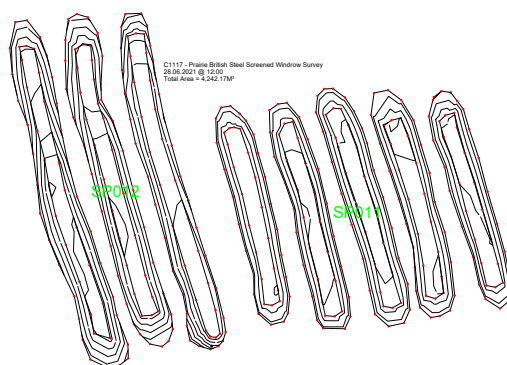




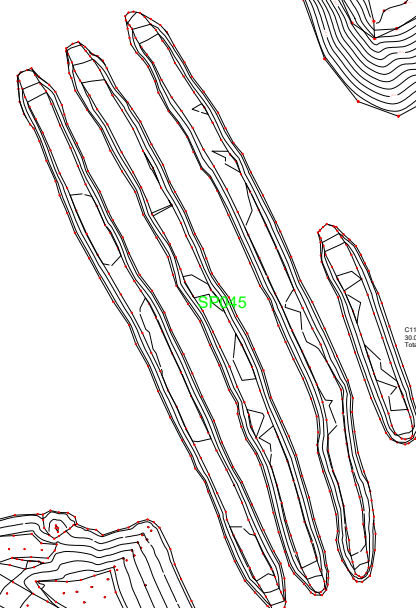
C1117 - Parie British Steel Screen Survey  
03.08.2021 @ 10:30  
Total Quantity = 2,117.53M<sup>3</sup>



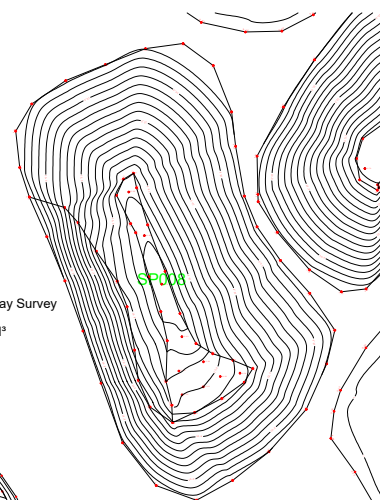
C1117 - Parie British Steel OSZ Survey  
16.08.2021 @ 10:30  
Total Quantity = 287.93M<sup>3</sup>



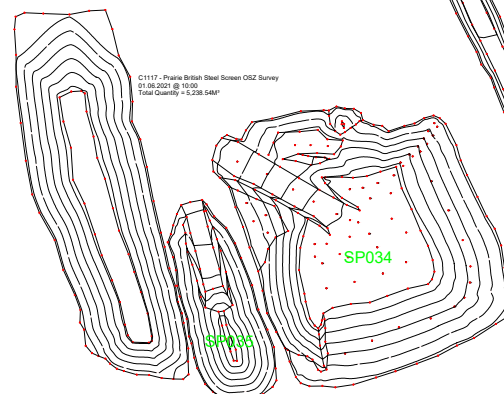
C1117 - Parie British Steel Screened Window Survey  
28.08.2021 @ 10:00  
Total Area = 6,242.17M<sup>2</sup>



C1096 - Parie British Steel Clay Survey  
26.04.2021 @ 10:00  
Total Quantity = 13,680.181M<sup>3</sup>



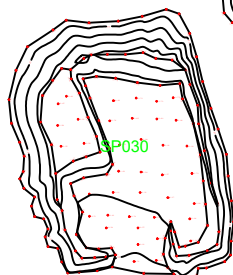
SP08



C1117 - Parie British Steel Screen OSZ Survey  
01.08.2021 @ 10:30  
Total Quantity = 1,238.84M<sup>3</sup>

C1117 - Parie British Steel Screened Survey  
28.08.2021 @ 10:30  
Total Quantity = 8,874.02M<sup>3</sup> + 227.8M<sup>3</sup> (Taken For Fill) = 9,101.82M<sup>3</sup>

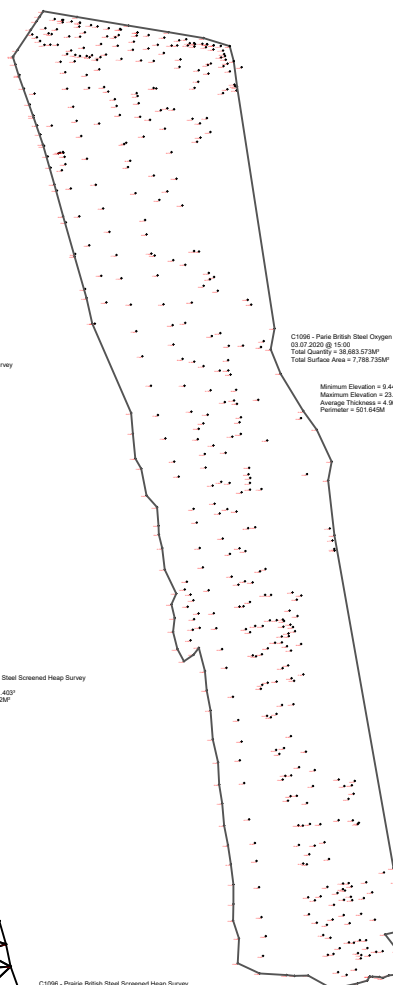
C1117 - Parie British MS-Fraction Survey  
01.08.2021 @ 10:30  
Total Quantity = 1,321.07M<sup>3</sup>



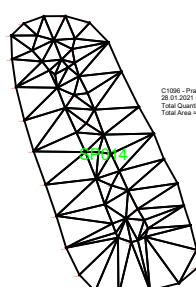
C1096 - Parie British Steel Contaminated Heap Survey  
06.08.2021 @ 12:00  
Total Quantity = 1,118.141M<sup>3</sup>



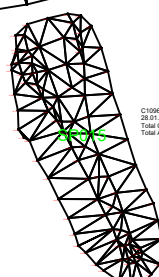
C1096 - Parie British Steel Contaminated Heap Survey  
16.08.2021 @ 12:00  
Total Quantity = 4,173.038M<sup>3</sup>



C1096 - Parie British Steel Oxygen Plant Heap Survey  
03.07.2021 @ 15:55  
Total Quantity = 28,653.57M<sup>3</sup>  
Total Surface Area = 7,788.735M<sup>2</sup>  
Minimum Elevation = 9.448M  
Maximum Elevation = 25.127M  
Average Thickness = 4.967M  
Perimeter = 521.945M

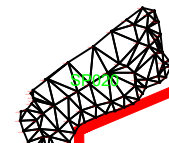


C1096 - Parie British Steel Screened Heap Survey  
28.01.2021 @ 15:00  
Total Quantity = 2,340.407M<sup>3</sup>  
Total Area = 1,487.702M<sup>2</sup>

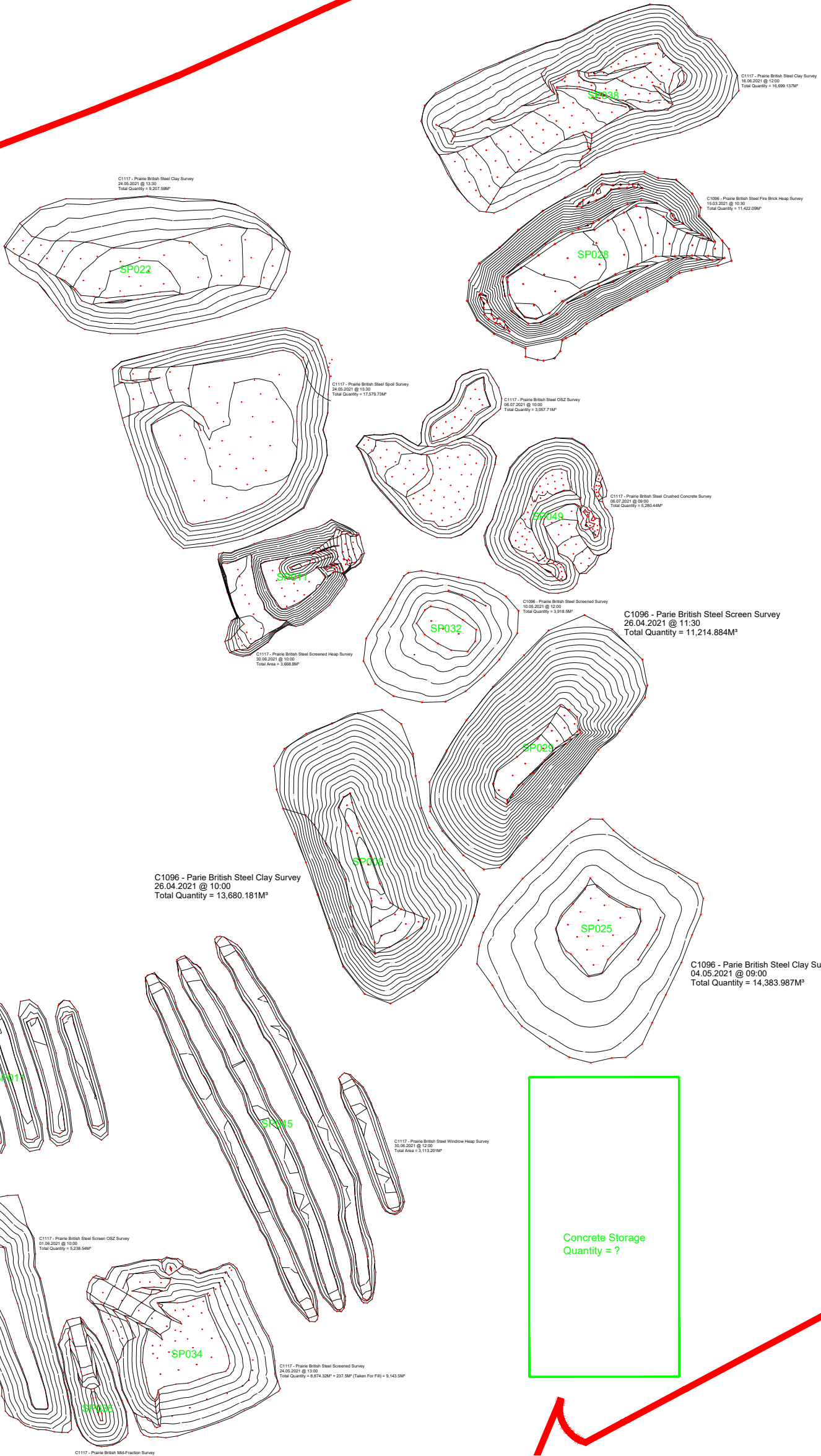
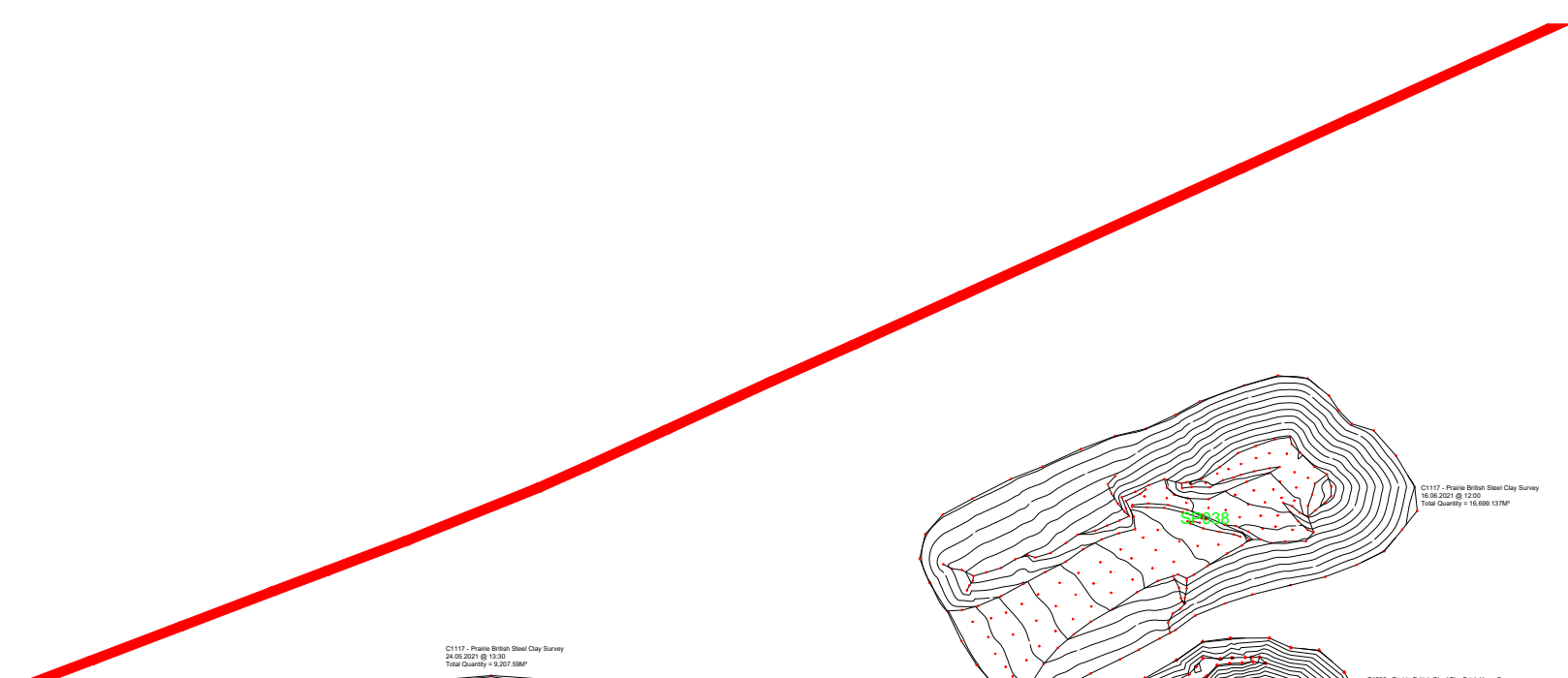


C1096 - Parie British Steel Screened Heap Survey  
28.01.2021 @ 14:00  
Total Quantity = 2,814.117M<sup>3</sup>  
Total Area = 1,068.964M<sup>2</sup>

SP050 (Spoil)  
Quantity = ?



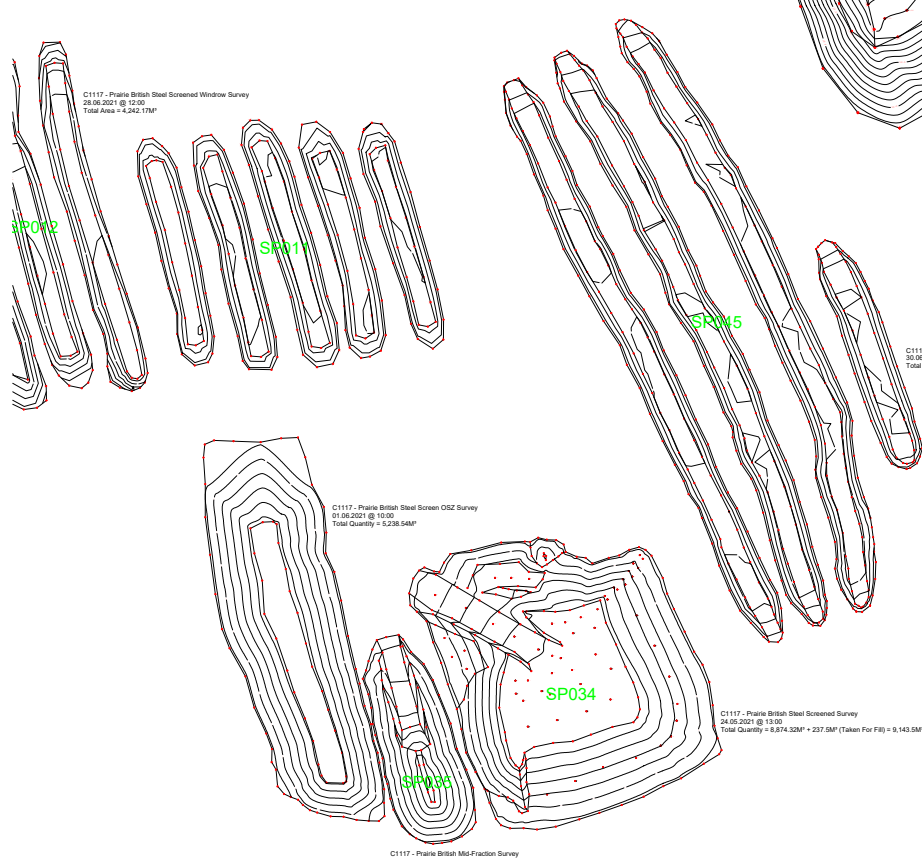
C1096 - Parie British Steel Screened Heap Survey 1  
28.01.2021 @ 16:00  
Total Quantity = 451.626M<sup>3</sup>  
Total Area = 475.199M<sup>2</sup>

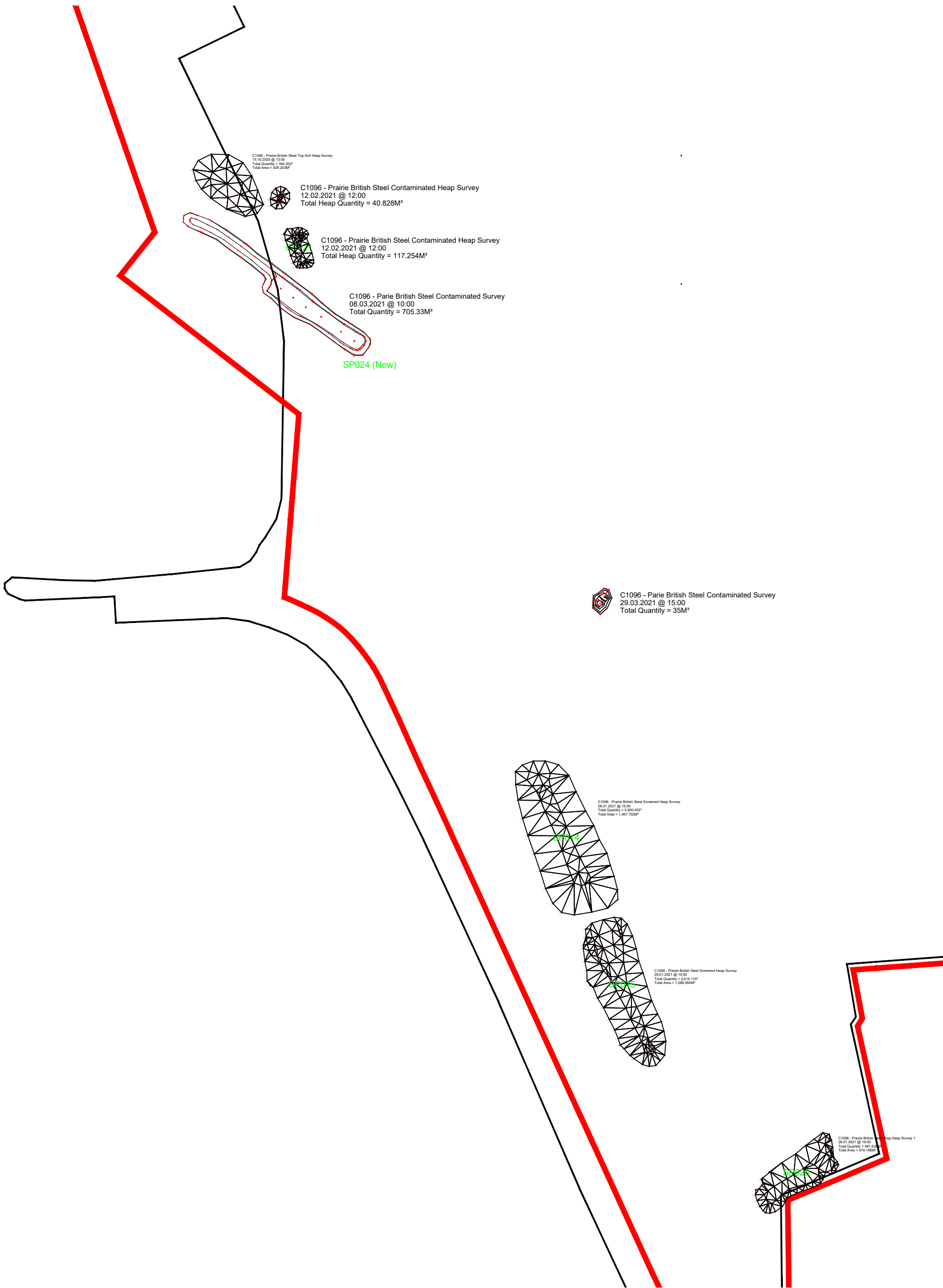


Spoil Storage  
Quantity = ?

Concrete Storage  
Quantity = ?

Concrete Storage  
Quantity = ?





C1096 - Prairie British Steel Top Soil Heap Survey  
15.10.2020 @ 13:00  
Total Quantity = 344.202M³  
Total Area = 429.253M²

C1096 - Prairie British Steel Contaminated Heap Survey  
12.02.2021 @ 12:00  
Total Heap Quantity = 40.828M³

C1096 - Prairie British Steel Contaminated Heap Survey  
12.02.2021 @ 12:00  
Total Heap Quantity = 117.254M³

C1096 - Prairie British Steel Contaminated Survey  
08.03.2021 @ 10:00  
Total Quantity = 705.33M³

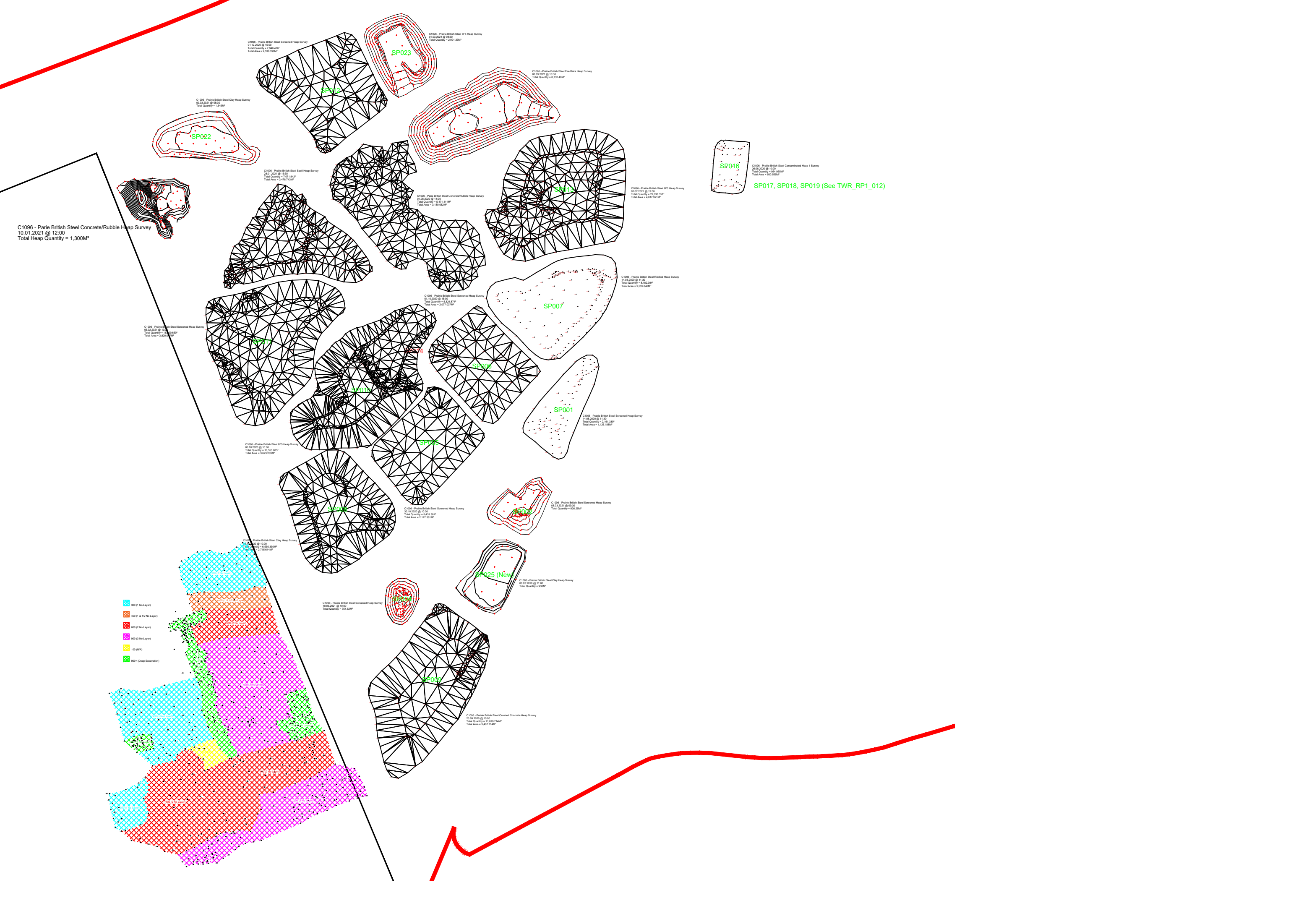
SP024 (New)

C1096 - Prairie British Steel Contaminated Survey  
29.03.2021 @ 15:00  
Total Quantity = 35M³

C1096 - Prairie British Steel Screened Heap Survey  
28.01.2021 @ 15:00  
Total Quantity = 3,500.402M³  
Total Area = 1,487.925M²

C1096 - Prairie British Steel Screened Heap Survey  
28.01.2021 @ 14:00  
Total Quantity = 2,614.110M³  
Total Area = 1,060.954M²

C1096 - Prairie British Steel Screened Heap Survey 1  
28.01.2021 @ 15:00  
Total Quantity = 481.620M³  
Total Area = 470.199M²



C1096 - Parie British Steel Concrete/Rubble Heap Survey  
10.01.2021 @ 12:00  
Total Heap Quantity = 1,300M³

- 300 (1 No Layer)
- 400 (1 & 10 No Layer)
- 600 (2 No Layer)
- 800 (3 No Layer)
- 100 (PA)
- 900+ (Deep Excavation)

C1098 - Parie British Steel Screened Heap Survey  
01.12.2021 @ 10:00  
Total Quantity = 2,291.20M³  
Total Area = 2,258.25M²

SP022

SP023

C1099 - Parie British Steel FFS Heap Survey  
01.03.2021 @ 09:30  
Total Quantity = 2,961.20M³

C1097 - Parie British Steel Fine Brink Heap Survey  
08.02.2021 @ 10:30  
Total Quantity = 8,732.40M³

SP016

C1096 - Parie British Steel Contaminated Heap 1 Survey  
24.08.2020 @ 10:30  
Total Quantity = 504.80M³  
Total Area = 340.00M²  
SP017, SP018, SP019 (See TWR\_RP1\_012)

C1098 - Parie British Steel Concrete/Rubble Heap Survey  
01.01.2021 @ 10:30  
Total Quantity = 7,720.40M³  
Total Area = 2,476.74M²

C1098 - Parie British Steel Screened Heap Survey  
01.01.2021 @ 11:00  
Total Quantity = 5,471.11M³  
Total Area = 5,102.92M²

C1098 - Parie British Steel FFS Heap Survey  
01.02.2021 @ 11:30  
Total Quantity = 2,830.20M³  
Total Area = 4,877.62M²

C1098 - Parie British Steel Rotted Heap Survey  
14.08.2020 @ 11:30  
Total Quantity = 4,742.20M³  
Total Area = 2,832.84M²

C1098 - Parie British Steel Screened Heap Survey  
01.10.2020 @ 09:30  
Total Quantity = 5,204.81M³  
Total Area = 3,077.92M²

SP007

C1098 - Parie British Steel Screened Heap Survey  
05.02.2021 @ 10:30  
Total Quantity = 1,124.20M³  
Total Area = 3,820.71M²

C1098 - Parie British Steel Screened Heap Survey  
01.10.2020 @ 09:30  
Total Quantity = 5,204.81M³  
Total Area = 3,077.92M²

SP008

SP001

C1098 - Parie British Steel Screened Heap Survey  
14.08.2020 @ 11:30  
Total Quantity = 2,381.20M³  
Total Area = 1,228.88M²

C1098 - Parie British Steel FFS Heap Survey  
08.10.2020 @ 10:30  
Total Quantity = 76,303.80M³  
Total Area = 5,673.20M²

C1098 - Parie British Steel Screened Heap Survey  
01.10.2020 @ 09:30  
Total Quantity = 5,204.81M³  
Total Area = 3,077.92M²

C1098 - Parie British Steel FFS Heap Survey  
08.10.2020 @ 10:30  
Total Quantity = 76,303.80M³  
Total Area = 5,673.20M²

C1098 - Parie British Steel Screened Heap Survey  
08.10.2020 @ 10:30  
Total Quantity = 76,303.80M³  
Total Area = 5,673.20M²

C1098 - Parie British Steel Screened Heap Survey  
08.10.2020 @ 10:30  
Total Quantity = 76,303.80M³  
Total Area = 5,673.20M²

SP025 (New)

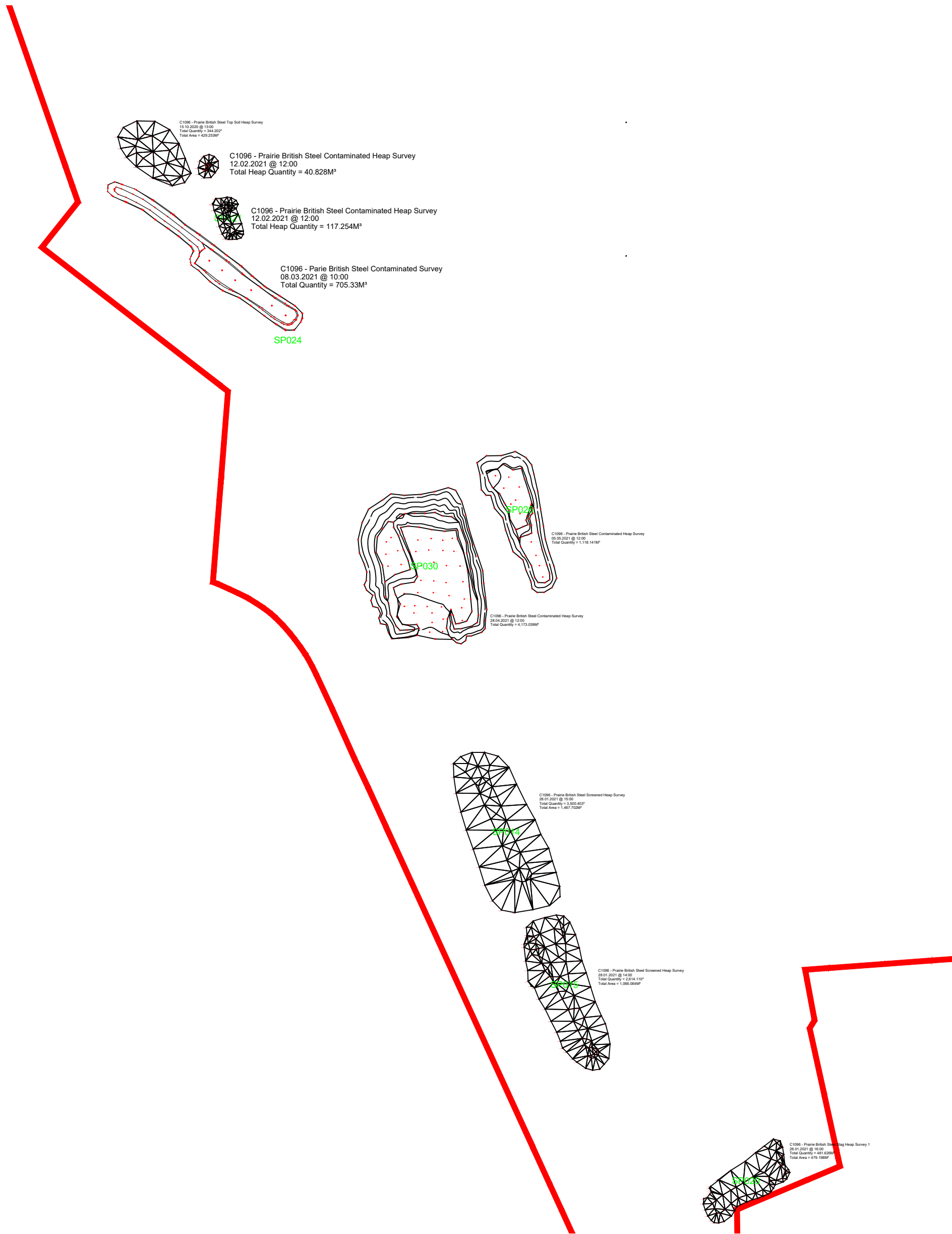
C1098 - Parie British Steel Clay Heap Survey  
08.03.2020 @ 10:00  
Total Quantity = 6.20M³

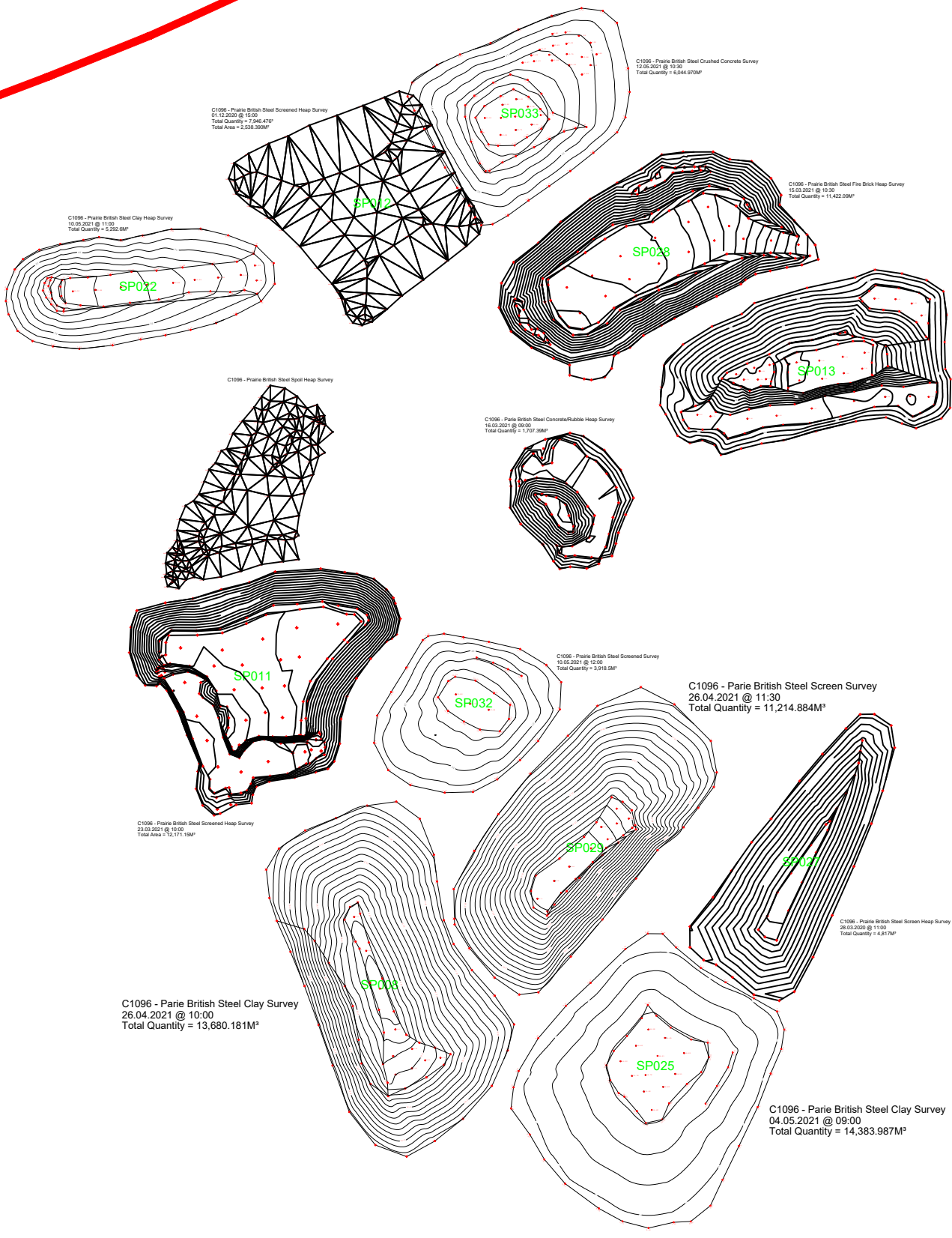
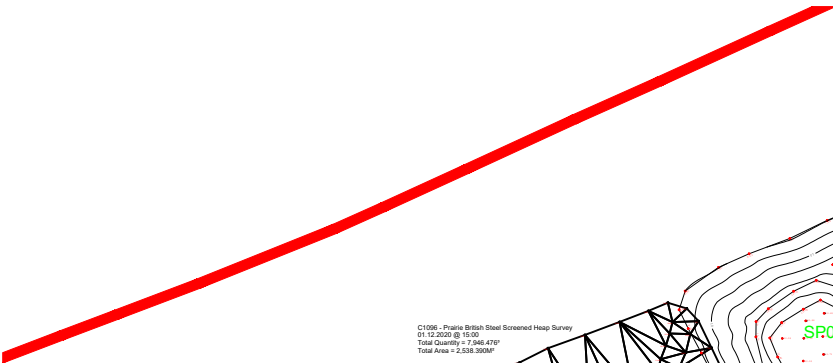
C1098 - Parie British Steel Screened Heap Survey  
10.03.2021 @ 10:30  
Total Quantity = 768.40M³

SP004

C1098 - Parie British Steel Crushed Concrete Heap Survey  
03.09.2020 @ 10:30  
Total Quantity = 11,879.71M³  
Total Area = 3,487.74M²







C1096 - Prairie British Steel Screened Heap Survey  
21.12.2020 @ 15:00  
Total Quantity = 7,948.47M³  
Total Area = 2,038.908M²

C1096 - Prairie British Steel Crushed Concrete Survey  
13.05.2021 @ 16:30  
Total Quantity = 8,044.870M³

C1096 - Prairie British Steel Clay Heap Survey  
15.05.2021 @ 11:00  
Total Quantity = 5,262.08M³

C1096 - Prairie British Steel Fire Brick Heap Survey  
16.03.2021 @ 15:30  
Total Quantity = 11,422.09M³

C1096 - Prairie British Steel Crushed Concrete Survey  
27.04.2021 @ 11:00  
Total Quantity = 14,239.889M³

C1096 - Prairie British Steel Spill Heap Survey

C1096 - Prairie British Steel Concrete/Rubble Heap Survey  
16.02.2021 @ 09:00  
Total Quantity = 1,707.38M³

C1096 - Prairie British Steel Screen Survey  
26.04.2021 @ 11:30  
Total Quantity = 11,214.884M³

C1096 - Prairie British Steel Concrete Survey

C1096 - Prairie British Steel Screened Heap Survey  
23.05.2021 @ 10:00  
Total Area = 12,171.198M²

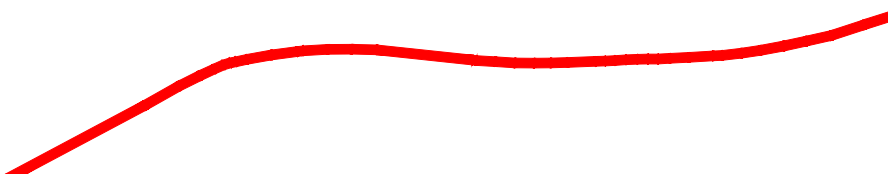
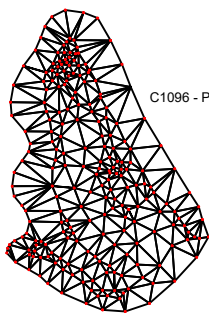
C1096 - Prairie British Steel Clay Survey  
26.04.2021 @ 10:00  
Total Quantity = 13,680.181M³

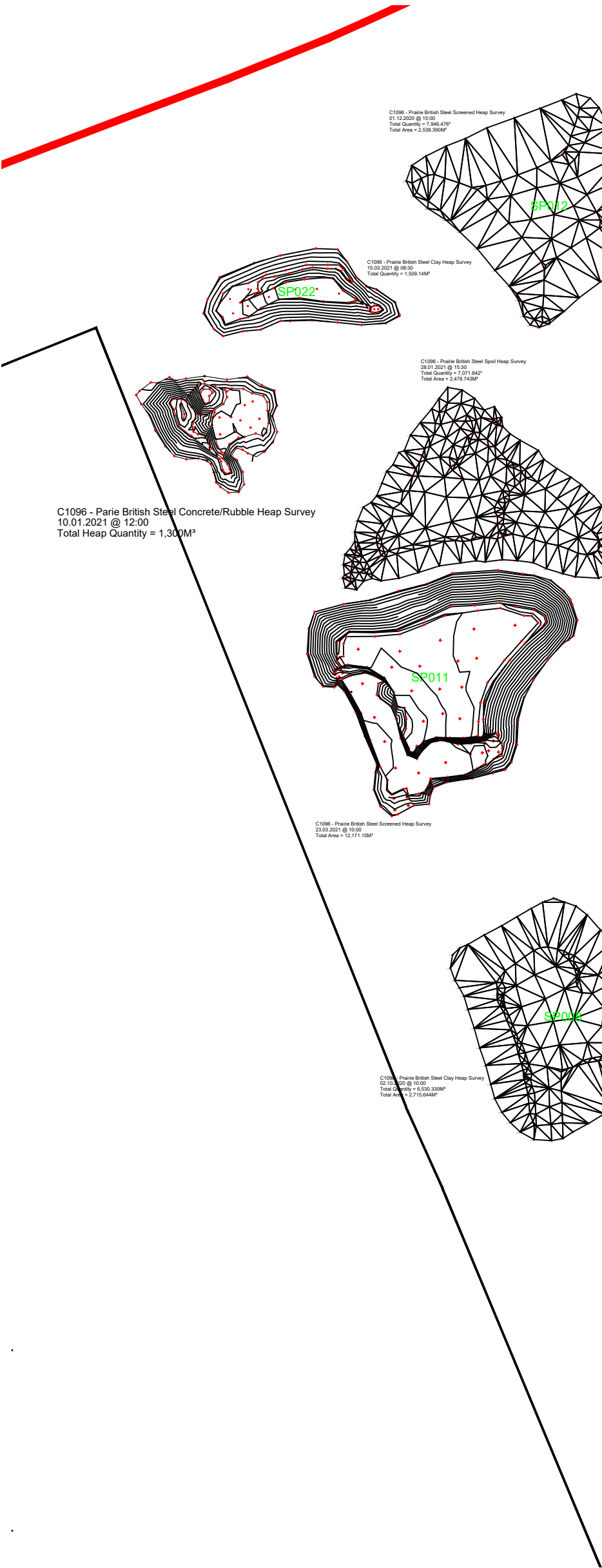
C1096 - Prairie British Steel Screen Heap Survey  
28.03.2020 @ 11:00  
Total Quantity = 4,817M³

C1096 - Prairie British Steel Concrete Survey

C1096 - Prairie British Steel Clay Survey  
04.05.2021 @ 09:00  
Total Quantity = 14,383.987M³

C1096 - Prairie British Steel Concrete Survey





C1096 - Prairie British Steel Screened Heap Survey  
01.12.2020 @ 15:00  
Total Quantity = 7,546,470<sup>m</sup><sup>3</sup>  
Total Area = 2,539,390M<sup>2</sup>

C1096 - Prairie British Steel BFS Heap Survey  
01.03.2021 @ 08:30  
Total Quantity = 2,901,238<sup>m</sup><sup>3</sup>

C1096 - Prairie British Steel Fire Brick Heap Survey  
15.03.2021 @ 10:30  
Total Quantity = 11,422,098<sup>m</sup><sup>3</sup>

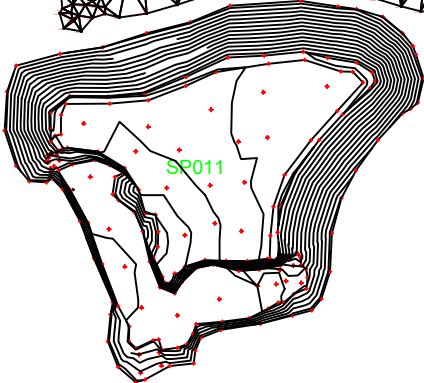
C1096 - Prairie British Steel Clay Heap Survey  
15.03.2021 @ 08:30  
Total Quantity = 1,508,148<sup>m</sup><sup>3</sup>

C1096 - Prairie British Steel Spoil Heap Survey  
29.01.2021 @ 15:30  
Total Quantity = 7,071,842<sup>m</sup><sup>3</sup>  
Total Area = 2,479,743M<sup>2</sup>

C1096 - Prairie British Steel Concrete/Rubble Heap Survey  
16.02.2021 @ 09:00  
Total Quantity = 1,707,368<sup>m</sup><sup>3</sup>

C1096 - Prairie British Steel BFS Heap Survey  
02.02.2021 @ 12:00  
Total Quantity = 22,630,351<sup>m</sup><sup>3</sup>  
Total Area = 4,017,923M<sup>2</sup>

C1096 - Prairie British Steel Concrete/Rubble Heap Survey  
10.01.2021 @ 12:00  
Total Heap Quantity = 1,300M<sup>3</sup>



C1096 - Prairie British Steel Screened Survey  
13.04.2021 @ 10:00  
Total Quantity = 6,467,400M<sup>3</sup>

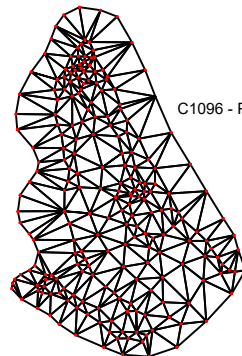
C1096 - Prairie British Steel Screened Heap Survey  
23.03.2021 @ 10:00  
Total Area = 12,171,198M<sup>2</sup>

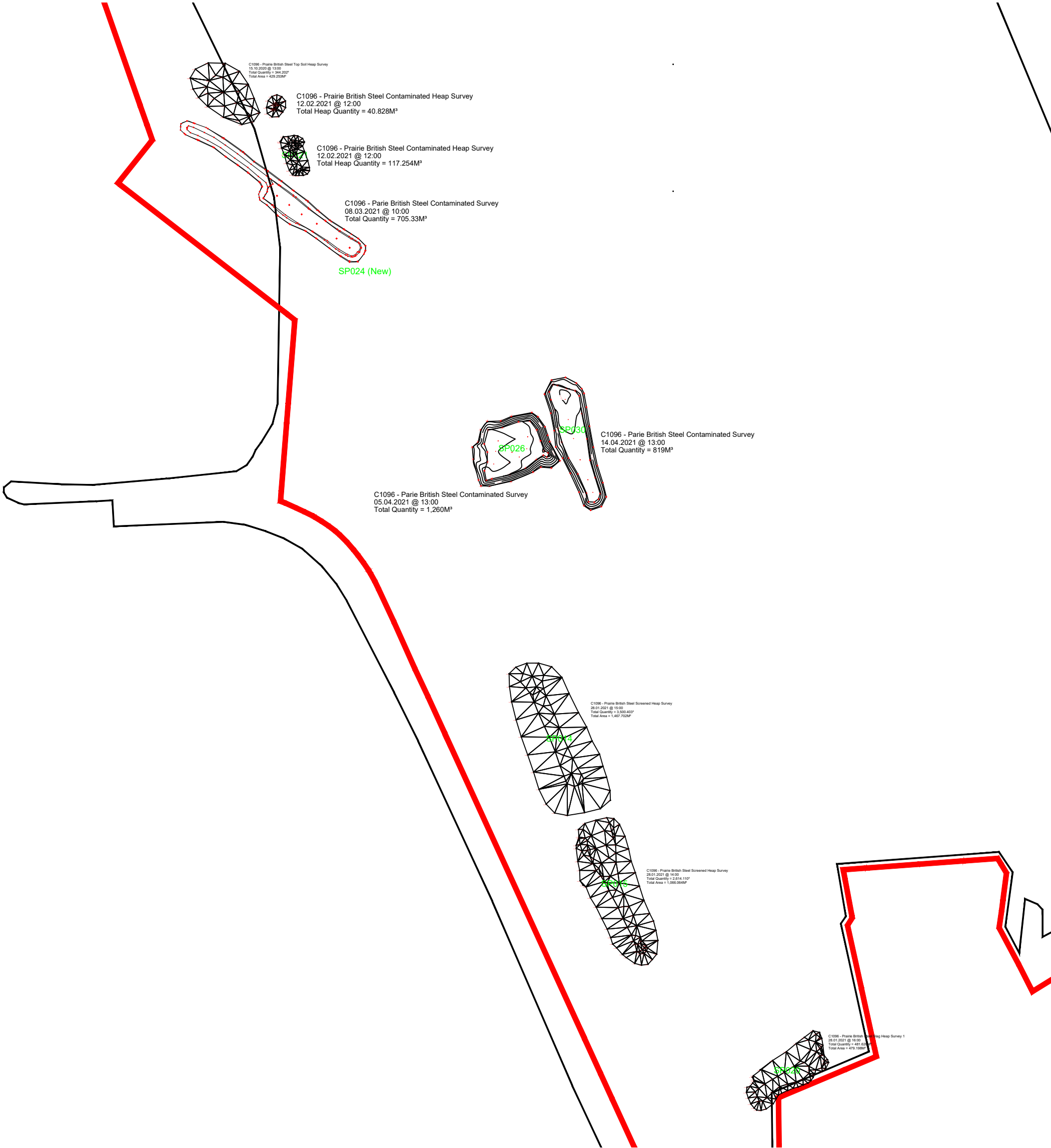
C1096 - Prairie British Steel Screen Heap Survey  
28.03.2020 @ 11:00  
Total Quantity = 4,917M<sup>3</sup>

C1096 - Prairie British Steel Clay Heap Survey  
02.10.2020 @ 10:00  
Total Quantity = 8,530,338M<sup>3</sup>  
Total Area = 2,715,644M<sup>2</sup>

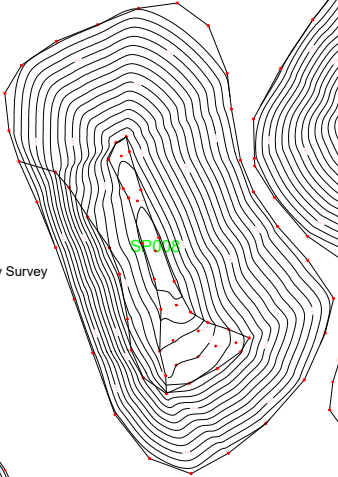
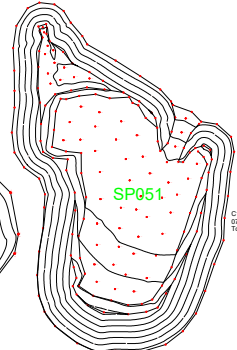
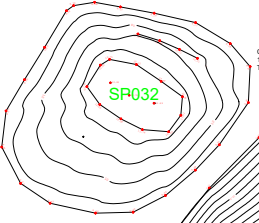
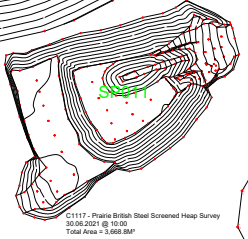
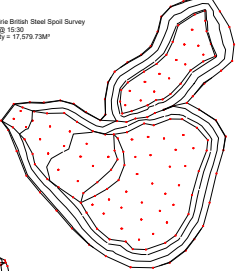
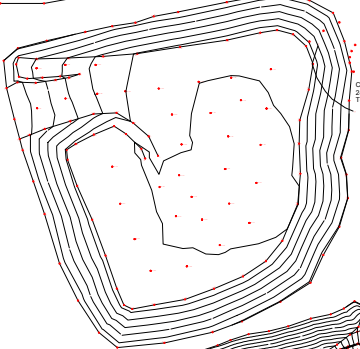
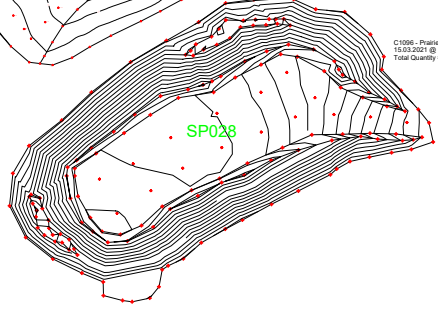
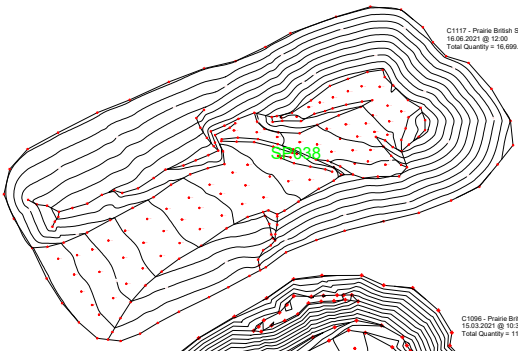
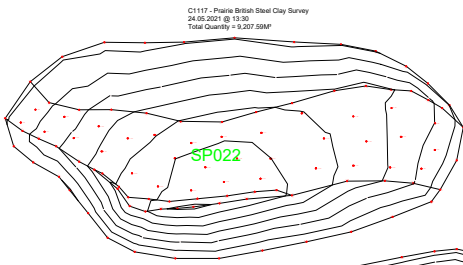
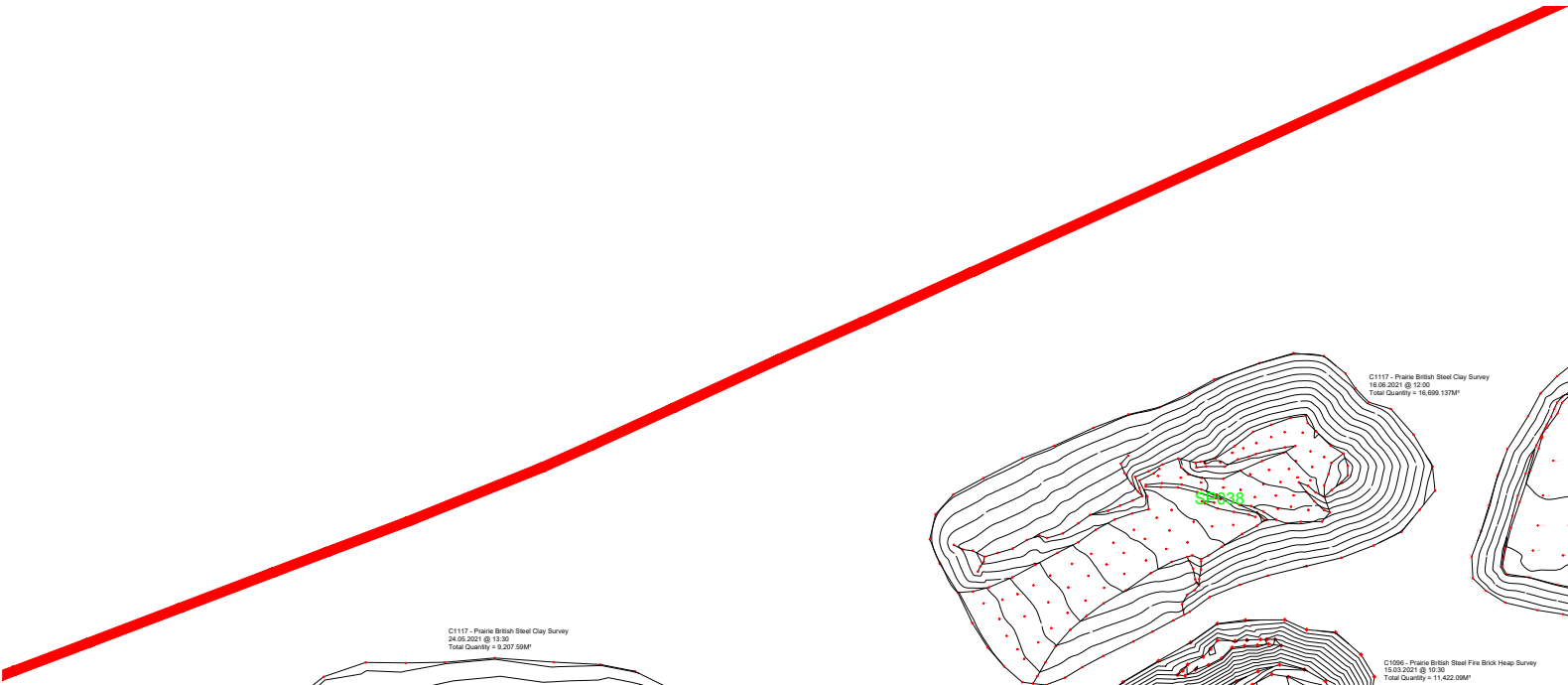
C1096 - Prairie British Steel Clay Survey  
13.04.2021 @ 10:00  
Total Quantity = 12,230,471M<sup>3</sup>

C1096 - Prairie British Steel Concrete Survey

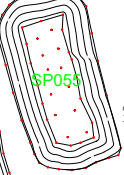
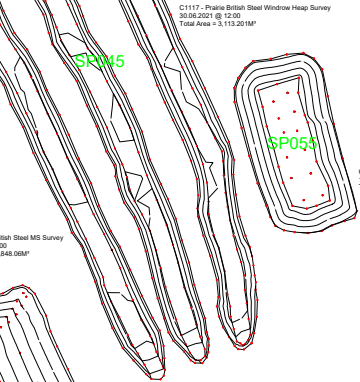
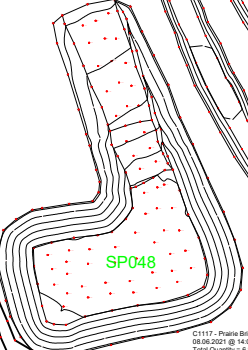
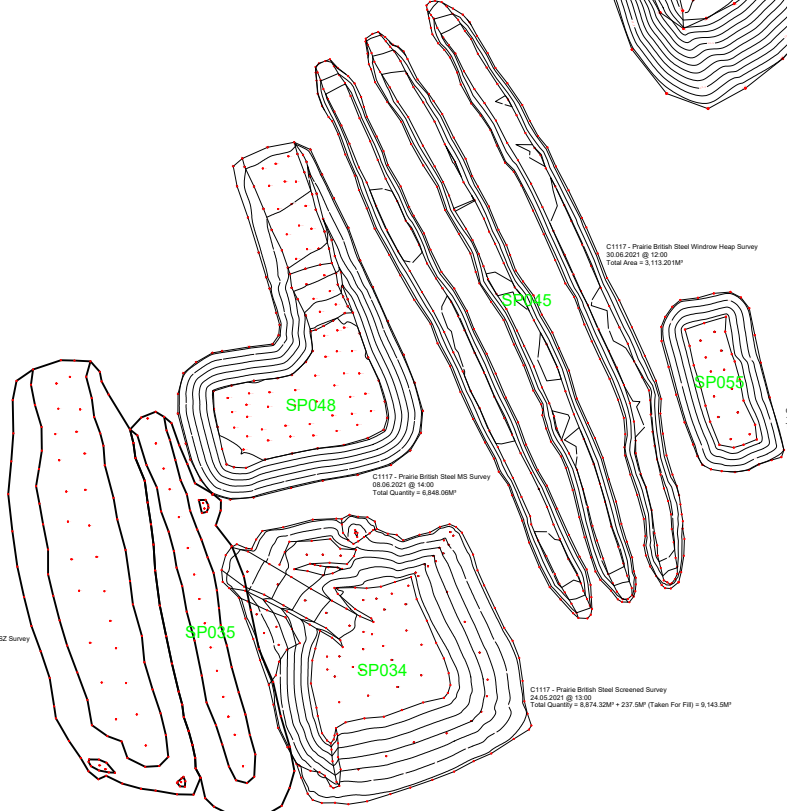
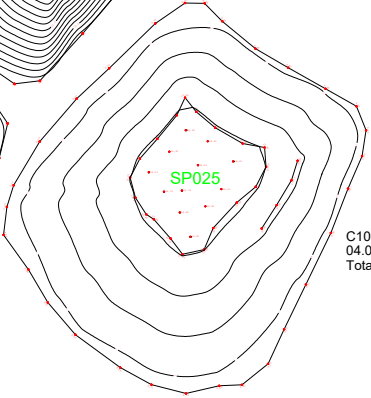
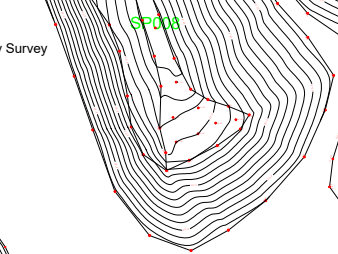




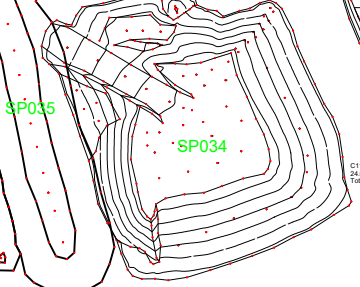




C1096 - Prairie British Steel Clay Survey  
26.04.2021 @ 10:00  
Total Quantity = 13,680.181M<sup>3</sup>



C1117 - Prairie British Steel CRZ Survey  
16.07.2021 @ 10:00  
Total Quantity = 7,152.07M<sup>3</sup>



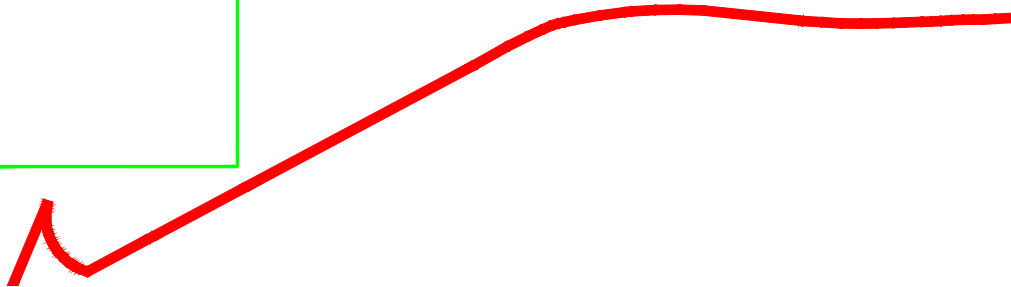
C1117 - Prairie British Steel Screened Survey  
24.05.2021 @ 10:00  
Total Quantity = 5,974.32M<sup>3</sup> + 237.0M<sup>3</sup> (Taken For F4) = 6,143.0M<sup>3</sup>

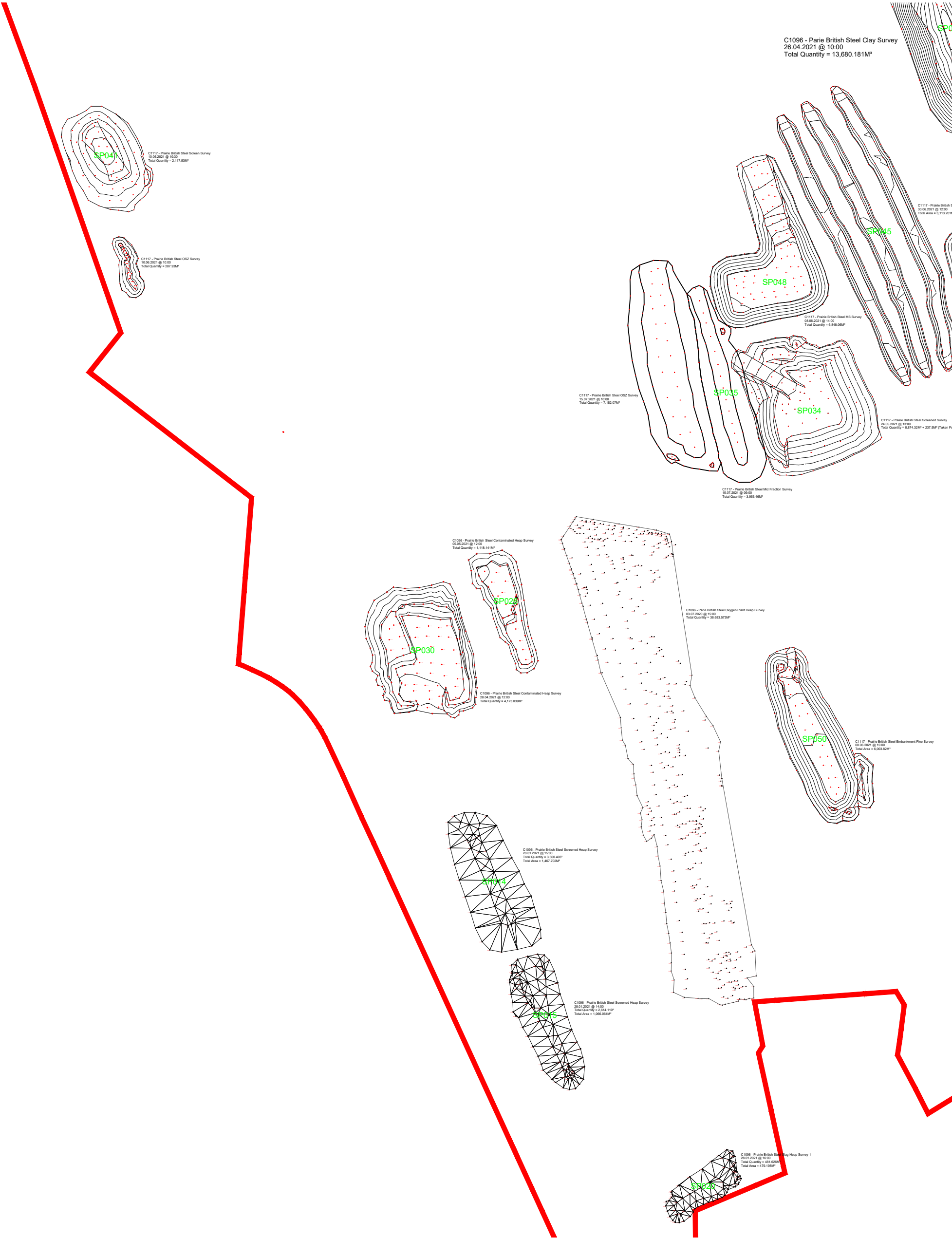
C1117 - Prairie British Steel Crushed Concrete Survey  
22.07.2021 @ 10:00  
Total Area = 1,838M<sup>2</sup>

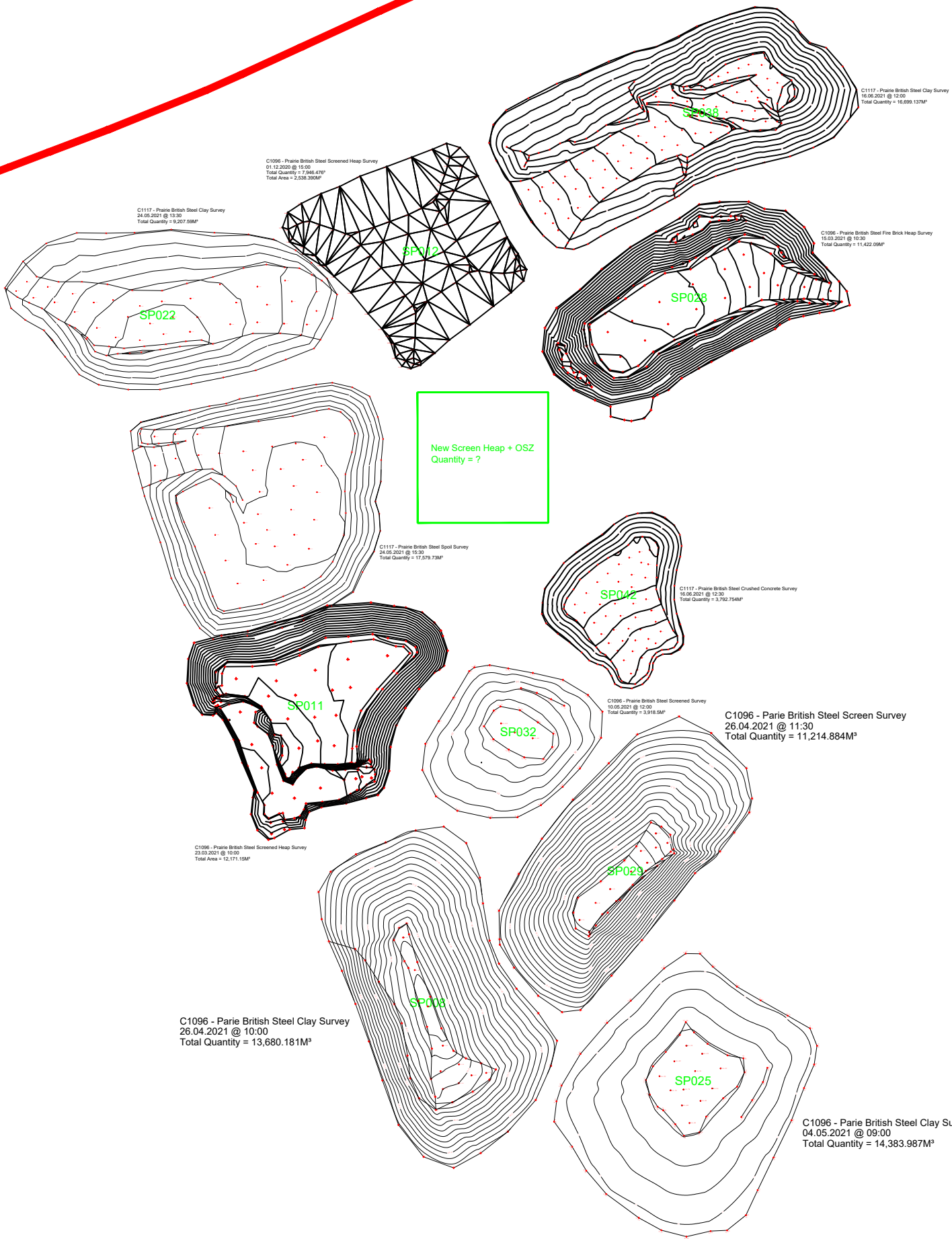
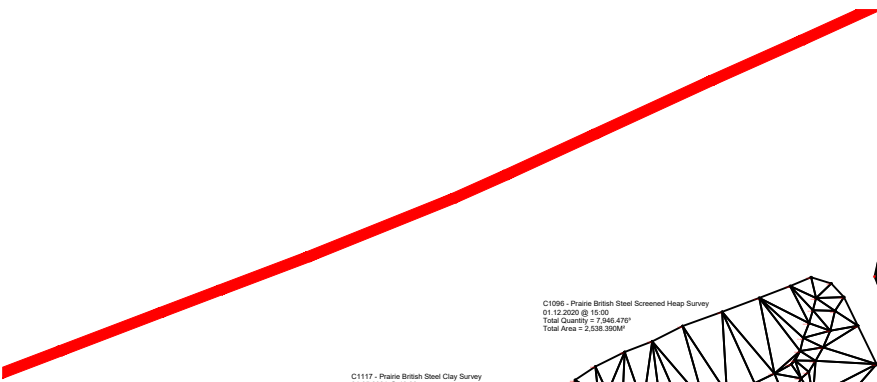
Spoil Storage  
Quantity = ?

Concrete Storage  
Quantity = ?

Concrete Storage  
Quantity = ?





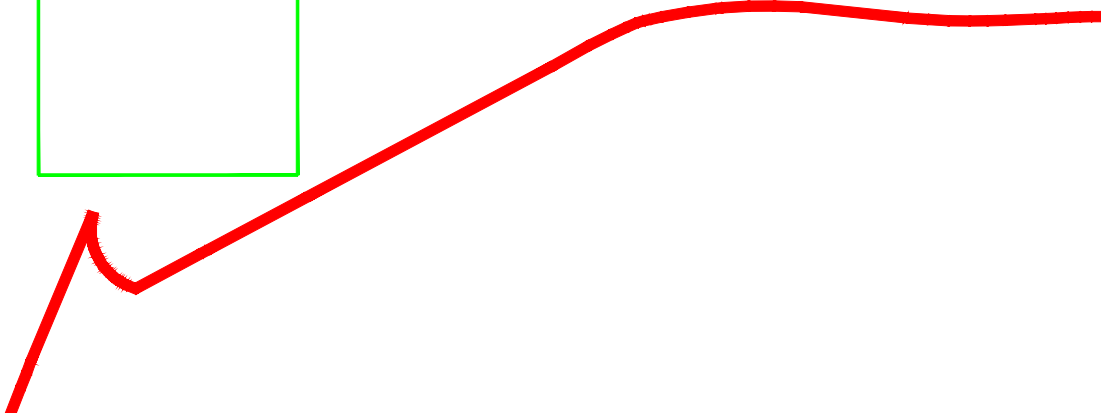
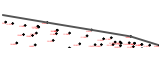


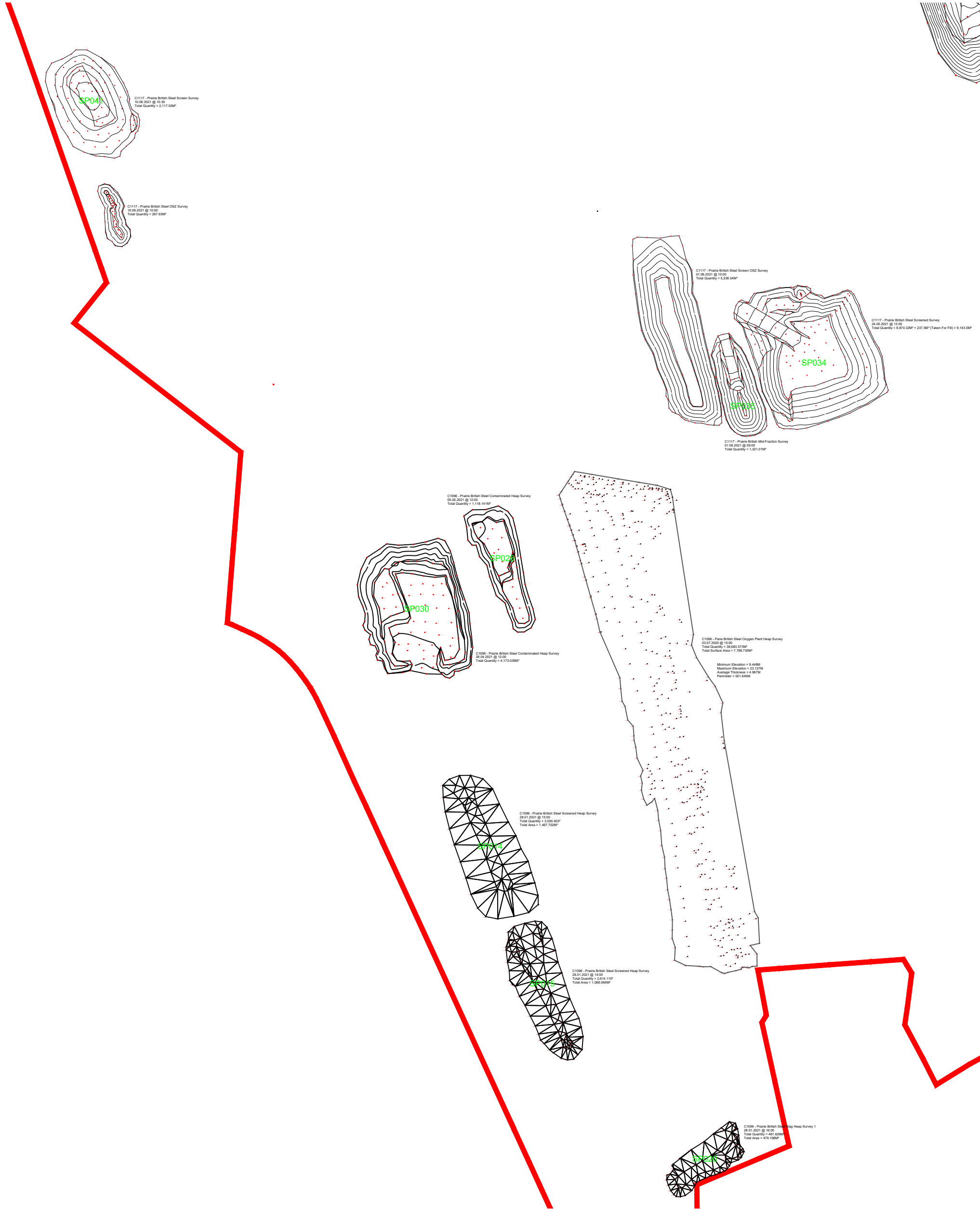
New Screen Heap + OSZ  
Quantity = ?

Spoil Storage  
Quantity = ?

Concrete Storage  
Quantity = ?

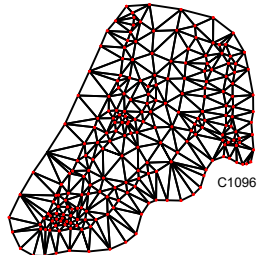
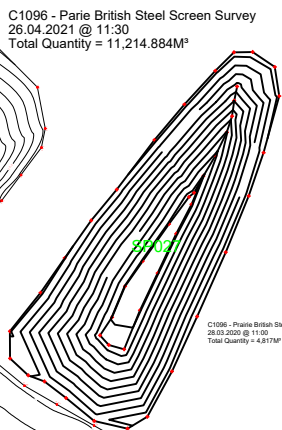
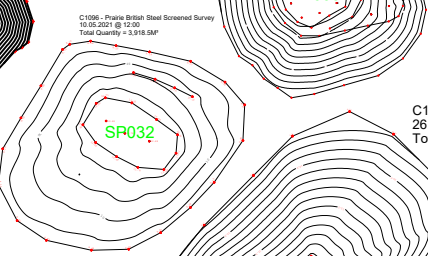
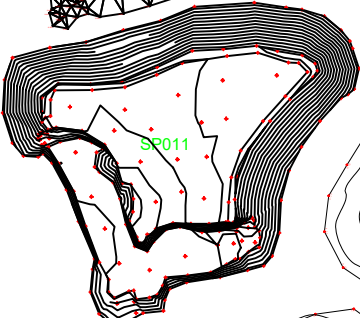
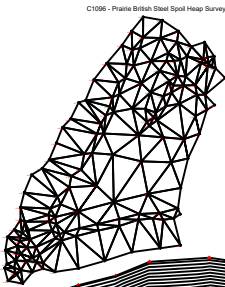
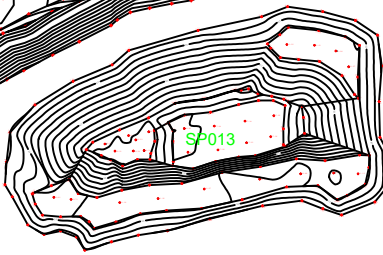
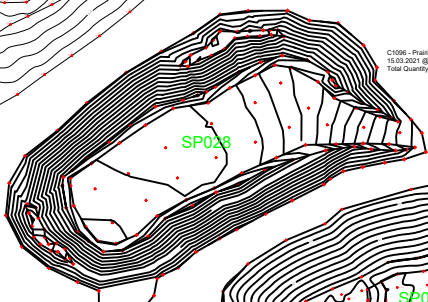
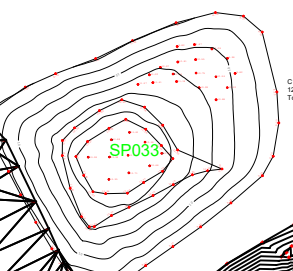
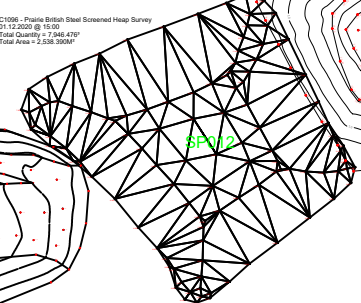
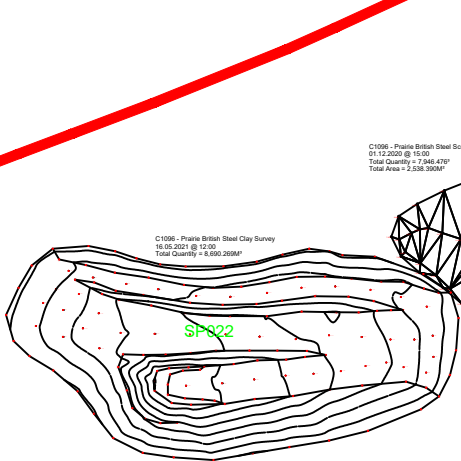
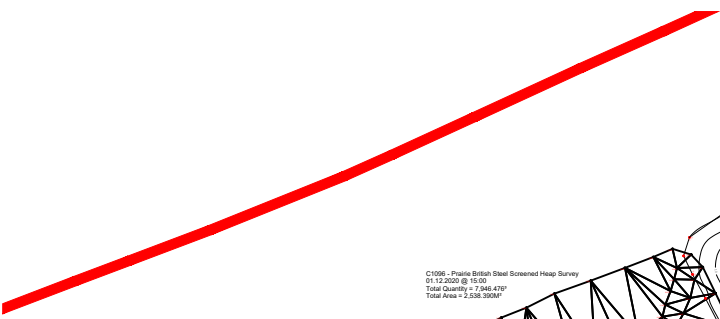
Concrete Storage  
Quantity = ?



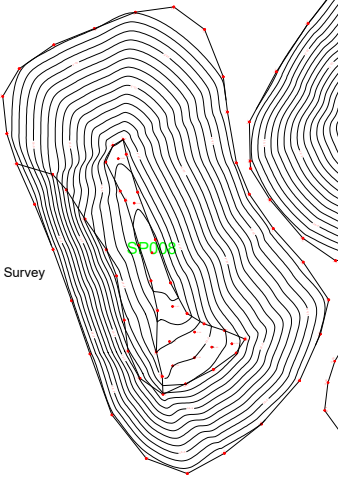




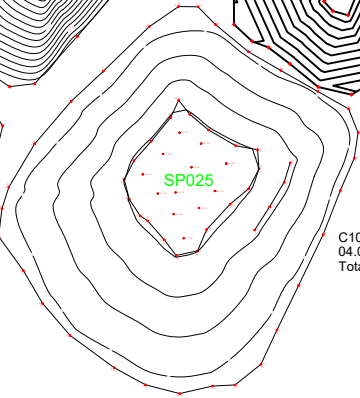




C1096 - Prairie British Steel Clay Survey 26.04.2021 @ 10:00 Total Quantity = 13,680,181M³



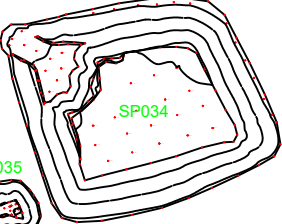
C1096 - Prairie British Steel Clay Survey 04.05.2021 @ 09:00 Total Quantity = 14,383,987M³



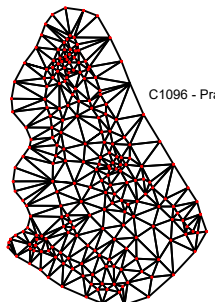
C1096 - Prairie British Steel Concrete Survey 27.04.2021 @ 11:00 Total Quantity = 14,239,889M³



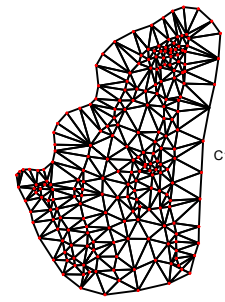
C1096 - Prairie British Steel Concrete Survey 27.04.2021 @ 11:00 Total Quantity = 14,239,889M³



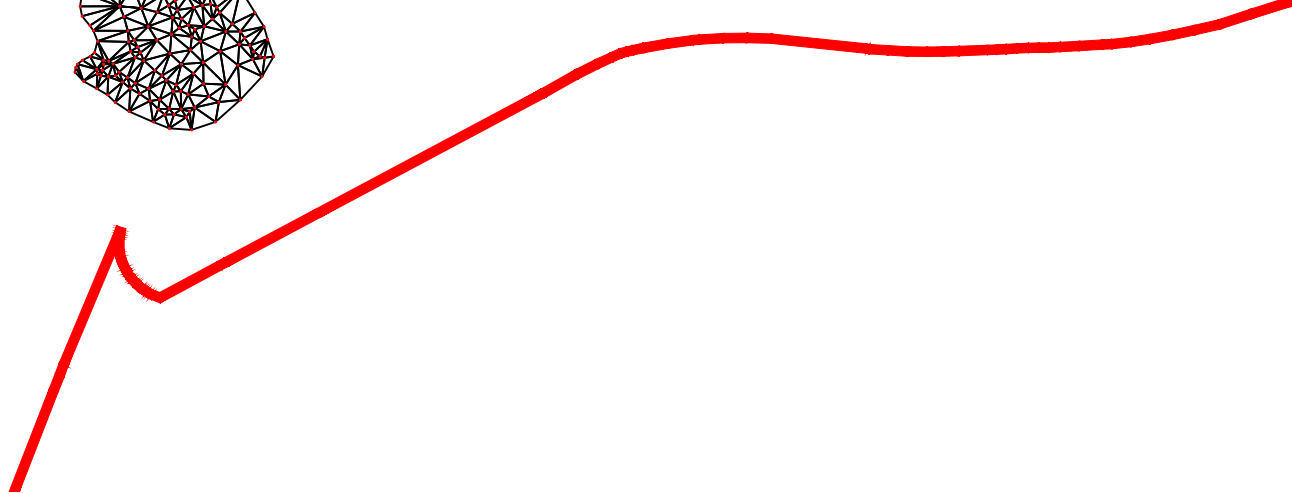
C1096 - Prairie British Steel Concrete Survey 27.04.2021 @ 11:00 Total Quantity = 14,239,889M³

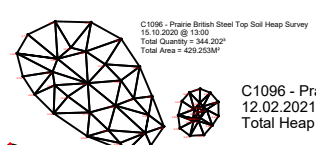
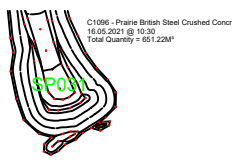


C1096 - Prairie British Steel Concrete Survey 27.04.2021 @ 11:00 Total Quantity = 14,239,889M³



C1096 - Prairie British Steel Concrete Survey 27.04.2021 @ 11:00 Total Quantity = 14,239,889M³

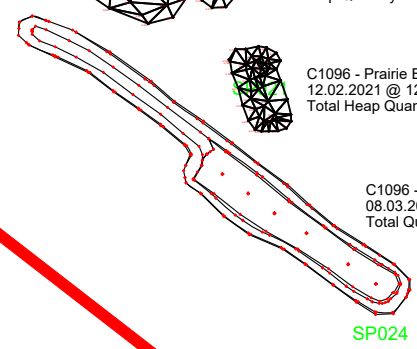




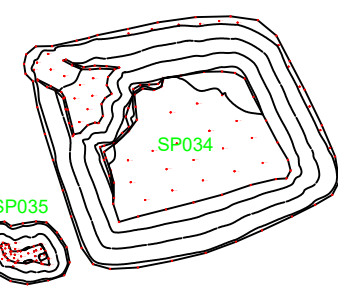
C1096 - Prairie British Steel Contaminated Heap Survey  
12.02.2021 @ 12:00  
Total Heap Quantity = 40.828M³

C1096 - Prairie British Steel Contaminated Heap Survey  
12.02.2021 @ 12:00  
Total Heap Quantity = 117.254M³

C1096 - Prairie British Steel Contaminated Survey  
08.03.2021 @ 10:00  
Total Quantity = 705.33M³



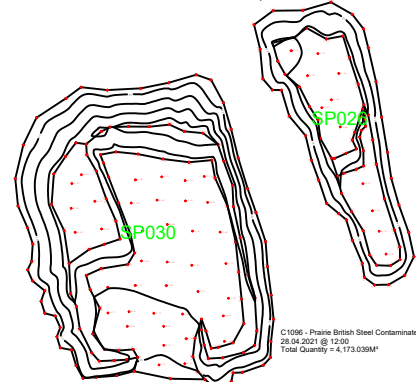
C1096 - Prairie British Steel Screen OS2 Survey  
16.05.2021 @ 10:30  
Total Quantity = 742.85M³



C1096 - Prairie British Steel Screened Survey  
16.05.2021 @ 10:30  
Total Quantity = 3,963.31M³

C1096 - Prairie British Steel Mid-Fraction Survey  
16.05.2021 @ 10:30  
Total Quantity = 170.64M³

C1096 - Prairie British Steel Contaminated Heap Survey  
05.05.2021 @ 12:00  
Total Quantity = 1,118.1418M³

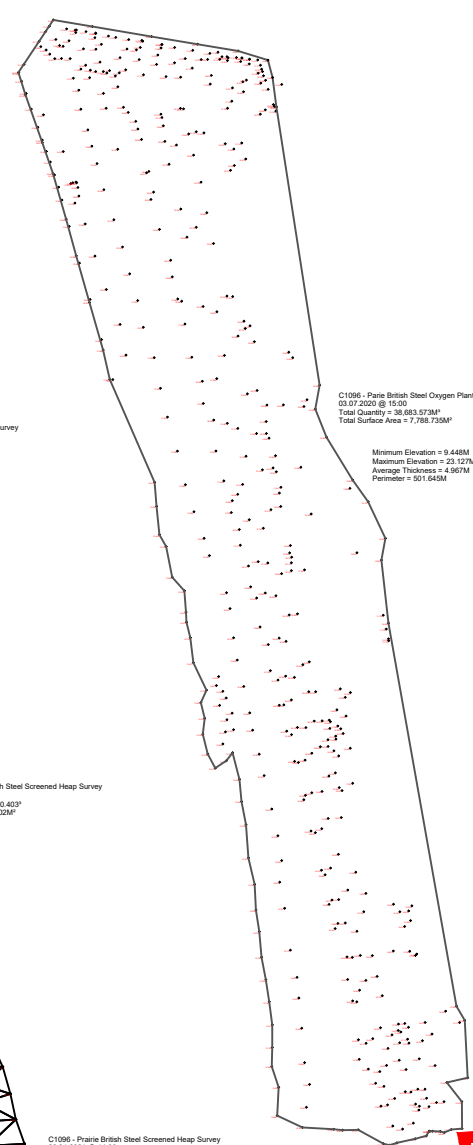


C1096 - Prairie British Steel Contaminated Heap Survey  
28.06.2021 @ 12:00  
Total Quantity = 4,173.039M³

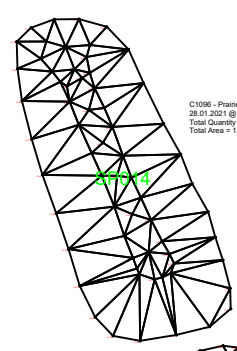


C1096 - Prairie British Steel Oxygen Plant Heap Survey  
03.07.2020 @ 15:00  
Total Quantity = 38,693.573M³  
Total Surface Area = 7,798.732M²

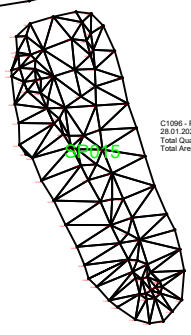
Minimum Elevation = 9.448M  
Maximum Elevation = 23.127M  
Average Thickness = 4.867M  
Perimeter = 501.645M



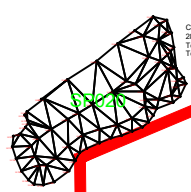
C1096 - Prairie British Steel Screened Heap Survey  
28.01.2021 @ 15:00  
Total Quantity = 3,500.403M³  
Total Area = 1,467.702M²

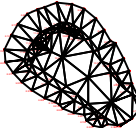
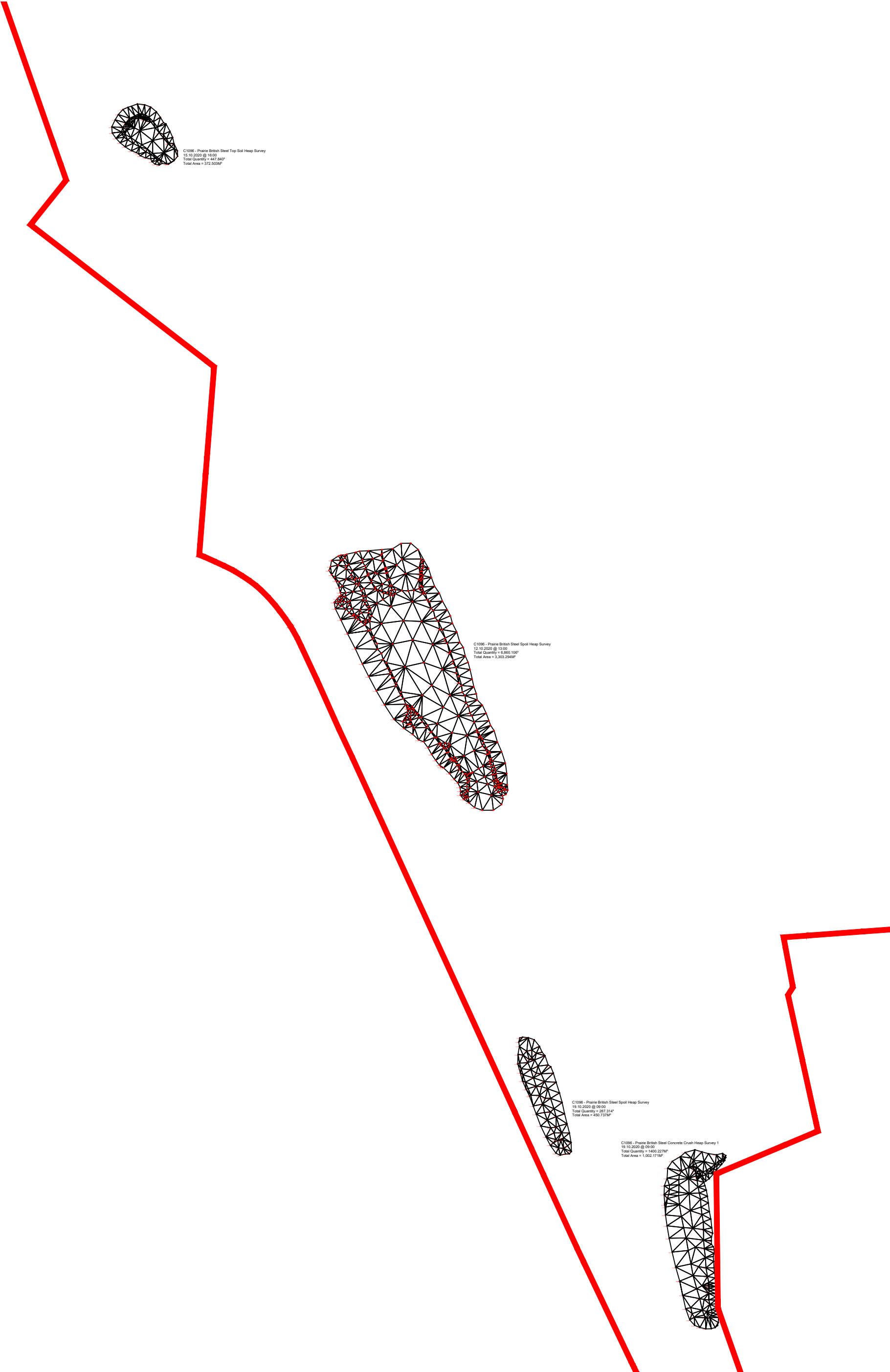


C1096 - Prairie British Steel Screened Heap Survey  
28.01.2021 @ 14:00  
Total Quantity = 3,816.110M³  
Total Area = 1,066.064M²

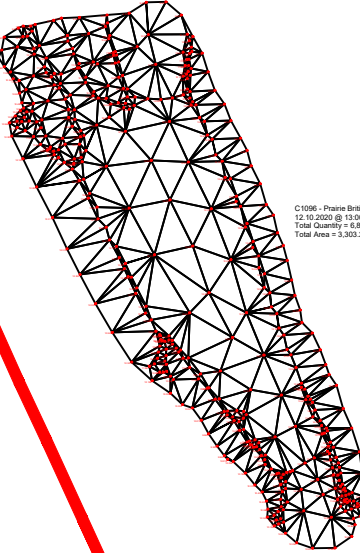


C1096 - Prairie British Steel Screened Heap Survey 1  
28.01.2021 @ 15:00  
Total Quantity = 481.820M³  
Total Area = 476.100M²

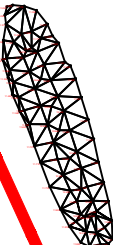




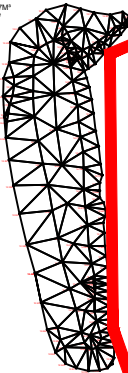
C1096 - Prairie British Steel Top Soil Heap Survey  
15.10.2020 @ 16.00  
Total Quantity = 447.84M<sup>3</sup>  
Total Area = 372.503M<sup>2</sup>



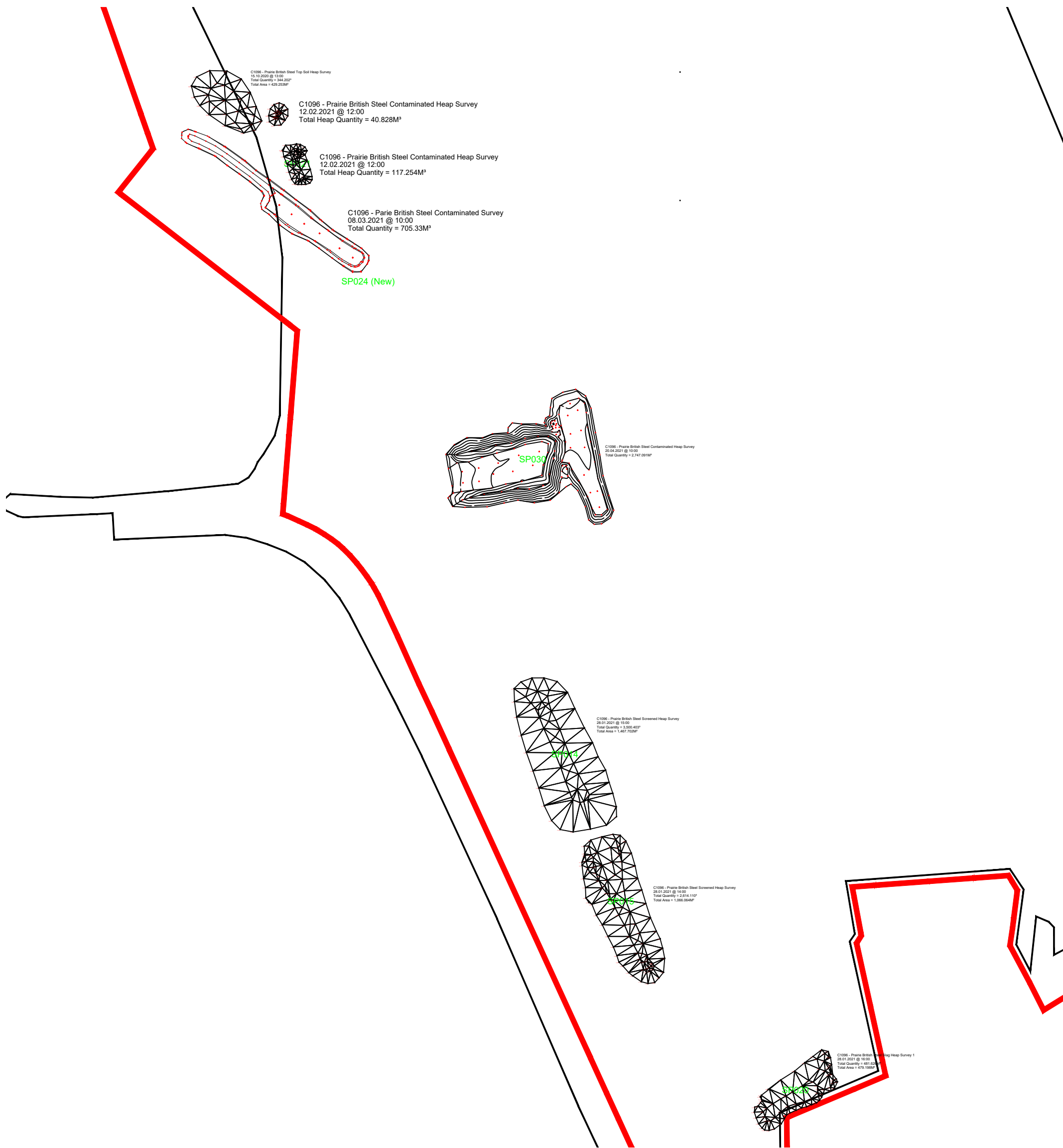
C1096 - Prairie British Steel Spoil Heap Survey  
12.10.2020 @ 13.00  
Total Quantity = 6,866.10M<sup>3</sup>  
Total Area = 3,303.294M<sup>2</sup>



C1096 - Prairie British Steel Spoil Heap Survey  
19.10.2020 @ 09.00  
Total Quantity = 267.73M<sup>3</sup>  
Total Area = 450.737M<sup>2</sup>



C1096 - Prairie British Steel Concrete Crush Heap Survey 1  
19.10.2020 @ 09.00  
Total Quantity = 1,600.227M<sup>3</sup>  
Total Area = 1,002.171M<sup>2</sup>



C1096 - Prairie British Steel Top Soil Heap Survey  
15.10.2020 @ 13:00  
Total Quantity = 344.202  
Total Area = 429.253M²

C1096 - Prairie British Steel Contaminated Heap Survey  
12.02.2021 @ 12:00  
Total Heap Quantity = 40.828M³

C1096 - Prairie British Steel Contaminated Heap Survey  
12.02.2021 @ 12:00  
Total Heap Quantity = 117.254M³

C1096 - Prairie British Steel Contaminated Survey  
08.03.2021 @ 10:00  
Total Quantity = 705.33M³

SP024 (New)

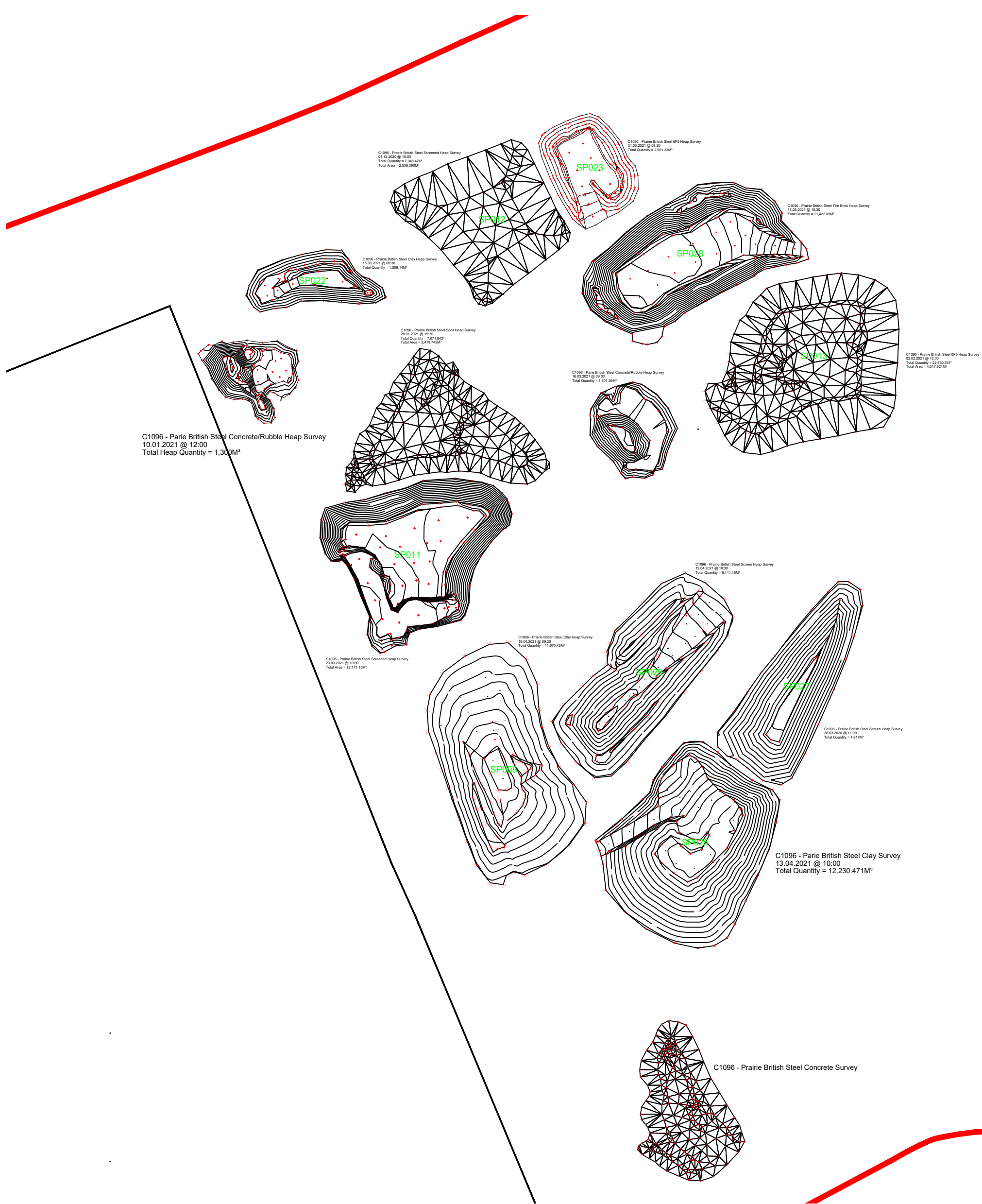
C1096 - Prairie British Steel Contaminated Heap Survey  
20.04.2021 @ 10:00  
Total Quantity = 2,747.091M³

C1096 - Prairie British Steel Screened Heap Survey  
28.01.2021 @ 15:00  
Total Quantity = 3,306.403  
Total Area = 1,487.702M²

C1096 - Prairie British Steel Screened Heap Survey  
28.01.2021 @ 14:00  
Total Quantity = 2,614.110  
Total Area = 1,068.064M²

C1096 - Prairie British Steel Screened Heap Survey 1  
28.01.2021 @ 16:00  
Total Quantity = 431.024  
Total Area = 478.193M²





C1096 - Prairie British Steel Screened Heap Survey  
01.12.2020 @ 15:00  
Total Quantity = 7,346.471M³  
Total Area = 2,538.395M²

C1096 - Prairie British Steel 6FS Heap Survey  
01.02.2021 @ 08:30  
Total Quantity = 2,901.938M³

C1096 - Prairie British Steel Fire Brick Heap Survey  
19.03.2021 @ 10:30  
Total Quantity = 11,422.098M³

C1096 - Prairie British Steel Clay Heap Survey  
19.03.2021 @ 08:30  
Total Quantity = 1,505.144M³

C1096 - Prairie British Steel Spoil Heap Survey  
28.01.2021 @ 10:30  
Total Quantity = 7,071.842M³  
Total Area = 2,479.143M²

C1096 - Prairie British Steel Concrete/Rubble Heap Survey  
16.03.2021 @ 09:00  
Total Quantity = 1,707.388M³

C1096 - Prairie British Steel 6FS Heap Survey  
02.02.2021 @ 12:00  
Total Quantity = 22,636.351M³  
Total Area = 4,017.916M²

C1096 - Prairie British Steel Concrete/Rubble Heap Survey  
10.01.2021 @ 12:00  
Total Heap Quantity = 1,300M³

C1096 - Prairie British Steel Screen Heap Survey  
19.04.2021 @ 10:30  
Total Quantity = 9,111.188M³

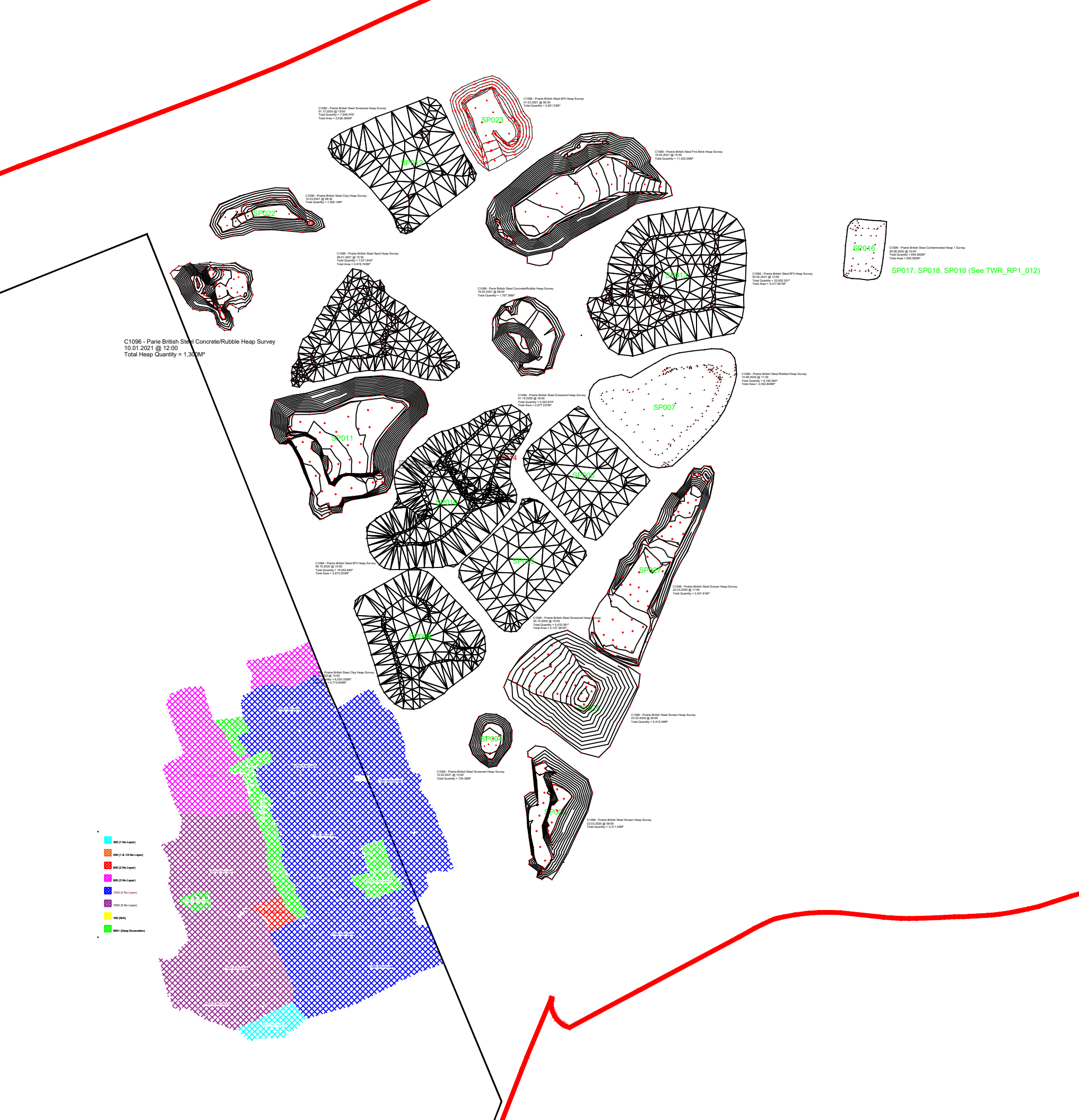
C1096 - Prairie British Steel Clay Heap Survey  
19.04.2021 @ 09:30  
Total Quantity = 11,670.438M³

C1096 - Prairie British Steel Screened Heap Survey  
23.03.2021 @ 10:00  
Total Area = 12,171.158M²

C1096 - Prairie British Steel Screen Heap Survey  
28.03.2020 @ 11:00  
Total Quantity = 4,817M³

C1096 - Prairie British Steel Clay Survey  
13.04.2021 @ 10:00  
Total Quantity = 12,230.471M³

C1096 - Prairie British Steel Concrete Survey



C1096 - Parie British Steel Concrete/Rubble Heap Survey  
10.01.2021 @ 12:00  
Total Heap Quantity = 1,303M³

C1098 - Parie British Steel Screened Heap Survey  
01.12.2020 @ 11:50  
Total Quantity = 7,586,470M³  
Total Area = 2,538,380M²

C1099 - Parie British Steel SP19 Heap Survey  
01.01.2021 @ 09:30  
Total Quantity = 2,020,220M³

C1097 - Parie British Steel Fine Brink Heap Survey  
10.01.2021 @ 10:30  
Total Quantity = 1,432,050M³

C1095 - Parie British Steel Clay Heap Survey  
12.01.2021 @ 09:30  
Total Quantity = 1,500,140M³

C1092 - Parie British Steel Spill Heap Survey  
28.01.2021 @ 10:30  
Total Quantity = 7,725,140M³  
Total Area = 2,475,710M²

C1094 - Parie British Steel Comminuted Heap Survey  
16.01.2021 @ 09:30  
Total Quantity = 1,900,000M³

C1093 - Parie British Steel SP18 Heap Survey  
01.01.2021 @ 11:00  
Total Quantity = 2,222,000M³  
Total Area = 1,122,000M²

SP046

SP017, SP018, SP019 (See TWR\_RP1\_012)

C1090 - Parie British Steel Screened Heap Survey  
01.12.2020 @ 09:30  
Total Quantity = 5,258,820M³  
Total Area = 1,677,220M²

C1088 - Parie British Steel Filled Heap Survey  
01.01.2021 @ 11:30  
Total Quantity = 1,100,000M³  
Total Area = 1,100,000M²

SP011

SP007

C1096 - Parie British Steel SP19 Heap Survey  
01.01.2021 @ 10:30  
Total Quantity = 11,300,000M³  
Total Area = 3,000,000M²

SP014

SP012

C1091 - Parie British Steel Screened Heap Survey  
21.01.2021 @ 10:30  
Total Quantity = 4,421,810M³

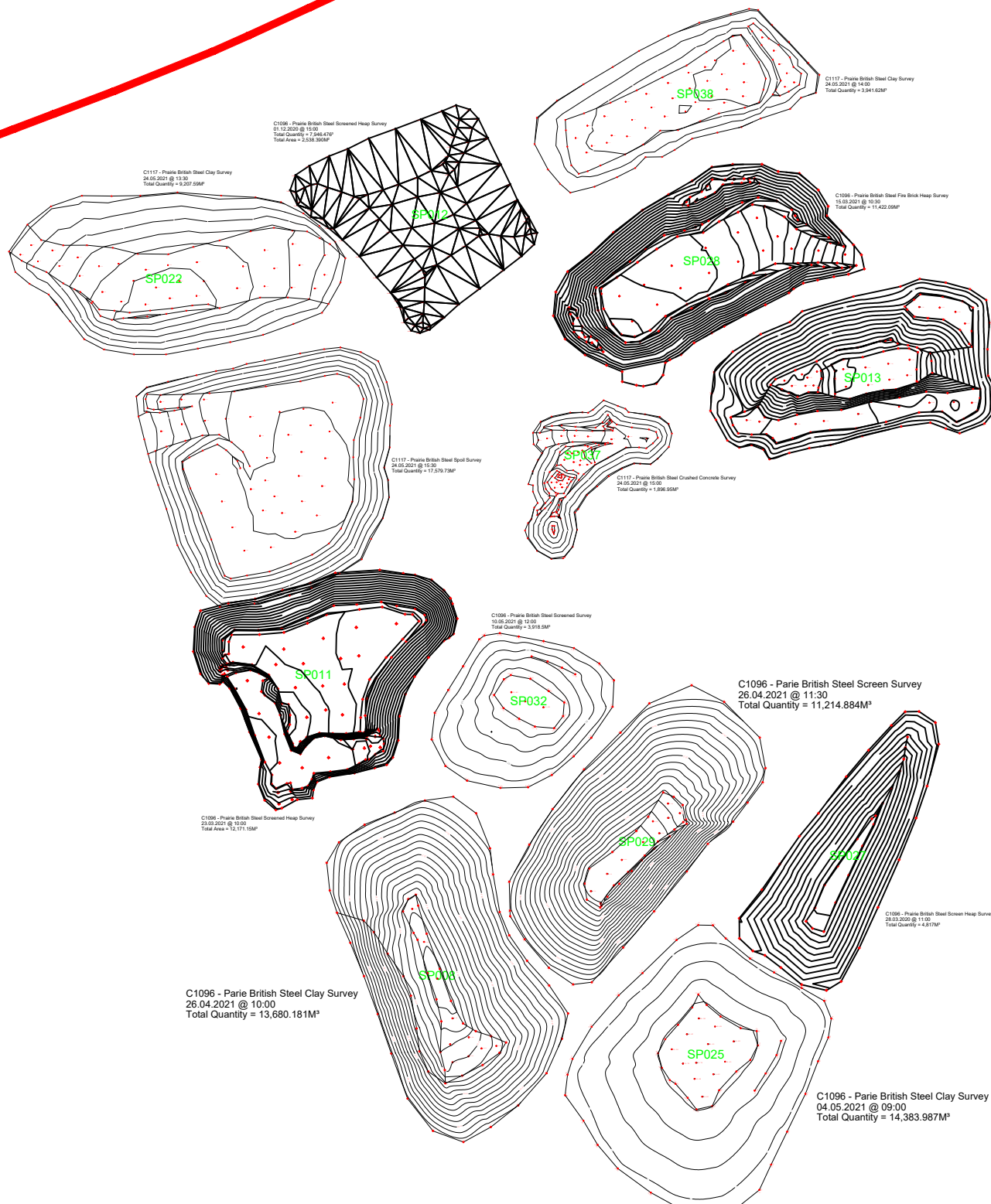
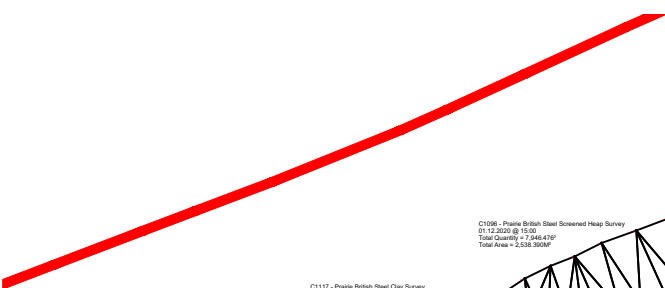
C1095 - Parie British Steel Clay Heap Survey  
08.10.2020 @ 10:30  
Total Quantity = 1,500,000M³  
Total Area = 2,125,000M²

C1090 - Parie British Steel Screened Heap Survey  
21.01.2021 @ 09:30  
Total Quantity = 1,610,000M³

C1094 - Parie British Steel Screened Heap Survey  
16.01.2021 @ 10:30  
Total Quantity = 724,200M³

C1095 - Parie British Steel Screened Heap Survey  
21.01.2021 @ 09:30  
Total Quantity = 1,311,100M³

- 300 (1 No Layer)
- 400 (1 & 10 No Layers)
- 500 (2 No Layers)
- 600 (3 No Layers)
- 700 (4 No Layers)
- 800 (5 No Layers)
- 900 (6 No Layers)
- 100 (2M³)
- 800 (Deep Excavation)

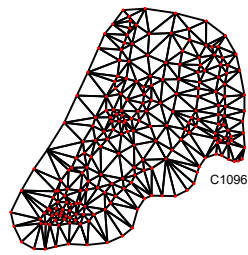


C1096 - Prairie British Steel Crushed Concrete Survey  
27.04.2021 @ 11:00  
Total Quantity = 14,239,889M³

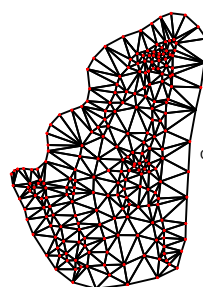
C1096 - Prairie British Steel Screen Survey  
26.04.2021 @ 11:30  
Total Quantity = 11,214,884M³

C1096 - Prairie British Steel Clay Survey  
26.04.2021 @ 10:00  
Total Quantity = 13,680,181M³

C1096 - Prairie British Steel Clay Survey  
04.05.2021 @ 09:00  
Total Quantity = 14,383,987M³



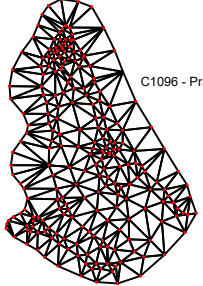
C1096 - Prairie British Steel Concrete Survey



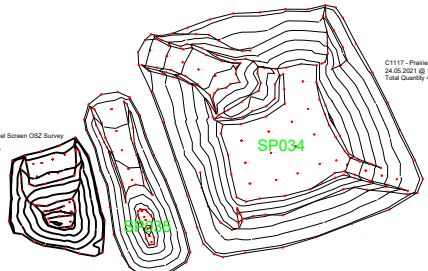
C1096 - Prairie British Steel Concrete Survey



C1096 - Prairie British Steel Crushed Concrete Survey  
16.05.2021 @ 10:30  
Total Quantity = 961,228M³



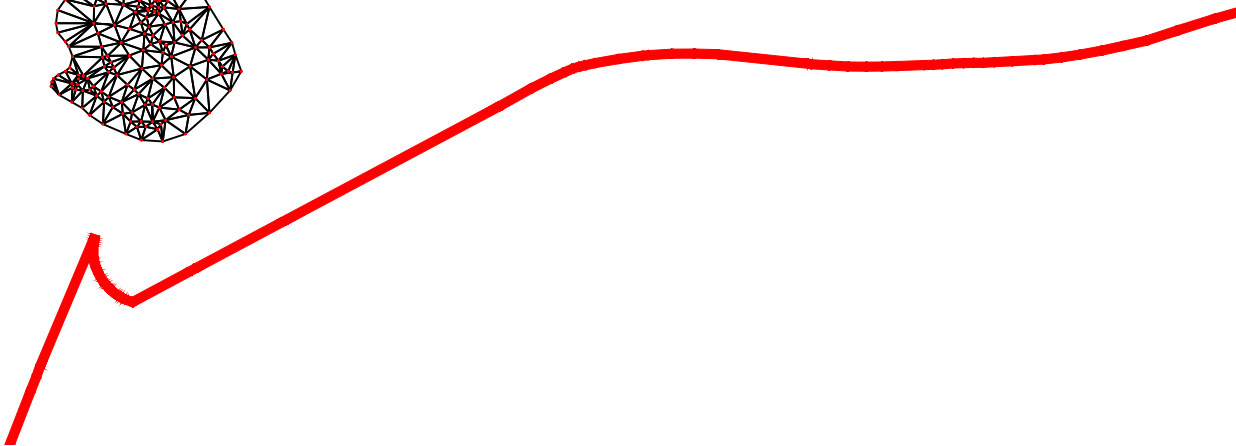
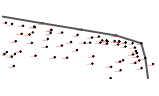
C1096 - Prairie British Steel Concrete Survey



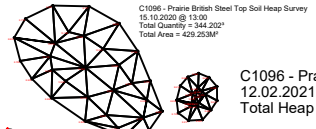
C1096 - Prairie British Steel Screen CS2 Survey  
16.05.2021 @ 10:30  
Total Quantity = 742,859M³

C1117 - Prairie British Steel Screened Survey  
24.05.2021 @ 15:30  
Total Quantity = 1,261,478M³

C1117 - Prairie British Steel Screened Survey  
24.05.2021 @ 15:30  
Total Quantity = 943,378M³

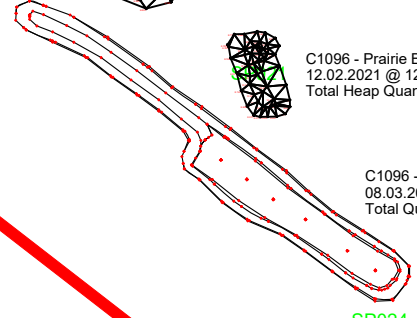






C1096 - Prairie British Steel Top Soil Heap Survey  
15.10.2020 @ 13:00  
Total Quantity = 341.222M³  
Total Area = 429.203M²

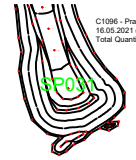
C1096 - Prairie British Steel Contaminated Heap Survey  
12.02.2021 @ 12:00  
Total Heap Quantity = 40.828M³



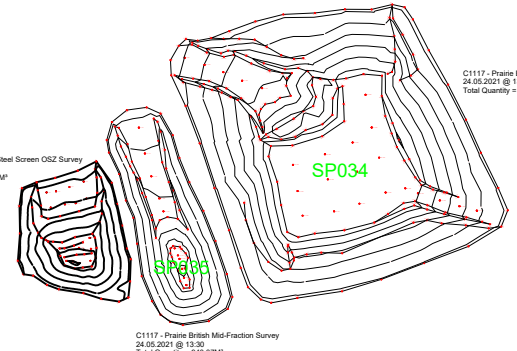
C1096 - Prairie British Steel Contaminated Heap Survey  
12.02.2021 @ 12:00  
Total Heap Quantity = 117.254M³

C1096 - Prairie British Steel Contaminated Survey  
08.03.2021 @ 10:00  
Total Quantity = 705.33M³

SP024



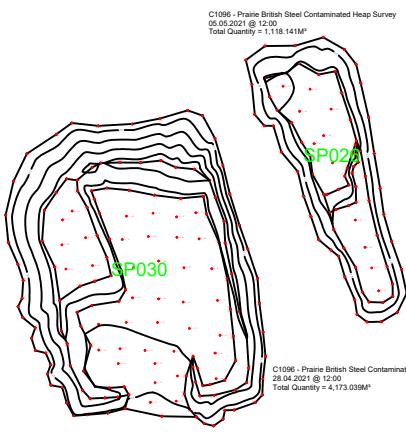
C1096 - Prairie British Steel Crushed Contaminated  
15.05.2021 @ 16:30  
Total Quantity = 651.22M³



C1117 - Prairie British Steel Screened Survey  
24.05.2021 @ 13:00  
Total Quantity = 7,599.47M³

C1096 - Prairie British Steel Screen OSZ Survey  
16.05.2021 @ 10:30  
Total Quantity = 742.85M³

C1117 - Prairie British Steel Mid-Fraction Survey  
24.05.2021 @ 13:30  
Total Quantity = 940.37M³

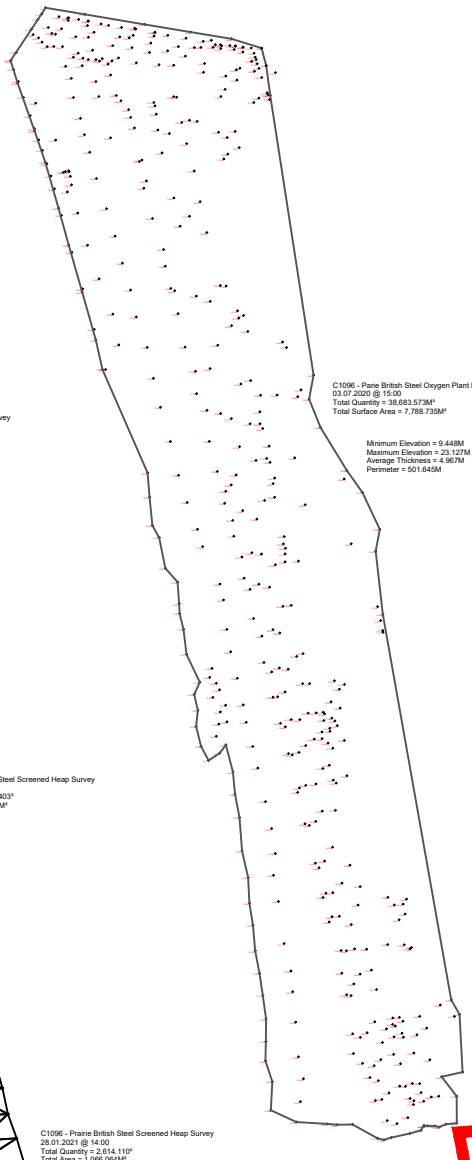


C1096 - Prairie British Steel Contaminated Heap Survey  
05.05.2021 @ 12:00  
Total Quantity = 1,116.141M³

SP026

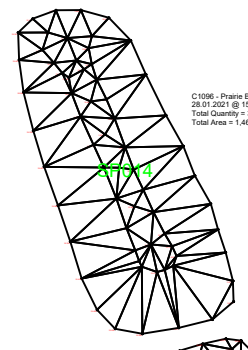
SP030

C1096 - Prairie British Steel Contaminated Heap Survey  
28.04.2021 @ 12:00  
Total Quantity = 4,173.039M³



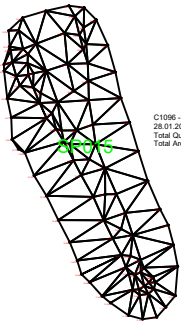
C1096 - Prairie British Steel Oxygen Plant Heap Survey  
03.07.2020 @ 10:00  
Total Quantity = 38,883.373M³  
Total Surface Area = 7,768.732M²

Minimum Elevation = 9.448M  
Maximum Elevation = 23.127M  
Average Thickness = 4.907M  
Perimeter = 501.645M



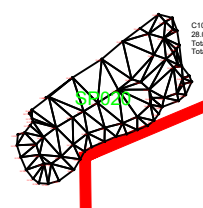
C1096 - Prairie British Steel Screened Heap Survey  
28.01.2021 @ 15:00  
Total Quantity = 3,000.403M³  
Total Area = 1,467.702M²

SP024



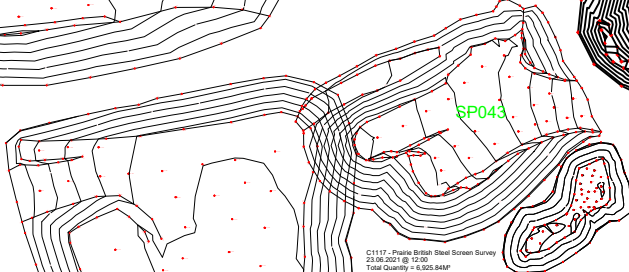
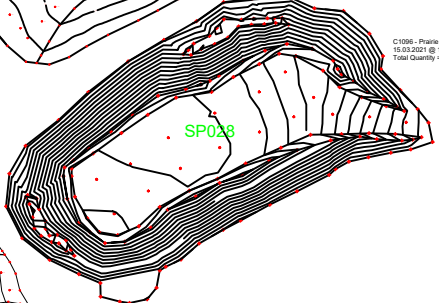
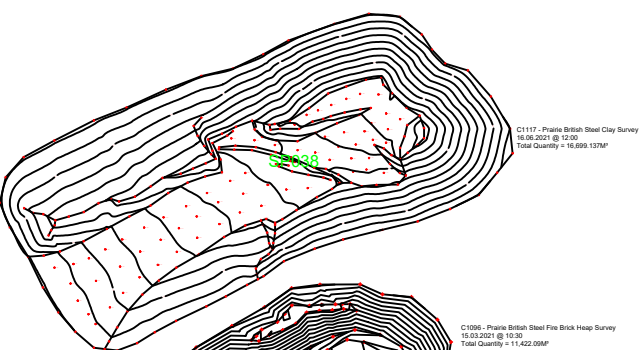
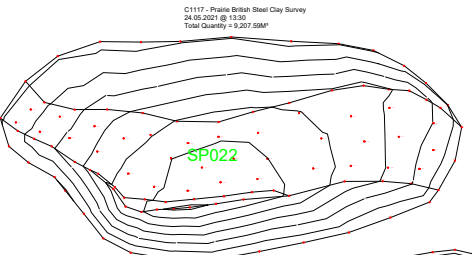
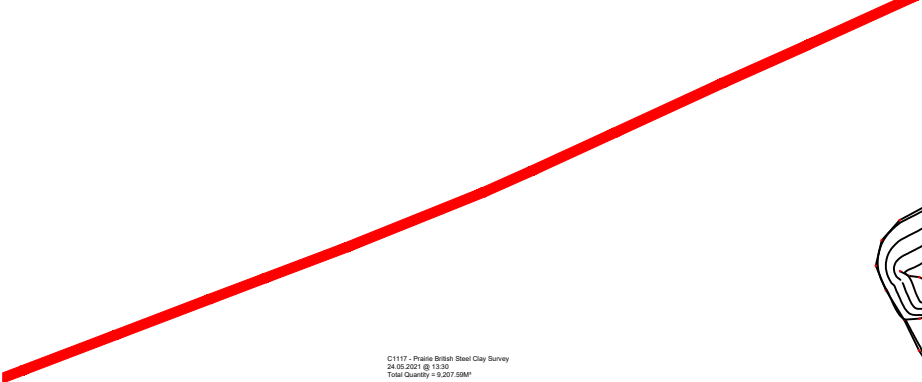
C1096 - Prairie British Steel Screened Heap Survey  
28.01.2021 @ 14:00  
Total Quantity = 2,614.110M³  
Total Area = 1,266.064M²

SP025

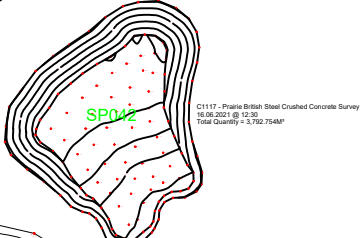


C1096 - Prairie British Steel Screening Heap Survey 1  
28.01.2021 @ 16:00  
Total Quantity = 481.820M³  
Total Area = 479.195M²

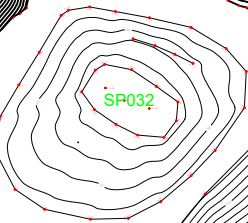
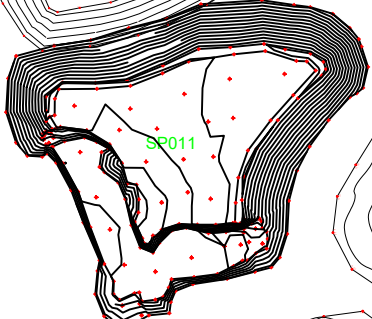
SP026



C1117 - Parie British Steel OSZ Survey  
24.04.2021 @ 10:00  
Total Quantity = 720.88M³

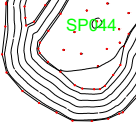
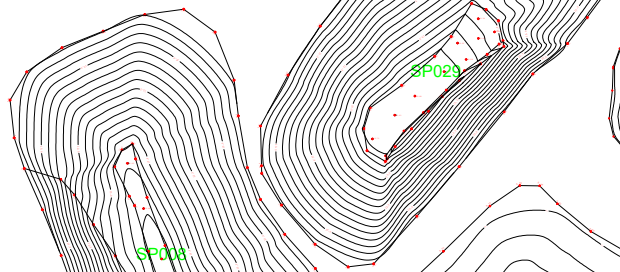


Spoil Storage  
Quantity = ?



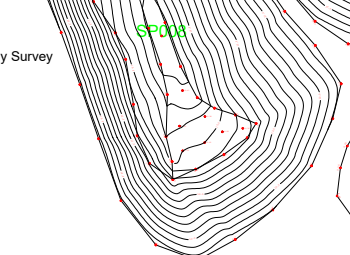
C1096 - Parie British Steel Screen Survey  
26.04.2021 @ 11:30  
Total Quantity = 11,214.884M³

C1096 - Parie British Steel Screened Heap Survey  
23.09.2021 @ 10:00  
Total Area = 12,171.19M²

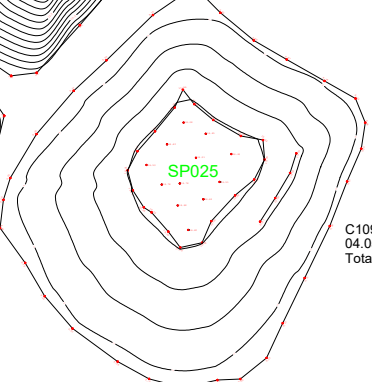


Concrete Storage  
Quantity = ?

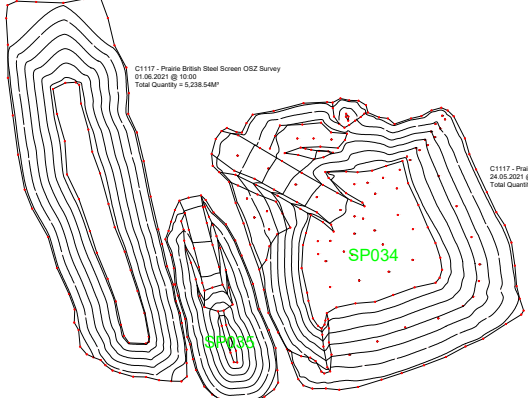
C1096 - Parie British Steel Clay Survey  
26.04.2021 @ 10:00  
Total Quantity = 13,680.181M³



C1096 - Parie British Steel Clay Survey  
04.05.2021 @ 09:00  
Total Quantity = 14,383.987M³

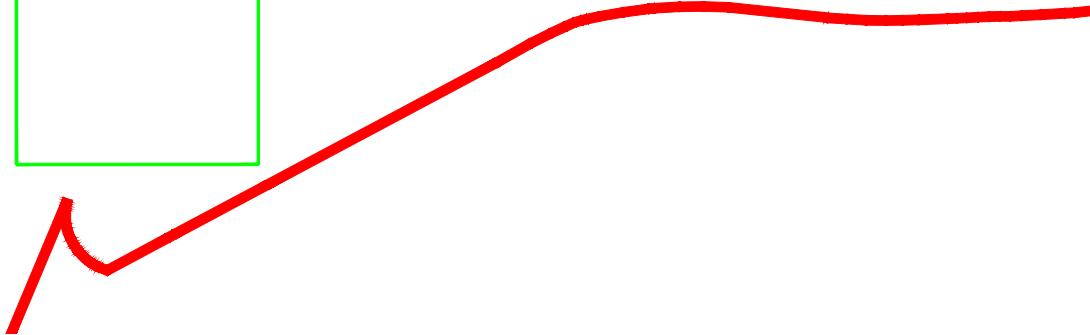


Concrete Storage  
Quantity = ?

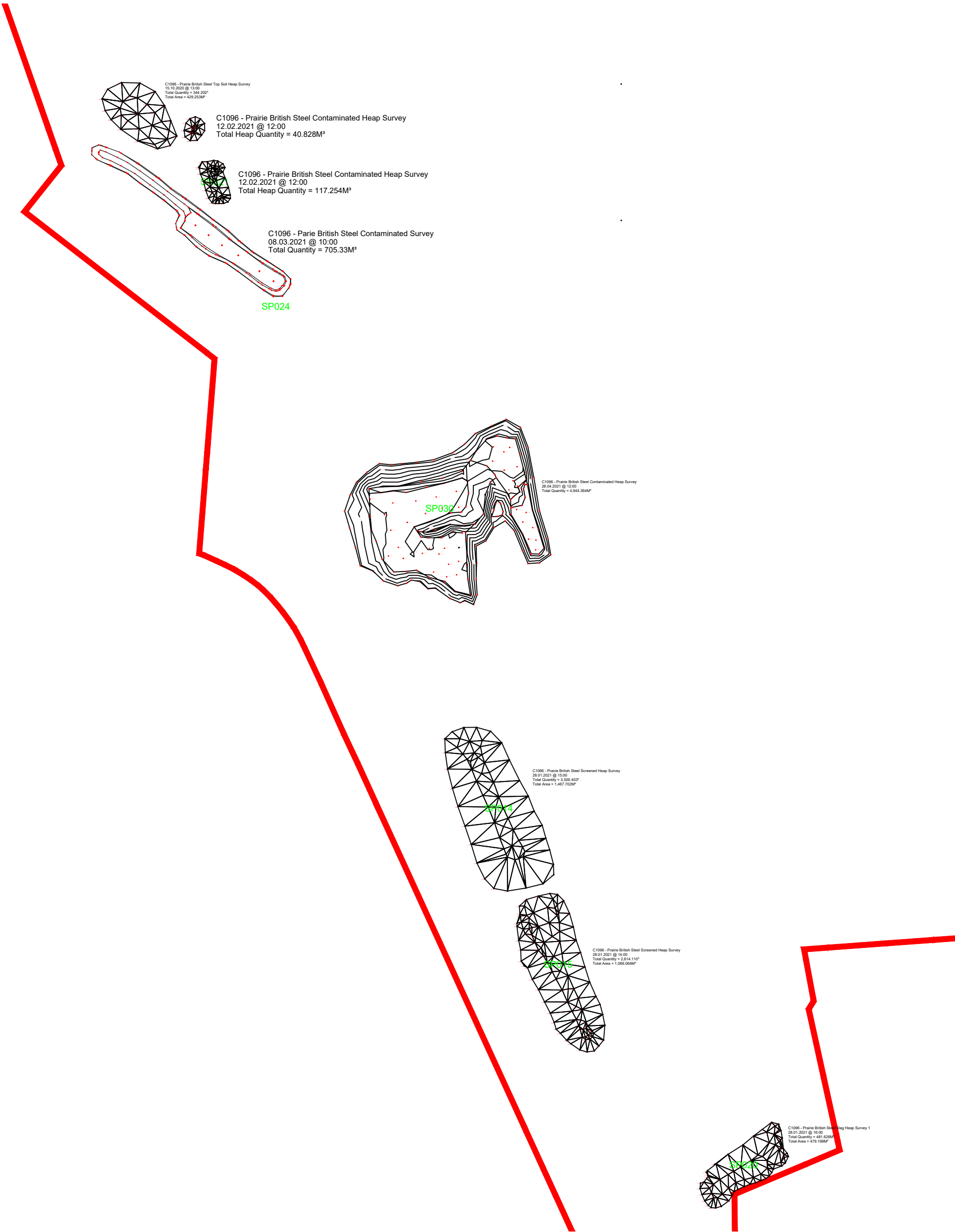


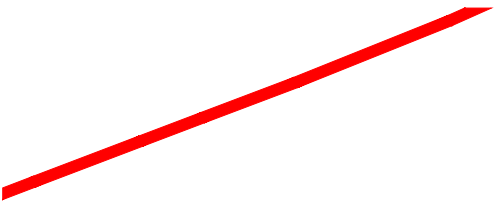
C1117 - Parie British Steel Screened Survey  
24.04.2021 @ 13:00  
Total Quantity = 8,874.32M³ (Taken For F8) = 9,143.9M³

C1117 - Parie British Mid-Fraction Survey  
01.06.2021 @ 09:00  
Total Quantity = 1,307.01M³

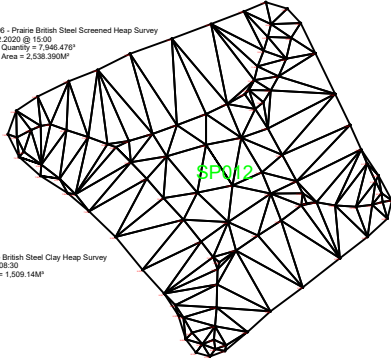




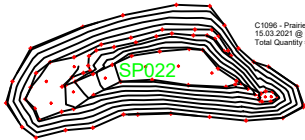




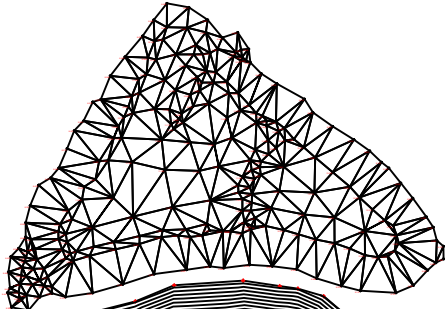
C1096 - Prairie British Steel Screened Heap Survey  
01.12.2020 @ 15:00  
Total Quantity = 7,940.47M<sup>3</sup>  
Total Area = 2,538.390M<sup>2</sup>



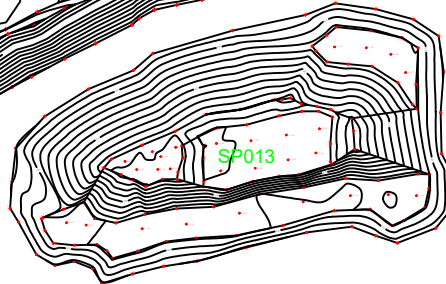
C1096 - Prairie British Steel Clay Heap Survey  
15.03.2021 @ 08:30  
Total Quantity = 1,509.14M<sup>3</sup>



C1096 - Prairie British Steel Spill Heap Survey  
28.01.2021 @ 15:30  
Total Quantity = 7,071.84M<sup>3</sup>  
Total Area = 2,478.743M<sup>2</sup>

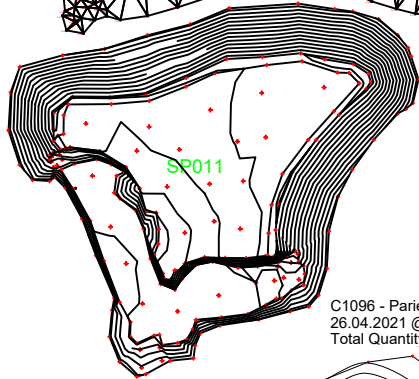
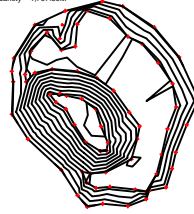


C1096 - Prairie British Steel Fire Brick Heap Survey  
15.03.2021 @ 10:30  
Total Quantity = 11,422.09M<sup>3</sup>



C1096 - Prairie British Steel Crushed Concrete Survey  
27.04.2021 @ 11:00  
Total Quantity = 14,239.889M<sup>3</sup>

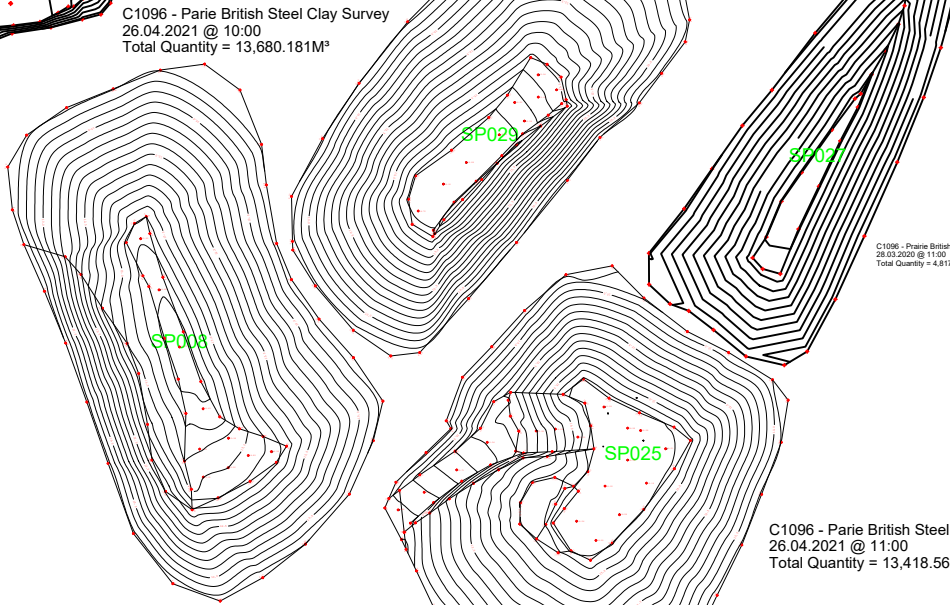
C1096 - Prairie British Steel Concrete/Rubble Heap Survey  
16.03.2021 @ 09:00  
Total Quantity = 1,707.39M<sup>3</sup>



C1096 - Prairie British Steel Screen Survey  
26.04.2021 @ 11:30  
Total Quantity = 11,214.884M<sup>3</sup>

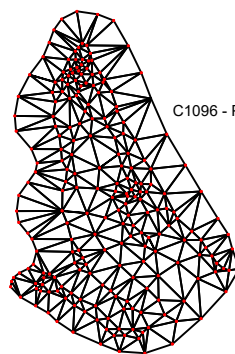
C1096 - Prairie British Steel Clay Survey  
26.04.2021 @ 10:00  
Total Quantity = 13,680.181M<sup>3</sup>

C1096 - Prairie British Steel Screened Heap Survey  
23.03.2021 @ 10:00  
Total Area = 12,171.15M<sup>2</sup>



C1096 - Prairie British Steel Screen Heap Survey  
28.03.2020 @ 11:00  
Total Quantity = 4,8117M<sup>3</sup>

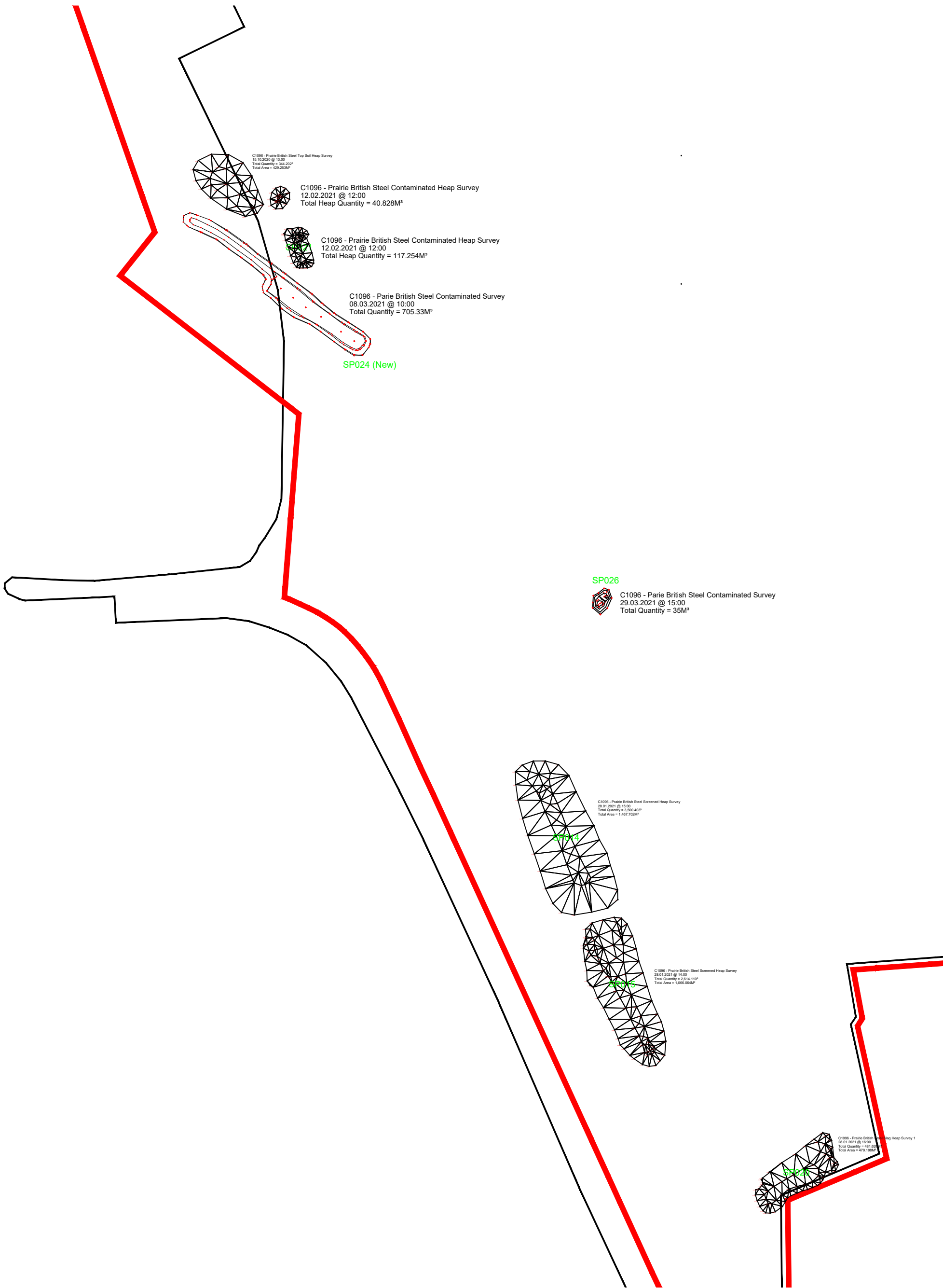
C1096 - Prairie British Steel Clay Survey  
26.04.2021 @ 11:00  
Total Quantity = 13,418.567M<sup>3</sup>



C1096 - Prairie British Steel Concrete Survey







C1096 - Prairie British Steel Top Soil Heap Survey  
15.10.2020 @ 13:00  
Total Quantity = 344.202M³  
Total Area = 429.253M²

C1096 - Prairie British Steel Contaminated Heap Survey  
12.02.2021 @ 12:00  
Total Heap Quantity = 40.828M³

C1096 - Prairie British Steel Contaminated Heap Survey  
12.02.2021 @ 12:00  
Total Heap Quantity = 117.254M³

C1096 - Prairie British Steel Contaminated Survey  
08.03.2021 @ 10:00  
Total Quantity = 705.33M³

SP024 (New)

SP026  
C1096 - Prairie British Steel Contaminated Survey  
29.03.2021 @ 15:00  
Total Quantity = 35M³

C1096 - Prairie British Steel Screened Heap Survey  
28.01.2021 @ 15:00  
Total Quantity = 3,500.402M³  
Total Area = 1,487.928M²

C1096 - Prairie British Steel Screened Heap Survey  
28.01.2021 @ 14:00  
Total Quantity = 2,614.110M³  
Total Area = 1,060.954M²

C1096 - Prairie British Steel Contaminated Heap Survey 1  
28.01.2021 @ 15:00  
Total Quantity = 481.628M³  
Total Area = 470.188M²

C1096 - Parie British Steel Concrete/Rubble Heap Survey  
10.01.2021 @ 12:00  
Total Heap Quantity = 1,300M³

C1096 - Parie British Steel Screened Heap Survey  
01.12.2021 @ 15:30  
Total Quantity = 7,265,470³  
Total Area = 2,528,909M²

C1096 - Parie British Steel FFS Heap Survey  
15.03.2021 @ 09:30  
Total Quantity = 2,281,200M³

C1096 - Parie British Steel Clay Heap Survey  
15.03.2021 @ 09:30  
Total Quantity = 1,568,148M³

C1096 - Parie British Steel Spoil Heap Survey  
28.07.2021 @ 10:30  
Total Quantity = 1,272,847M³  
Total Area = 2,476,743M²

C1096 - Parie British Steel Concrete/Rubble Heap Survey  
04.03.2021 @ 09:30  
Total Quantity = 1,702,100M³

C1096 - Parie British Steel FFS Heap Survey  
03.02.2021 @ 12:00  
Total Quantity = 22,836,351M³  
Total Area = 4,877,029M²

C1096 - Parie British Steel Ridded Heap Survey  
14.03.2021 @ 11:00  
Total Quantity = 8,162,084M³  
Total Area = 2,522,949M²

C1096 - Parie British Steel FFS Heap Survey  
08.02.2021 @ 09:30  
Total Quantity = 19,253,000M³  
Total Area = 4,872,029M²

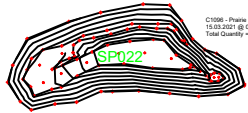
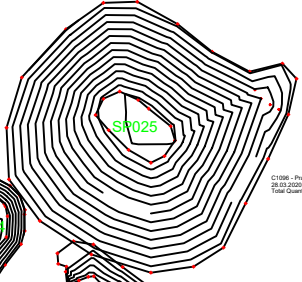
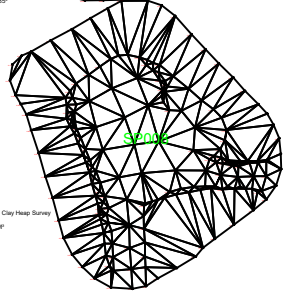
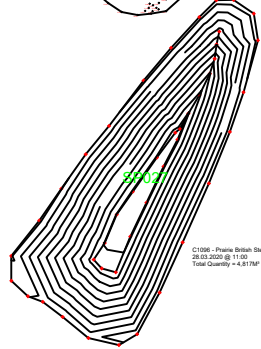
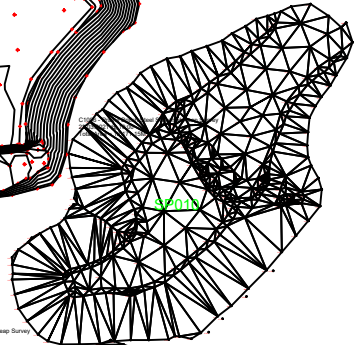
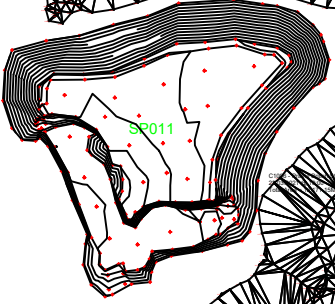
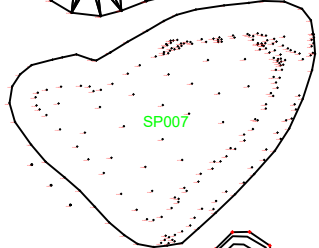
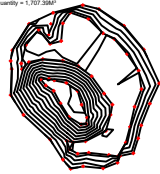
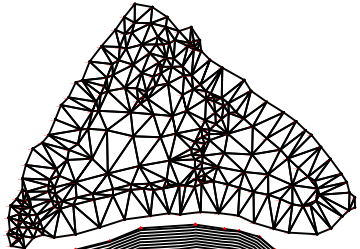
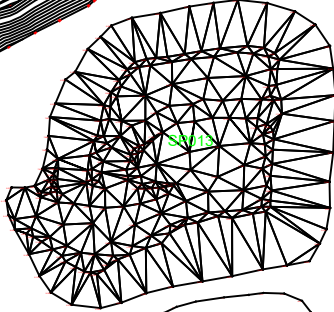
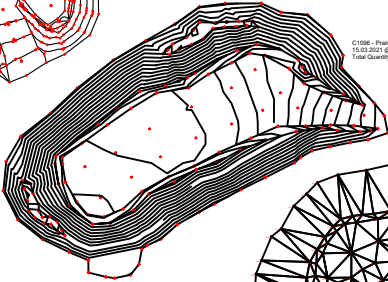
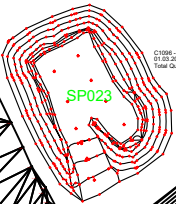
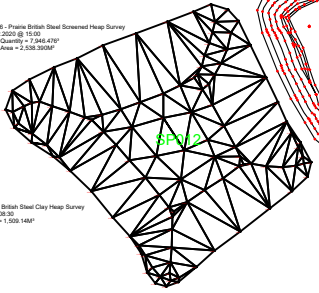
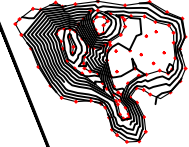
C1096 - Parie British Steel Screen Heap Survey  
28.03.2021 @ 11:00  
Total Quantity = 4,872,000M³

C1096 - Parie British Steel Clay Heap Survey  
04.03.2021 @ 10:00  
Total Quantity = 4,528,338M³  
Total Area = 2,776,666M²

C1096 - Parie British Steel Clay Heap Survey  
28.02.2021 @ 09:30  
Total Quantity = 1,516,000M³

C1096 - Parie British Steel Screened Heap Survey  
10.03.2021 @ 10:00  
Total Quantity = 794,180M³

C1096 - Parie British Steel Screen Heap Survey  
22.03.2021 @ 09:30  
Total Quantity = 3,311,340M³



SP023

SP024

SP022

SP025

SP011

SP007

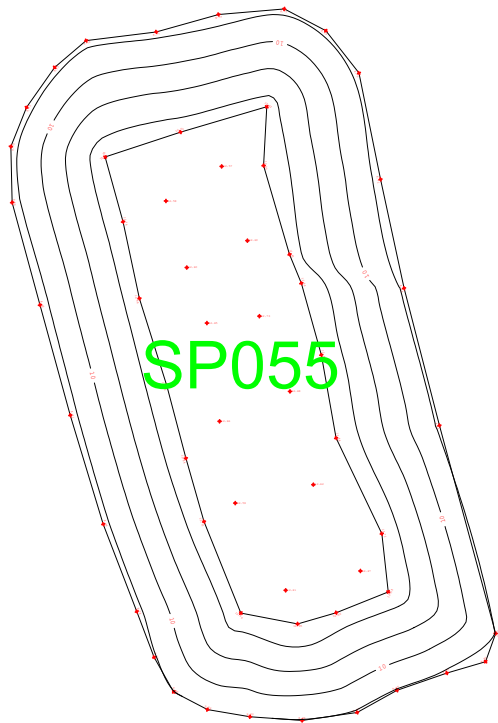
SP013

SP014

SP026

SP001

SP012



C1117 - Prairie British Steel Crushed Concrete Survey  
12.07.2021 @ 10:00  
Total Quantity = 1,638M<sup>3</sup>

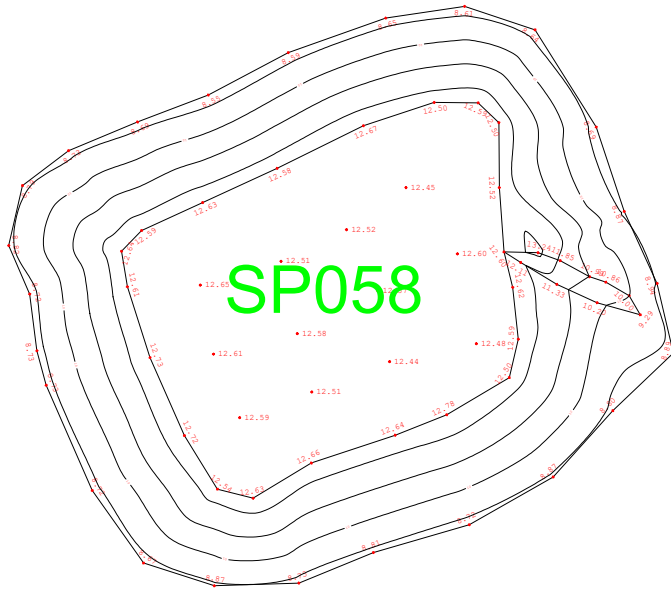


Client  
STDC  
Teesside Management  
Office,  
Redcar, TS10 5QW

Project Title  
Prairie Enabling Work

Drawing Title  
SEY CEC SP055  
Prairie Enabling Work  
Phase 1  
12.07.2021





C1117 - Prairie British Steel Crushed Concrete Survey  
 14.06.2021 @ 13:00  
 Total Quantity = 1,947.73M<sup>3</sup>



Client  
 STDC  
 Teeside Management  
 Office,  
 Redcar, TS10 5QW

Project Title  
 Prairie Enabling Work

Drawing Title  
 SEY CEC SP058  
 Prairie Enabling Work  
 Phase 1  
 12.07.2021

# APPENDIX H

## Contractor In-situ Testing Data





<b>Test Report:</b>	<b>Determination of water content of soil</b> BS EN 17892:2014 Water Content	<b>Report Date:</b> 30.06.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab Ref:</b> MT0318-19009-19029
<b>Site:</b>	British Steel, Redcar	<b>Client Ref:</b> As below
<b>Sample Location:</b>	See Below	<b>Date Sampled:</b> 28.06.21
<b>Material Description:</b>	See Below	<b>Date Received:</b> 28.06.21
<b>Test Method:</b>	Oven Dried Method	<b>Test conducted by:</b> WB
		<b>Sampled By:</b> Client
		<b>Variation from Standard Method:</b> None

**Test Results**

Sample No/Ref Ref	Material	Water Content (%)
PRA-SP515-S7	Mudstone	8.2
PRA-SP515-S8	Mudstone	9.1
PRA-SP515-S9	Mudstone	6.7
PRA-SP047-S1	Mudstone	6.5
PRA-SP047-S2	Mudstone	4.7
PRA-SP047-S3	Mudstone	9
PRA-AU-17-S7	Spoil	13
PRA-AU-17-S8	Spoil	16
PRA-AU-17-S9	Spoil	13
PRA-SP515-S11	Mudstone	4.2
PRA-SP515-S12	Mudstone	4.3
PRA-SP515-S13	Mudstone	4.3
PRA-SP012-43	Spoil	15
PRA-SP012-44	Spoil	15
PRA-SP012-45	Spoil	14
PRA-SP034-S12	Spoil	9.5
PRA-SP034-S13	Spoil	7.8
PRA-SP034-S14	Spoil	8.3
PRA-SP047-S4	Mudstone	3.4
PRA-SP047-S5	Spoil	9.7
PRA-AU19-S7	Spoil	11

**Comments**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

- M. Aiston (Director)
- G. Dresser (Director)
- C. Spencer (Site Works Supervisor)
- M. Caulfield (Laboratory Supervisor)

**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 05.05.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318-17370-17379

**Site:** British Steel , Redcar **Client Ref:** See Below

**Sample location:** As per logs **Date Sampled:** 22.03.2021

**Material description:** Grey/Brown sandy GRAVEL **Date Received:** 22.03.2021

**Test Method:** Oven Dried Method **Test conducted by:** AG

**Sampled By:** Client

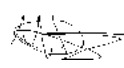
**Variation from Standard Method:** None

### Test Results

Test No	Water Content (%)
PRA-BC-23-S1	25
PRA-SP006-S12	11
PRA-SP006-S13	12
PRA-SP006-S14	11
PRA-BA-23-S1	19
PRA-SP012-S17	15
PRA-SP012-S18	19
PRA-SP012-S19	17
PRA-SP012-S20	18
PRA-BA-21-S2	26

Comments:

**Signed:**

  
For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)

**Page:** 1 of 1



**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 13.05.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318-17672-17680

**Site:** British Steel , Redcar **Client Ref:** See Below

**Sample location:** See Below **Date Sampled:** 26.04.2021

**Material description:** Brown slightly gravelly CLAY **Date Received:** 27.04.2021

**Test Method:** Oven Dried Method **Test conducted by:** AG

**Sampled By:** Client

**Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
17672 PRA-AY-21-S2	27
17673 PRA-AZ-19-S2	22
17674 PRA-AU-19-S1	20
17675 PRA-AT-18-S1	19
17676 PRA-AY-22-S2	19
17677 PRA-SP025-S5	19
17678 PRA-SP025-S6	26
17679 PRA-SP025-S7	21
17680 PRA-AV-18-S1	20

Comments:

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)

**Page:** 1 of 1



**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 24.05.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318 / 18030-41

**Site:** British Steel , Redcar **Client Ref:** See Below

**Sample location:** See Below **Date Sampled:**

**Material description:** Brown slightly gravelly sandy CLAY **Date Received:** 13.05.2021

**Test Method:** Oven Dried Method **Test conducted by:** AG

**Sampled By:** Client

**Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
MT0318-18030 PRA-AZ-16-S1	26
MT0318-18032 PRA-AV-21-S1	21
MT0318-18033 PRA-AV-23-S1	27
MT0318-18034 PRA-AV-19-S1	24
MT0318-18040 PRA-AZ-17-S1	20
MT0318-18041 PRA-AX-22-S1	33

Comments:

**Signed:**For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1

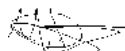
<b>Test Report:</b>	<b>Determination of water content of soil</b> BS EN 17892:2014 Water Content	<b>Report Date:</b> 02.07.2021
<b>Client:</b>	Seymour CE	<b>Lab Ref:</b> MT0318 - 19197-19202
<b>Site:</b>	British Steel, Redcar	<b>Client Ref:</b>
<b>Sample Location:</b>	See Below	<b>Date Sampled:</b> 01.07.21
<b>Material Description:</b>	See Below	<b>Date Received:</b> 01.07.21
<b>Test Method:</b>	Oven Dried Method	<b>Test conducted by:</b> WB
		<b>Sampled By:</b> WB
		<b>Variation from Standard Method:</b> None

**Test Results**

Sample No/Ref Ref	Material	Water Content (%)
PRA-AS-27-S1	19197 Firm Brown S/G, S/Sa Clay	27
PRA-AR-27-S2	19198 Firm Brown Silty Clay	22
PRA-SP043-S4	19199 Spoil	15
PRA-SP043-S5	19200 Spoil	14
PRA-SP043-S6	19201 Spoil	20
PRA-SP043-S7	19202 Spoil	15

**Comments**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

- M. Aiston (Director)
- G. Dresser (Director)
- C. Spencer (Site Works Supervisor)
- M. Caulfield (Laboratory Supervisor)

**Test Report:** **Determination of water content of soil** **Report Date:** 03.07.2021  
BS EN 17892:2014 Water Content


**Client:** Seymour CE Ltd **Lab Ref:** MT0318 - 19216-19228

**Site:** British Steel, Redcar **Client Ref:**  
**Date Sampled:** 02.07.21  
**Date Received:** 02.07.21

**Sample Location:** As Below **Test conducted by:** WB  
**Material Description:** Various **Sampled By:** WB  
**Test Method:** Oven Dried Method **Variation from Standard Method:** None

**Test Results**

Sample No/Ref Ref	Material	Water Content (%)
PRA-BM23-S14	Spoil	16
PRA-BM25-S15	Spoil	15
PRA-ST050-S1	Spoil	8.1
PRA-ST050-S2	Spoil	7.6
PRA-SP034-S24	Spoil	9
PRA-SP034-S25	Spoil	8.5
PRA-ST050-S1	Spoil	8.4
PRA-ST050-S2	Spoil	8.7
PRA-ST050-S3	Spoil	10
PRA-AU19-S8	Spoil	12
PRA-SP34-S24	Spoil	9.2
PRA-SP34-S25	Spoil	9.4
PRA-SP34-S26	Spoil	7

**Comments****Signed:**For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

 M. Aiston (Director) G. Dresser (Director) C. Spencer (Site Works Supervisor) M. Caulfield (Laboratory Supervisor)



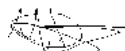
<b>Test Report:</b>	<b>Determination of water content of soil</b> BS EN 17892:2014 Water Content	<b>Report Date:</b> 08/07/2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab Ref:</b> MT0318 - 19410-19416
<b>Site:</b>	British Steel, Redcar	<b>Client Ref:</b>
<b>Sample Location:</b>		<b>Date Sampled:</b> 06-Jul
<b>Material Description:</b> Various		<b>Date Received:</b> 06/07/2021
<b>Test Method:</b> Oven Dried Method		<b>Test conducted by:</b> WB
		<b>Sampled By:</b> WB
		<b>Variation from Standard Method:</b> None

**Test Results**

Sample No/Ref Ref	Material	Water Content (%)
PRA-AU-19-S10	Spoil	11
PRA-AY-17-S6	Spoil	9
PRA-SP050-S11	Spoil	13
PRA-SP050-S12	Spoil	16
PRA-SP050-S13	Spoil	17
PRA-AY-15-S3	Crushed Concrete	11
PRA-AY-17-S7	Crushed Concrete	14

**Comments**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

M. Aiston (Director)

G. Dresser (Director)

C. Spencer (Site Works Supervisor)

M. Caulfield (Laboratory Supervisor)



**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 01.04.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318-16954-16962

**Site:** British Steel Redcar **Client Ref:** PRA  
**Date Sampled:** 22.03.2021  
**Date Received:** 23.03.2021

**Sample location:** See Below **Test conducted by:** AG  
**Material description:** Grey/Brown sandy GRAVEL **Sampled By:** Client  
**Test Method:** Oven Dried Method **Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
PRA-SP011-S25	14
PRA-SP011-S26	12
PRA-SP011-S27	14
PRA-SP011-S28	12
PRA-SP011-S29	10
PRA-SP011-S30	12
PRA-SP009-S17	12
PRA-SP009-S18	9.9
PRA-SP009-S19	13

Comments:

**Signed:**  
For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)**Page:** 1 of 1

**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 02/06/21

**Client:** Seymour CE Ltd **Lab ref:** MT0318 18019-18029

**Site:** British Steel , Redcar **Client Ref:** See Below

**Sample location:** See Below **Date Sampled:** 17/05/21

**Material description:** Site Arisings **Date Received:** 18/05/21

**Test Method:** Oven Dried Method **Test conducted by:** AG/NY

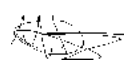
**Sampled By:** Client

**Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
MT0318-18019 PRA-AV-19-S3	29
MT0318-18020 PRA-AV-19-S2	34
MT0318-18021 PRA-SPO34-S1	10
MT0318-18022 PRA-SPO34-S2	12
MT0318-18024 PRA-AY-16-S1	19
MT0318-18025 PRA-SPO35-S1	8.9
MT0318-18026 PRA-SPO35-S2	8.3
MT0318-18027 PRA-SPO35-S3	7.2
MT0318-18028 PRA-SPO34-S4	13
MT0318-18029 PRA-SPO34-S5	13

Comments:

**Signed:**  
For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1



**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 07.06.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318 / 18166-18179

**Site:** British Steel , Redcar **Client Ref:** See Below

**Sample location:** See Below **Date Sampled:** 20.05.2021

**Material description:** Various **Date Received:** 25.05.2021

**Test Method:** Oven Dried Method **Test conducted by:** AB

**Sampled By:** Client

**Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
MT0318-18116 PRA-AW-22 S1	33
MT0318-18167 PRA-AW-18-S1	17
MT0318-18168 PRA-SPO20-S7	10
MT0318-16169 PRA-AX-16-S1	25
MT0318-16170 PRA-SPO14-S11	8.0
MT0318-16171 PRA-SPO14-S12	6.8
MT0318-16172 PRA-SPO31-S1	13
MT0318-16173 PRA-SPO31-S2	13
MT0318-16174 PRA-SPO31-S3	11
MT0318-16175 PRA-SPO36-S1	9.4
MT0318-16176 PRA-SPO36-S2	9.4
MT0318-16177 PRA-SPO36-S3	9.2
MT0318-16178 PRA-SPO36-S4	7.7
MT0318-16179 PRA-AY-15-S1	23

Comments:

**Signed:**  
For & on behalf of  
Dunelm Testing LtdAuthorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1

**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 07.06.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318 / 18180-92

**Site:** British Steel , Redcar **Client Ref:** See Below

**Sample location:** See Below **Date Sampled:** 20.05.2021

**Material description:** Various **Date Received:** 25.05.2021

**Test Method:** Oven Dried Method **Test conducted by:** AB

**Sampled By:** Client

**Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
MT0318-18180 PRA-AW-16-S1	29
MT0318-18181 PRA-SPO27-S18	9.9
MT0318-18182 PRA-SPO27-S19	13
MT0318-18183 PRA-SPO27-S20	14
MT0318-18184 PRA-SPO25-S8	24
MT0318-18185 PRA-SPO25-S9	27
MT0318-18186 PRA-SPO25-S10	27
MT0318-18187 PRA-SPO11-S49	10
MT0318-18188 PRA-SPO11-S50	16
MT0318-18189 PRA-SPO11-S51	12
MT0318-18190 PRA-SPO11-S52	18
MT0318-18191 PRA-SPO11-S53	15
MT0318-18191 PRA-SPO11-S54	16

Comments:

**Signed:**  
For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1

**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 24.06.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318 18271-18279

**Site:** British Steel , Redcar **Client Ref:** See Below

**Sample location:** As below 17 **Date Sampled:** 27/05/2021

**Material description:** As below **Date Received:** 02/06/2021

**Test Method:** Oven Dried Method **Test conducted by:** AB


**Sampled By:** WB

**Variation from Standard Method:** None

**Test Results**

Test No	Material	Water Content (%)
PRA-AW-24-S2 18271	Clay Base	24
PRA-SP037-S1 18272	Crushed Concrete	13
PRA-SP037-S2 18273	Crushed Concrete	11
PRA-SP015-S10 18274	Slag Rich Made Ground	12
PRA-SP015-S11 18275	Slag Rich Made Ground	11
PRA-SP034-S10 18276	Slag Rich Railway Embankment Fines	8.8
PRA-SP034-S11 18277	Slag Rich Railway Embankment Fines	9.5
PRA-AW-19-S7 18278	Clay Base	30
PRA-AW-17-S4 18279	Clay Base	28

Comments:

**Signed:**  
For & on behalf of  
Dunelm Testing LtdAuthorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1

**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 02/06/21

**Client:** Seymour CE Ltd **Lab ref:** MT0318/18289-18292

**Site:** British Steel , Redcar **Client Ref:** See Below

**Sample location:** See Below **Date Sampled:** 01/06/2021

**Material description:** Grey MUDSTONE **Date Received:** 01/06/2021

**Test Method:** Oven Dried Method **Test conducted by:** MC


**Sampled By:** Client

**Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
MT0318-18289 PRA-SPO27-S21	11
MT0318-18290 PRA-SPO27-S22	11
MT0318-18291 PRA-AW-17-S5	5.1
MT0318-18292 PRA-AW-21-S3	6.3

Comments:

**Signed:**  
For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1

**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 05/06/21

**Client:** Seymour CE Ltd **Lab ref:** MT0318/18315-18318

**Site:** British Steel , Redcar **Client Ref:** See Below

**Sample location:** See Below **Date Sampled:** 02/06/2021

**Material description:** Grey MUDSTONE **Date Received:** 02/06/2021

**Test Method:** Oven Dried Method **Test conducted by:** MC

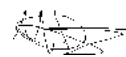
**Sampled By:** Client

**Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
MT0318-18315 PRA-AW-17-56	10
MT0318-18316 PRA-AU-17-S3 (1)	4.5
MT0318-18317 PRA-AU-17-S3 (2)	6.5
MT0318-18318 PRA-AU-17-S3 (3)	6.9

Comments:

**Signed:**  
For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1

**Test Report:** **Determination of water content of soil**  
ASTM D4643 -17 Microwave Oven Heating **Report Date:** 16.06.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318 18551-18552

**Site:** British Steel , Redcar **Client Ref:** See Below

**Sample location:** See Below **Date Sampled:** 11/06/2021

**Material description:** Grey MUDSTONE **Date Received:** N/A

**Test Method:** Microwave - Method **Test conducted by:** WB

**Sampled By:** Client

**Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
18551- PRA-SPO11-S55	11
18552 - PRA-SPO11-S56	11

Comments:

**Signed:**For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1

**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 11.06.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318 18553-18558

**Site:** British Steel , Redcar **Client Ref:** See Below

**Sample location:** See Below **Date Sampled:** 11/06/21

**Material description:** Grey MUDSTONE **Date Received:** 14/06/21

**Test Method:** Oven Dried Method **Test conducted by:** MC

**Sampled By:** WB

**Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
MT0318-18553 PRA-SPO11-S55	18
MT0318-18554 PRA-SPO11-S56	20
MT0318-18555 PRA-SPO11-S57	16
MT0318-18556 PRA-SPO11-S58	19
MT0318-18557 PRA-AV-20-S2	11
PMT0318-18558 RA-AV-20-S4	12

Comments:

**Signed:**For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1

**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 24.06.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318-18594-18604

**Site:** British Steel Redcar **Client Ref:**

**Sample location:** See Below **Date Sampled:** 04.06.2021

**Material description:** See Below **Date Received:** 14.06.2021

**Test Method:** Oven Dried Method **Test conducted by:** AG


**Sampled By:** Client

**Variation from Standard Method:** None

**Test Results**

Test No	Material	Water Content (%)
PRA-SP027-S23 18594	Screened Spoil	16
PRA-SP027-S24 18595	Screened Spoil	13
PRA-SP027-S25 18596	Screened Spoil	12
PRA-SP029-S29 18597	Screened Spoil	12
PRA-SP029-S30 18587	Screened Spoil	14
PRA-SP029-S31 18599	Screened Spoil	20
PRA-AT-24-S1 18600	Base Sample - Clay	30
PRA-AV-18-S5 18601	Imported Mudstone	8.2
PRA-AW-20-S2 18602	Imported Mudstone	4.9
PRA-SP039-S1 18603	Crushed Concrete	8.2
PRA-SP039-S2 18604	Crushed Concrete	8.2

Comments:

**Signed:**For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)**Page:** 1 of 1



**Test Report:** **Determination of water content of soil**  
ASTM D4643 -17 Microwave Oven Heating

**Report Date:** 16/06/21

**Client:** Seymour CE Ltd

**Lab ref:** MT0318 18617-18618

**Site:** British Steel , Redcar

**Client Ref:** See Below

**Date Sampled:** 14/06/2021

**Date Received:** 14/06/2021

**Sample location:** As below

**Test conducted by:** WB

**Material description:** Mudstone

**Sampled By:** Client

**Test Method:** Microwave - Method

**Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
PRA-AW-20-S4 18617	16
PRA-AU-20-S2 18618	16

Comments:

**Signed:**For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1

**Test Report:** **Determination of water content of soil**  
ASTM D4643 -17 Microwave Oven Heating

**Report Date:** 18/06/21

**Client:** Seymour CE Ltd

**Lab ref:** MT0318 18724-18727

**Site:** British Steel , Redcar

**Client Ref:** See Below

**Date Sampled:** 15/06/2021

**Date Received:** 16/06/2021

**Sample location:** As below

**Test conducted by:** WB

**Material description:** Mudstone

**Sampled By:** Client

**Test Method:** Microwave - Method

**Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
PRA-AU-19-S5 18724	7.9
PRA-SPO12-S21 18725	19
PRA-SPO12-S23 18726	19
PRA-AY-23-S4 18727	14

Comments:

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**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1

**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 21.06.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318 18728-18733

**Site:** British Steel , Redcar **Client Ref:** See Below

**Sample location:** As below 17 **Date Sampled:** 15/06/21

**Material description:** Grey MUDSTONE **Date Received:** 16/06/21

**Test Method:** Oven Dried Method **Test conducted by:** AB


**Sampled By:** WB

**Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
PRA-AU-19-S5 18728	17
PRA-SPO12-S22 18729	20
PRA-SPO12-S23 18730	18
PRA-AU-19-S5 18731	7.9
PRA-AY-21-S3 18732	17
PRA-AY-23-S4 18733	16

Comments:

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**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1

**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 25.06.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318-18825-18832

**Site:** British Steel, Redcar **Client Ref:** See Below

**Sample location:** See Below **Date Sampled:** 11.06.2021

**Material description:** See Below **Date Received:** 16.06.2021

**Test Method:** Oven Dried Method **Test conducted by:** AG


**Sampled By:** Client

**Variation from Standard Method:** None

**Test Results**

Test No	Material	Water Content (%)
PRA-AR-27-S1 18825	Clay Base	20
PRA-AX-23-S2 18826	Mudstone	3.4
PRA-SPO40-S1 18827	Crushed Concrete	10
PRA-SPO40-S2 18828	Crushed Concrete	11
PRA-SPO40-S3 18829	Crushed Concrete	12
PRA-SPO40-S4 18830	Crushed Concrete	11
PRA-AW-17-S7 18831	Mudstone	2.8
PRA-AR-24-S1 18832	Clay Base	26

Comments:

**Signed:**For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1

**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 28.06.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318-18834-18839

**Site:** British Steel, Redcar **Client Ref:** See Below

**Sample location:** See Below **Date Sampled:** 21.06.2021

**Material description:** Mudstone **Date Received:** 22.06.2021

**Test Method:** Oven Dried Method **Test conducted by:** WB

**Sampled By:** WB

**Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
18 PRA-AW-17-S8 188834	7.7
PRA-AY-21-S4 Uncomp 18835	17
PRA-AY-21-S5 Comp 18836	14
PRA-AY-21-S6 18837	14
PRA-AY-21-S7 18838	14
PRA-AY-21-S8 18839	14

Comments:

**Signed:**For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1

<b>Test Report:</b>	<b>Determination of water content of soil</b> BS EN 17892:2014 Water Content	<b>Report Date:</b> 30.06.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab Ref:</b> MT0318 -18893-18908
<b>Site:</b>	British Steel Redcar	<b>Client Ref:</b> As below
<b>Sample Location:</b>	See below	<b>Date Sampled:</b> 15.06.2021
<b>Material Description:</b>	See Below	<b>Date Received:</b> 23.06.2021
<b>Test Method:</b>	Oven Dried Method	<b>Test conducted by:</b> AG
		<b>Sampled By:</b> Client
		<b>Variation from Standard Method:</b> None

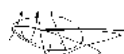
**Test Results**

Sample No/Ref Ref	Material	Water Content (%)
18893 PRA-SP012-S21	Screened Spoil	18
18894 PRA-SP012-S22	Screened Spoil	19
18895 PRA-SP012-S23	Screened Spoil	18
18896 PRA-AU-17-S6	Mudstone	7.4
18897 PRA-AU-19-S5	Mudstone	6.8
18898 PRA-AR-23-S1	Clay Base	22
18999 PRA-AS-23-S1	Clay Base	20
18900 PRA-AY-17-S4	Mudstone	6.7
18901 PRA-AS-27-S1	Clay Base	4.5*
18902 PRA-AY-21-S3	Screened Spoil (damp, uncompacted)	16
18903 PRA-AY-23-S4	Screened Spoil (SI damp, compacted)	12
18904 PRA-AU-19-S6	Mudstone	8.1
18905 PRA-AW-15-S1	Mudstone	11
18906 PRA-SP041-S1	Spoil	7.8
18907 PRA-SP41-S2	Spoil	7.6
18908 PRA-SP041-S3	Spoil	7.8

\* sample received dry

**Comments**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

- M. Aiston (Director)
- G. Dresser (Director)
- C. Spencer (Site Works Supervisor)
- M. Caulfield (Laboratory Supervisor)

**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 25.06.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318-18930-18936

**Site:** British Steel, Redcar **Client Ref:** See Below

**Sample location:** See Below **Date Sampled:** 23.06.2021

**Material description:** Spoil **Date Received:** 23.06.2021

**Test Method:** Oven Dried Method **Test conducted by:** WB

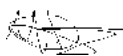
**Sampled By:** Client

**Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
PRA-AU-21-S2 18930	14
PRA-AW-23-S3 18931	19
PRA-SP012-S40 18932	17
PRA-SP012-S41 18933	16
PRA-SP012-S42 18934	16
PRA-SP012-S39 18935	18
PRA-SP012-S38 18936	17

Comments:

**Signed:**For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1

**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 25.06.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318-18942-18950

**Site:** British Steel, Redcar **Client Ref:** See Below

**Sample location:** See Below **Date Sampled:** 24.06.2021

**Material description:** See Below **Date Received:** 24.06.2021

**Test Method:** Oven Dried Method **Test conducted by:** WB

**Sampled By:** Client

**Variation from Standard Method:** None

**Test Results**

Test No	Material	Water Content (%)
PRA-AY21-S10 18942	Spoil	16
PRA-AY21-S11 18943	Spoil	15
PRA-AY21-S12 18944	Spoil	16
PRA-SP515-S1 18945	Mudstone	1.8
PRA-SP515-S2 18946	Mudstone	2.1
PRA-SP515-S3 18947	Mudstone	1.5
PRA-SP515-S4 18948	Mudstone	3.9
PRA-SP515-S5 18949	Mudstone	2.4
PRA-SP515-S6 18950	Mudstone	1.8

Comments:

**Signed:**For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1







**Test Report:** **Determination of water content of soil**  
BS EN 17892:2014 Water Content **Report Date:** 27/04/21

**Client:** Seymour Civil Engineering Ltd **Lab ref:** MT0318/17598-17613


**Site:** British Steel, Redcar **Client Ref:** See Below  
**Date Sampled:** 21/04/2021  
**Date Received:** 23/04/2021

**Sample location:** See Below **Test conducted by:** AG  
**Material description:** Various See Logs **Sampled By:** Client  
**Test Method:** Oven Dried Method **Variation from Standard Method:** None

**Test Results**

Test No	Water Content (%)
MT0318-17598 PRA-AY-23-S2	26
MT0318-17599 PRA-AZ-19-S1	33
MT0318-17600 PRA-AZ-21-S2	31
MT0318-17601 PRA-AY-19-S2	9
MT0318-17602 PRA-SP027-S14	15
MT0318-17603 PRA-SPO27-S15	14
MT0318-17604 PRA-SPO27-S16	18
MT0318-17605 PRA-SPO27-S17	14
MT0318-17606 PRA-SPO29-S6	14
MT0318-17607 PRA-SPO29-S7	14
MT0318-17608 PRA-SPO29-S8	17
MT0318-17609 PRA-SPO29-S9	18
MT0318-17610 PRA-SPO29-S10	20
MT0318-17611 PRA-SPO29-S11	19
MT0318-17612 PRA-SPO29-S12	21
MT0318-17613 PRA-SPO29-S13	19

Comments:

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**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 Dresser (Director)  
 C.Spencer (Site Works Supervisor)**Page:** 1 of 1

**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test**  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1 **Report Date:** 17.11.2020

**Client:** Seymour CE Ltd **Test ref:** MT0269-14565

**Site:** Teesside STSC **Client ref:** -

**Test location:** BC 27 **Date tested:** 17.11.2020

**Material description:** Brown Sandy Gravelly CLAY **Test conducted by:** EA

**Plate diameter (mm):** 610 **Reaction load:** 13 Ton Excavator

**Test depth (m):** Formation **Weather conditions:** Wet, Cloudy

**Max Min temp:** 8c - 10c

### Test Results

<b>Plate Correction Factor:</b>	0.81649	<b>Equivalent CBR Value (%):</b>	2.1
<b>Applied Pressure at 1.25mm (kPa):</b>	36.1	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	22.5

### Comments:

See attached graphs

Signed:



For & on behalf of  
**Dunelm Testing Ltd**

M. Aiston (Director)

G.Dresser (Director)

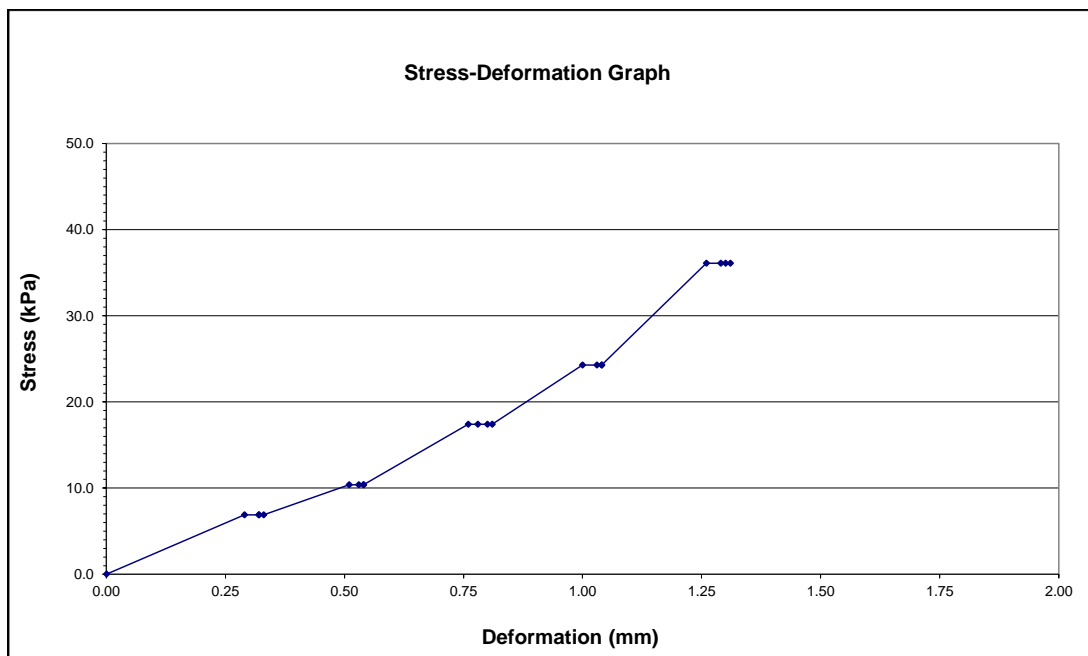
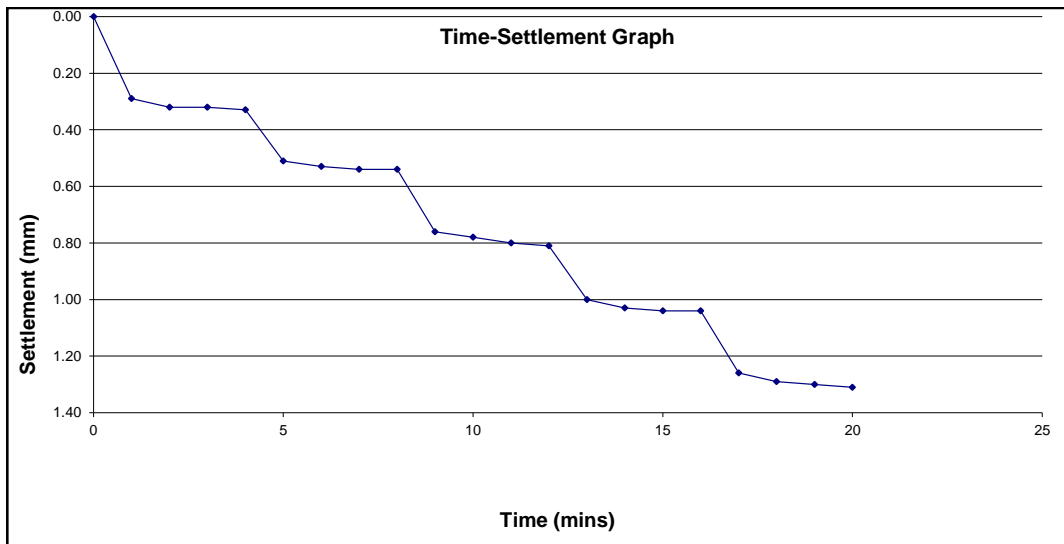
**Page:** 1 of 2

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**Test Results**

**Site:** Teesside STSC  
**Client:** Seymour CE Ltd

**Lab ref:** MT0269-14565  
**Date Tested:** 17.11.2020



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test**  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1 **Report Date:** 17.11.2020

**Client:** Seymour CE Ltd **Test ref:** MT0269-14566

**Site:** Teesside STSC **Client ref:** -

**Test location:** BC 25 **Date tested:** 17.11.2020

**Material description:** Brown Sandy Gravelly CLAY **Test conducted by:** EA

**Plate diameter (mm):** 610 **Reaction load:** 13 Ton Excavator

**Test depth (m):** Formation **Weather conditions:** Wet, Cloudy

**Max Min temp:** 8c - 10c

### Test Results

<b>Plate Correction Factor:</b>	0.81649	<b>Equivalent CBR Value (%):</b>	2.4
<b>Applied Pressure at 1.25mm (kPa):</b>	38.2	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	24.4

### Comments:

See attached graphs

Signed:



For & on behalf of  
**Dunelm Testing Ltd**

M. Aiston (Director)

G.Dresser (Director)

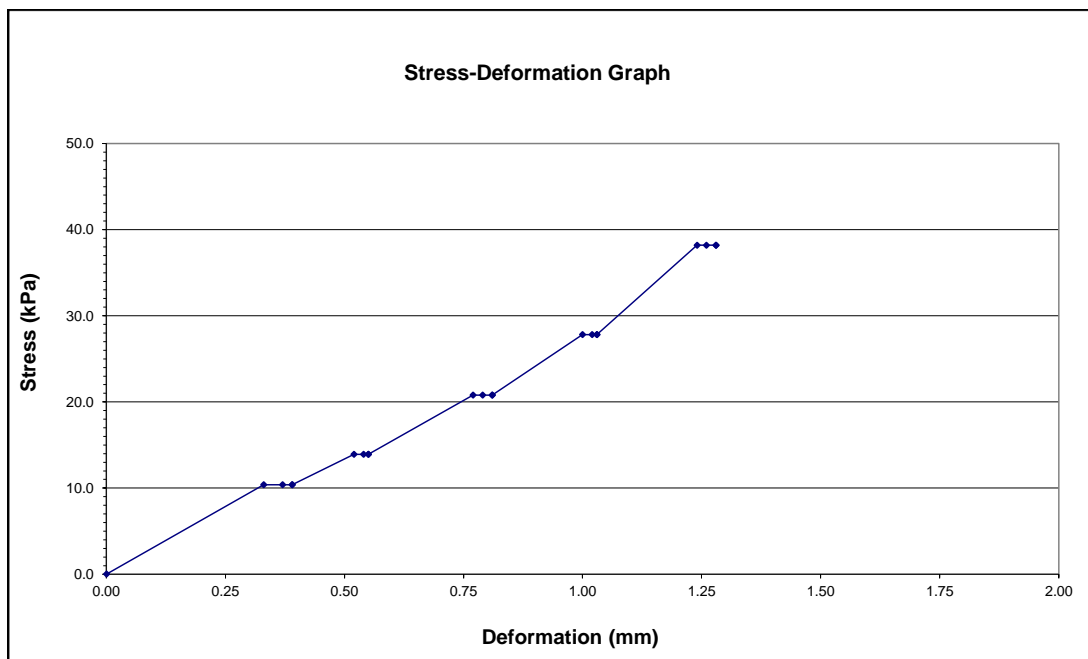
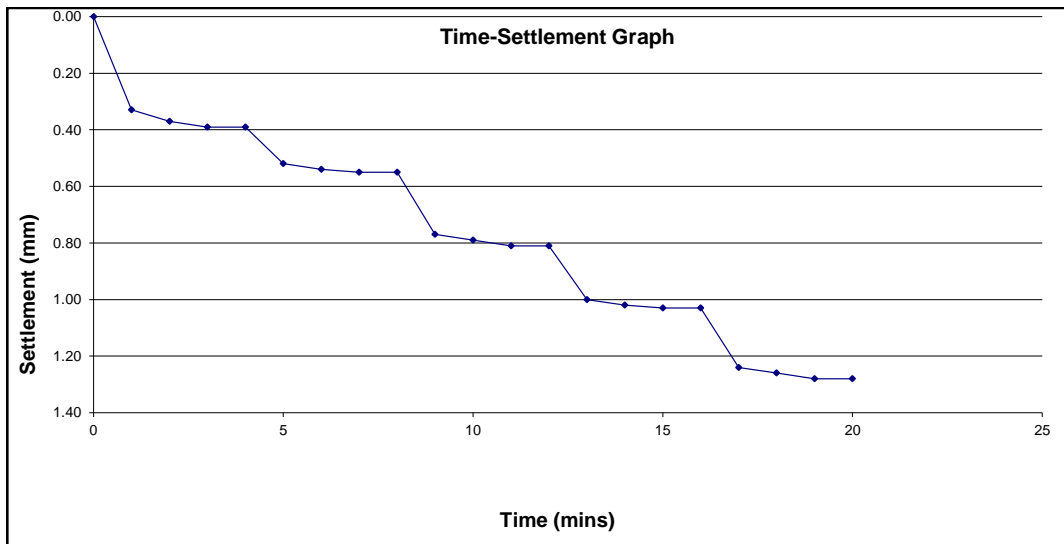
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**Test Results**

**Site:** Teesside STSC  
**Client:** Seymour CE Ltd

**Lab ref:** MT0269-14566  
**Date Tested:** 17.11.2020



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test**  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1 **Report Date:** 17.11.2020

**Client:** Seymour CE Ltd **Test ref:** MT0269-14567

**Site:** Teesside STSC **Client ref:** -

**Test location:** BA 25 **Date tested:** 17.11.2020

**Material description:** Brown Sandy Gravelly CLAY **Test conducted by:** EA

**Plate diameter (mm):** 610 **Reaction load:** 13 Ton Excavator

**Test depth (m):** Formation **Weather conditions:** Wet, Cloudy

**Max Min temp:** 8c - 10c

### Test Results

<b>Plate Correction Factor:</b>	0.81649	<b>Equivalent CBR Value (%):</b>	8.3
<b>Applied Pressure at 1.25mm (kPa):</b>	79.9	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	49.4

### Comments:

See attached graphs

Signed:



For & on behalf of  
**Dunelm Testing Ltd**

M. Aiston (Director)

G.Dresser (Director)

**Page:** 1 of 2

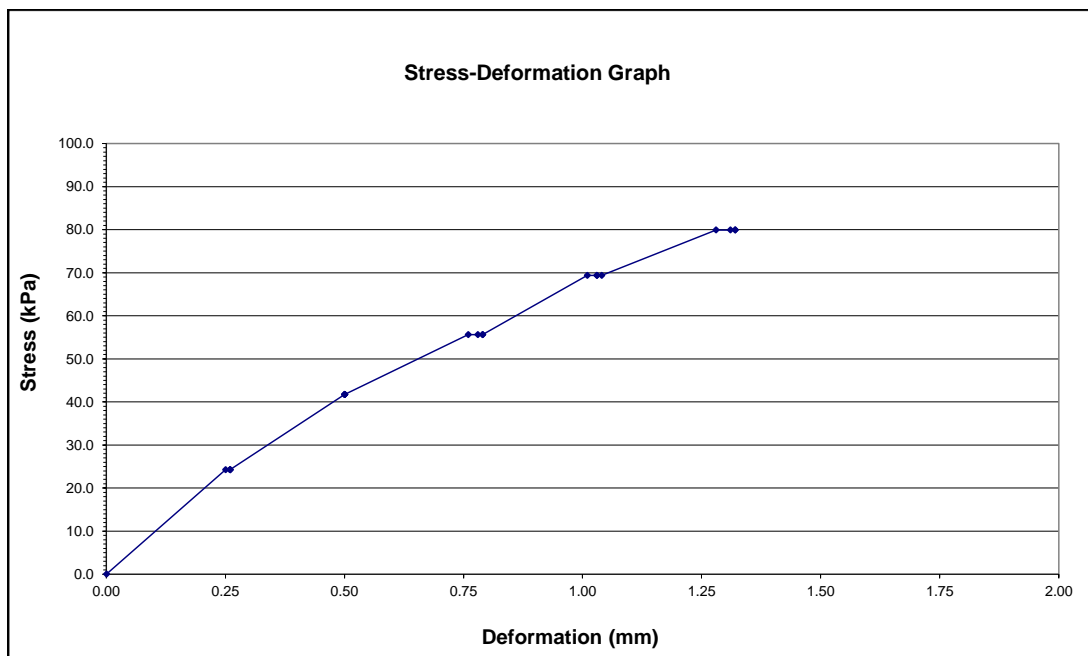
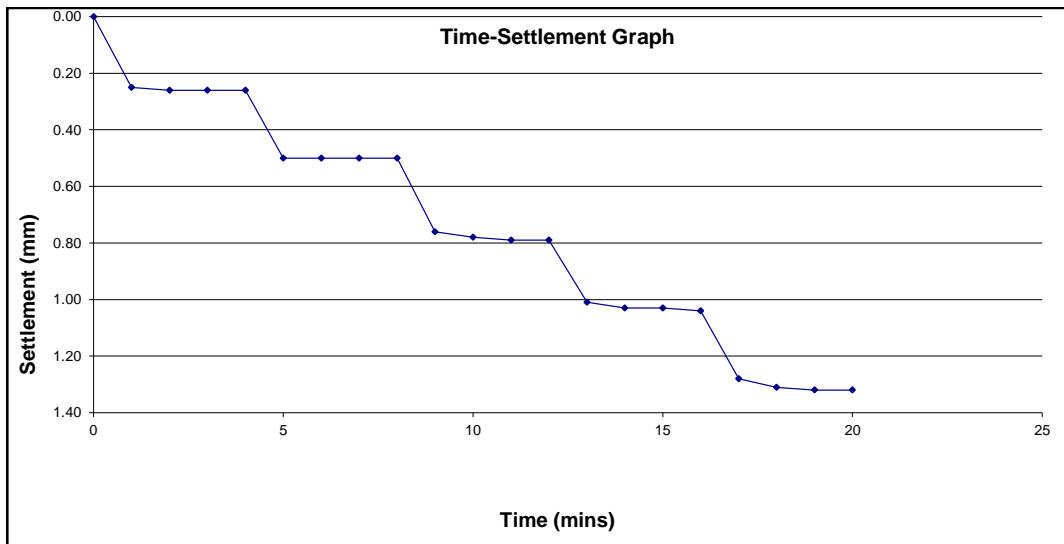
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**Test Results**

**Site:** Teesside STSC  
**Client:** Seymour CE Ltd

**Lab ref:** MT0269-14567  
**Date Tested:** 17.11.2020



**Test Report:** Determination of Equivalent CBR Value by Plate Bearing Test  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1 **Report Date:** 17.11.2020

**Client:** Seymour CE Ltd **Test ref:** MT0269-14571

**Site:** Teesside STSC **Client ref:** -

**Test location:** BA 29 **Date tested:** 17.11.2020

**Material description:** Brown Sandy Gravelly CLAY **Test conducted by:** EA

**Plate diameter (mm):** 610 **Reaction load:** 13 Ton Excavator

**Test depth (m):** Formation **Weather conditions:** Wet, Cloudy

**Max Min temp:** 8c - 10c

### Test Results

Plate Correction Factor:	0.81649	Equivalent CBR Value (%):	5.8
Applied Pressure at 1.25mm (kPa):	66.0	Modulus of Sub-Grade Reaction (kN/m <sup>2</sup> /mm):	40.2

### Comments:

See attached graphs

Signed:



For & on behalf of  
Dunelm Testing Ltd

M. Aiston (Director)

G.Dresser (Director)

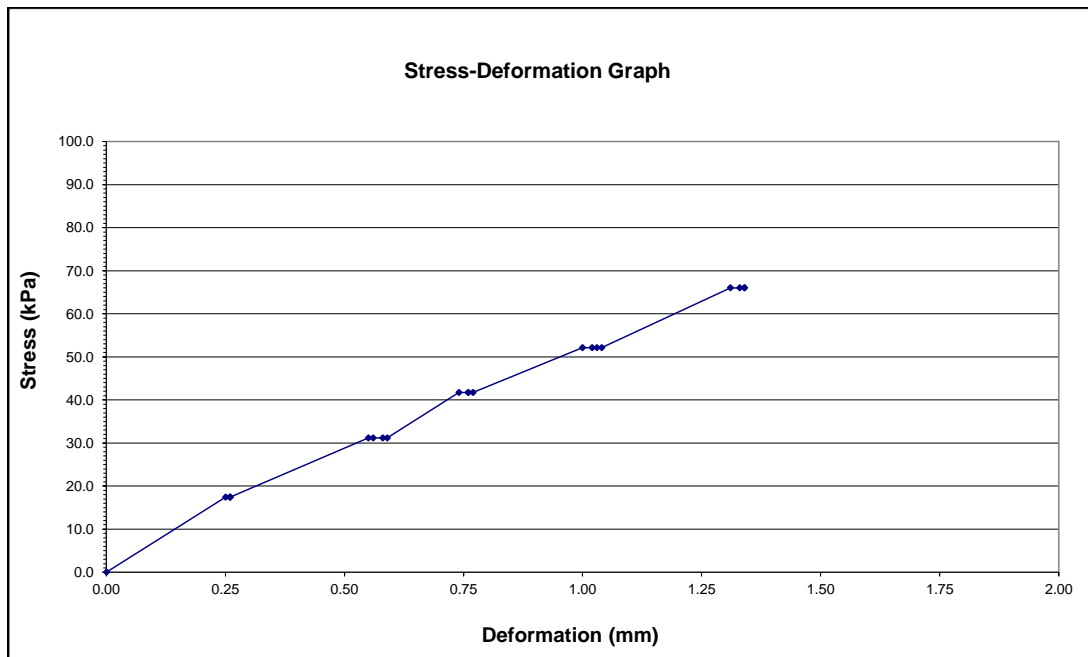
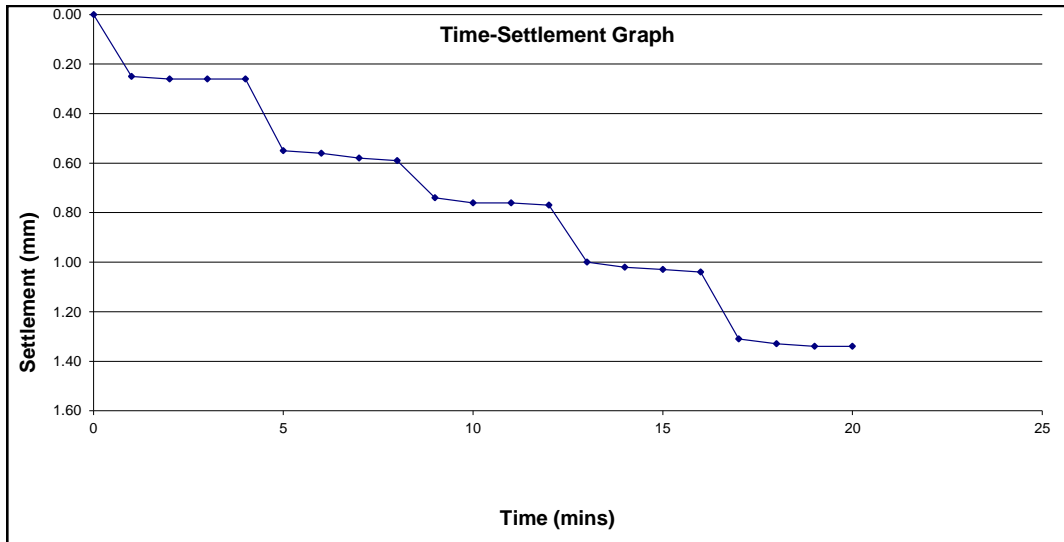
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**Test Results**

**Site:** Teesside STSC  
**Client:** Seymour CE Ltd

**Lab ref:** MT0269-14571  
**Date Tested:** 17.11.2020



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test**  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1 **Report Date:** 17.11.2020

**Client:** Seymour CE Ltd **Test ref:** MT0269-14572

**Site:** Teesside STSC **Client ref:** -

**Test location:** BC 29 **Date tested:** 17.11.2020

**Material description:** Brown Sandy Gravelly CLAY **Test conducted by:** EA

**Plate diameter (mm):** 610 **Reaction load:** 13 Ton Excavator

**Test depth (m):** Formation **Weather conditions:** Wet, Cloudy

**Max Min temp:** 8c - 10c

### Test Results

Plate Correction Factor:	0.81649	Equivalent CBR Value (%):	3.4
Applied Pressure at 1.25mm (kPa):	47.2	Modulus of Sub-Grade Reaction (kN/m <sup>2</sup> /mm):	29.6

### Comments:

See attached graphs

Signed:



For & on behalf of  
**Dunelm Testing Ltd**

M. Aiston (Director)

G.Dresser (Director)

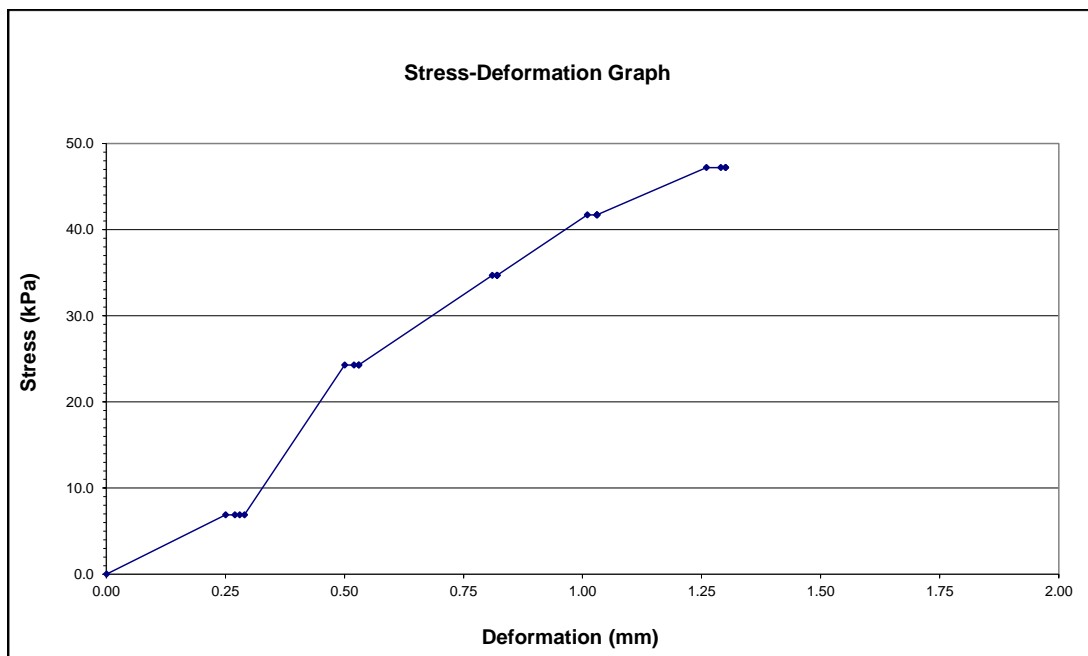
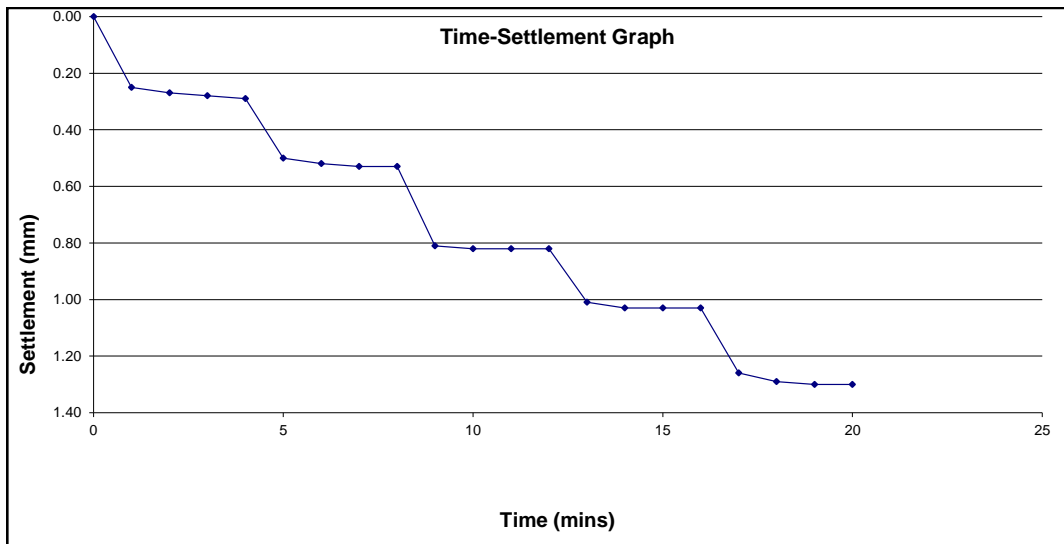
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**Test Results**

**Site:** Teesside STSC  
**Client:** Seymour CE Ltd

**Lab ref:** MT0269-14572  
**Date Tested:** 17.11.2020



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 01/03/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 16407  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 24/02/21  
**Test conducted by:** MC


**Test location:** BC25 @ 300  
**Material description:** Grey, sandy, gravelly clay **Reaction load:** 18t Excavator  
**Plate diameter (mm):** 610 **Weather conditions:** Rain  
**Test depth (m):** 0 **Max Min temp:** 6°c

**Test Results**

<b>Plate Correction Factor:</b>	0.81649	<b>Equivalent CBR Value (%):</b>	4.3
<b>Applied Pressure at 1.25mm (KPa):</b>	53.7	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	33.8

**Comments:**

See attached graphs

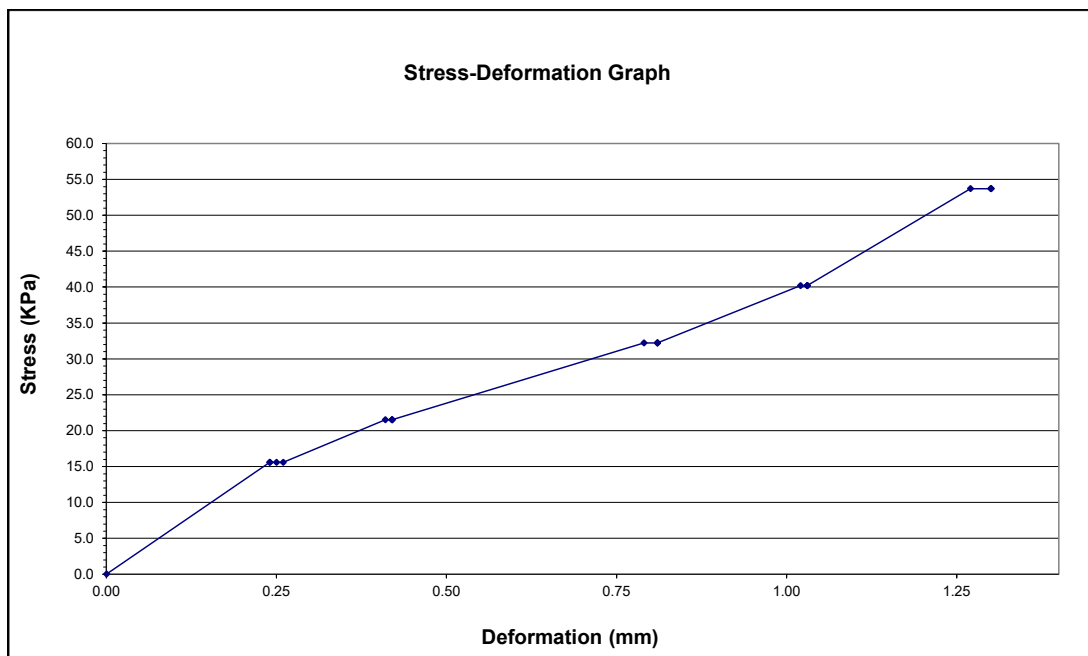
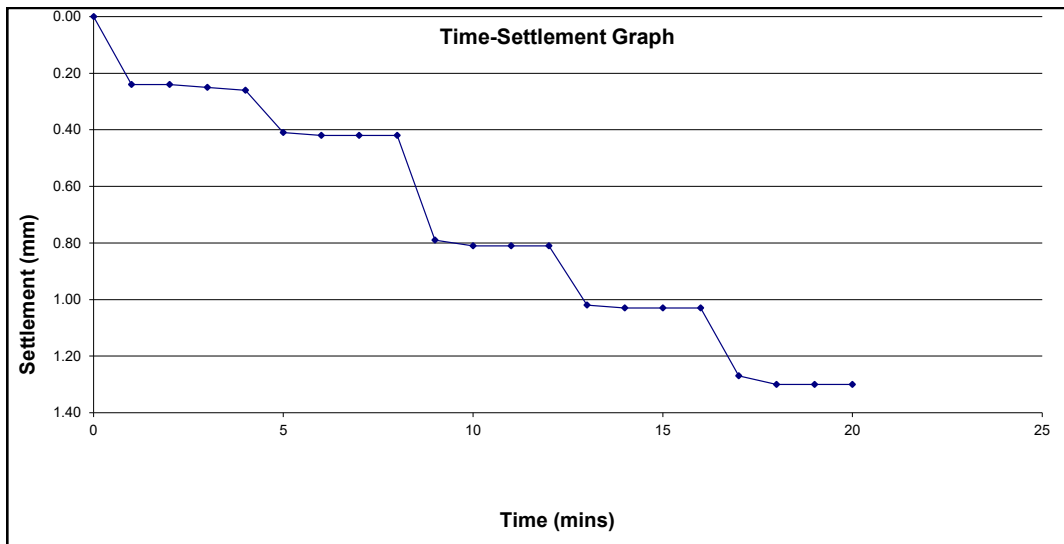
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For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 - 16407  
**Date Tested:** 24/02/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 01/03/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 16408  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 24/02/21  
**Test conducted by:** MC


**Test location:** BC25 @ Formation  
**Material description:** Grey, sandy, gravelly clay **Reaction load:** 18t Excavator  
**Plate diameter (mm):** 610 **Weather conditions:** Rain  
**Test depth (m):** 0 **Max Min temp:** 6°c

**Test Results**

<b>Plate Correction Factor:</b>	0.81649	<b>Equivalent CBR Value (%):</b>	3.3
<b>Applied Pressure at 1.25mm (KPa):</b>	45.0	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	28.9

**Comments:**

See attached graphs

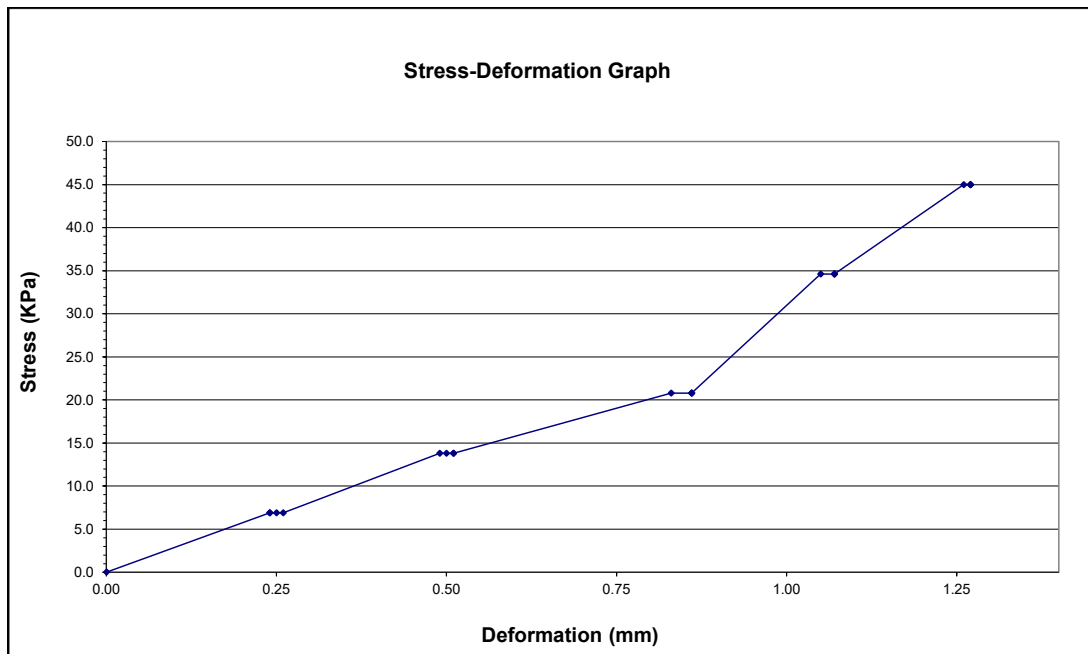
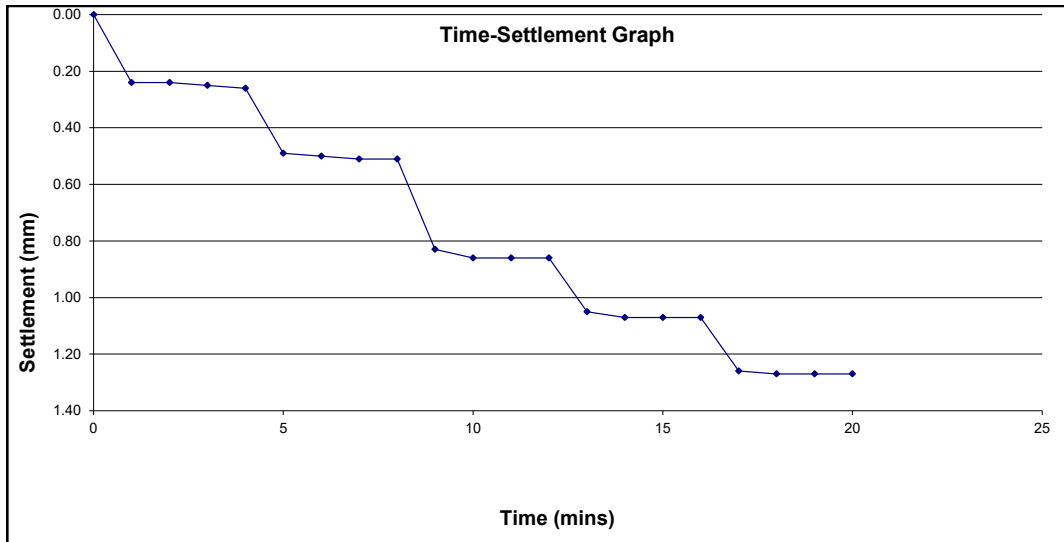
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For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2



## Test Results

Site: British Steel, Redcar  
Client: Seymour Civils

Lab ref: MT0318 - 16408  
Date Tested: 24/02/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 01/03/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 16409  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 24/02/21  
**Test conducted by:** MC

**Test location:** BC27 @ 300  
**Material description:** Grey, sandy, gravelly clay **Reaction load:** 18t Excavator  
**Plate diameter (mm):** 610 **Weather conditions:** Rain  
**Test depth (m):** 0 **Max Min temp:** 6°c

**Test Results**

<b>Plate Correction Factor:</b>	0.81649	<b>Equivalent CBR Value (%):</b>	2.9
<b>Applied Pressure at 1.25mm (KPa):</b>	41.6	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	27.2

**Comments:**

See attached graphs

**Signed:**For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

- M. Aiston (Director)
- G Dresser (Director)
- C. Spencer (Fieldwork Supervisor)

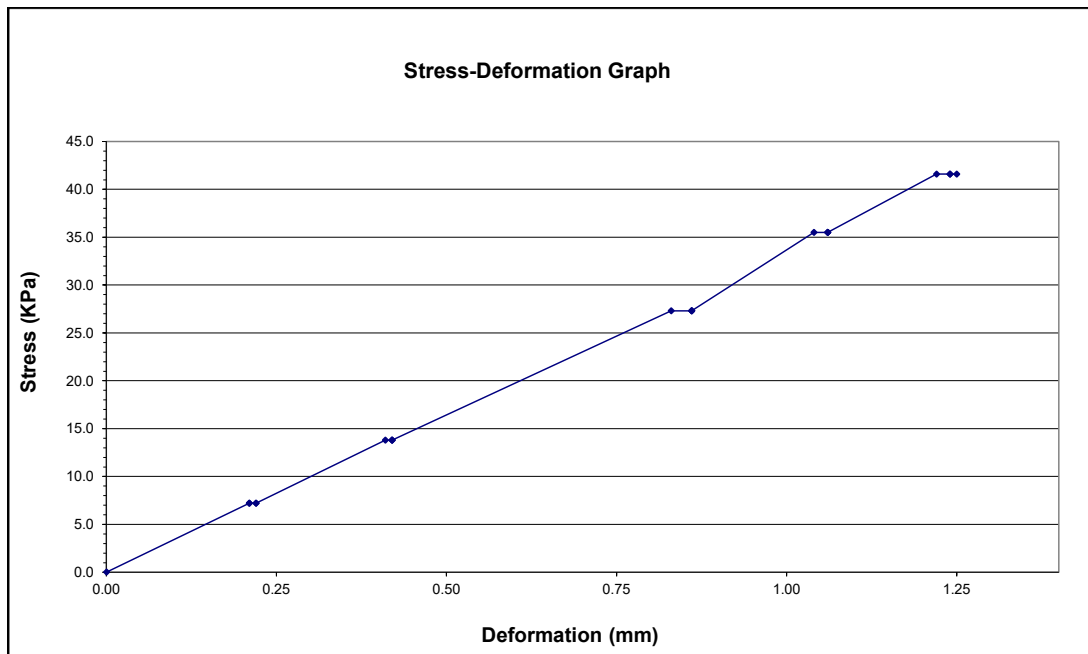
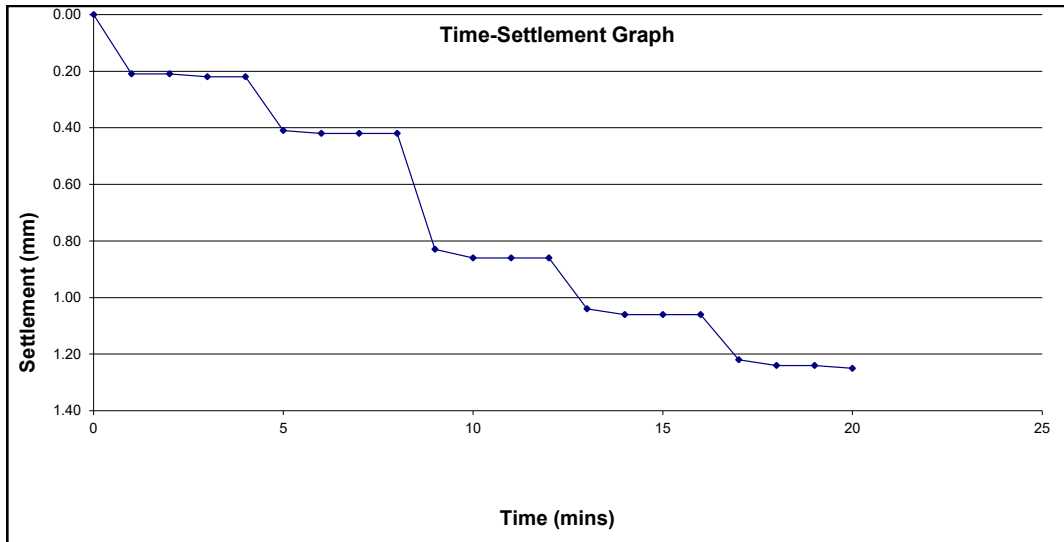
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 - 16409  
**Date Tested:** 24/02/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test**  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1 **Report Date:** 01/03/21

**Client:** Seymour Civils **Test ref:** MT0318 – 16410  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 24/02/21  
**Test conducted by:** MC


**Test location:** BC27 @ Formation  
**Material description:** Grey, sandy, gravelly clay **Reaction load:** 18t Excavator  
**Plate diameter (mm):** 610 **Weather conditions:** Rain  
**Test depth (m):** 0 **Max Min temp:** 6°c

**Test Results**

<b>Plate Correction Factor:</b>	0.81649	<b>Equivalent CBR Value (%):</b>	4.5
<b>Applied Pressure at 1.25mm (KPa):</b>	55.4	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	34.5

**Comments:**

See attached graphs

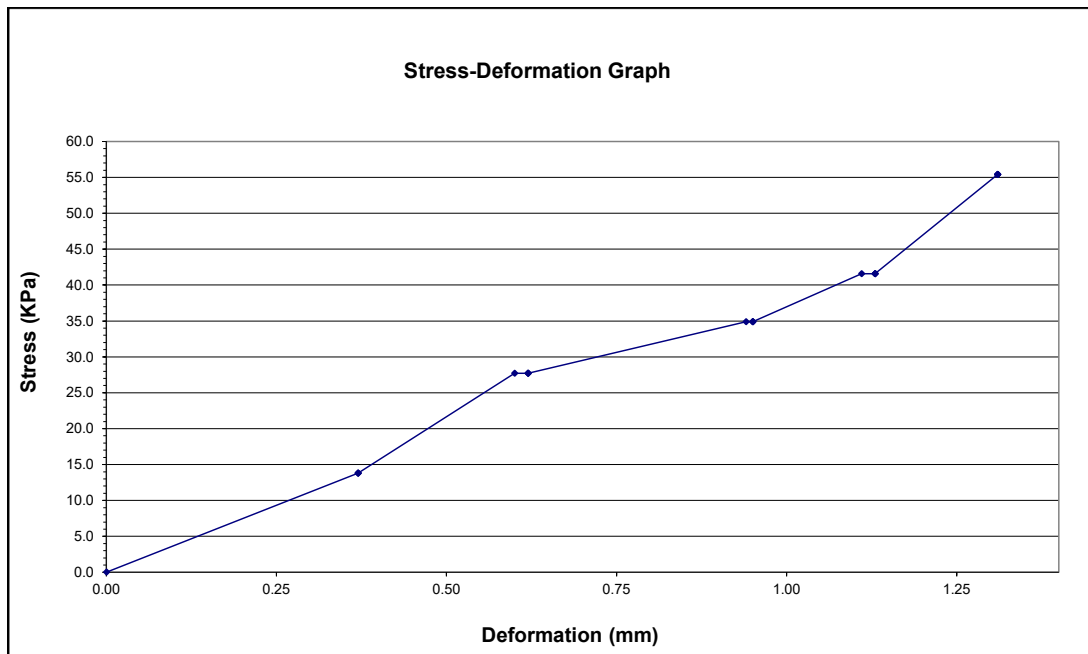
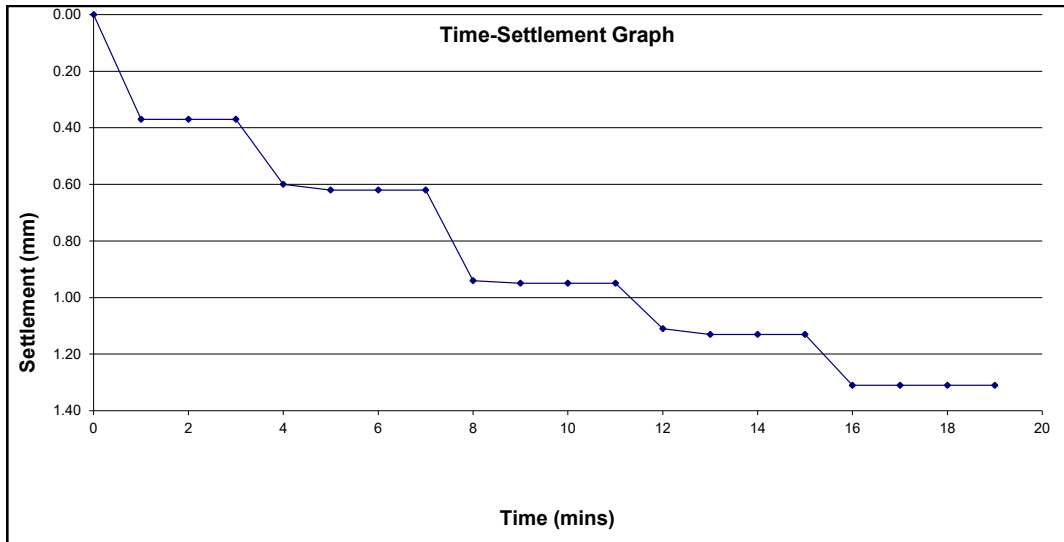
**Signed:**  
For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
[ ] M. Aiston (Director)  
[ ] G Dresser (Director)  
[✓] C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 - 16410  
**Date Tested:** 24/02/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 02/03/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 16483  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 26/02/21  
**Test conducted by:** MC


**Test location:** BC25 @ 600  
**Material description:** Grey, sandy, gravelly clay **Reaction load:** 18t Excavator  
**Plate diameter (mm):** 610 **Weather conditions:** Rain  
**Test depth (m):** 0 **Max Min temp:** 6°c

**Test Results**

<b>Plate Correction Factor:</b>	0.81649	<b>Equivalent CBR Value (%):</b>	1.2
<b>Applied Pressure at 1.25mm (KPa):</b>	26.0	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	16.0

**Comments:**

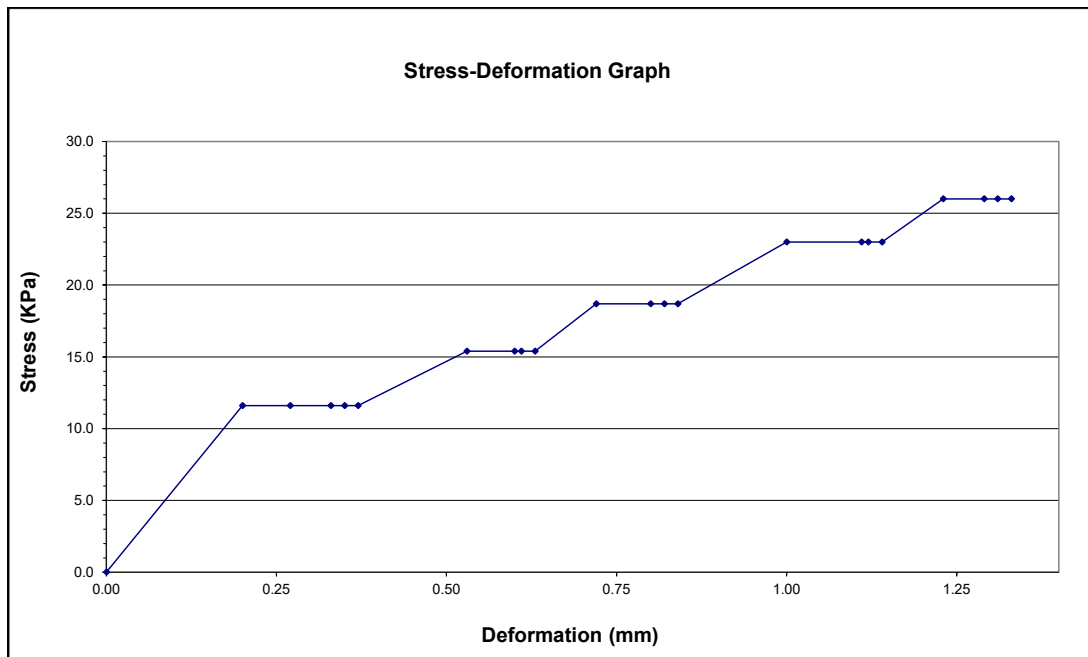
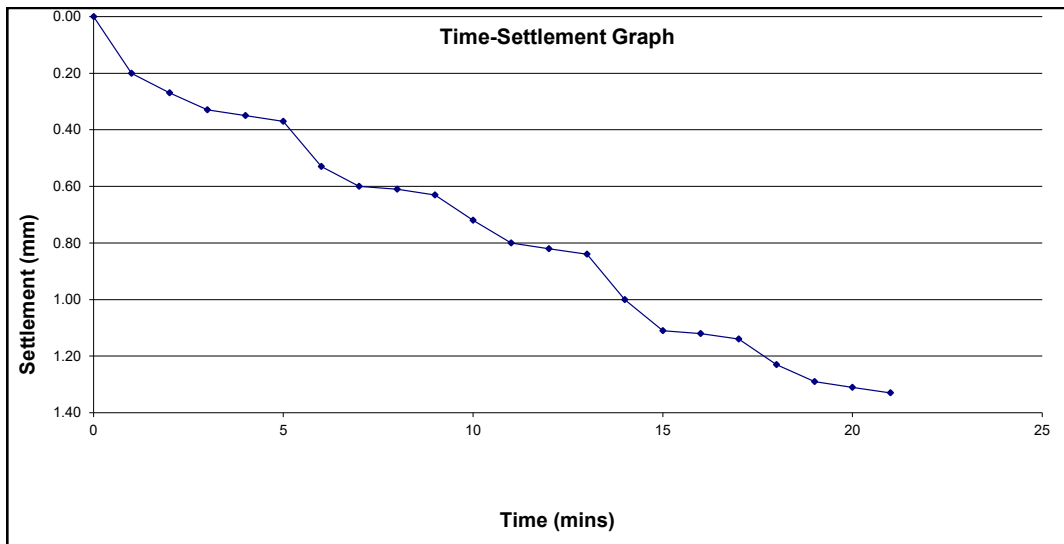
See attached graphs

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 - 16483  
**Date Tested:** 26/02/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test**  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1 **Report Date:** 02/03/21

**Client:** Seymour Civils **Test ref:** MT0318 – 16484  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 26/02/21  
**Test conducted by:** MC


**Test location:** BC27 @ 600  
**Material description:** Grey, sandy, gravelly clay **Reaction load:** 18t Excavator  
**Plate diameter (mm):** 610 **Weather conditions:** Rain  
**Test depth (m):** 0 **Max Min temp:** 6°c

**Test Results**

<b>Plate Correction Factor:</b>	0.81649	<b>Equivalent CBR Value (%):</b>	1.1
<b>Applied Pressure at 1.25mm (KPa):</b>	24.3	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	15.5

**Comments:**

See attached graphs

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[ ] G Dresser (Director)  
[✓] C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

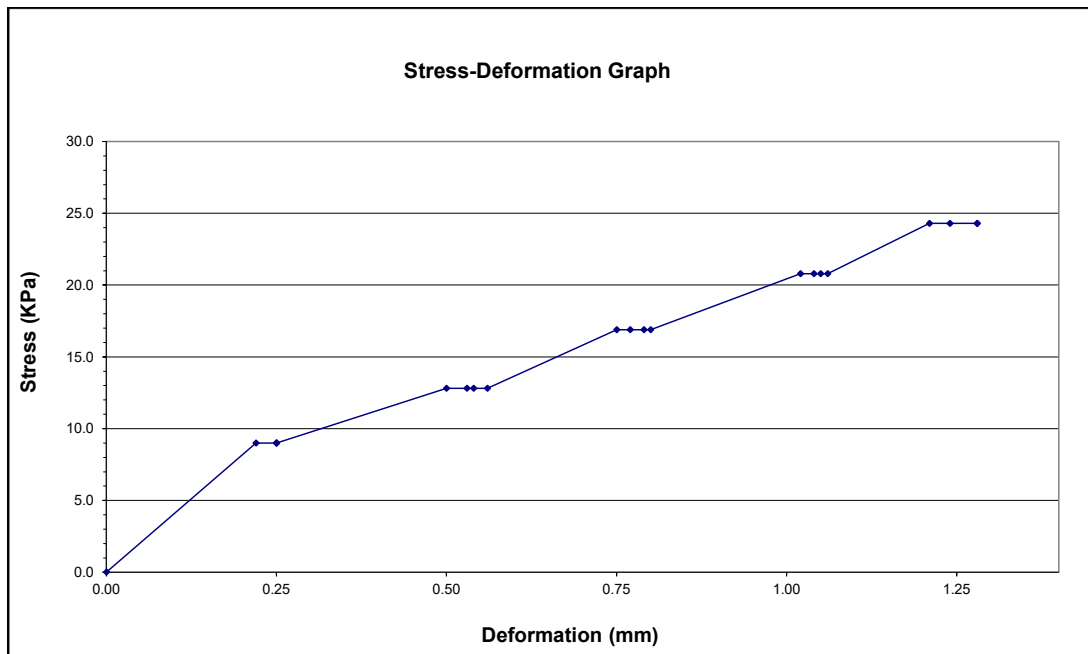
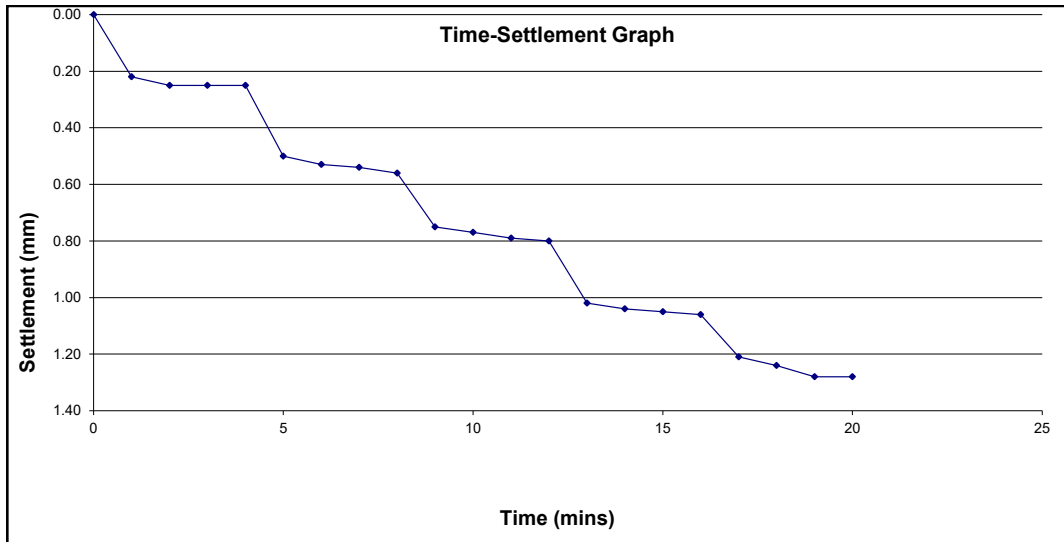
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## Test Results

Site: British Steel, Redcar  
Client: Seymour Civils

Lab ref: MT0318 - 16484  
Date Tested: 26/02/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 05/03/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 16626  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 02/03/21  
**Test conducted by:** WB


**Test location:** BA27 @ 900V  
**Material description:** Spoil **Reaction load:** 18t Excavator  
**Plate diameter (mm):** 610 **Weather conditions:** Cloudy  
**Test depth (m):** 0 **Max Min temp:** 5°c

**Test Results**

<b>Plate Correction Factor:</b>	0.81649	<b>Equivalent CBR Value (%):</b>	1.1
<b>Applied Pressure at 1.25mm (KPa):</b>	25.1	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	15.1

**Comments:**

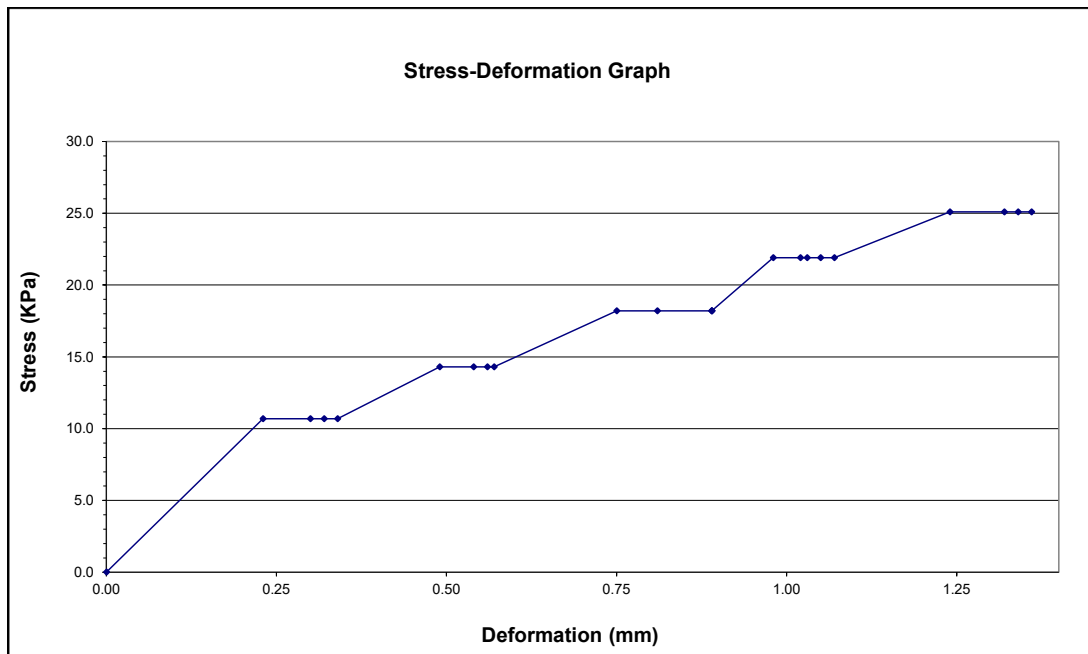
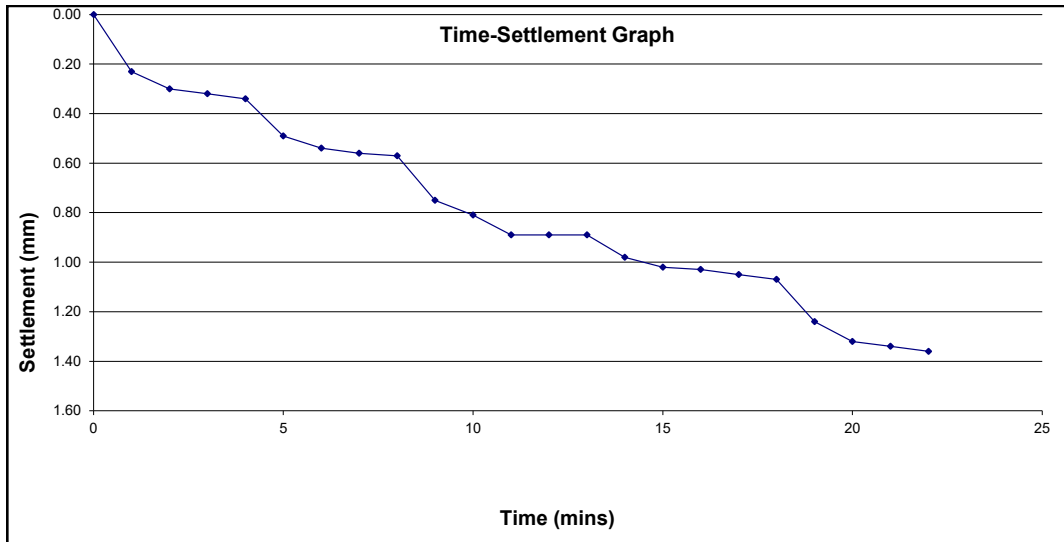
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 16626  
**Date Tested:** 02/03/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 05/03/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 16627  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 02/03/21  
**Test conducted by:** WB


**Test location:** BA27 @ 900 (ELR)  
**Material description:** Spoil **Reaction load:** 18t Excavator  
**Plate diameter (mm):** 610 **Weather conditions:** Cloudy  
**Test depth (m):** 0 **Max Min temp:** 5°c

**Test Results**

<b>Plate Correction Factor:</b>	0.81649	<b>Equivalent CBR Value (%):</b>	1.1
<b>Applied Pressure at 1.25mm (KPa):</b>	25.5	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	15

**Comments:**

See attached graphs

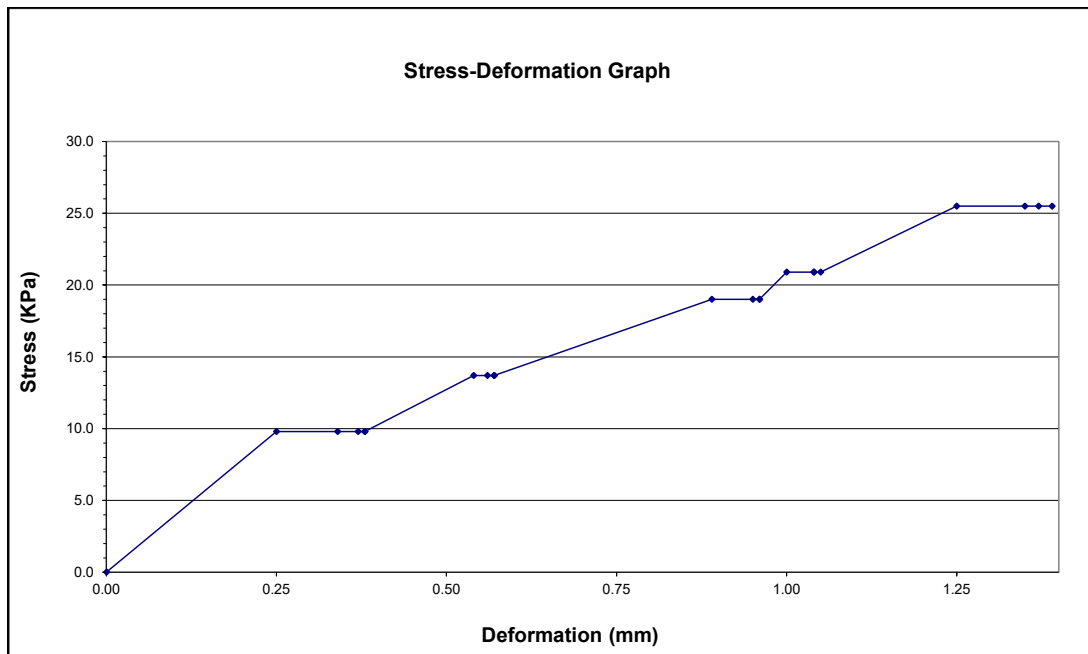
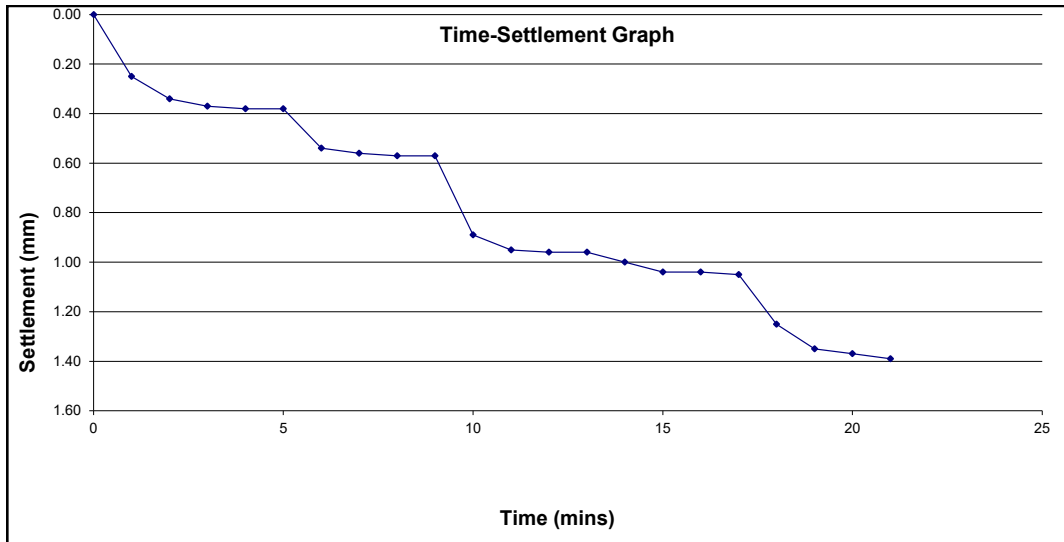
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 16627  
**Date Tested:** 02/03/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 05/03/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 16628  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 02/03/21  
**Test conducted by:** WB

**Test location:** BC25 @ 900  
**Material description:** Spoil **Reaction load:** 18t Excavator  
**Plate diameter (mm):** 610 **Weather conditions:** Cloudy  
**Test depth (m):** 0 **Max Min temp:** 5°c

**Test Results**

<b>Plate Correction Factor:</b>	0.81649	<b>Equivalent CBR Value (%):</b>	1.2
<b>Applied Pressure at 1.25mm (KPa):</b>	25.3	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	15.9

**Comments:**

See attached graphs

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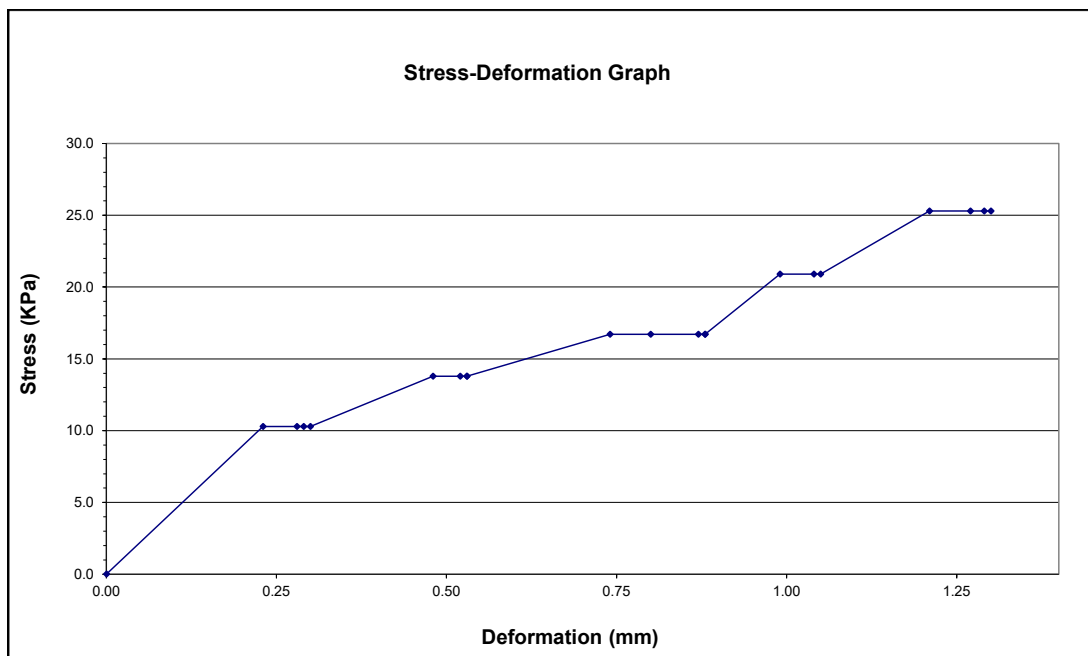
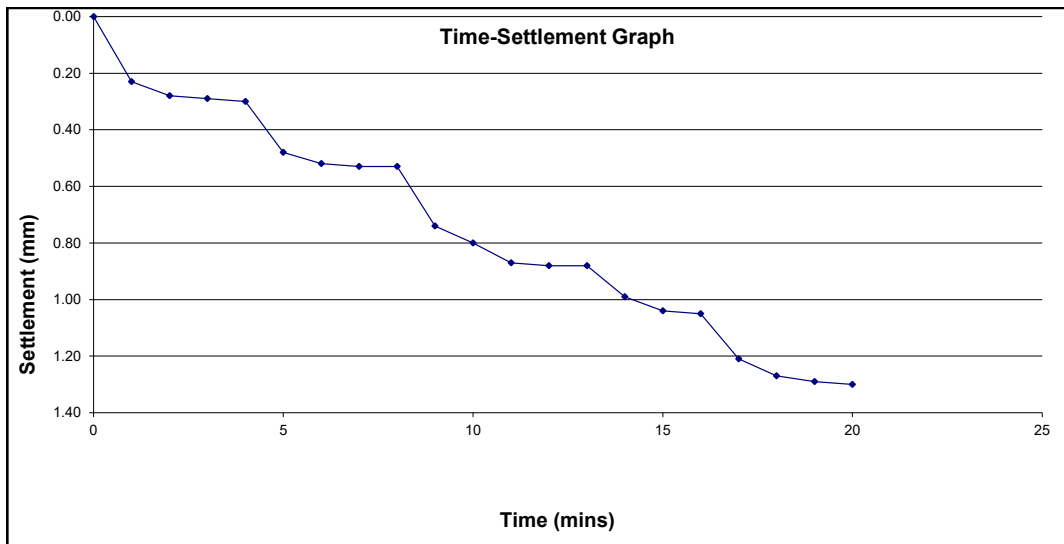
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 16628  
**Date Tested:** 02/03/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test**  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1 **Report Date:** 05/03/21

**Client:** Seymour Civils **Test ref:** MT0318 – 16629

**Site:** British Steel, Redcar **Client ref:** -

**Test location:** BA29F (ELR) **Date tested:** 02/03/21

**Material description:** Spoil **Test conducted by:** WB

**Plate diameter (mm):** 610 **Reaction load:** 18t Excavator

**Test depth (m):** 0 **Weather conditions:** Cloudy

**Max Min temp:** 5°c

**Test Results**

<b>Plate Correction Factor:</b>	0.81649	<b>Equivalent CBR Value (%):</b>	3.4
<b>Applied Pressure at 1.25mm (KPa):</b>	50.3	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	29.5

**Comments:**

See attached graphs

Moisture Content of 31%

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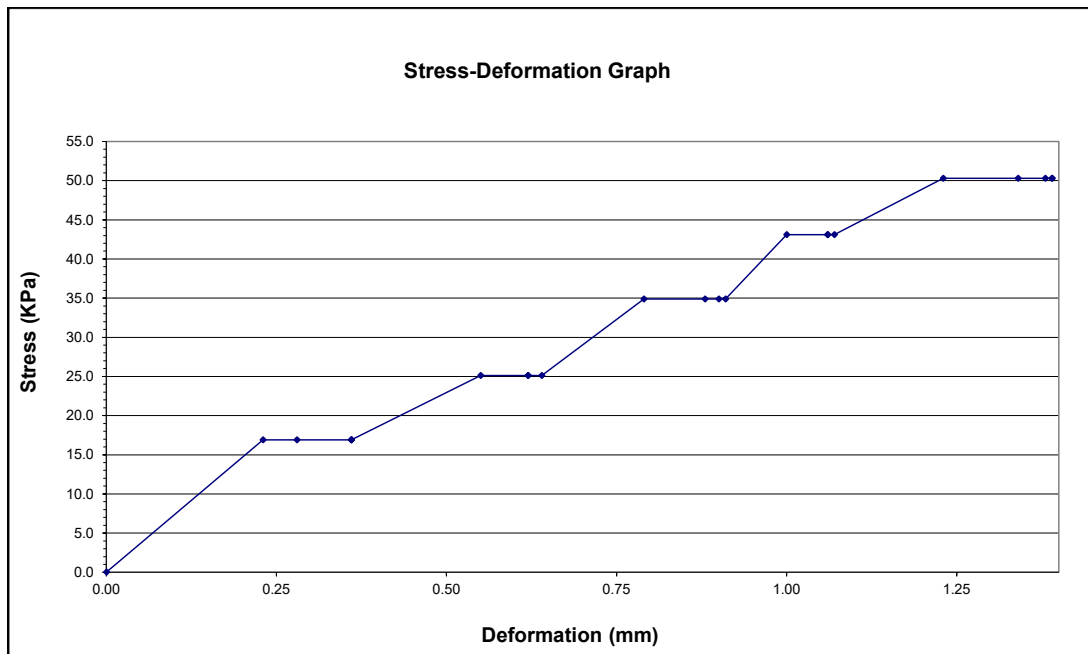
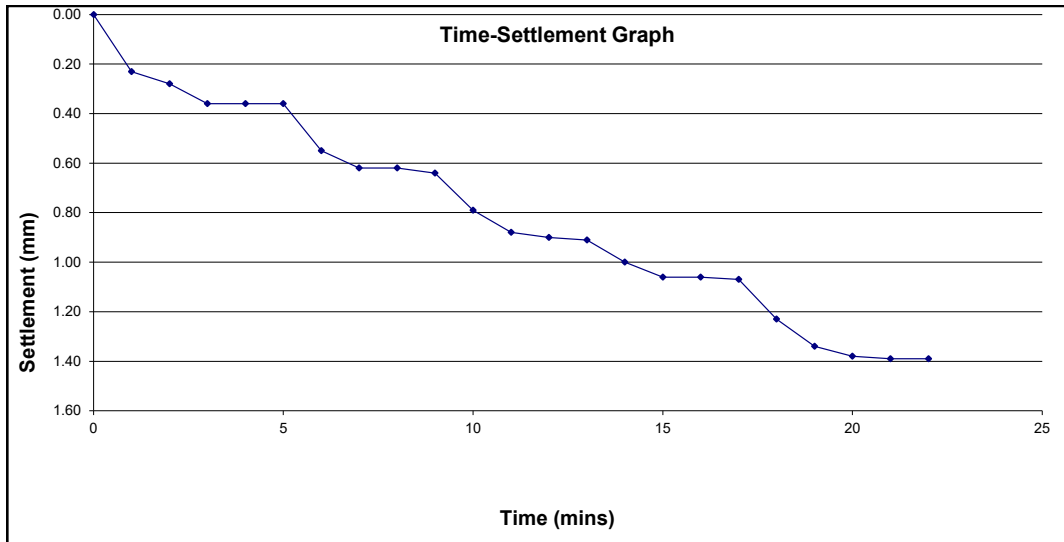
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 16629  
**Date Tested:** 02/03/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 14/04/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17287  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 09/04/21  
**Test conducted by:** WB


**Test location:** AY27 @ 1500  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Clear  
**Test depth (m):** 0 **Max Min temp:** 7°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	4.6
<b>Applied Pressure at 1.25mm (KPa):</b>	69.8	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	35.1

**Comments:**

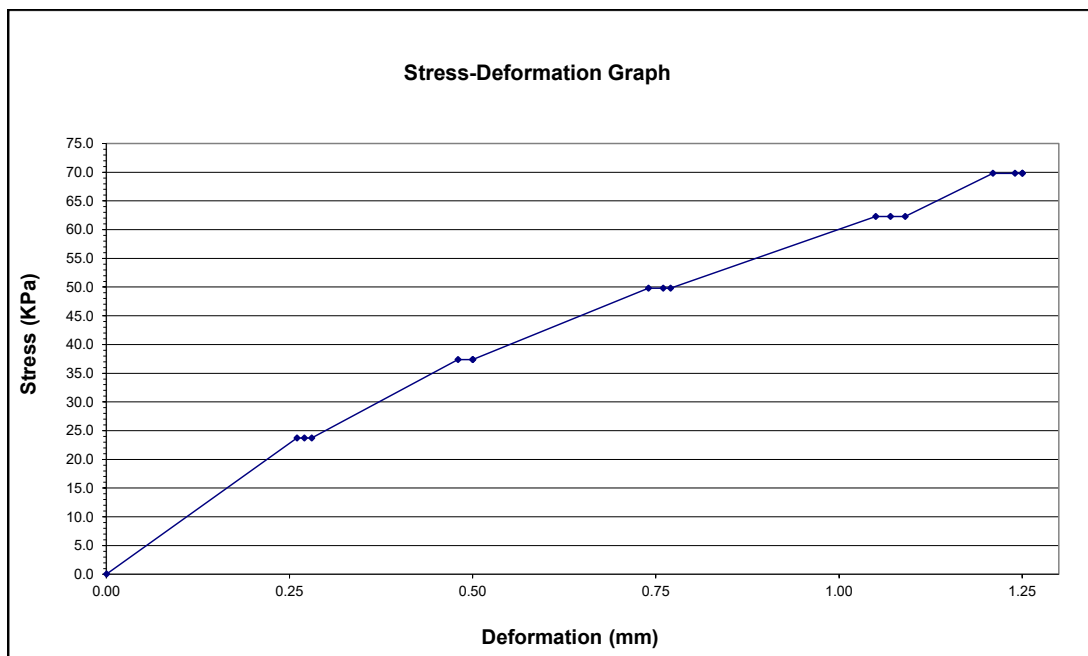
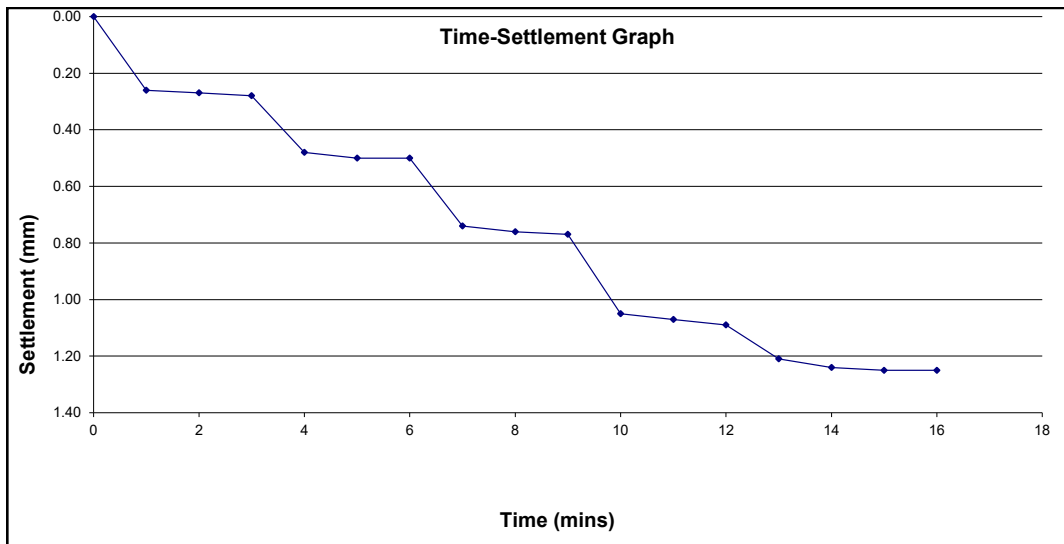
See attached graphs

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17287  
**Date Tested:** 09/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test**  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1 **Report Date:** 14/04/21

**Client:** Seymour Civils **Test ref:** MT0318 – 17288

**Site:** British Steel, Redcar **Client ref:** -

**Test location:** BA25 @ 1500 **Date tested:** 09/04/21

**Material description:** Spoil **Test conducted by:** WB

**Plate diameter (mm):** 455 **Reaction load:** 19t Dozer

**Test depth (m):** 0 **Weather conditions:** Clear

**Max Min temp:** 7°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	14.0
<b>Applied Pressure at 1.25mm (KPa):</b>	134	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	66.7

**Comments:**

See attached graphs

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- C. Spencer (Fieldwork Supervisor)

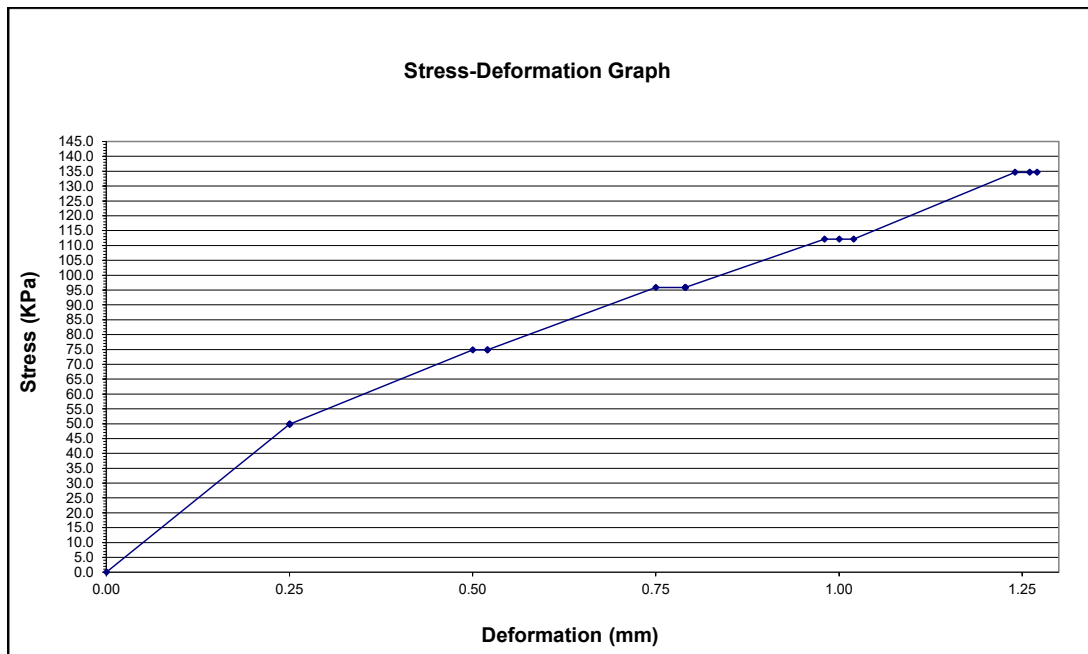
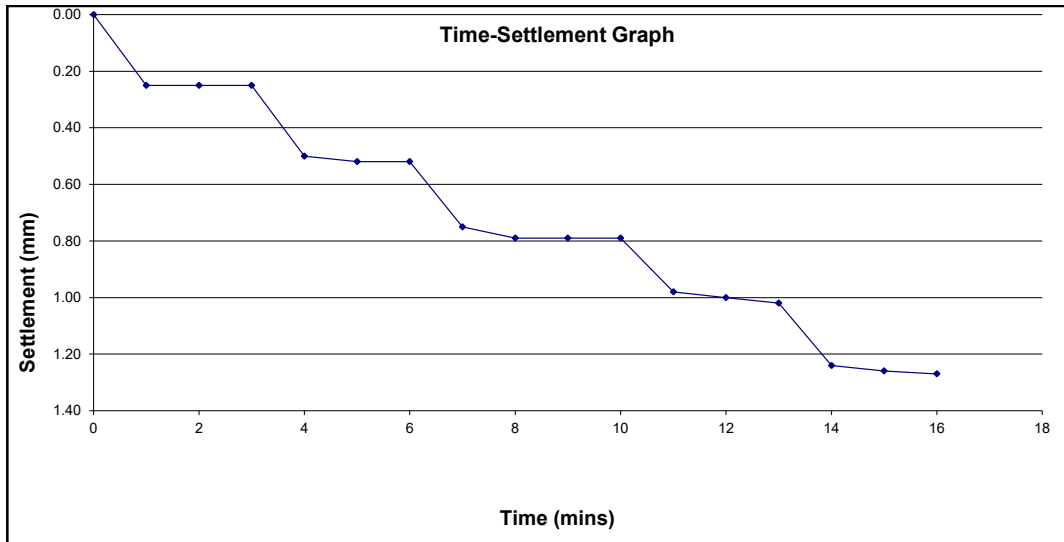
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17288  
**Date Tested:** 09/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 14/04/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17289  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 09/04/21  
**Test conducted by:** WB


**Test location:** BA21 @ 900  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Clear  
**Test depth (m):** 0 **Max Min temp:** 7°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	21.6
<b>Applied Pressure at 1.25mm (KPa):</b>	174	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	85.7

**Comments:**

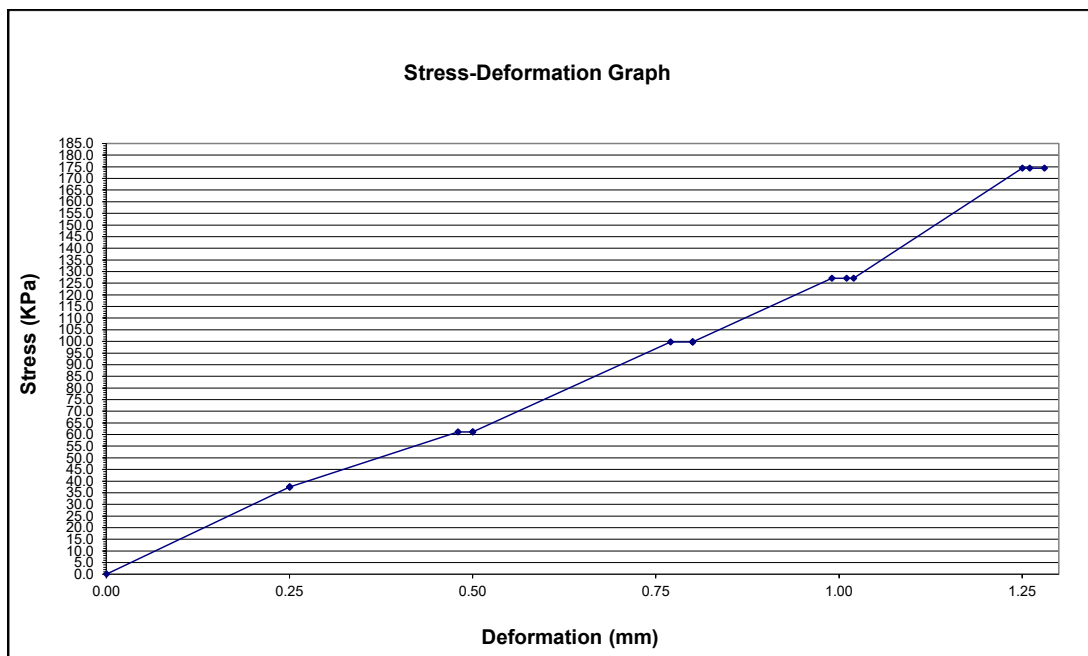
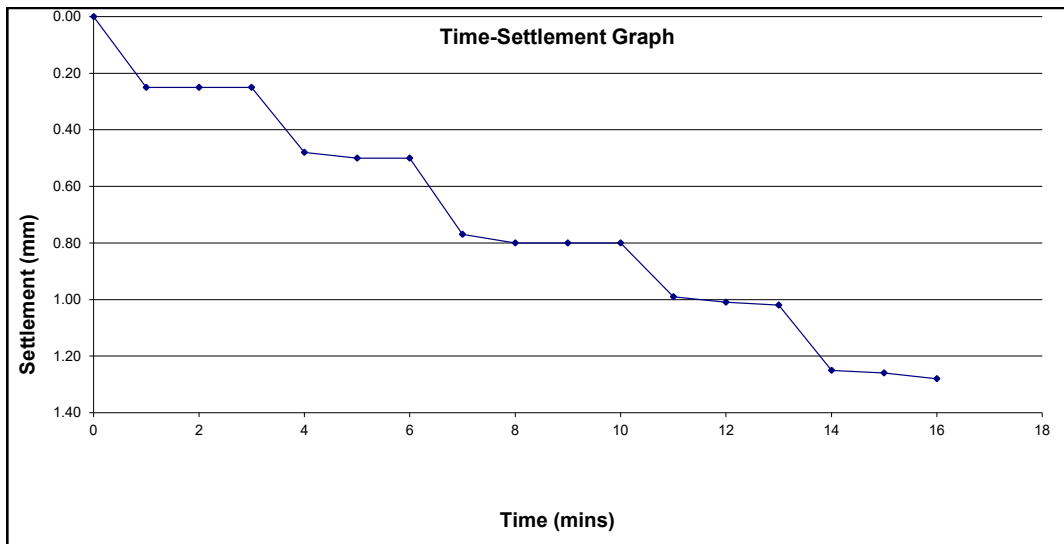
See attached graphs

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## Test Results

Site: British Steel, Redcar  
Client: Seymour Civils

Lab ref: MT0318 – 17289  
Date Tested: 09/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 14/04/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17304  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 08/04/21  
**Test conducted by:** WB

**Test location:** AY25 @ 1500  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Clear  
**Test depth (m):** 0 **Max Min temp:** 7°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	28.8
<b>Applied Pressure at 1.25mm (KPa):</b>	201	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	101

**Comments:**

See attached graphs

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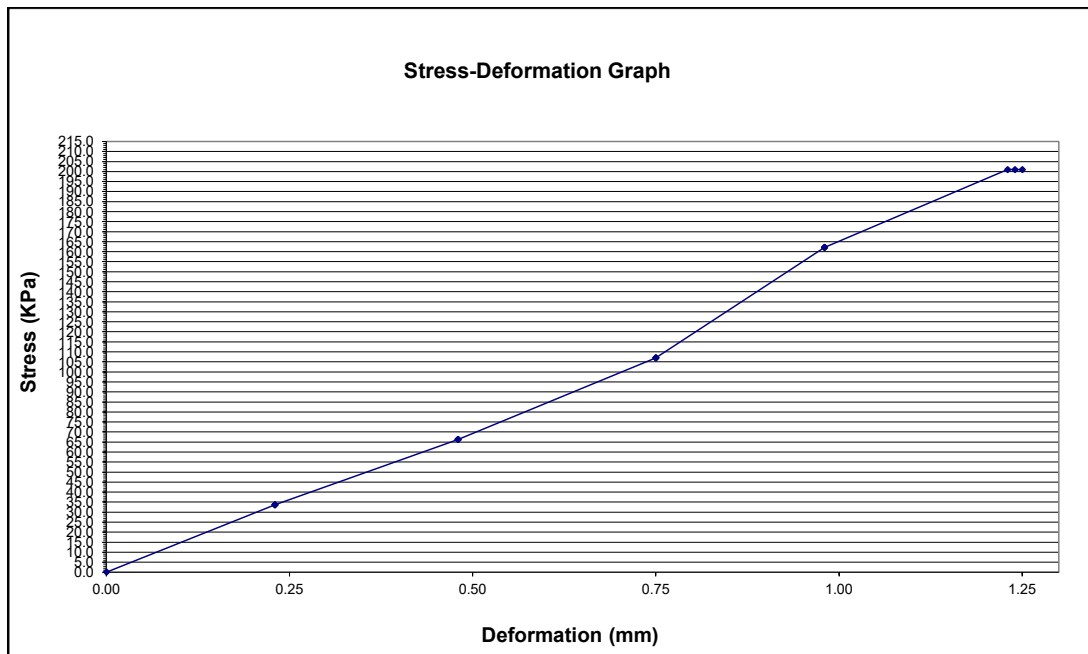
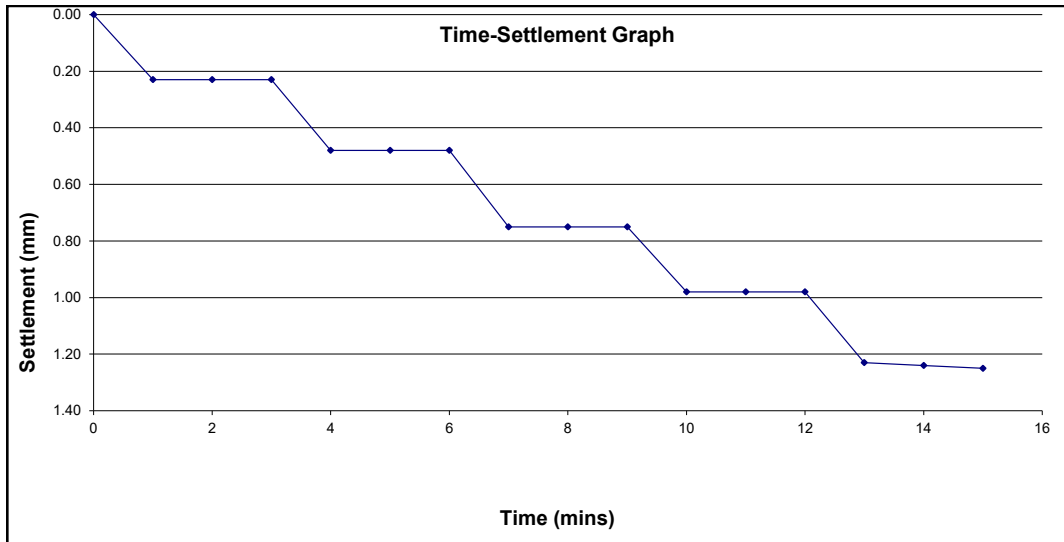
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17304  
**Date Tested:** 08/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test**  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1 **Report Date:** 14/04/21

**Client:** Seymour Civils **Test ref:** MT0318 – 17305

**Site:** British Steel, Redcar **Client ref:** -

**Test location:** BA23 @ 900 (2) **Date tested:** 08/04/21

**Material description:** Spoil **Test conducted by:** WB

**Plate diameter (mm):** 455 **Reaction load:** 19t Dozer

**Test depth (m):** 0 **Weather conditions:** Clear

**Max Min temp:** 7°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	8.4
<b>Applied Pressure at 1.25mm (KPa):</b>	108	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	49.6

**Comments:**

See attached graphs

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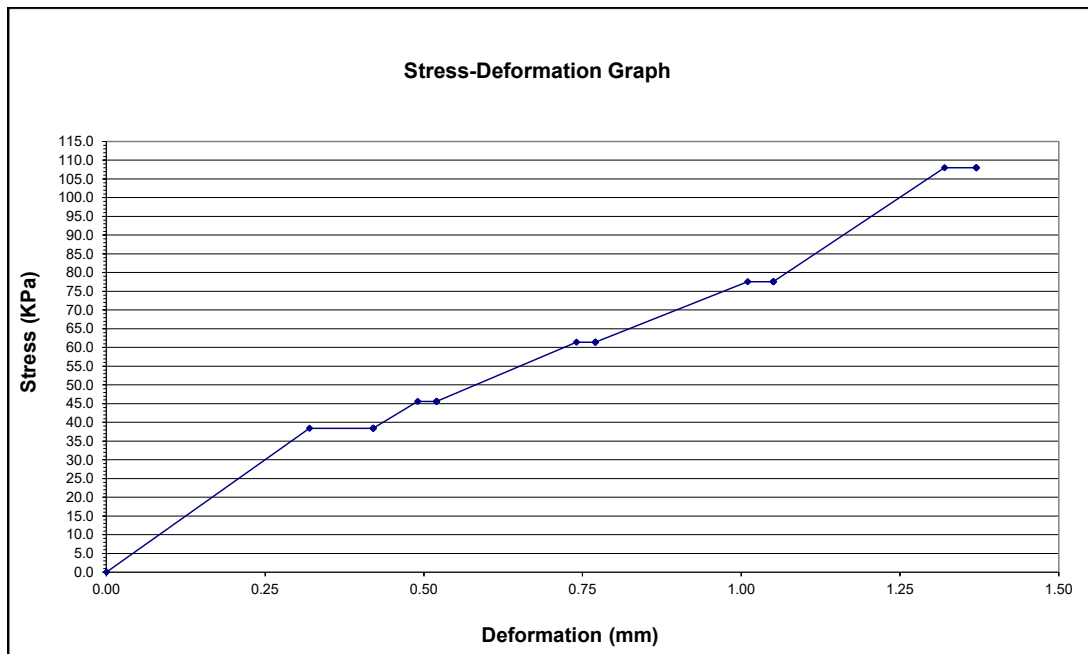
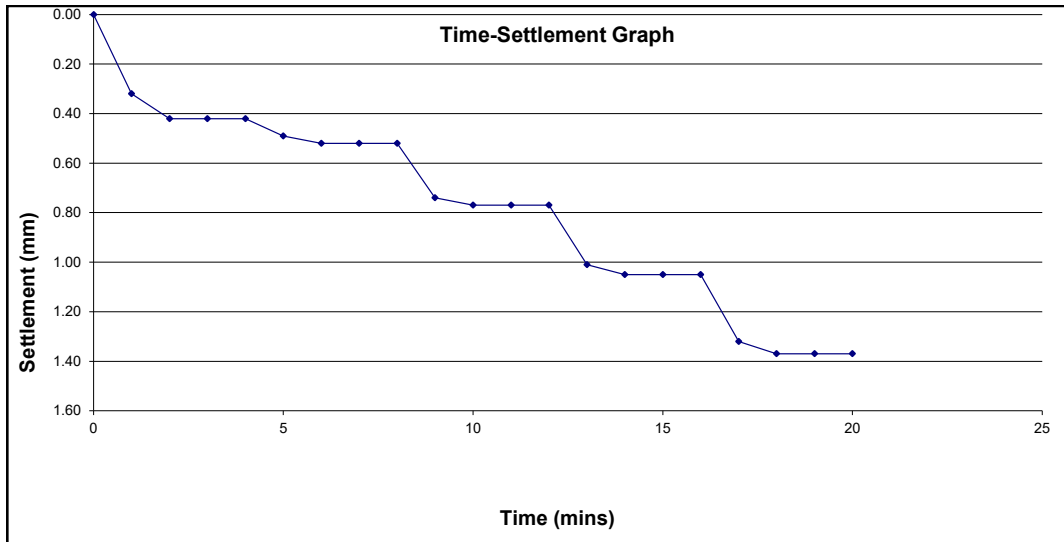
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17305  
**Date Tested:** 08/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 14/04/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17306  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 08/04/21  
**Test conducted by:** WB

**Test location:** BA21 @ 600  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Clear  
**Test depth (m):** 0 **Max Min temp:** 7°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	34.7
<b>Applied Pressure at 1.25mm (KPa):</b>	225	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	112.8

**Comments:**

See attached graphs

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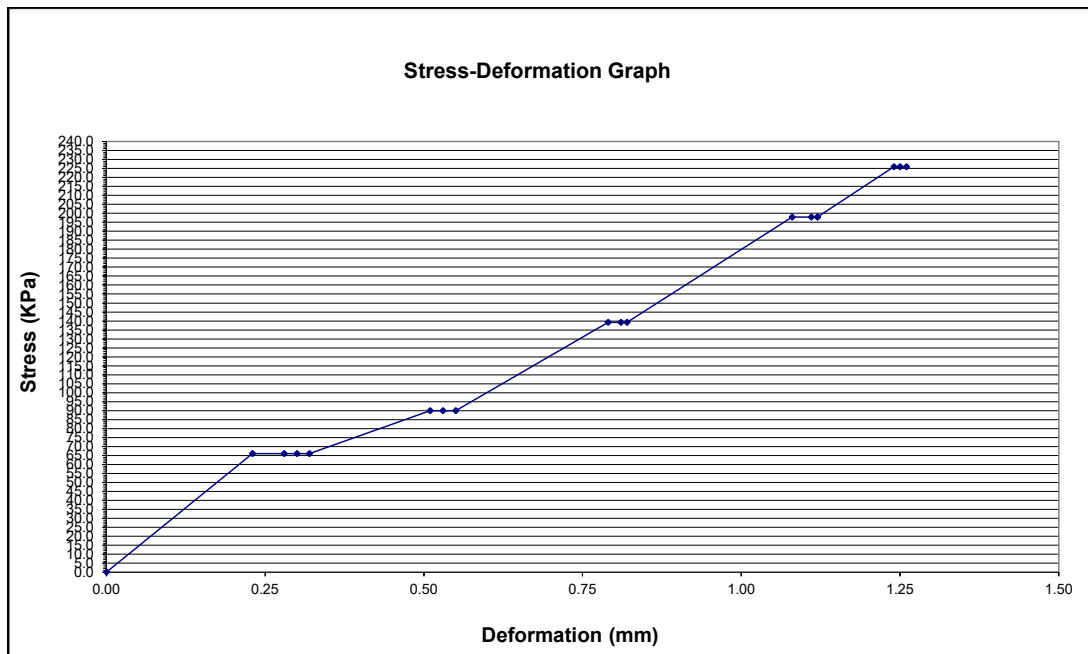
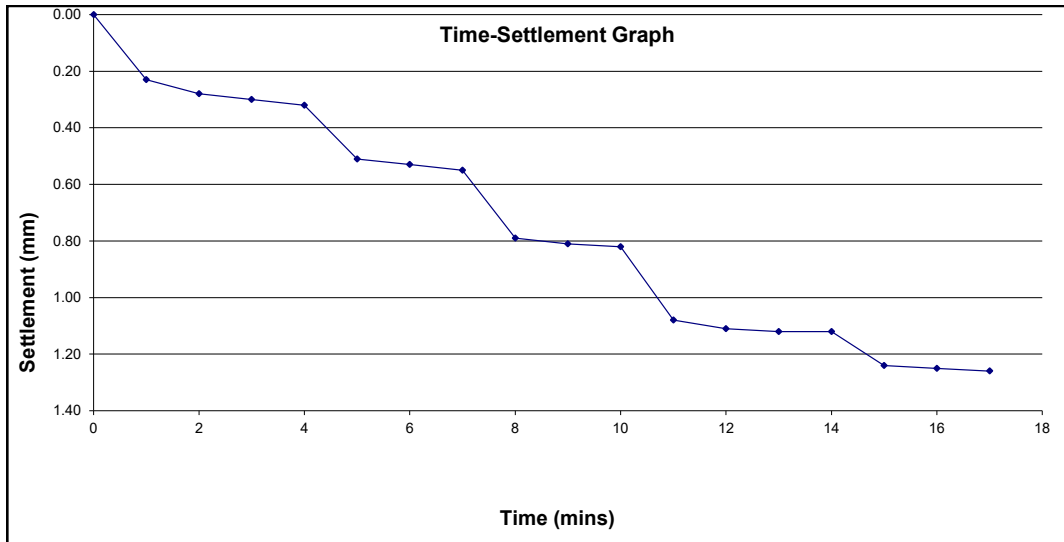
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17306  
**Date Tested:** 08/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 14/04/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17307  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 08/04/21  
**Test conducted by:** WB


**Test location:** AY25 @ 1800  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Clear  
**Test depth (m):** 0 **Max Min temp:** 7°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	19.2
<b>Applied Pressure at 1.25mm (KPa):</b>	159	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	80.1

**Comments:**

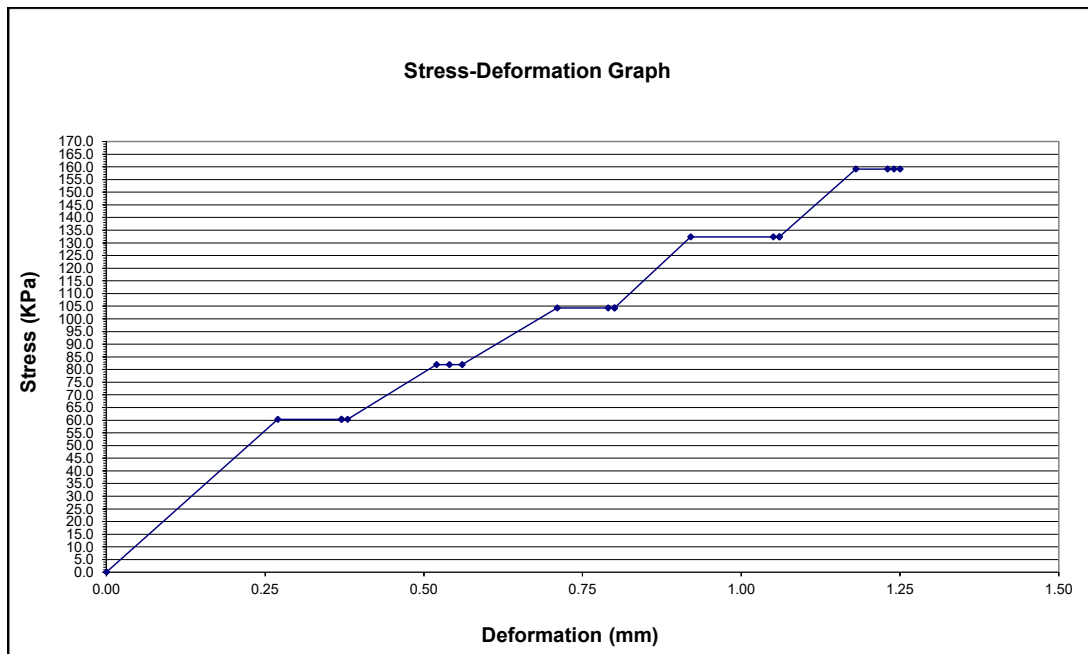
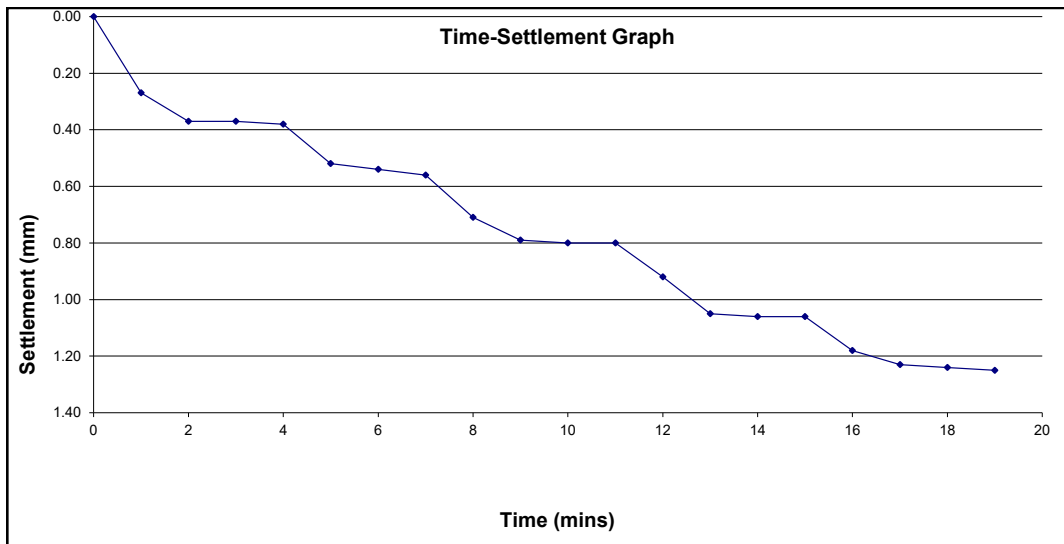
See attached graphs

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 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

## Test Results

Site: British Steel, Redcar  
Client: Seymour Civils

Lab ref: MT0318 – 17307  
Date Tested: 08/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 23/04/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17348  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 14/04/21  
**Test conducted by:** WB


**Test location:** BC29 @ 200  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Clear  
**Test depth (m):** 0 **Max Min temp:** 2-8°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	10
<b>Applied Pressure at 1.25mm (KPa):</b>	112	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	55.1

**Comments:**

See attached graphs

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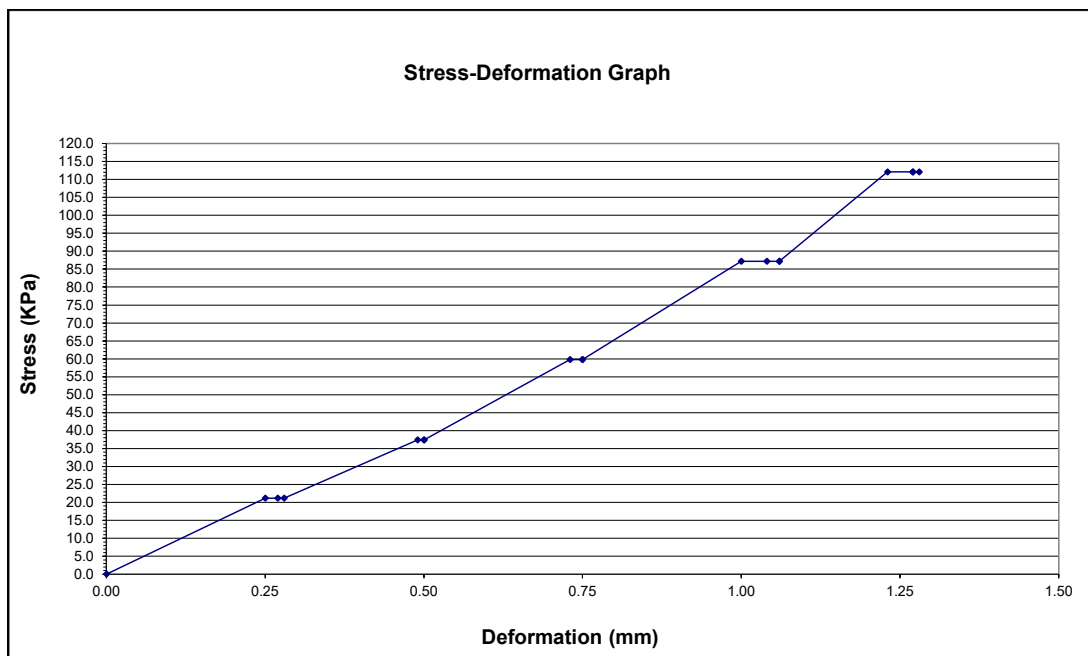
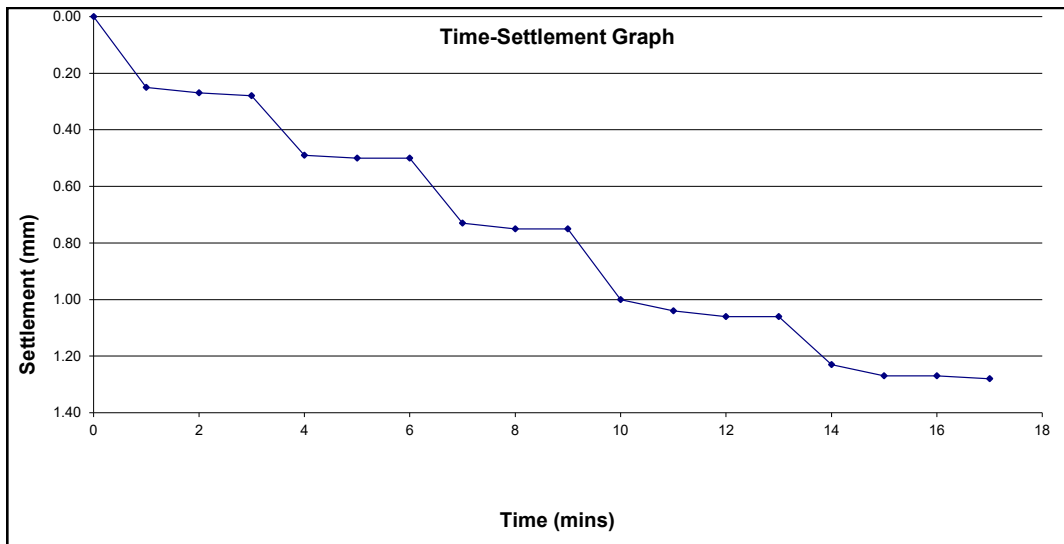
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17348  
**Date Tested:** 14/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 23/04/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17349  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 14/04/21  
**Test conducted by:** WB

**Test location:** BC27 @ 1500  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Clear  
**Test depth (m):** 0 **Max Min temp:** 2-8°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	7.8
<b>Applied Pressure at 1.25mm (KPa):</b>	97.2	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	47.8

**Comments:**

See attached graphs

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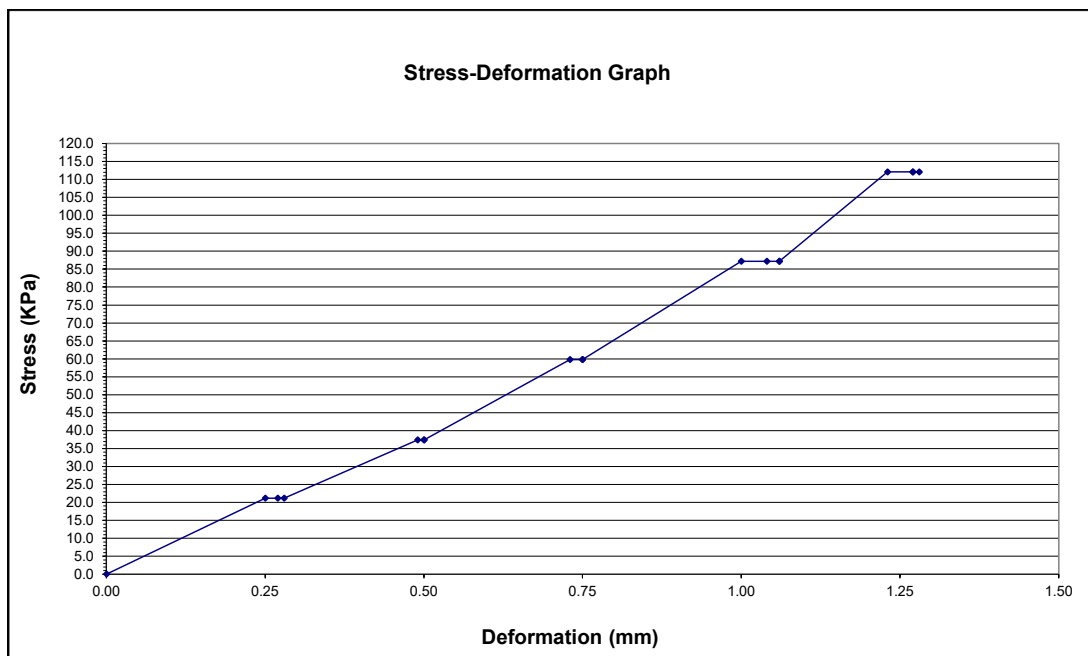
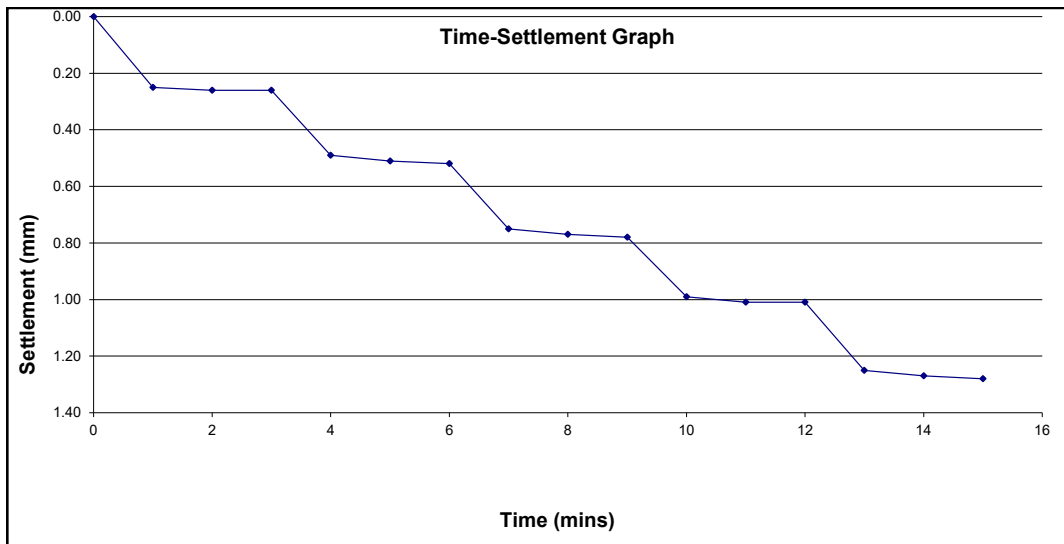
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## Test Results

Site: British Steel, Redcar  
Client: Seymour Civils

Lab ref: MT0318 – 17349  
Date Tested: 14/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 23/04/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17350  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 14/04/21  
**Test conducted by:** WB


**Test location:** BA25 @ 1800  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Clear  
**Test depth (m):** 0 **Max Min temp:** 2-8°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	12.1
<b>Applied Pressure at 1.25mm (KPa):</b>	124.6	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	61.2

**Comments:**

See attached graphs

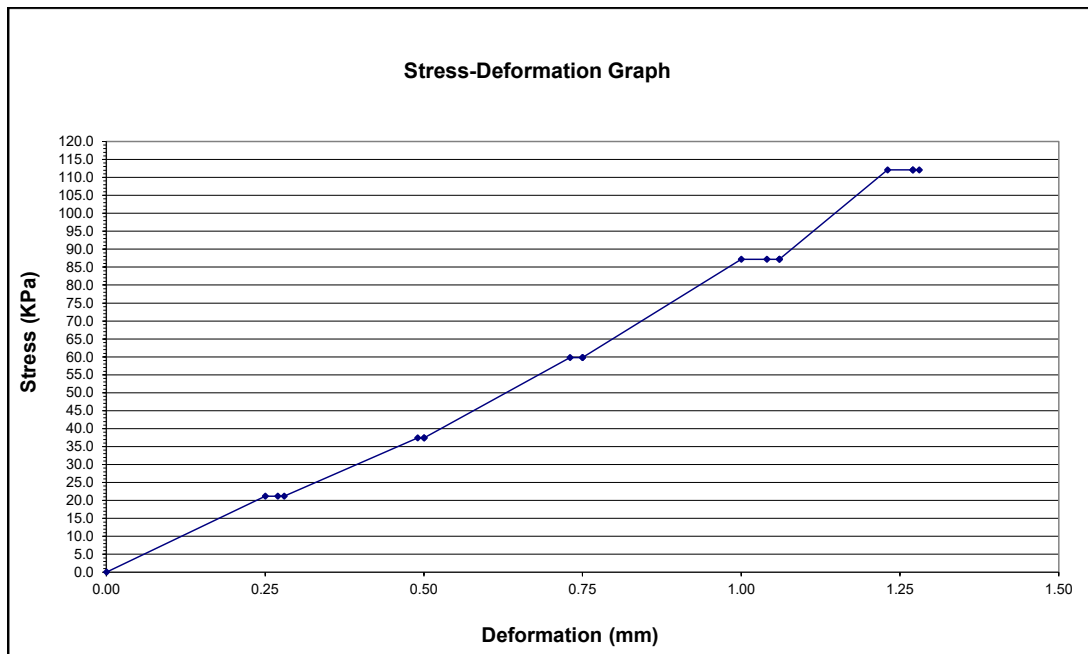
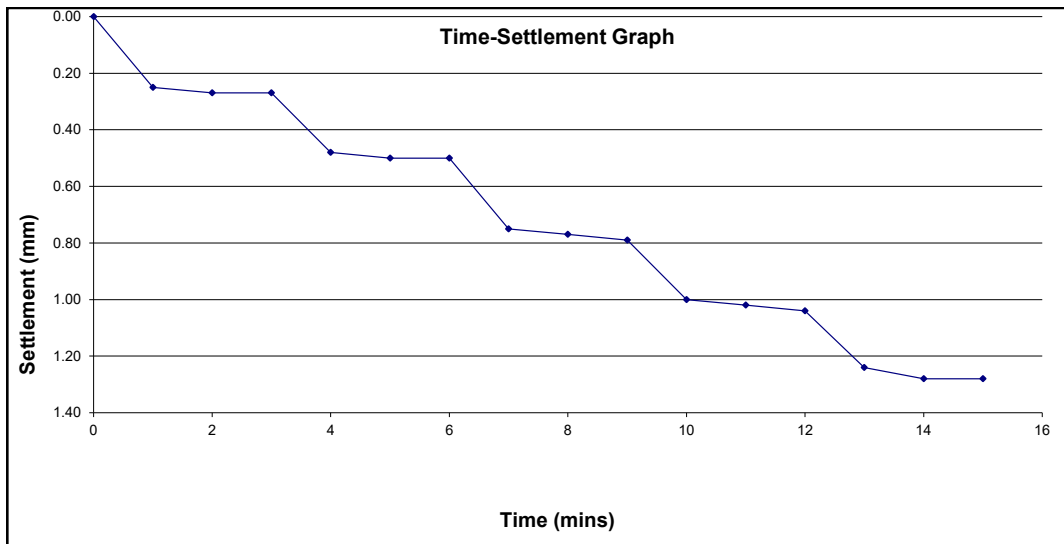
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17350  
**Date Tested:** 14/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test**  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1 **Report Date:** 23/04/21

**Client:** Seymour Civils **Test ref:** MT0318 – 17351  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 14/04/21  
**Test conducted by:** WB


**Test location:** BA25 @ 2400  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Clear  
**Test depth (m):** 0 **Max Min temp:** 2-8°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	3.8
<b>Applied Pressure at 1.25mm (KPa):</b>	64.8	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	31.4

**Comments:**

See attached graphs

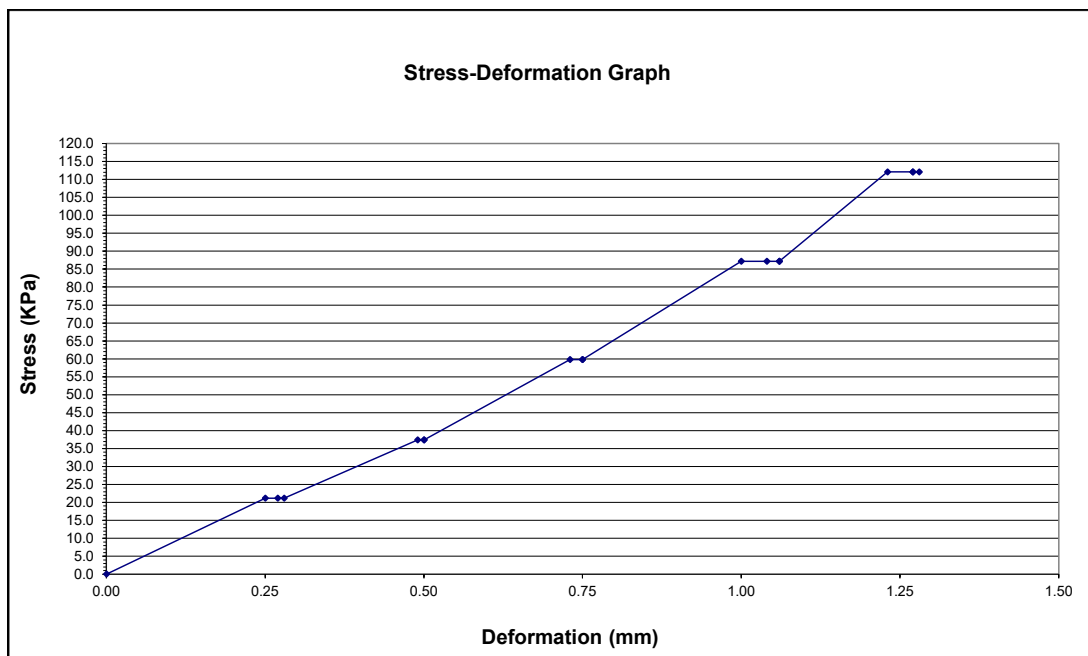
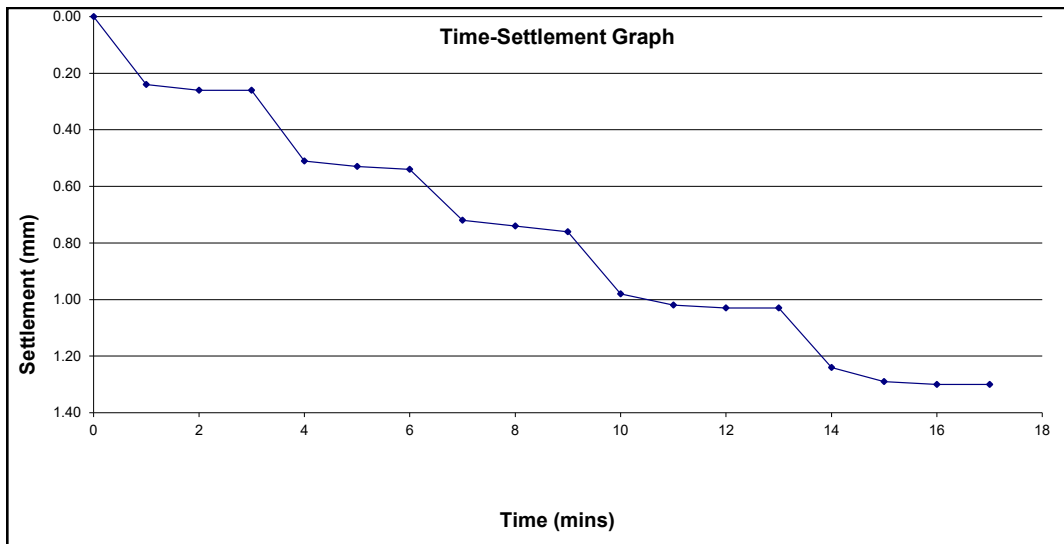
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17351  
**Date Tested:** 14/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test**  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1 **Report Date:** 23/04/21

**Client:** Seymour Civils **Test ref:** MT0318 – 17415  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 16/04/21  
**Test conducted by:** WB


**Test location:** AY21 @ 600  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Clear  
**Test depth (m):** 0 **Max Min temp:** 1-12°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	11.6
<b>Applied Pressure at 1.25mm (KPa):</b>	124.6	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	59.8

**Comments:**

See attached graphs

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[✓] C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

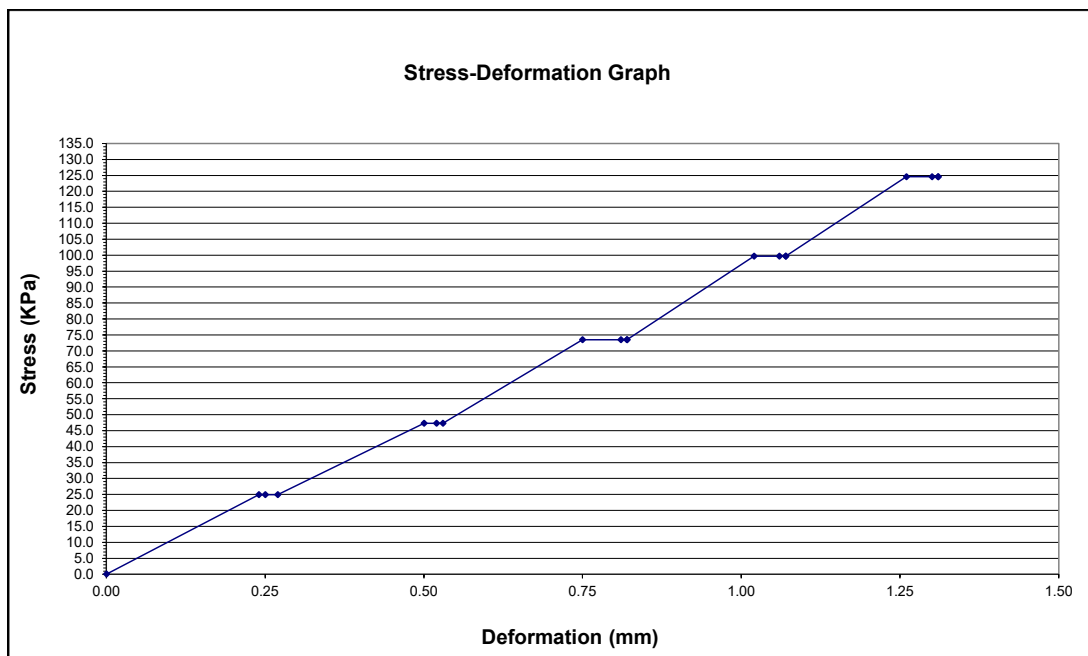
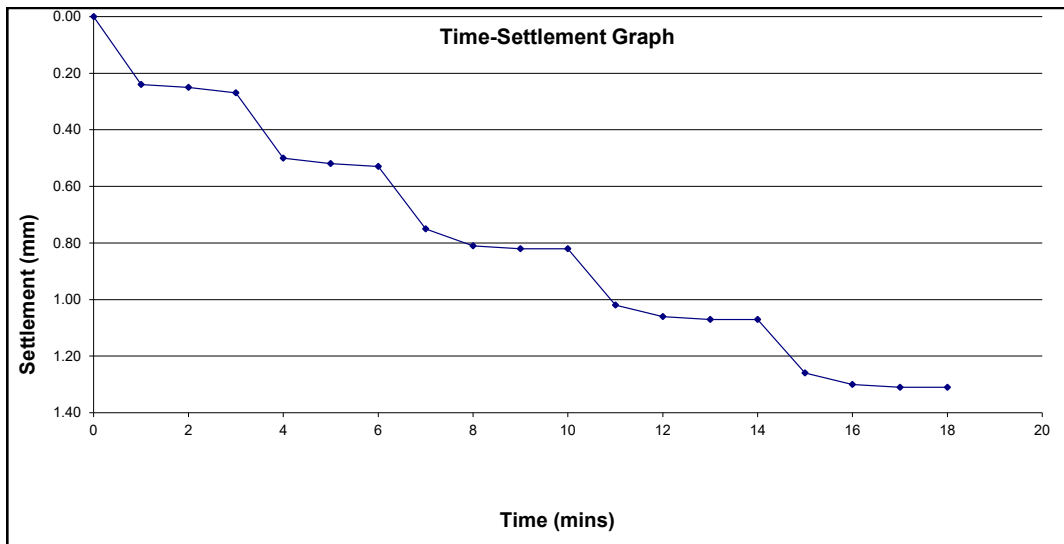
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17415  
**Date Tested:** 16/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 23/04/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17416  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 16/04/21  
**Test conducted by:** WB

**Test location:** AY19 F  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Clear  
**Test depth (m):** 0 **Max Min temp:** 1-12°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	3.1
<b>Applied Pressure at 1.25mm (KPa):</b>	56.1	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	28

**Comments:**

See attached graphs

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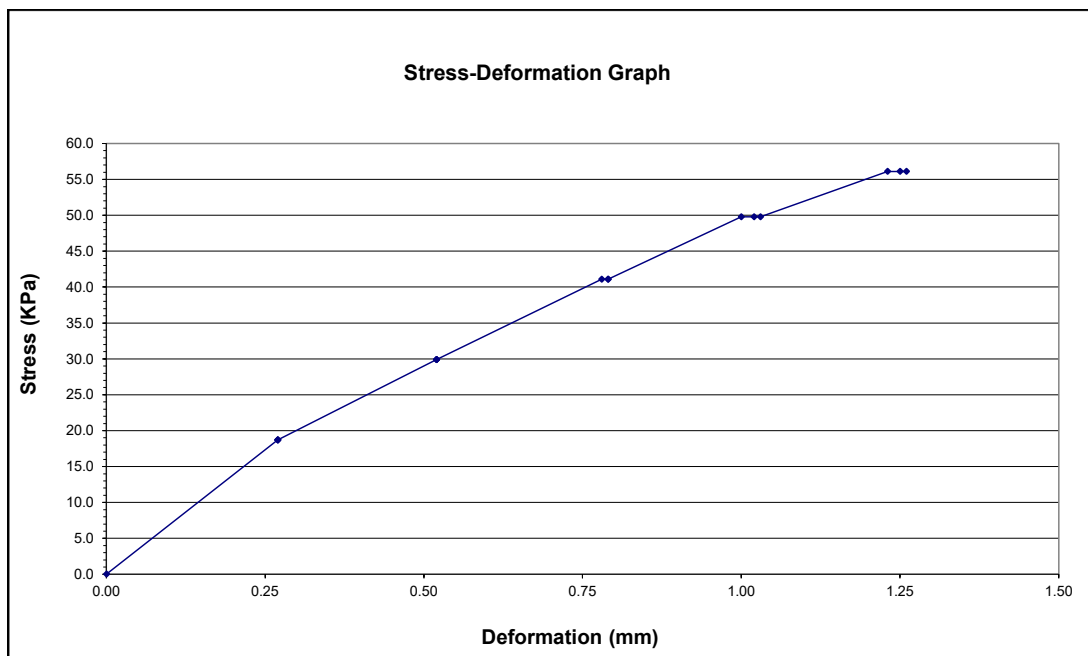
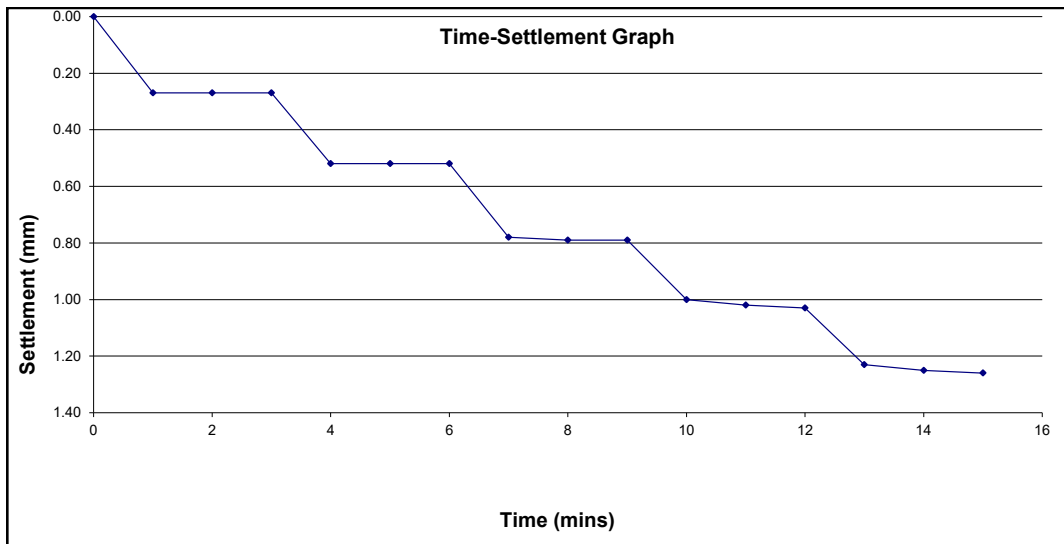
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17416  
**Date Tested:** 16/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 23/04/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17417  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 16/04/21  
**Test conducted by:** WB

**Test location:** AY19 F (2)  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Clear  
**Test depth (m):** 0 **Max Min temp:** 1-12°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	1.5
<b>Applied Pressure at 1.25mm (KPa):</b>	37.4	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	18.1

**Comments:**

See attached graphs

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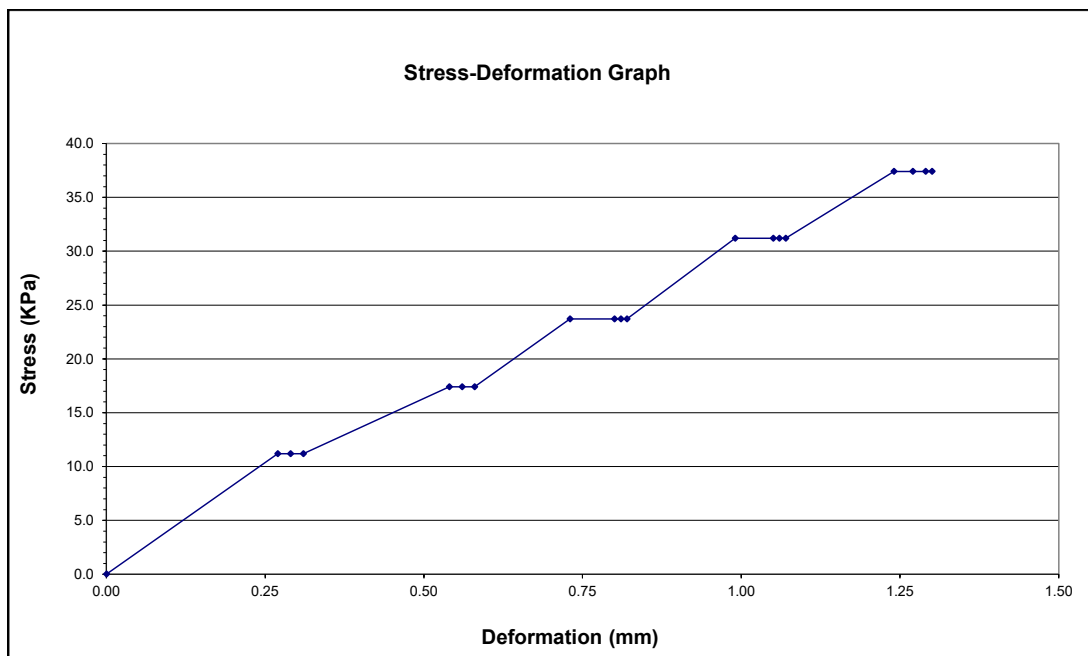
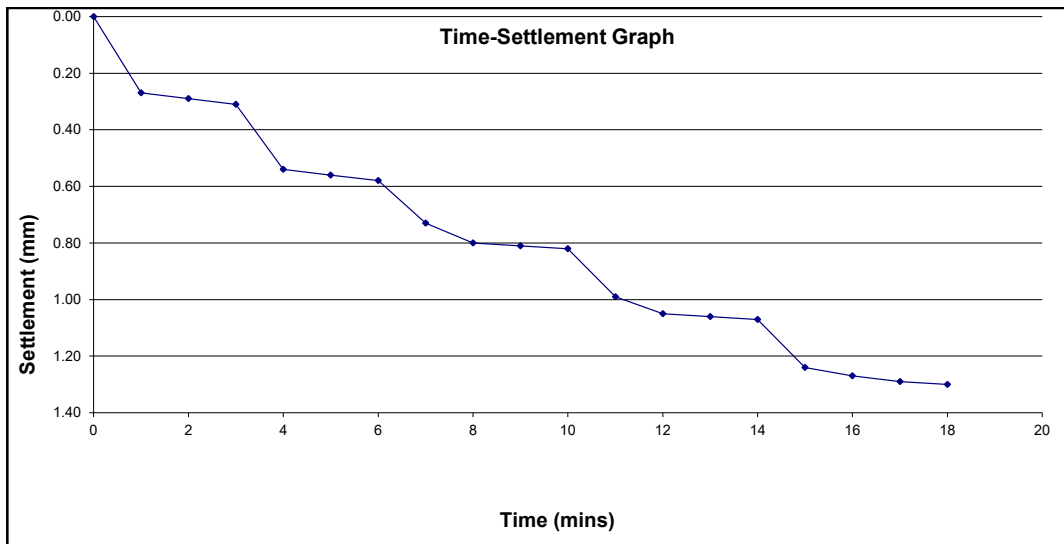
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17417  
**Date Tested:** 16/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 23/04/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17418  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 16/04/21  
**Test conducted by:** WB


**Test location:** BA17 @ 300  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Clear  
**Test depth (m):** 0 **Max Min temp:** 1-12°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	8.7
<b>Applied Pressure at 1.25mm (KPa):</b>	104.7	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	50.7

**Comments:**

See attached graphs

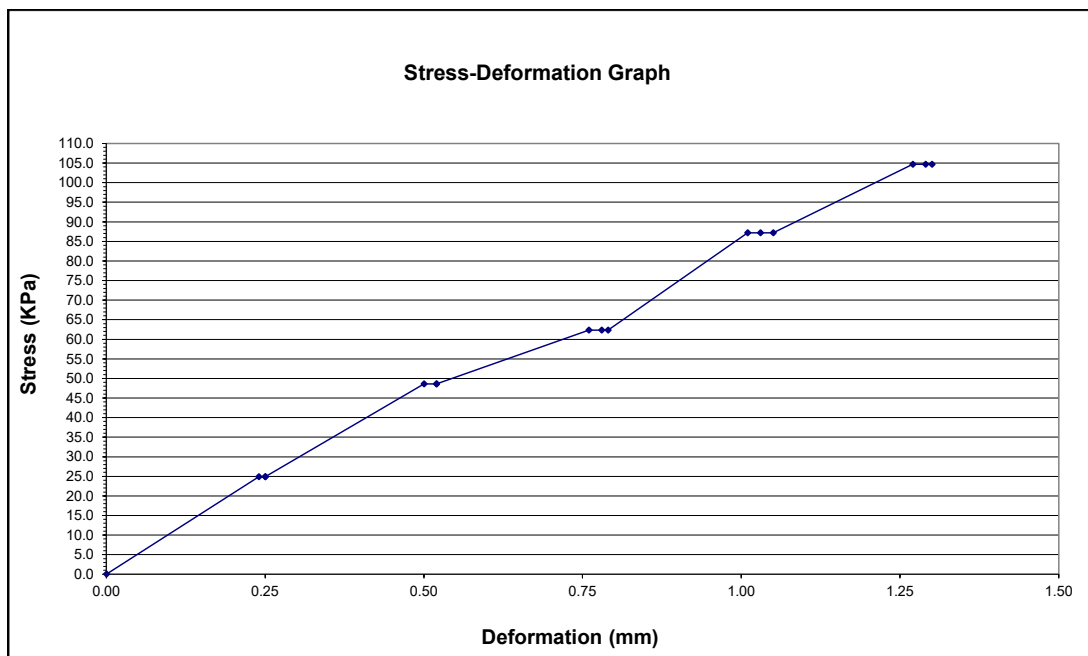
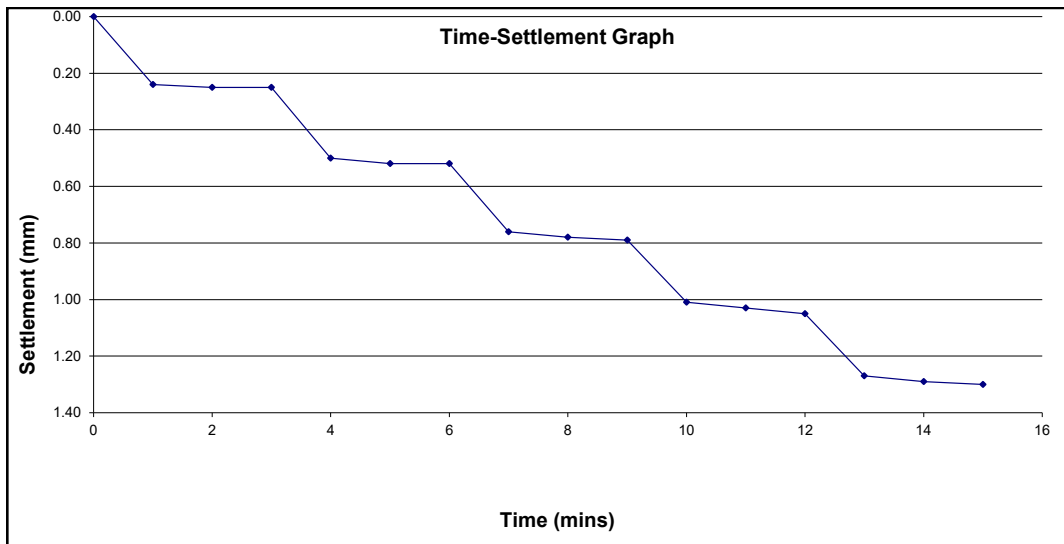
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17418  
**Date Tested:** 16/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 23/04/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17419  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 16/04/21  
**Test conducted by:** WB


**Test location:** BA23 @ 1200  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Clear  
**Test depth (m):** 0 **Max Min temp:** 1-12°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	23.3
<b>Applied Pressure at 1.25mm (KPa):</b>	199.4	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	89.6

**Comments:**

See attached graphs

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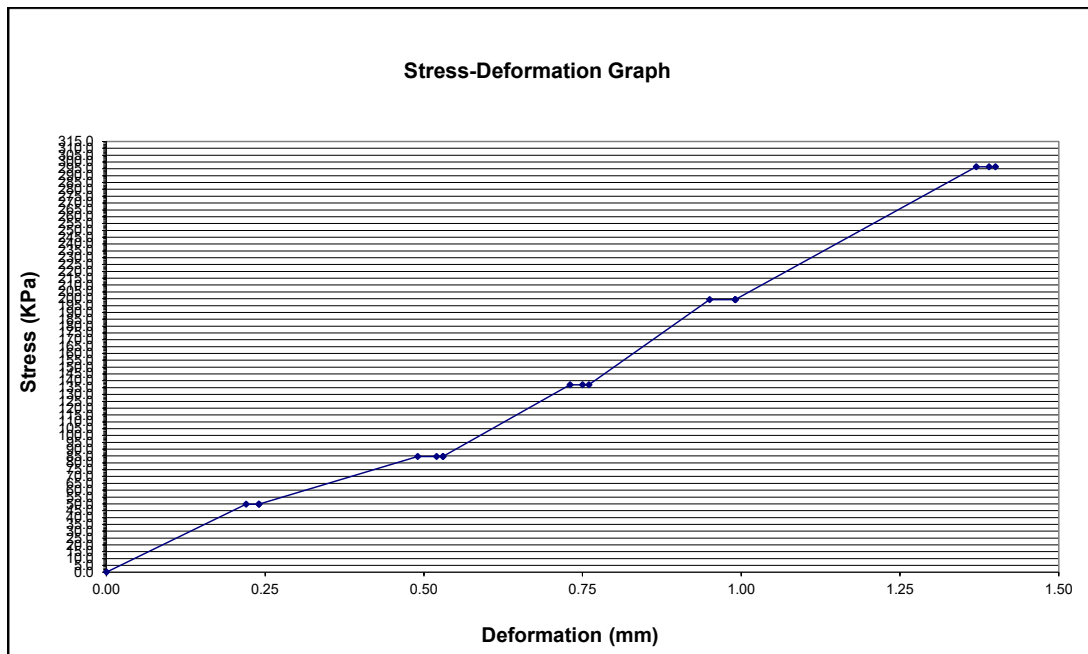
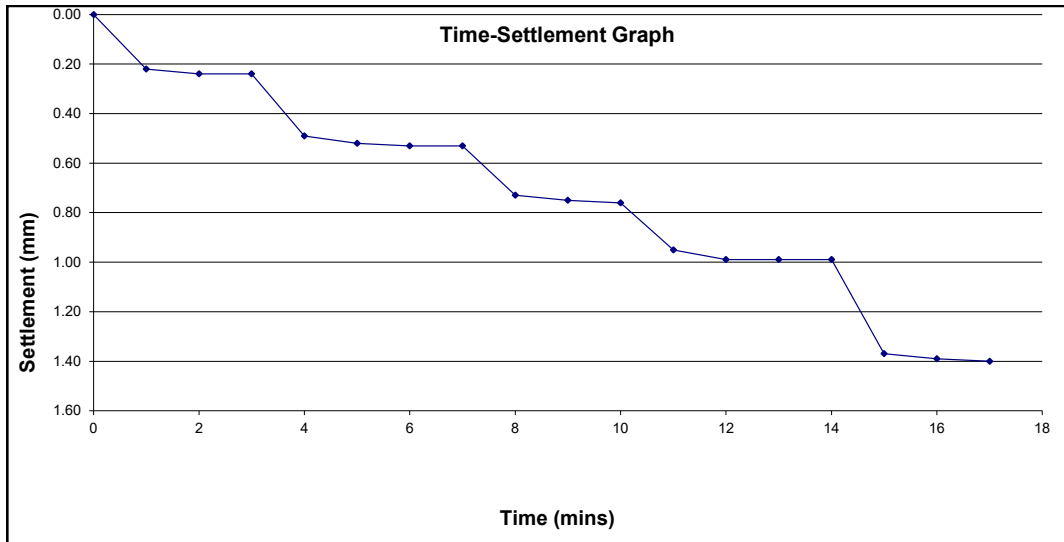
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## Test Results

Site: British Steel, Redcar  
Client: Seymour Civils

Lab ref: MT0318 – 17419  
Date Tested: 16/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 27/04/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17494  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 21/04/21  
**Test conducted by:** JK


**Test location:** BC27 @ 1200 ELR  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Clear  
**Test depth (m):** 0 **Max Min temp:** 8°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	12
<b>Applied Pressure at 1.25mm (KPa):</b>	130	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	61

**Comments:**

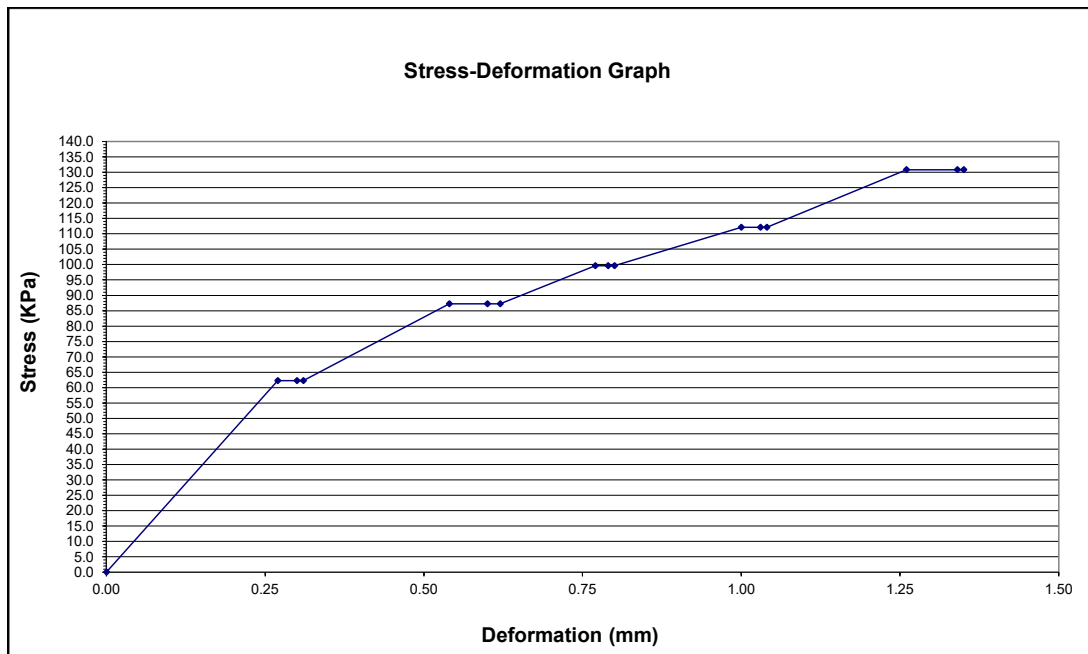
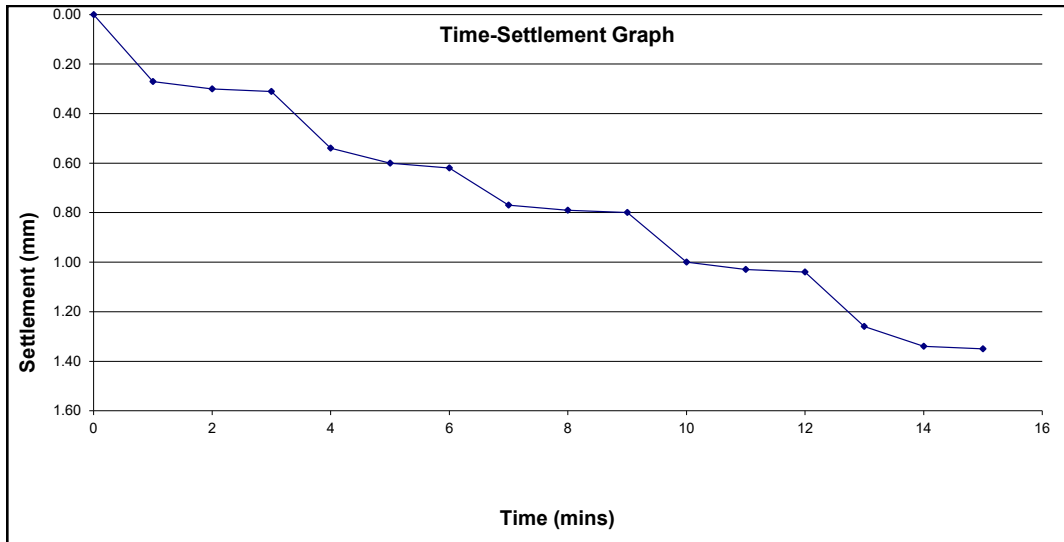
See attached graphs

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 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17494  
**Date Tested:** 21/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 27/04/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17495  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 21/04/21  
**Test conducted by:** JK


**Test location:** BC29 @ 2100 ELR  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Clear  
**Test depth (m):** 0 **Max Min temp:** 8°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	36.2
<b>Applied Pressure at 1.25mm (KPa):</b>	236	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	115.4

**Comments:**

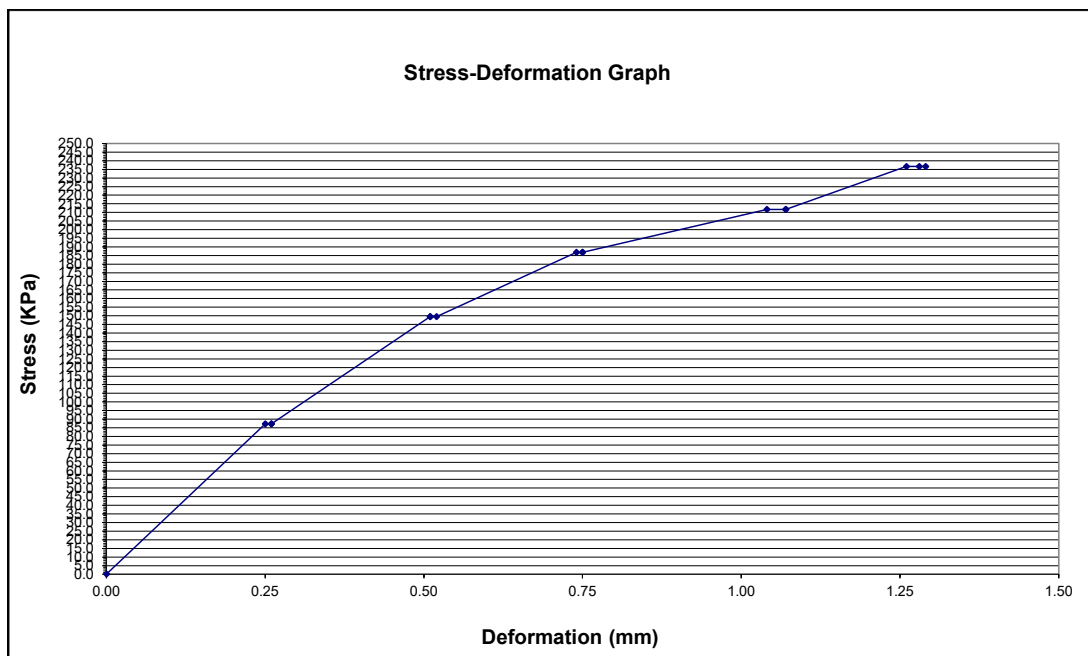
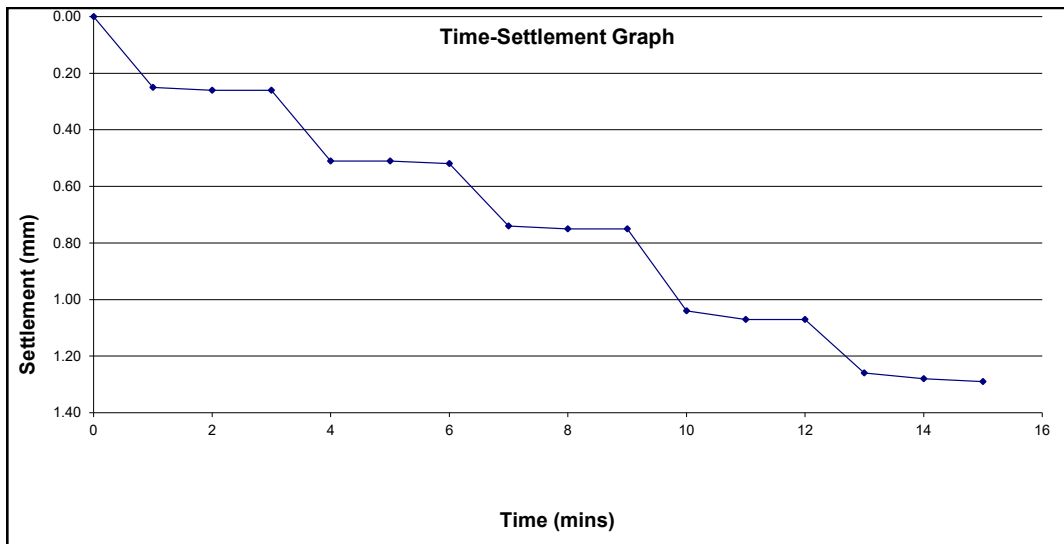
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17495  
**Date Tested:** 21/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 27/04/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17496  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 21/04/21  
**Test conducted by:** JK


**Test location:** AY21 @ 900  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Clear  
**Test depth (m):** 0 **Max Min temp:** 8°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	70.5
<b>Applied Pressure at 1.25mm (KPa):</b>	342	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	169

**Comments:**

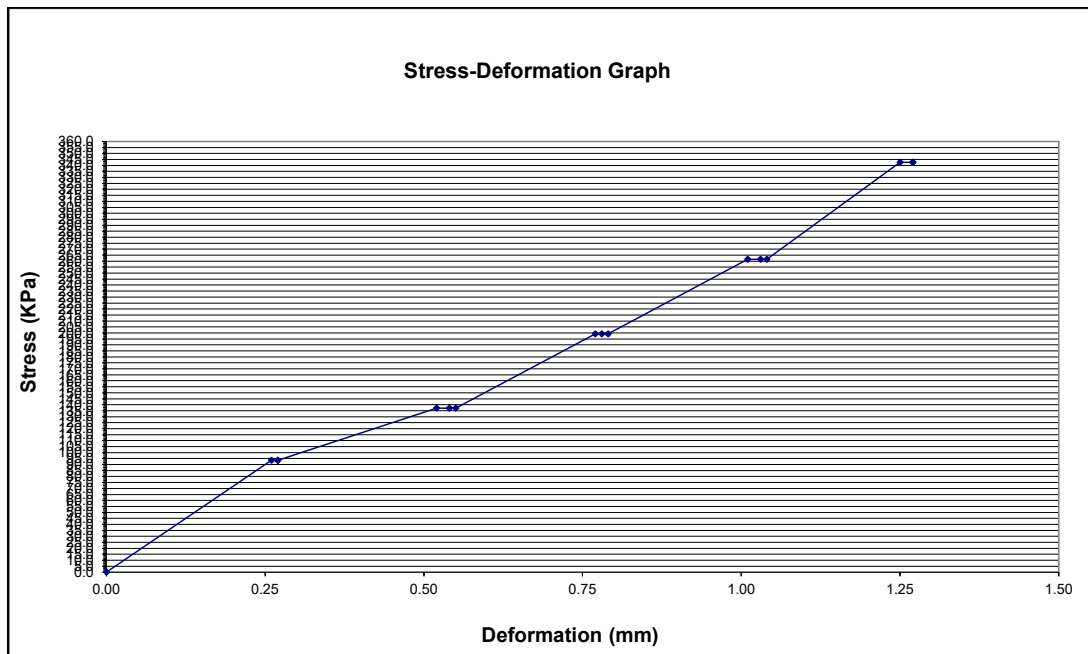
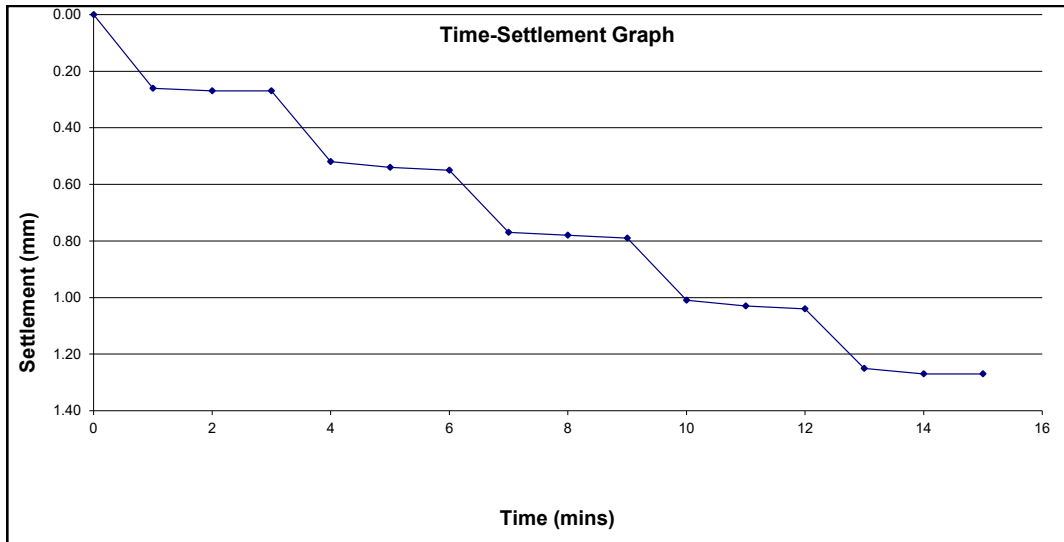
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 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17496  
**Date Tested:** 21/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 27/04/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17497  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 21/04/21  
**Test conducted by:** JK

**Test location:** AY23 @ 600  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Clear  
**Test depth (m):** 0 **Max Min temp:** 8°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	24.5
<b>Applied Pressure at 1.25mm (KPa):</b>	199	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	92.2

**Comments:**

See attached graphs

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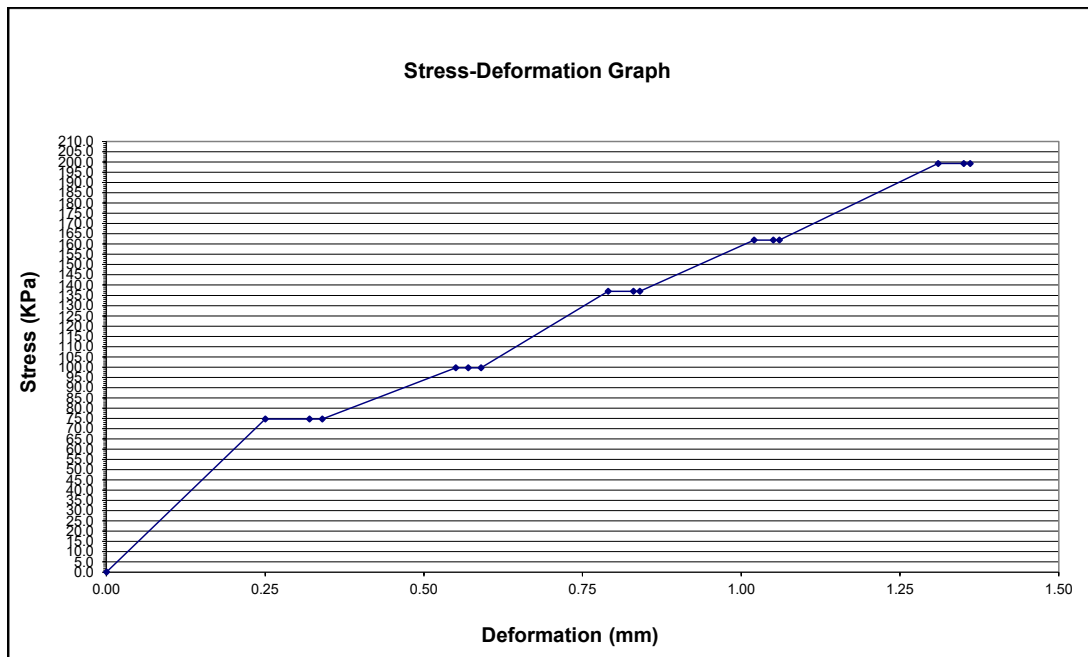
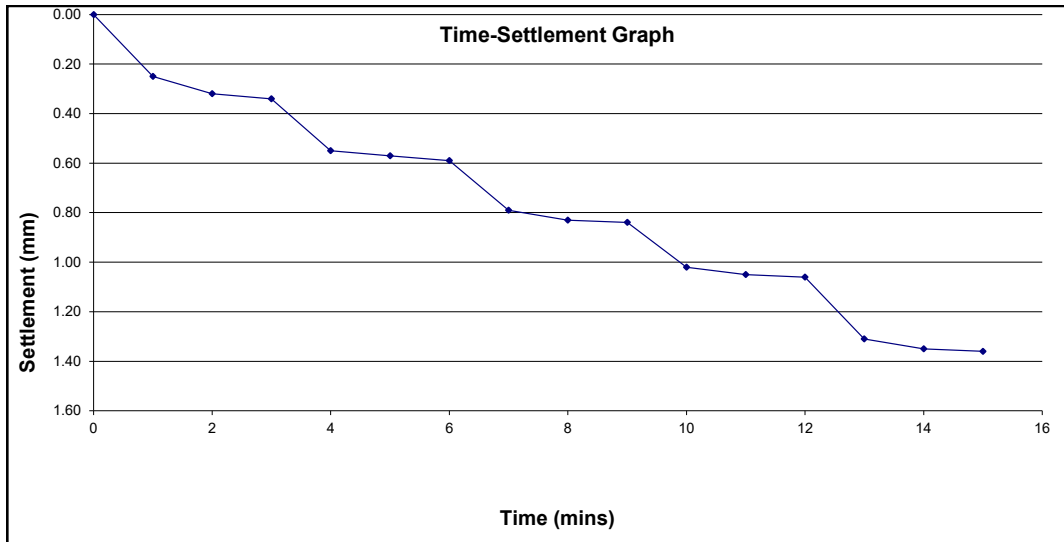
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17497  
**Date Tested:** 21/04/21

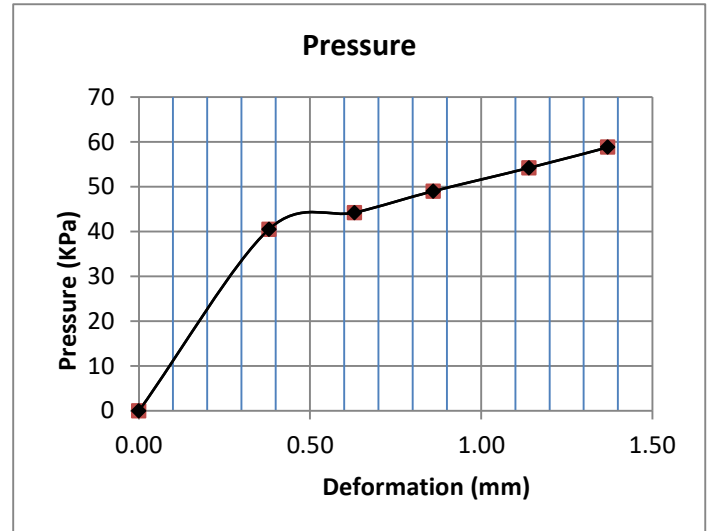
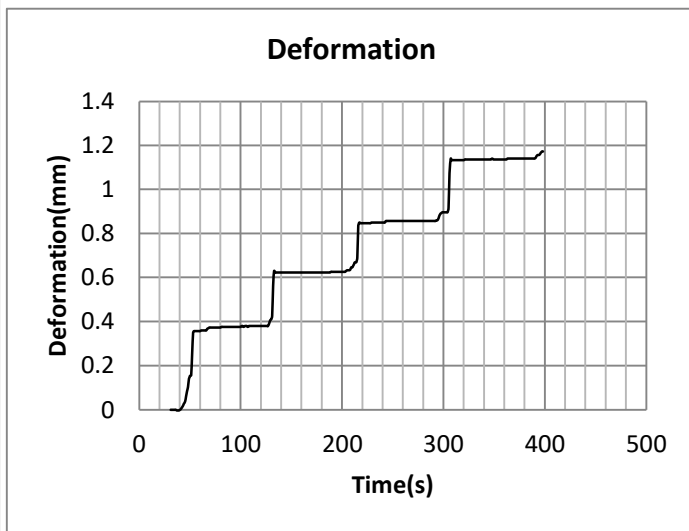


## In-Situ Vertical Deformation & Strength Test – Plate Loading Test

BS 1377: Part 9: 1990 clause 4.1

<b>Client:</b> Seymour CE	<b>Report Date:</b> 24/04/2021	
	<b>Lab Reference:</b> MT0318 17539	
	<b>Client Reference:</b>	
	<b>Date Tested:</b> 23.04.21	
<b>Site:</b> British Steel, Redcar	<b>Conducted By:</b> EA	
	<b>Reaction Load:</b> 18 T DOZER	
<b>Location:</b> AS17F	<b>Weather:</b> Dry	
<b>Test Depth:</b> Formation	<b>Temperature (C):</b> 15 - 16	
<b>Distance to excavation wall (m):</b> N/A	<b>Plate Diameter (mm):</b> 455	
<b>Visual Description:</b> Brown sandy clay		

### Test Results



Increment	Pressure (kPa)	Plate Settlement (mm)
0	0	0.00
1	40.5	0.38
2	44.2	0.63
3	49	0.86
4	54.2	1.14
5	58.8	1.37
Recovery	0	0.00

Maximum applied Pressure (kPa)	58.8
Maximum Deformation (mm)	1.4
Pressure at 1.25 mm (kPa)	56.4
Equivalent CBR Value (%)	3.4
Corrected CBR (BS 1377-9 - Cl. 4.3.5.1)	3.4
Modulus of Subgrade Reaction (MN/m <sup>2</sup> /m)	42.9
Effective compaction Indicator	0.40

Signed:

Authorised Signatories:

M. Aiston (Director)

C. Spencer (Site Works Supervisor)

G. Dresser (Director)

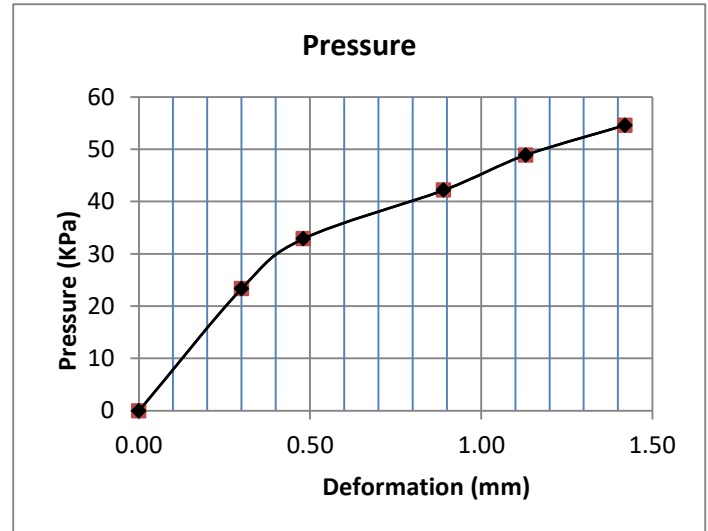
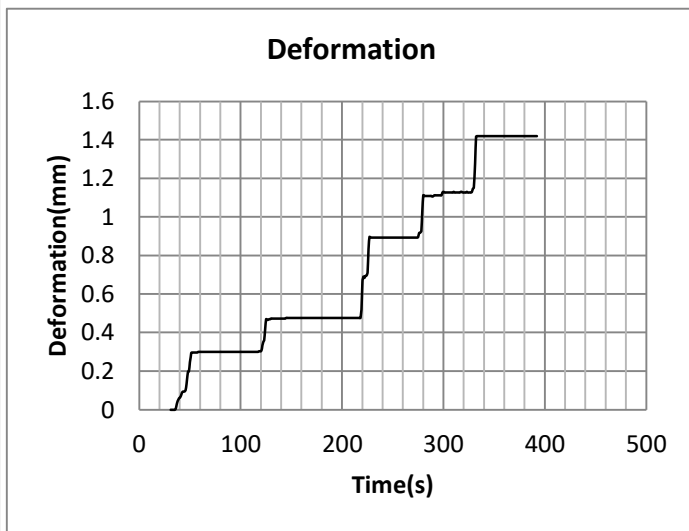
For and on behalf of  
**Dunelm Testing Ltd**

## In-Situ Vertical Deformation & Strength Test – Plate Loading Test

BS 1377: Part 9: 1990 clause 4.1

<b>Client:</b> Seymour CE	<b>Report Date:</b> 24/04/2021	
	<b>Lab Reference:</b> MT0318 17540	
	<b>Client Reference:</b>	
	<b>Date Tested:</b> 23.04.21	
<b>Site:</b> British Steel, Redcar	<b>Conducted By:</b> EA	
	<b>Reaction Load:</b> 18 T DOZER	
<b>Location:</b> AU19F	<b>Weather:</b> Dry	
<b>Test Depth:</b> Formation	<b>Temperature (C):</b> 15 - 16	
<b>Distance to excavation wall (m):</b> N/A	<b>Plate Diameter (mm):</b> 455	
<b>Visual Description:</b> Brown sandy clay		

### Test Results



Increment	Pressure (kPa)	Plate Settlement (mm)
0	0	0.00
1	23.4	0.30
2	32.9	0.48
3	42.2	0.89
4	48.9	1.13
5	54.6	1.42
Recovery	0	0.00

Maximum applied Pressure (kPa)	54.6
Maximum Deformation (mm)	1.4
Pressure at 1.25 mm (kPa)	51.3
Equivalent CBR Value (%)	2.8
Corrected CBR (BS 1377-9 - Cl. 4.3.5.1)	2.8
Modulus of Subgrade Reaction (MN/m <sup>2</sup> /m)	38.5
Effective compaction Indicator	0.49

Signed:



Authorised Signatories:

M. Aiston (Director)

C. Spencer (Site Works Supervisor)

G. Dresser (Director)

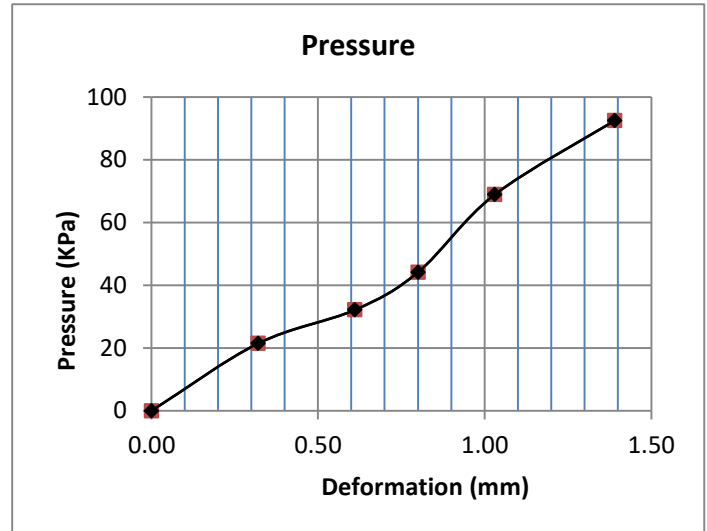
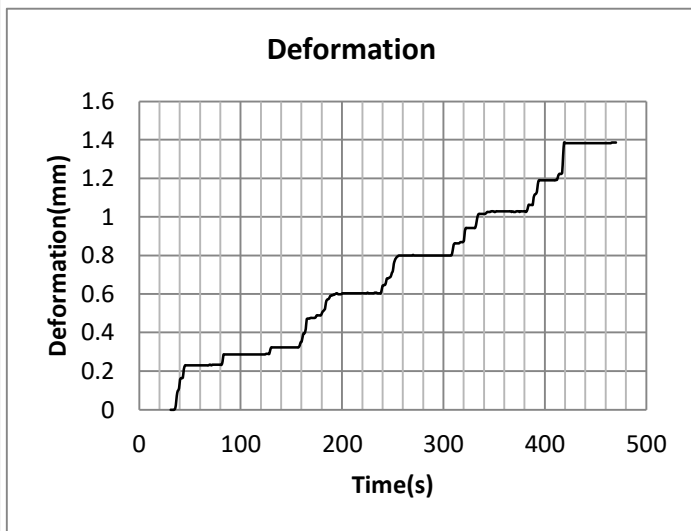
For and on behalf of  
**Dunelm Testing Ltd**

## In-Situ Vertical Deformation & Strength Test – Plate Loading Test

BS 1377: Part 9: 1990 clause 4.1

<b>Client:</b> Seymour CE	<b>Report Date:</b> 24/04/2021	
	<b>Lab Reference:</b> MT0318 17541	
	<b>Client Reference:</b>	
	<b>Date Tested:</b> 23.04.21	
<b>Site:</b> British Steel, Redcar	<b>Conducted By:</b> EA	
	<b>Reaction Load:</b> 18 T DOZER	
<b>Location:</b> AY19@1500	<b>Weather:</b> Dry	
<b>Test Depth:</b> Formation	<b>Temperature (C):</b> 15 - 16	
<b>Distance to excavation wall (m):</b> N/A	<b>Plate Diameter (mm):</b> 455	
<b>Visual Description:</b> Grey Spoil with crushed concrete and brick		

### Test Results



Increment	Pressure (kPa)	Plate Settlement (mm)
0	0	0.00
1	21.5	0.32
2	32.2	0.61
3	44.2	0.80
4	68.9	1.03
5	92.5	1.39
Recovery	0	0.00

Maximum applied Pressure (kPa)	92.5
Maximum Deformation (mm)	1.4
Pressure at 1.25 mm (kPa)	83.3
Equivalent CBR Value (%)	6.6
Corrected CBR (BS 1377-9 - Cl. 4.3.5.1)	10
Modulus of Subgrade Reaction (MN/m <sup>2</sup> /m)	66.5
Effective compaction Indicator	0.99

Signed:

Authorised Signatories:

M. Aiston (Director)

C. Spencer (Site Works Supervisor)

G. Dresser (Director)

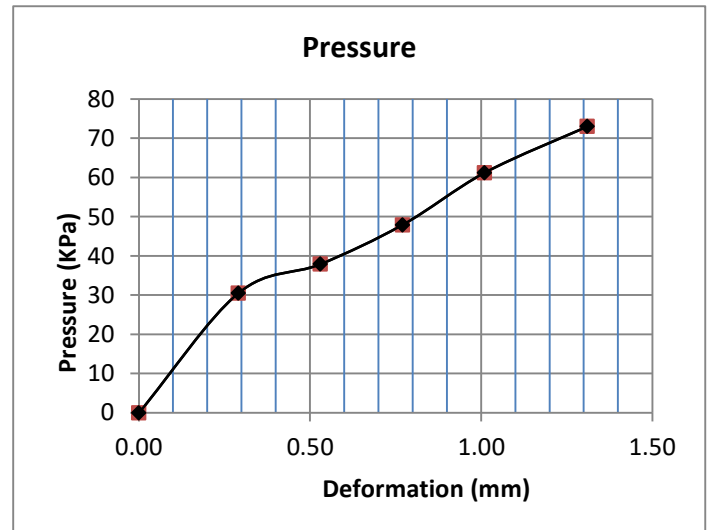
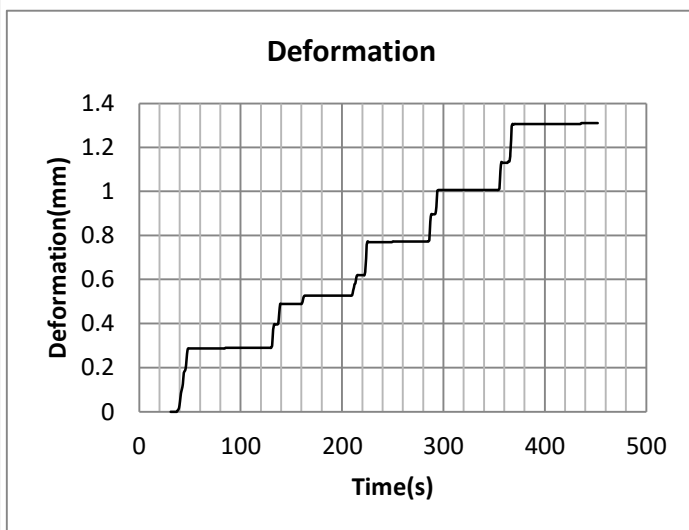
For and on behalf of  
**Dunelm Testing Ltd**

## In-Situ Vertical Deformation & Strength Test – Plate Loading Test

BS 1377: Part 9: 1990 clause 4.1

<b>Client:</b> Seymour CE	<b>Report Date:</b> 24/04/2021	
	<b>Lab Reference:</b> MT0318 17543	
	<b>Client Reference:</b>	
	<b>Date Tested:</b> 23.04.21	
<b>Site:</b> British Steel, Redcar	<b>Conducted By:</b> EA	
	<b>Reaction Load:</b> 18 T DOZER	
<b>Location:</b> Test 4 location tbc	<b>Weather:</b> Dry	
<b>Test Depth:</b> Formation	<b>Temperature (C):</b> 15 - 16	
<b>Distance to excavation wall (m):</b> N/A	<b>Plate Diameter (mm):</b> 455	
<b>Visual Description:</b> Brown very sandy clay		

### Test Results



Increment	Pressure (kPa)	Plate Settlement (mm)
0	0	0.00
1	30.5	0.29
2	37.9	0.53
3	47.9	0.77
4	61.2	1.01
5	73	1.31
Recovery	0	0.00

Maximum applied Pressure (kPa)	73.0
Maximum Deformation (mm)	1.3
Pressure at 1.25 mm (kPa)	70.6
Equivalent CBR Value (%)	5.0
Corrected CBR (BS 1377-9 - Cl. 4.3.5.1)	5.0
Modulus of Subgrade Reaction (MN/m <sup>2</sup> /m)	55.7
Effective compaction Indicator	0.53

Signed:

Authorised Signatories:

M. Aiston (Director)

C. Spencer (Site Works Supervisor)

G. Dresser (Director)

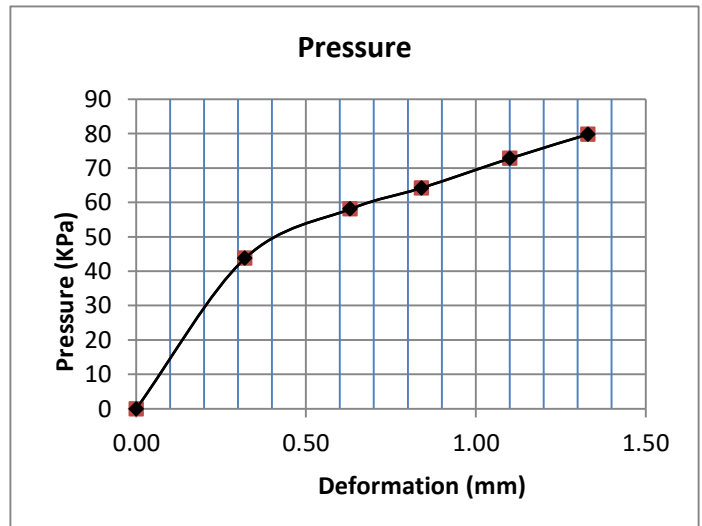
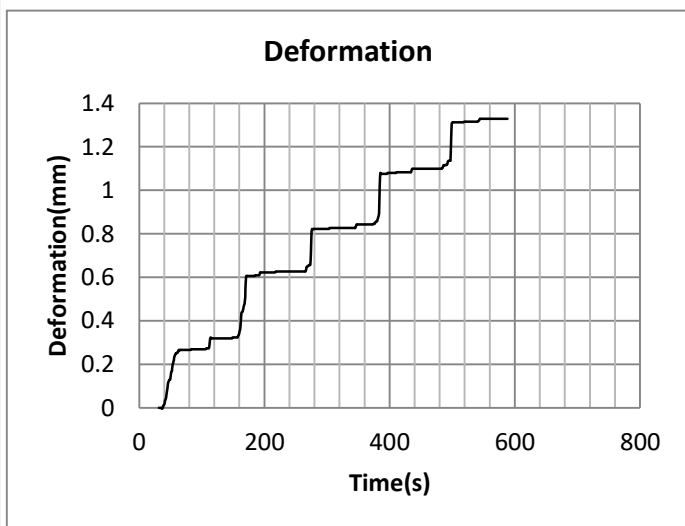
For and on behalf of  
**Dunelm Testing Ltd**

## In-Situ Vertical Deformation & Strength Test – Plate Loading Test

BS 1377: Part 9: 1990 clause 4.1

<b>Client:</b> Seymour CE	<b>Report Date:</b> 27/04/2021	<b>Lab Reference:</b> MT0318 17578
	<b>Client Reference:</b>	
	<b>Date Tested:</b> 26.04.21	
<b>Site:</b> British Steel, Redcar	<b>Conducted By:</b> EA	
	<b>Reaction Load:</b> 18 T DOZER	
<b>Location:</b> AU19@300	<b>Weather:</b> Dry	
<b>Test Depth:</b> Formation	<b>Temperature (C):</b> 15 - 16	
<b>Distance to excavation wall (m):</b> N/A	<b>Plate Diameter (mm):</b> 455	
<b>Visual Description:</b> Coarse GRAVEL		

### Test Results



Increment	Pressure (kPa)	Plate Settlement (mm)
0	0	0.00
1	43.8	0.32
2	58.1	0.63
3	64.2	0.84
4	72.8	1.10
5	79.8	1.33
<b>Recovery</b>	0	0.00

Maximum applied Pressure (kPa)	79.8
Maximum Deformation (mm)	1.3
Pressure at 1.25 mm (kPa)	77.4
Equivalent CBR Value (%)	5.8
Corrected CBR (BS 1377-9 - Cl. 4.3.5.1)	5.8
Modulus of Subgrade Reaction (MN/m <sup>2</sup> /m)	60.0
Effective compaction Indicator	0.44

Signed:



Authorised Signatories:

M. Aiston (Director)

G. Dresser (Director)

C. Spencer (Site Works Supervisor)

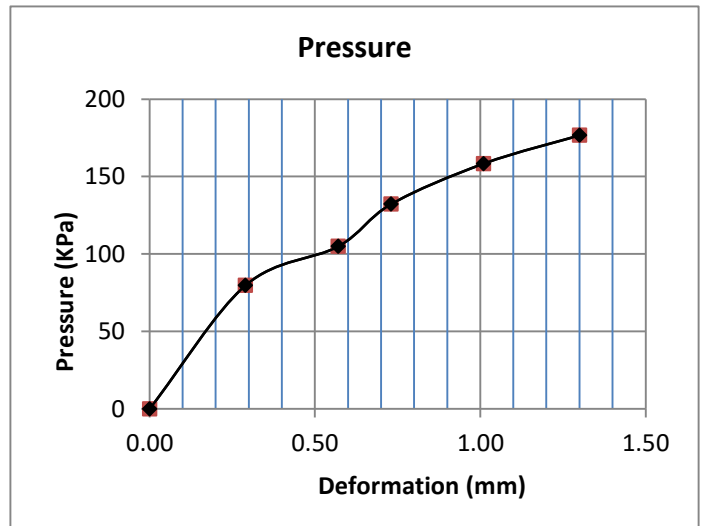
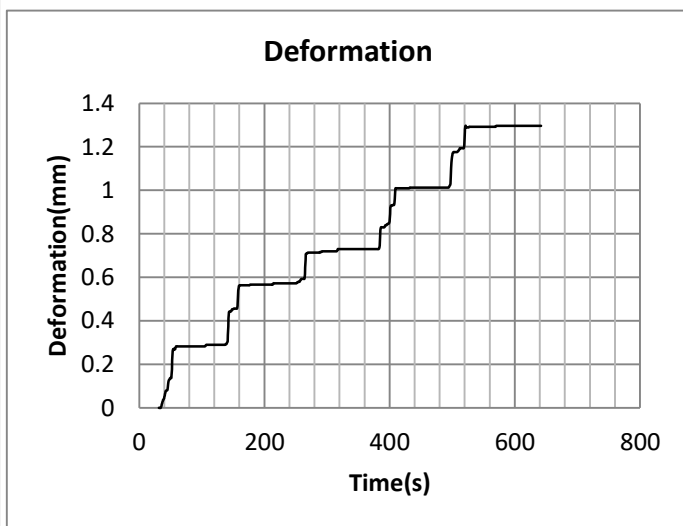
For and on behalf of  
**Dunelm Testing Ltd**

## In-Situ Vertical Deformation & Strength Test – Plate Loading Test

BS 1377: Part 9: 1990 clause 4.1

<b>Client:</b> Seymour CE	<b>Report Date:</b> 27/04/2021	<b>Lab Reference:</b> MT0318 17579
	<b>Client Reference:</b>	
	<b>Date Tested:</b> 26.04.21	
<b>Site:</b> British Steel, Redcar	<b>Conducted By:</b> EA	
	<b>Reaction Load:</b> 18 T DOZER	
<b>Location:</b> AS17@900	<b>Weather:</b> Dry	
<b>Test Depth:</b> Formation	<b>Temperature (C):</b> 15 - 16	
<b>Distance to excavation wall (m):</b> N/A	<b>Plate Diameter (mm):</b> 455	
<b>Visual Description:</b> Coarse GRAVEL		

### Test Results



Increment	Pressure (kPa)	Plate Settlement (mm)
0	0	0.00
1	79.8	0.29
2	105	0.57
3	132.3	0.73
4	158.4	1.01
5	176.7	1.30
<b>Recovery</b>	0	0.00

Maximum applied Pressure (kPa)	176.7
Maximum Deformation (mm)	1.3
Pressure at 1.25 mm (kPa)	173.5
Equivalent CBR Value (%)	24
Corrected CBR (BS 1377-9 - Cl. 4.3.5.1)	24
Modulus of Subgrade Reaction (MN/m <sup>2</sup> /m)	135.9
Effective compaction Indicator	0.49

Signed:



Authorised Signatories:

M. Aiston (Director)

G. Dresser (Director)

C. Spencer (Site Works Supervisor)

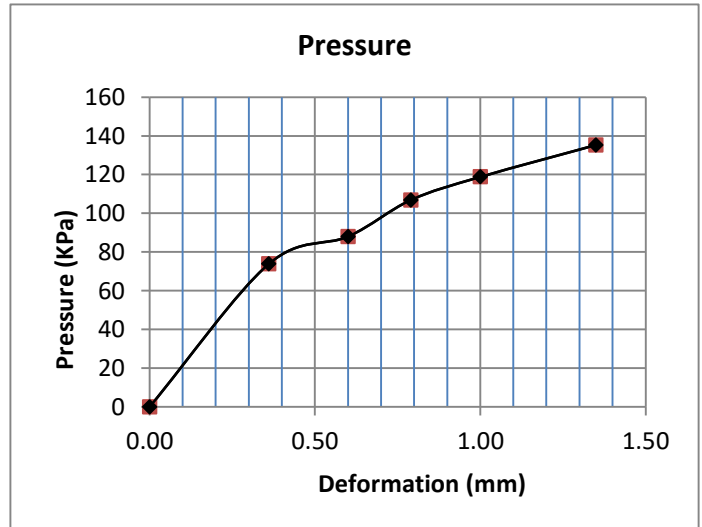
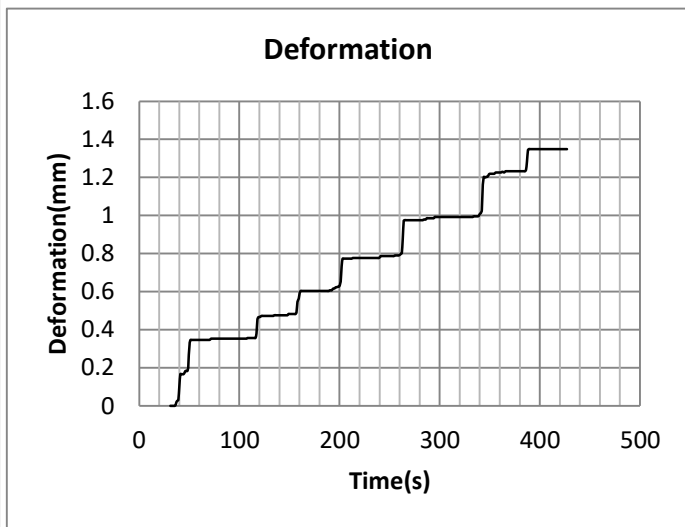
For and on behalf of  
**Dunelm Testing Ltd**

## In-Situ Vertical Deformation & Strength Test – Plate Loading Test

BS 1377: Part 9: 1990 clause 4.1

<b>Client:</b> Seymour CE	<b>Report Date:</b> 27/04/2021	<b>Lab Reference:</b> MT0318 17580
	<b>Client Reference:</b>	
	<b>Date Tested:</b> 26.04.21	
<b>Site:</b> British Steel, Redcar	<b>Conducted By:</b> EA	
	<b>Reaction Load:</b> 18 T DOZER	
<b>Location:</b> AY21@1200	<b>Weather:</b> Dry	
<b>Test Depth:</b> Formation	<b>Temperature (C):</b> 15 - 16	
<b>Distance to excavation wall (m):</b> N/A	<b>Plate Diameter (mm):</b> 455	
<b>Visual Description:</b> Coarse GRAVEL		

### Test Results



Increment	Pressure (kPa)	Plate Settlement (mm)
0	0	0.00
1	73.9	0.36
2	88	0.60
3	106.9	0.79
4	118.9	1.00
5	135.3	1.35
<b>Recovery</b>	0	0.00

Maximum applied Pressure (kPa)	135.3
Maximum Deformation (mm)	1.4
Pressure at 1.25 mm (kPa)	130.6
Equivalent CBR Value (%)	14
Corrected CBR (BS 1377-9 - Cl. 4.3.5.1)	14
Modulus of Subgrade Reaction (MN/m <sup>2</sup> /m)	100.2
Effective compaction Indicator	0.49

Signed:



Authorised Signatories:

M. Aiston (Director)

C. Spencer (Site Works Supervisor)

G. Dresser (Director)

For and on behalf of  
**Dunelm Testing Ltd**



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 05/05/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17720  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 29/04/21  
**Test conducted by:** JK


**Test location:** AY19 @ 900  
**Material description:** Gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** 0 **Max Min temp:** 4-9°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	34.8
<b>Applied Pressure at 1.25mm (KPa):</b>	236	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	112

**Comments:**

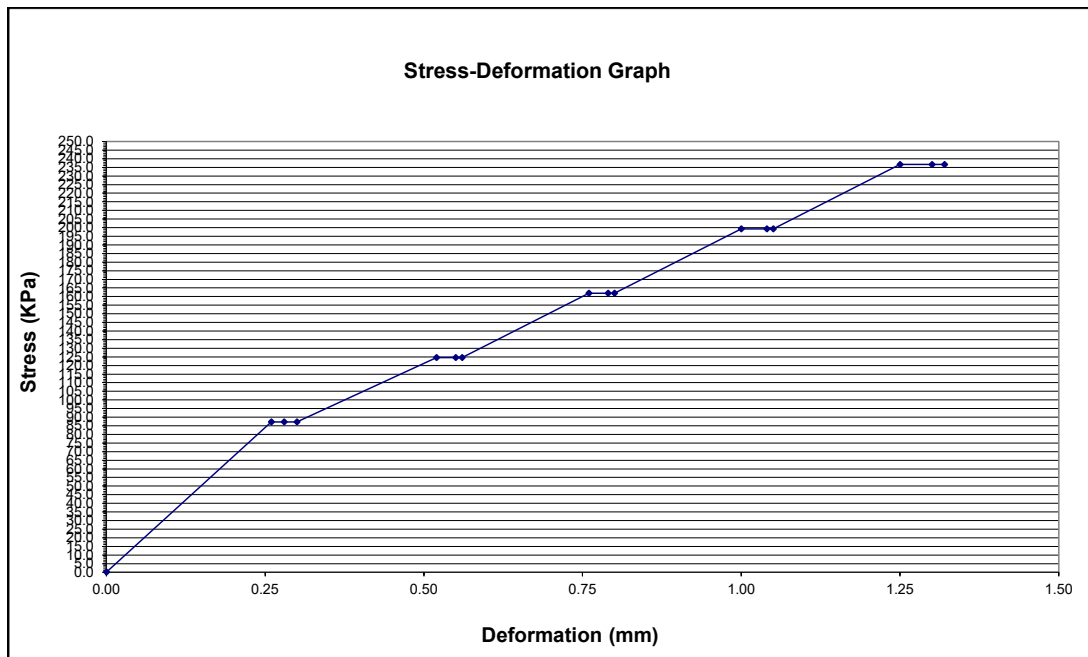
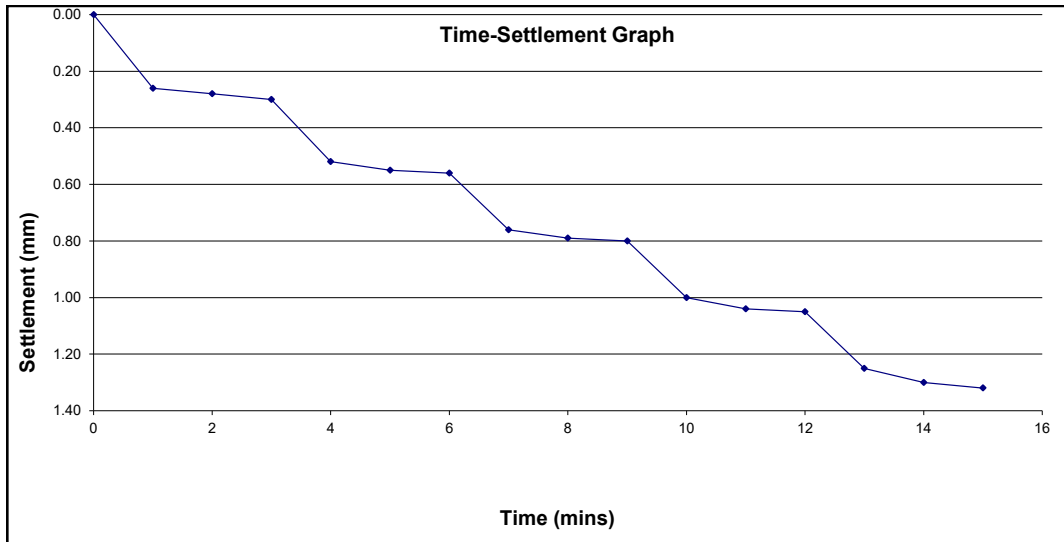
See attached graphs

**Signed:**  
For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17720  
**Date Tested:** 29/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 05/05/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17721  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 29/04/21  
**Test conducted by:** JK


**Test location:** AU21 @ 300  
**Material description:** Gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** 0 **Max Min temp:** 4-9°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	18.5
<b>Applied Pressure at 1.25mm (KPa):</b>	168	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	78

**Comments:**

See attached graphs

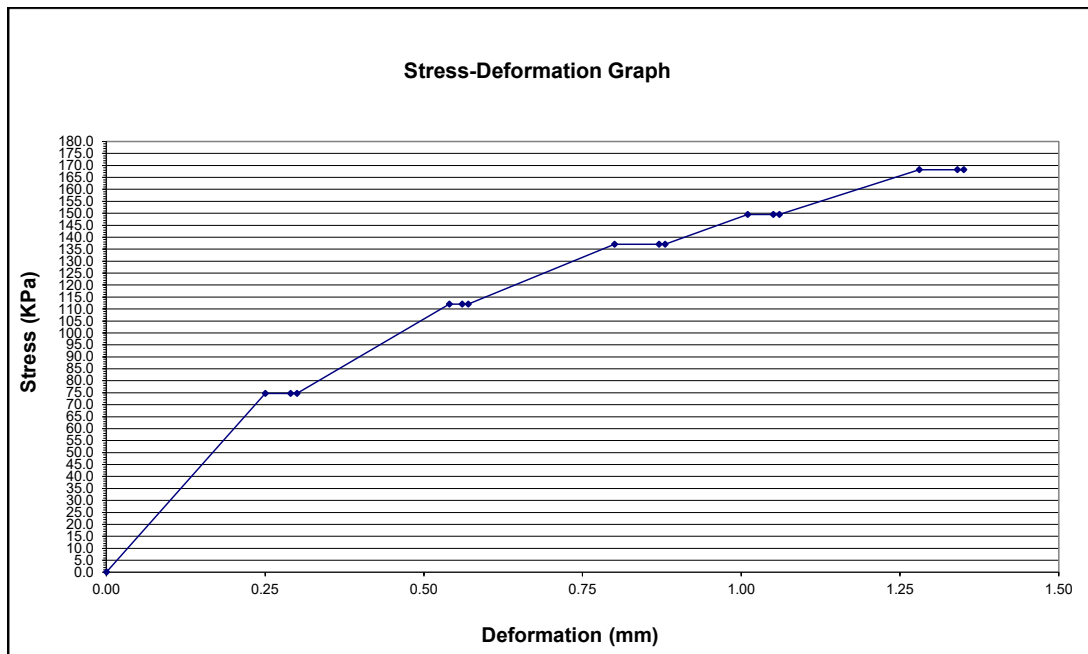
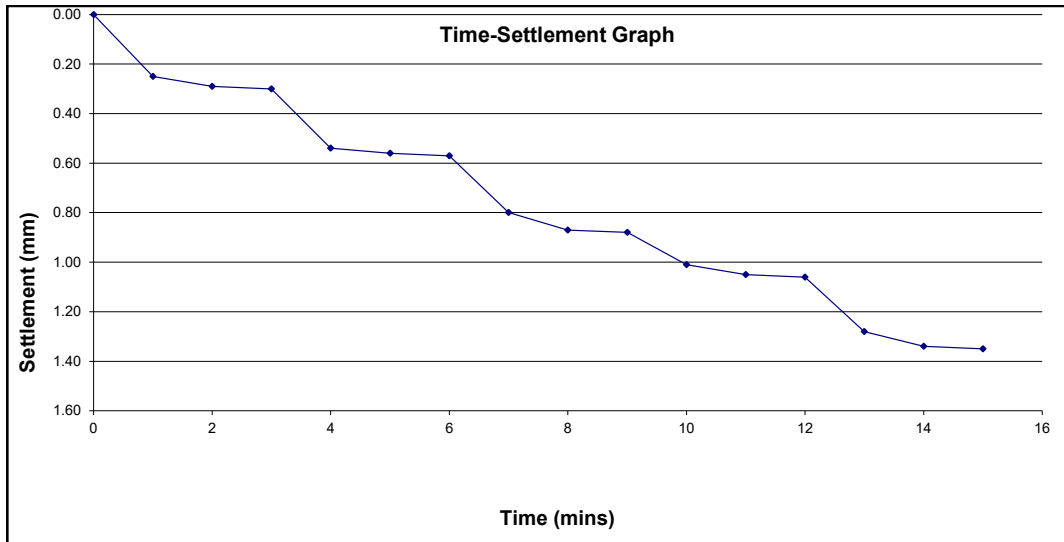
**Signed:**  
For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
[ ] M. Aiston (Director)  
[ ] G Dresser (Director)  
[✓] C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

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## Test Results

Site: British Steel, Redcar  
Client: Seymour Civils

Lab ref: MT0318 – 17721  
Date Tested: 29/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 05/05/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17722  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 29/04/21  
**Test conducted by:** JK


**Test location:** AU21 F  
**Material description:** Brown, sandy, gravelly CLAY **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** 0 **Max Min temp:** 4-9°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	4.7
<b>Applied Pressure at 1.25mm (KPa):</b>	74	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	35

**Comments:**

See attached graphs

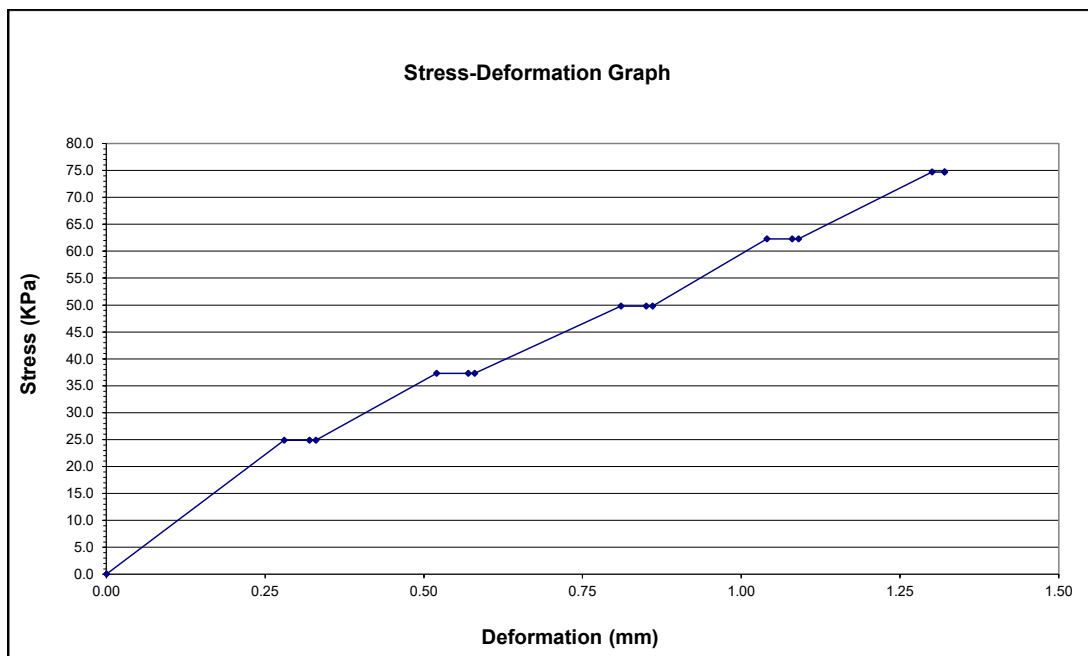
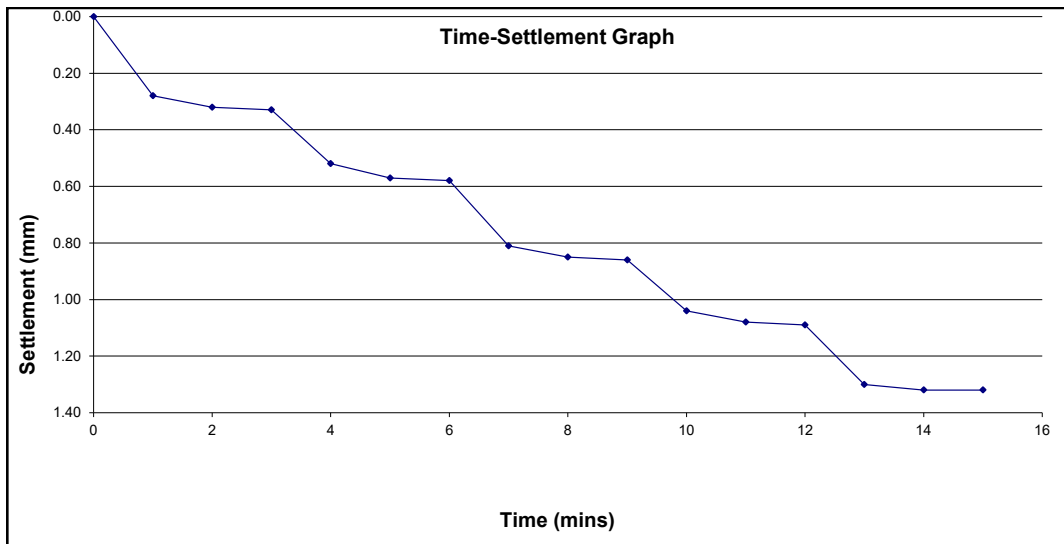
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 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17722  
**Date Tested:** 29/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 05/05/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17723  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 29/04/21  
**Test conducted by:** JK


**Test location:** AY15 F  
**Material description:** Brown, sandy, gravelly CLAY **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** 0 **Max Min temp:** 4-9°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	4.8
<b>Applied Pressure at 1.25mm (KPa):</b>	74	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	35

**Comments:**

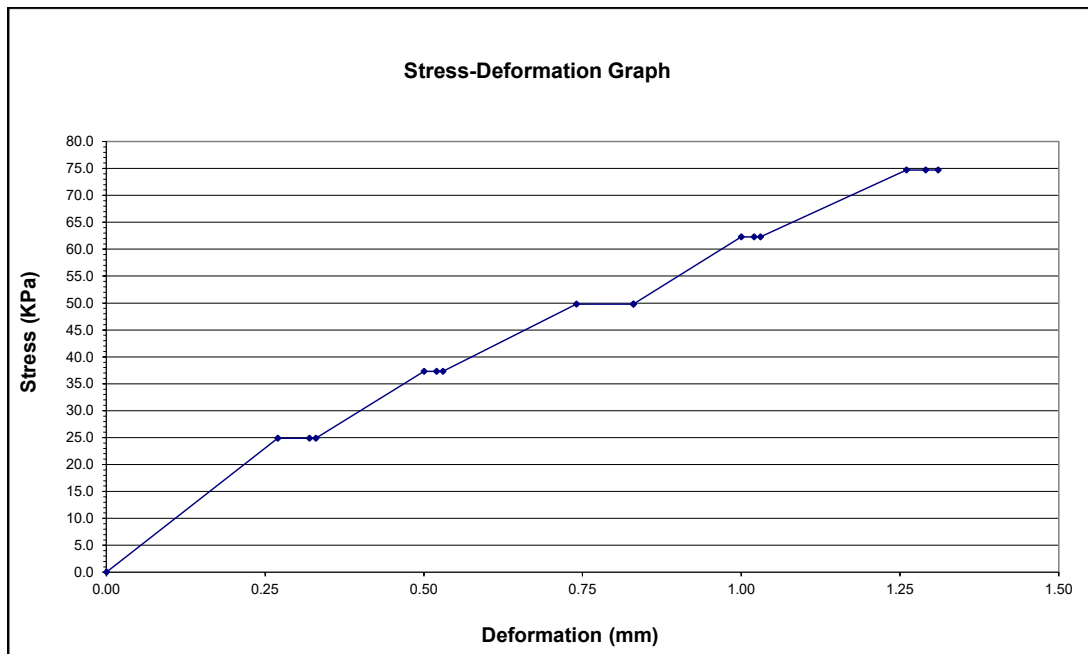
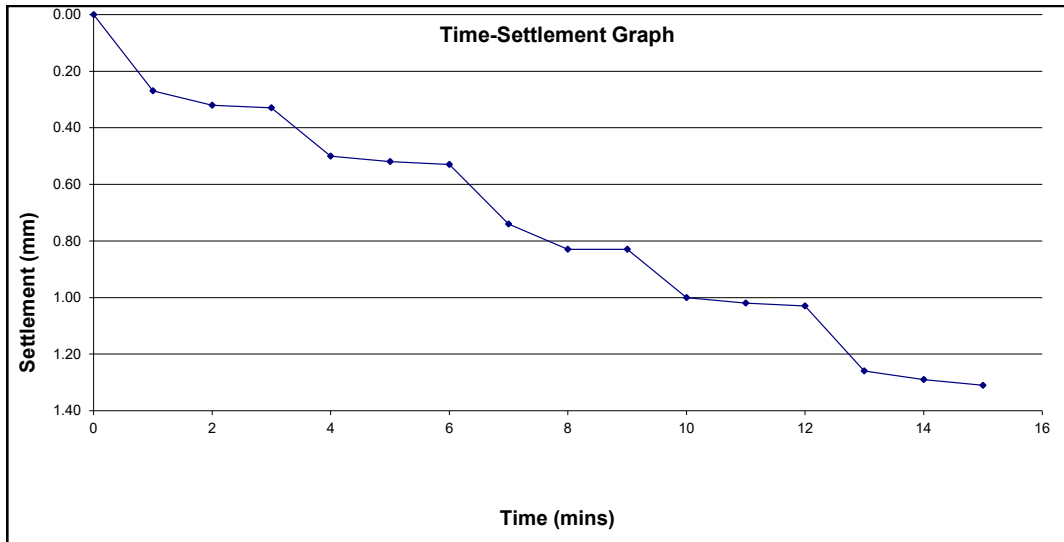
See attached graphs

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For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17723  
**Date Tested:** 29/04/21





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 10/05/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17770  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 06/05/21  
**Test conducted by:** JK


**Test location:** AU17 F  
**Material description:** Brown, sandy, gravelly CLAY **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Sun  
**Test depth (m):** 0 **Max Min temp:** 5-9°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	9.4
<b>Applied Pressure at 1.25mm (KPa):</b>	112	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	53

**Comments:**

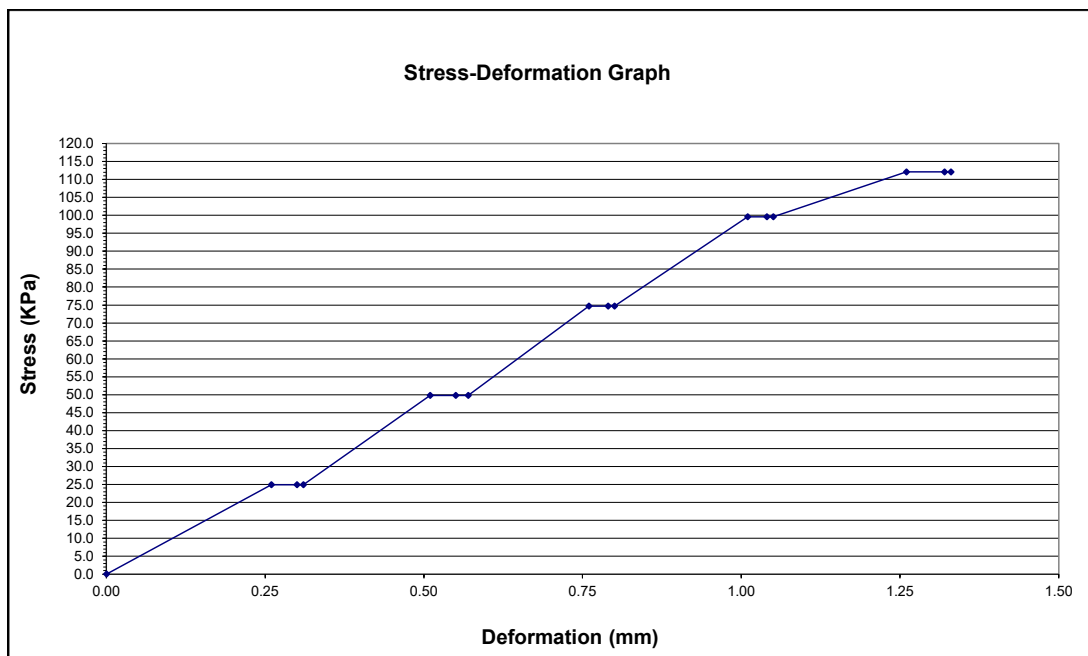
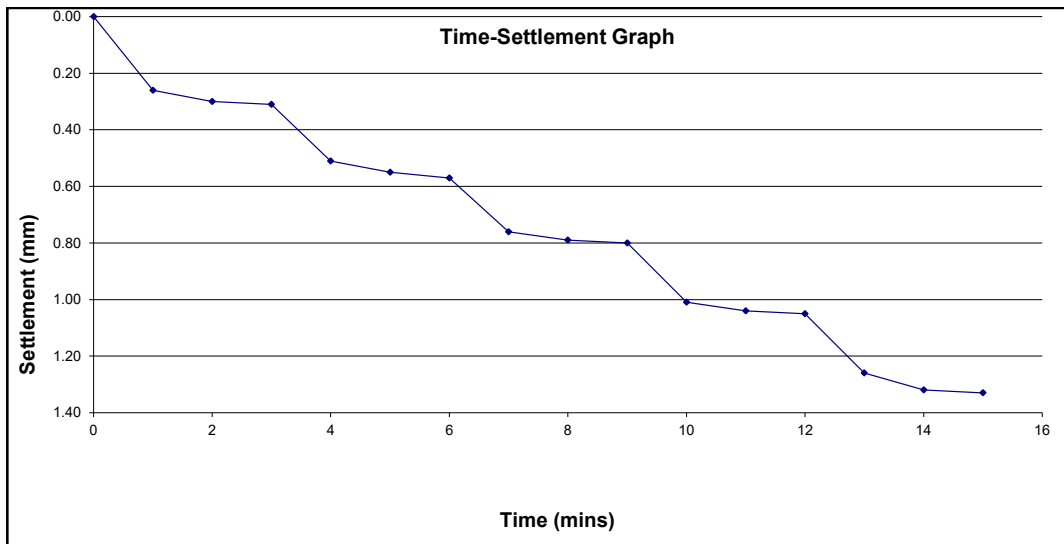
See attached graphs

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For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17770  
**Date Tested:** 06/05/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test**  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1 **Report Date:** 10/05/21

**Client:** Seymour Civils **Test ref:** MT0318 – 17771  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 06/05/21  
**Test conducted by:** JK

**Test location:** AU17 @ 300  
**Material description:** Gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Sun  
**Test depth (m):** 0 **Max Min temp:** 5-9°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	20.2
<b>Applied Pressure at 1.25mm (KPa):</b>	174	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	82

**Comments:**

See attached graphs

**Signed:**For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

- M. Aiston (Director)
- G Dresser (Director)
- C. Spencer (Fieldwork Supervisor)

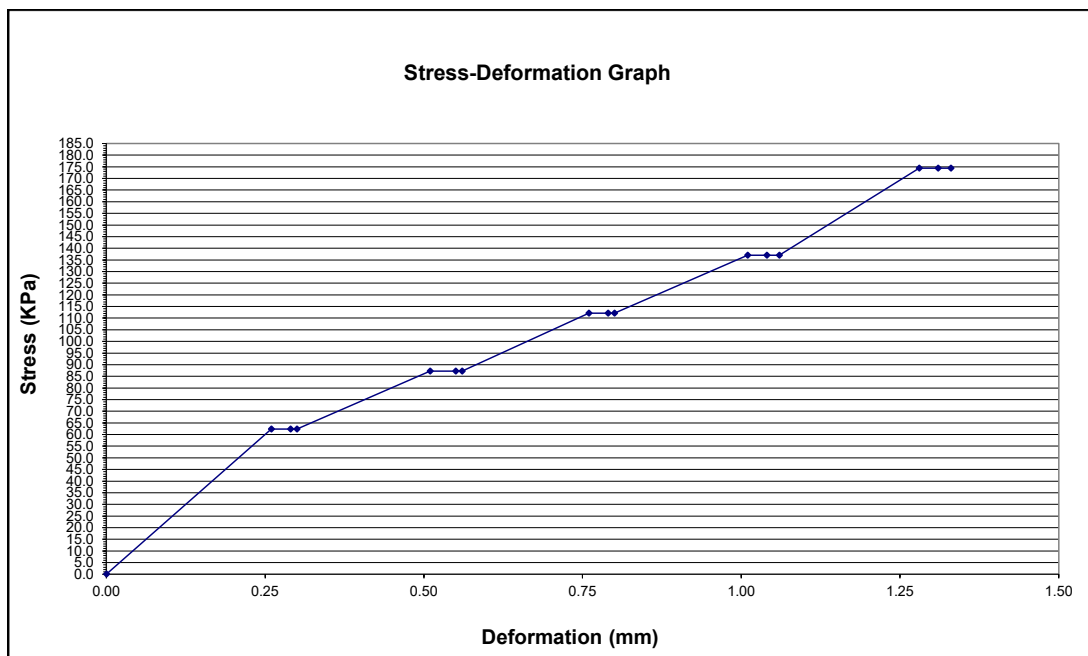
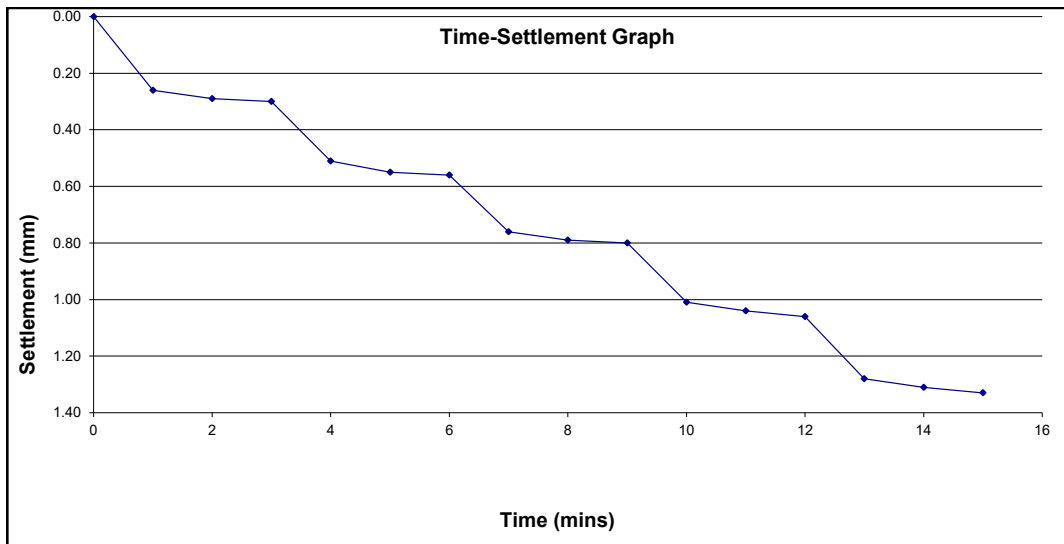
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17771  
**Date Tested:** 06/05/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 10/05/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17772  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 06/05/21  
**Test conducted by:** JK


**Test location:** AU17 @ 300  
**Material description:** Gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Sun  
**Test depth (m):** 0 **Max Min temp:** 5-9°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	14.7
<b>Applied Pressure at 1.25mm (KPa):</b>	149	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	68

**Comments:**

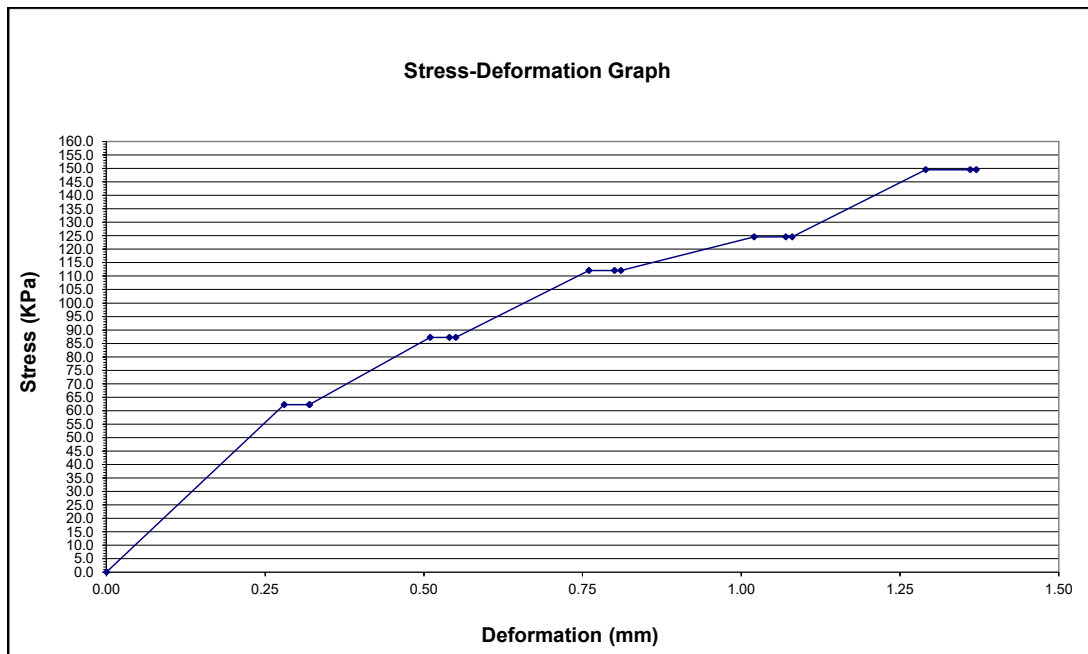
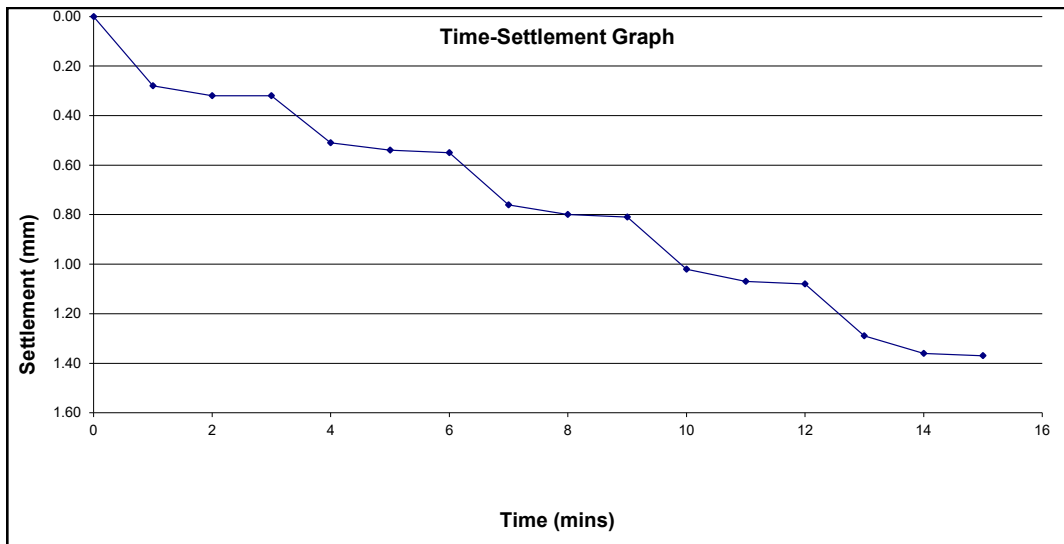
See attached graphs

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For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17772  
**Date Tested:** 06/05/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 10/05/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17773  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 06/05/21  
**Test conducted by:** JK


**Test location:** AU19 @ 600  
**Material description:** Gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Sun  
**Test depth (m):** 0 **Max Min temp:** 5-9°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	13.5
<b>Applied Pressure at 1.25mm (KPa):</b>	137	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	65

**Comments:**

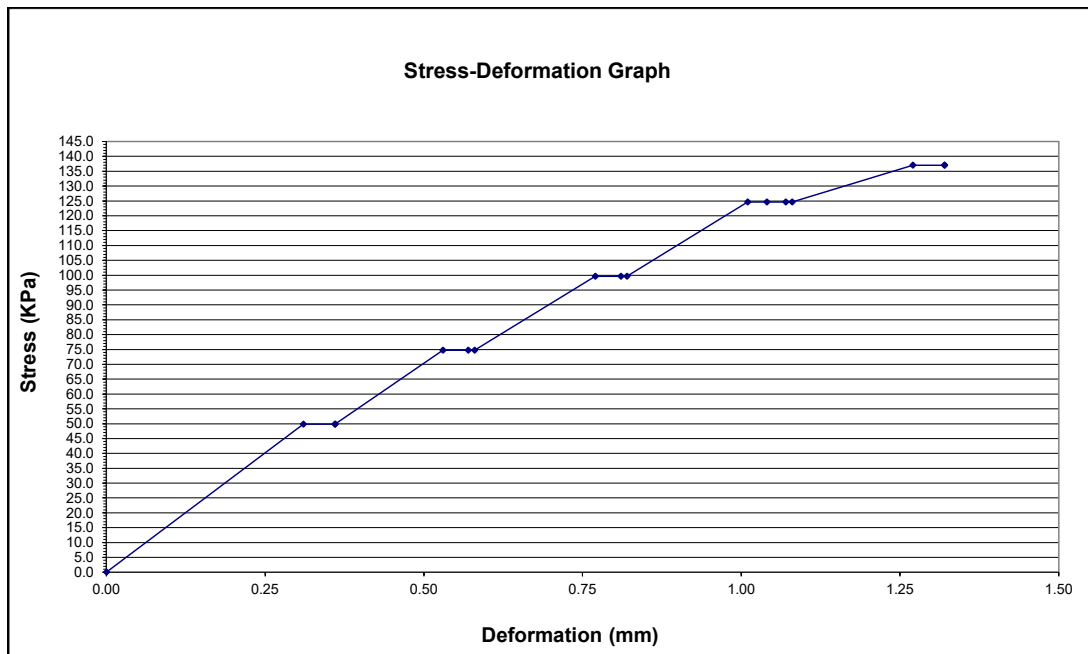
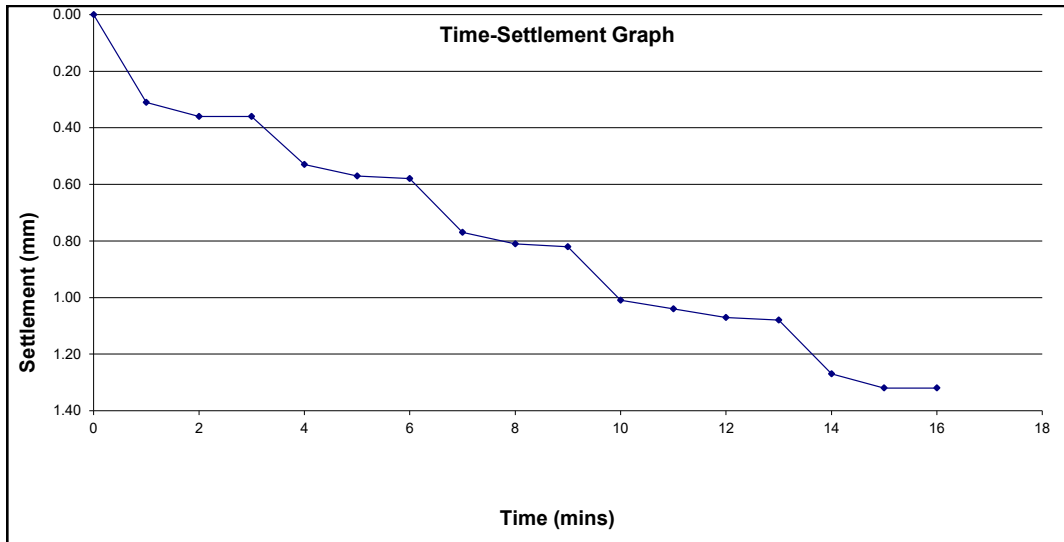
See attached graphs

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 M. Aiston (Director)  
 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17773  
**Date Tested:** 06/05/21





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 10/05/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17774  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 06/05/21  
**Test conducted by:** JK

**Test location:** AW21 F  
**Material description:** Brown, sandy, gravelly CLAY **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Sun  
**Test depth (m):** 0 **Max Min temp:** 5-9°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	4.8
<b>Applied Pressure at 1.25mm (KPa):</b>	74	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	35

**Comments:**

See attached graphs

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- G Dresser (Director)
- C. Spencer (Fieldwork Supervisor)

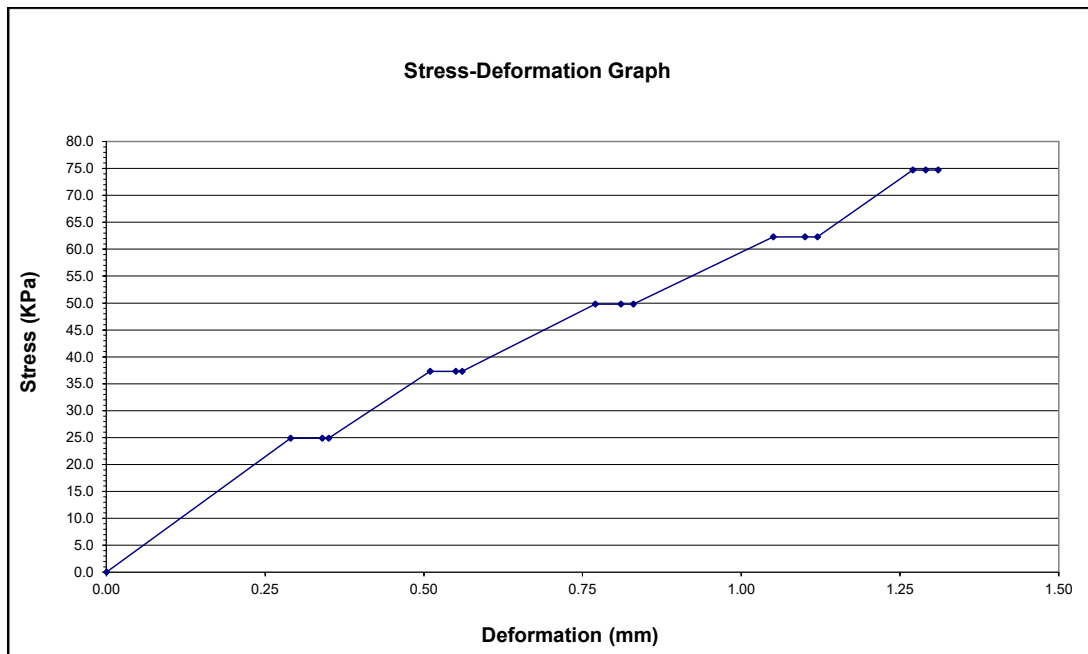
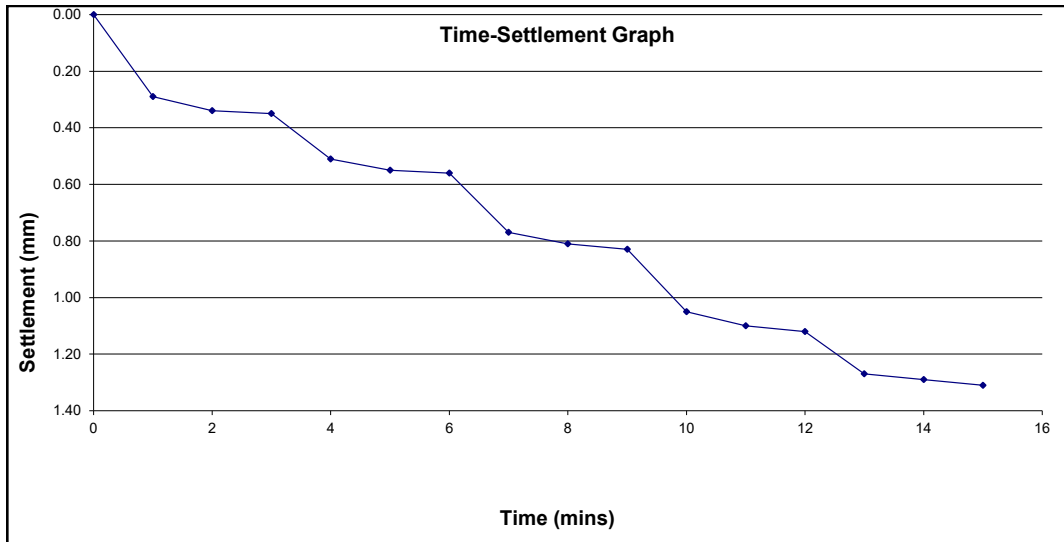
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17774  
**Date Tested:** 06/05/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test**  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1 **Report Date:** 20.05.2021

**Client:** Seymour Civils **Test ref:** MT0318 – 18053

**Site:** British Steel, Redcar **Client ref:** -

**Test location:** AW21@300 **Date tested:** 20.05.2021

**Material description:** Course Gravel **Test conducted by:** WB

**Plate diameter (mm):** 455 **Reaction load:** 19t Dozer

**Test depth (m):** 0 **Weather conditions:** Overcast

**Max Min temp:** 10°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	23.7
<b>Applied Pressure at 1.25mm (KPa):</b>	186.9	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	90.4

**Comments:**

See attached graphs

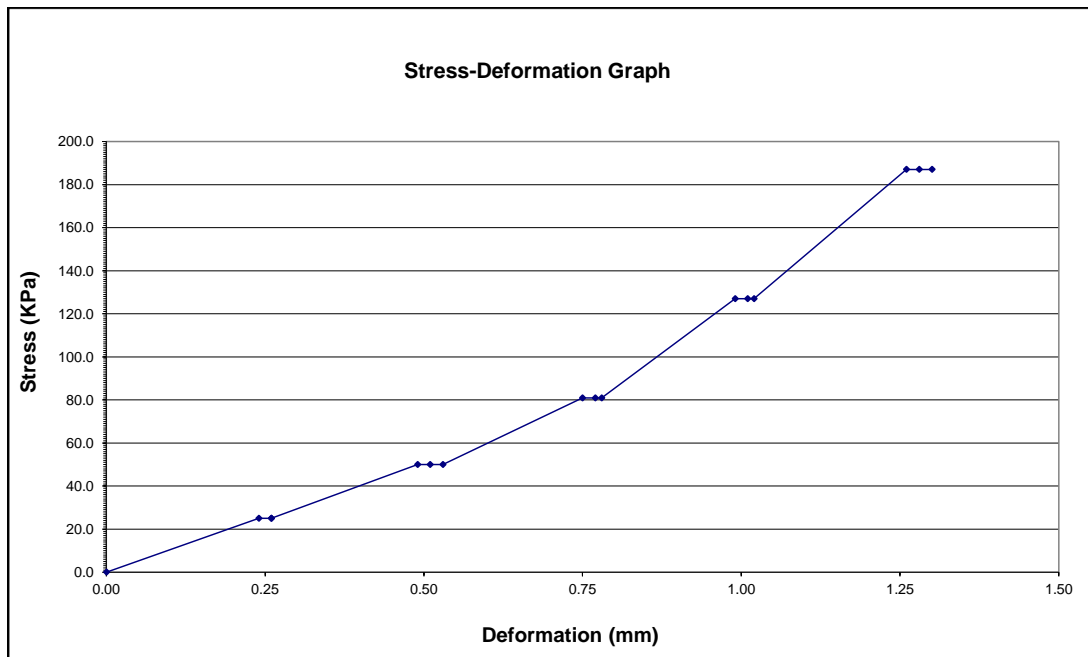
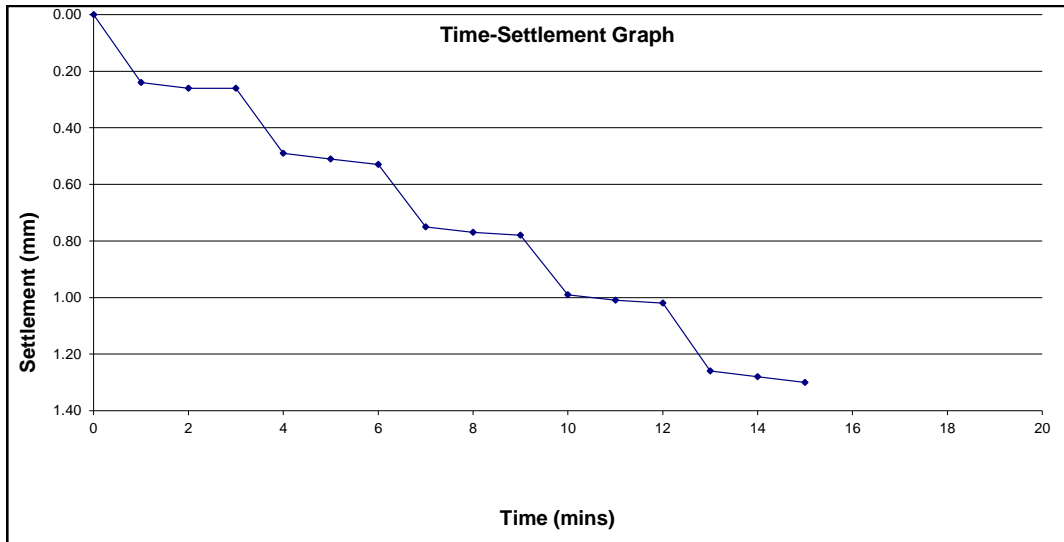
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18053  
**Date Tested:** 18.05.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 20.05.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18054  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 20.05.2021  
**Test conducted by:** WB

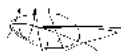
**Test location:** AU21@900  
**Material description:** Course Gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** 0 **Max Min temp:** 10°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	10.9
<b>Applied Pressure at 1.25mm (KPa):</b>	114.6	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	57.7

**Comments:**

See attached graphs

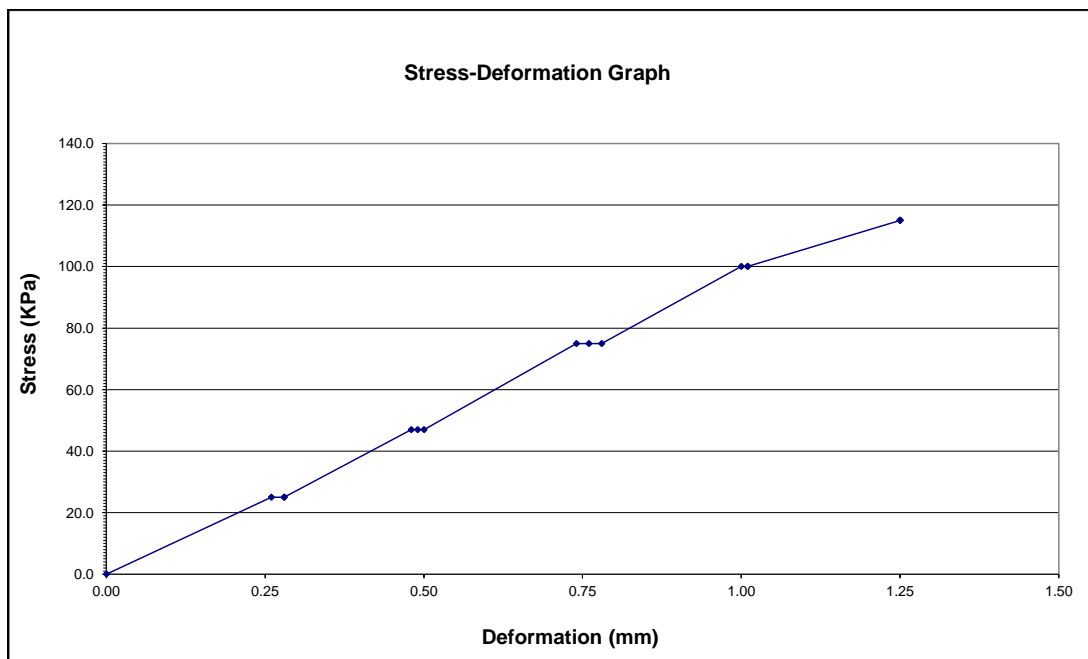
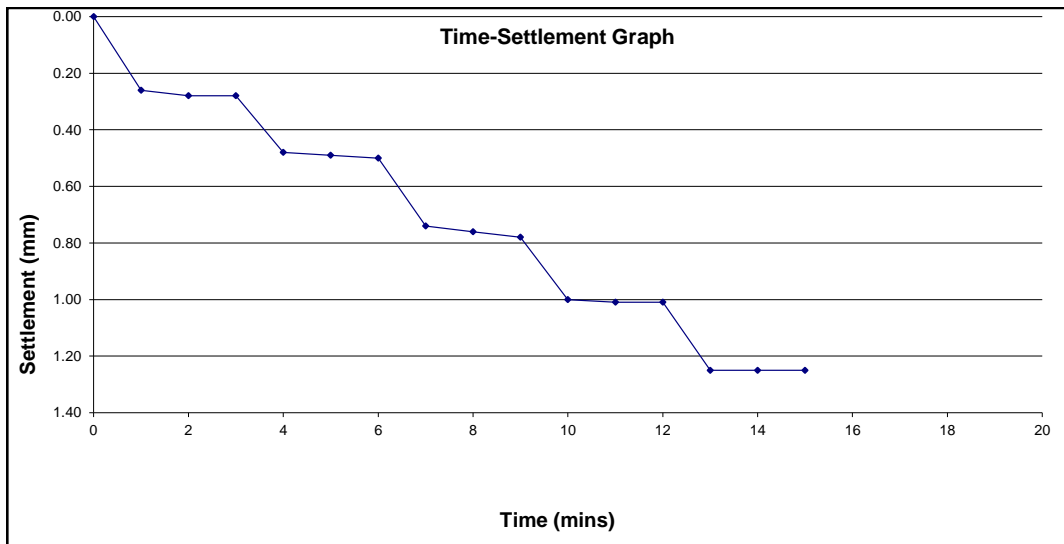
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18054  
**Date Tested:** 18.05.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 20.05.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18055  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 20.05.2021  
**Test conducted by:** WB

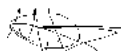
**Test location:** AY17@300  
**Material description:** Course Gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** 0 **Max Min temp:** 10°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	3.1
<b>Applied Pressure at 1.25mm (KPa):</b>	57.3	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	27.7

**Comments:**

See attached graphs

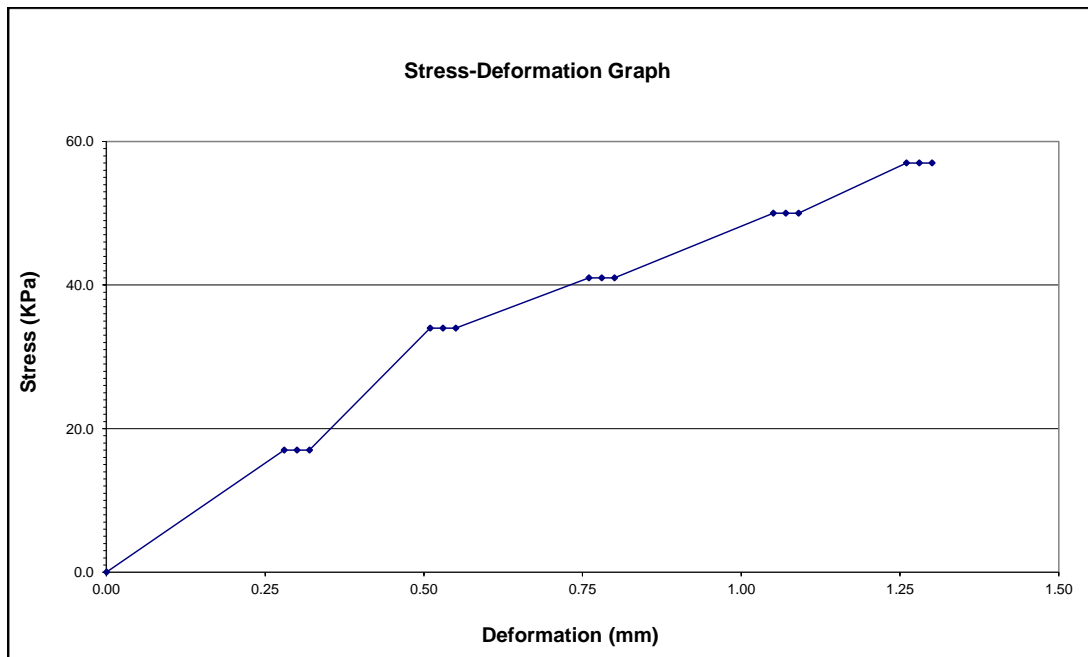
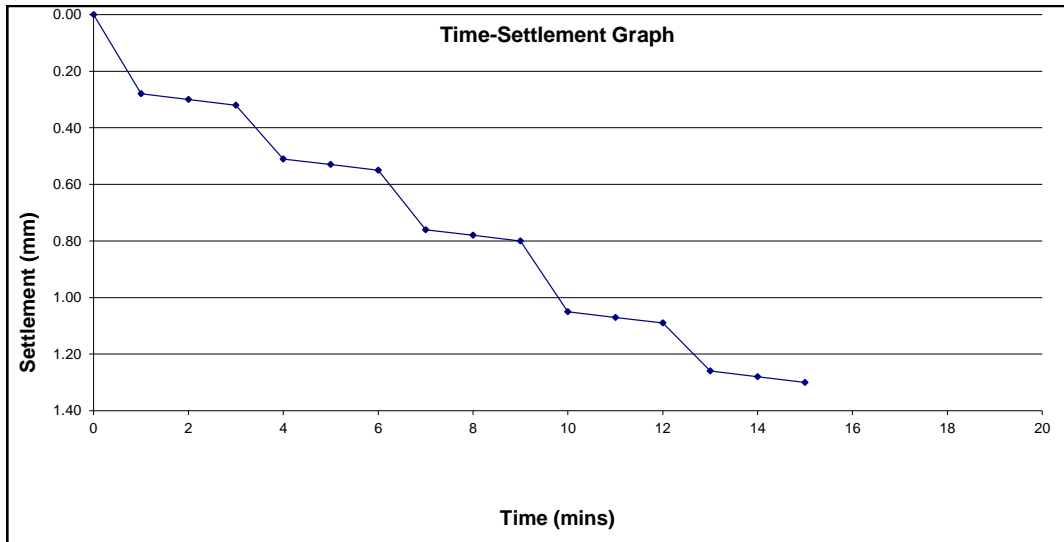
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18055  
**Date Tested:** 18.05.2021





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 20.05.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18056  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 20.05.2021  
**Test conducted by:** WB

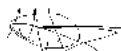
**Test location:** AY17@2400  
**Material description:** Course Gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** 0 **Max Min temp:** 10°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	16.5
<b>Applied Pressure at 1.25mm (KPa):</b>	149.5	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	73.5

**Comments:**

See attached graphs

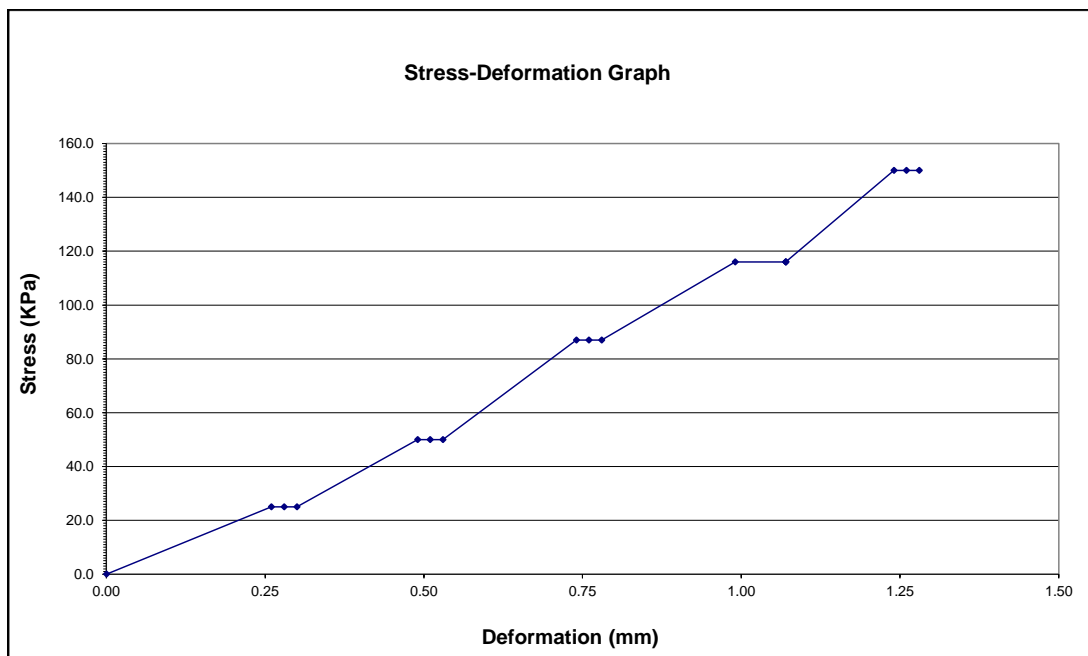
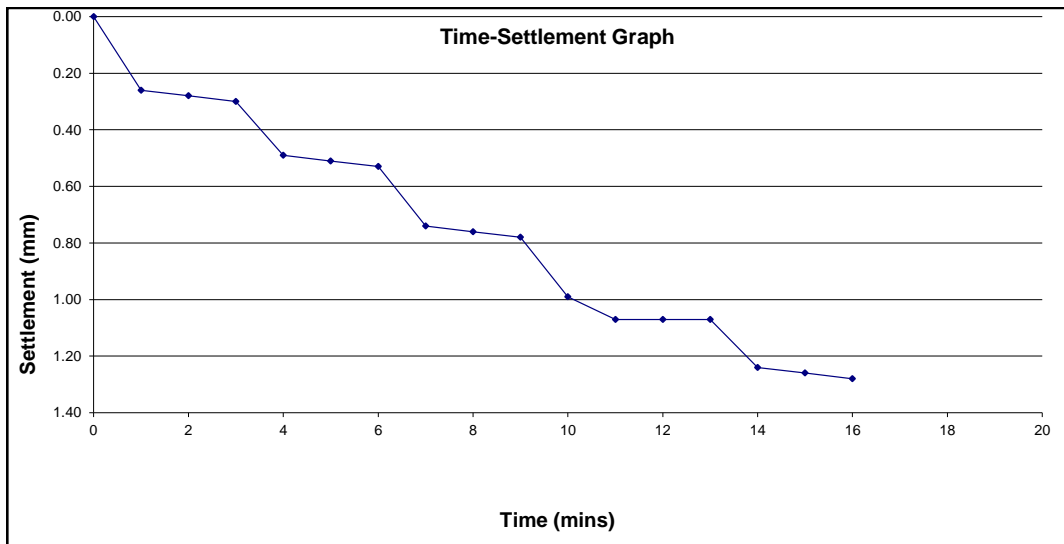
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18056  
**Date Tested:** 18.05.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 25/05/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18104  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 20/05/21  
**Test conducted by:** WB


**Test location:** AW23 F  
**Material description:** Brown, sandy, gravelly CLAY **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Sun  
**Test depth (m):** 0 **Max Min temp:** 12°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	2.8
<b>Applied Pressure at 1.25mm (KPa):</b>	53	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	26

**Comments:**

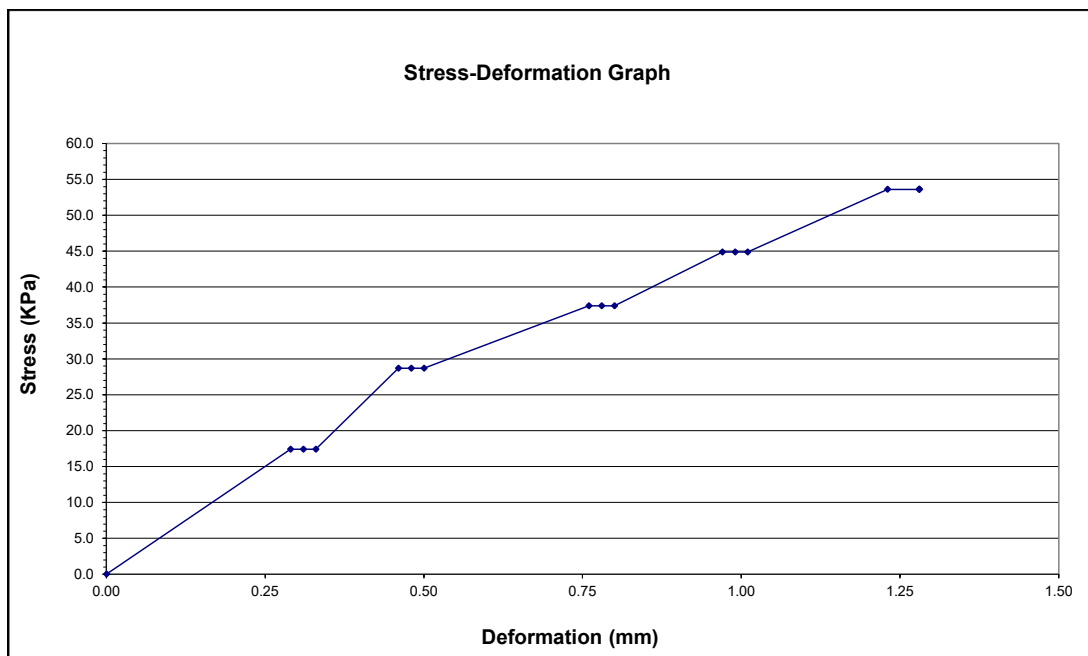
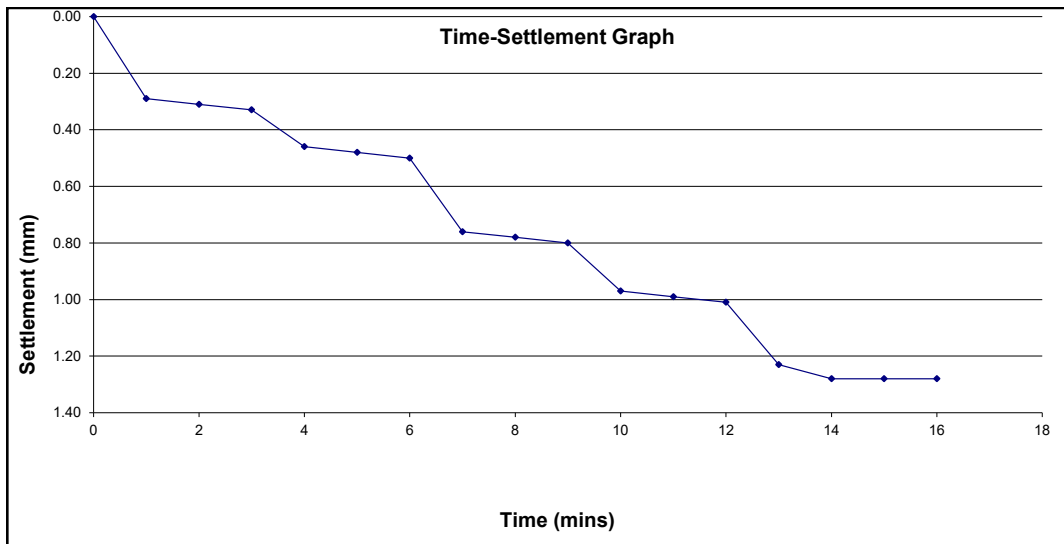
See attached graphs

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 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18104  
**Date Tested:** 20/05/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test**  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1 **Report Date:** 25/05/21

**Client:** Seymour Civils **Test ref:** MT0318 – 18105

**Site:** British Steel, Redcar **Client ref:** -

**Test location:** AS21 F **Date tested:** 20/05/21

**Material description:** Brown, silty CLAY **Test conducted by:** WB

**Plate diameter (mm):** 455 **Reaction load:** 19t Dozer

**Test depth (m):** 0 **Weather conditions:** Sun


**Max Min temp:** 12°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	2.7
<b>Applied Pressure at 1.25mm (KPa):</b>	52	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	25

**Comments:**

See attached graphs

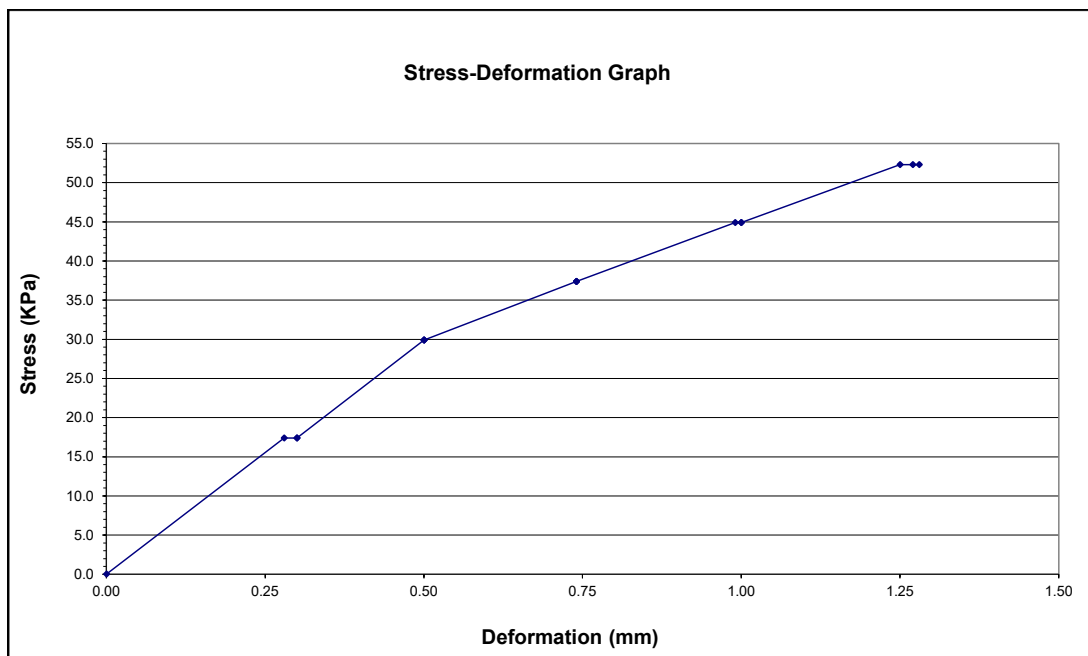
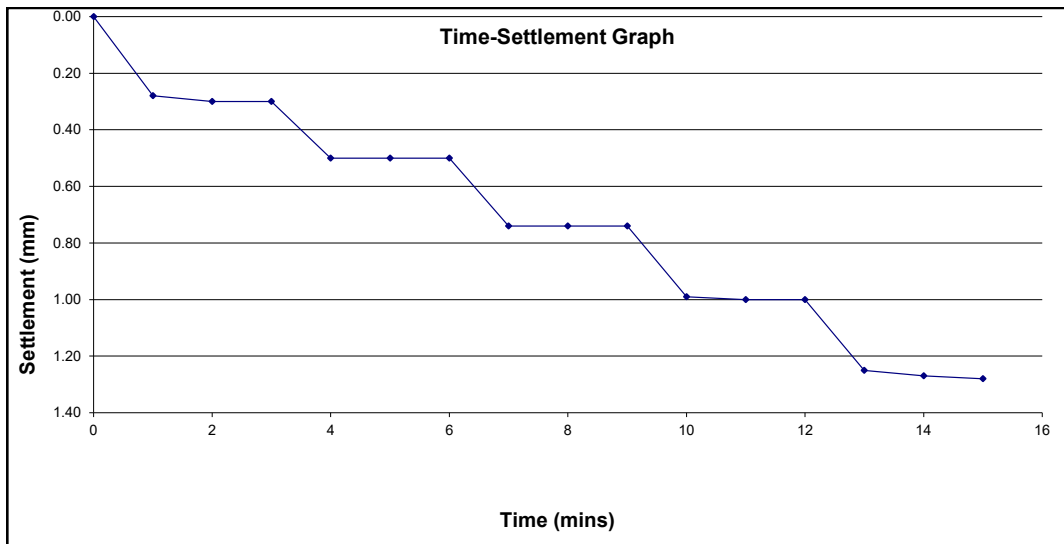
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 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18105  
**Date Tested:** 20/05/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test**  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1 **Report Date:** 25/05/21

**Client:** Seymour Civils **Test ref:** MT0318 – 18106  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 20/05/21  
**Test conducted by:** WB


**Test location:** AW17 @ 300  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Sun  
**Test depth (m):** 0 **Max Min temp:** 12°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	3.4
<b>Applied Pressure at 1.25mm (KPa):</b>	62	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	29

**Comments:**

See attached graphs

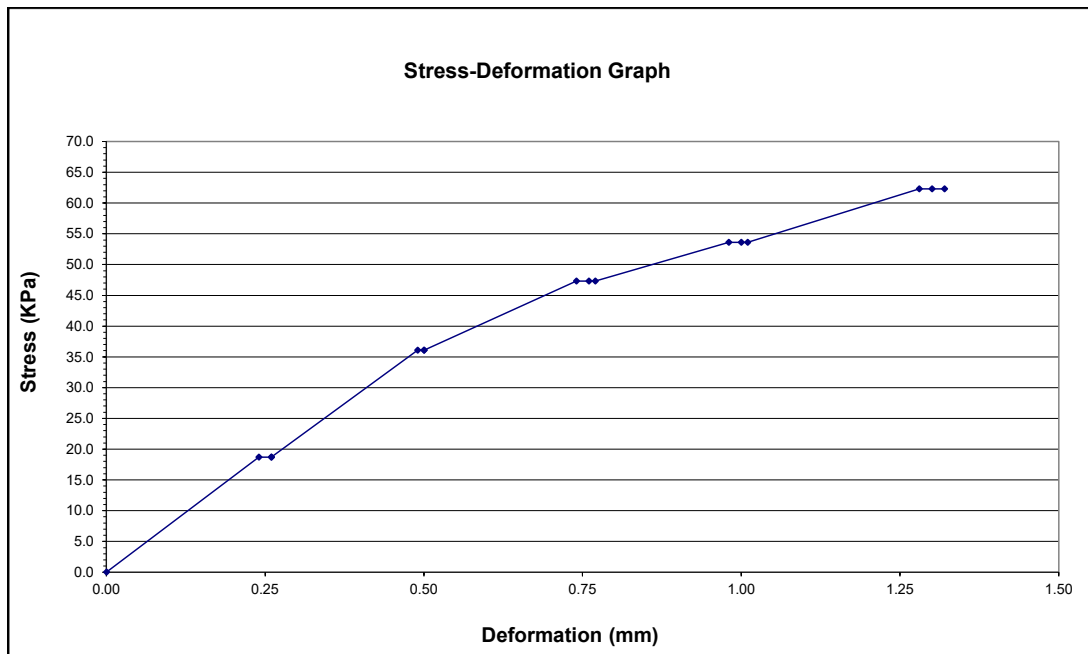
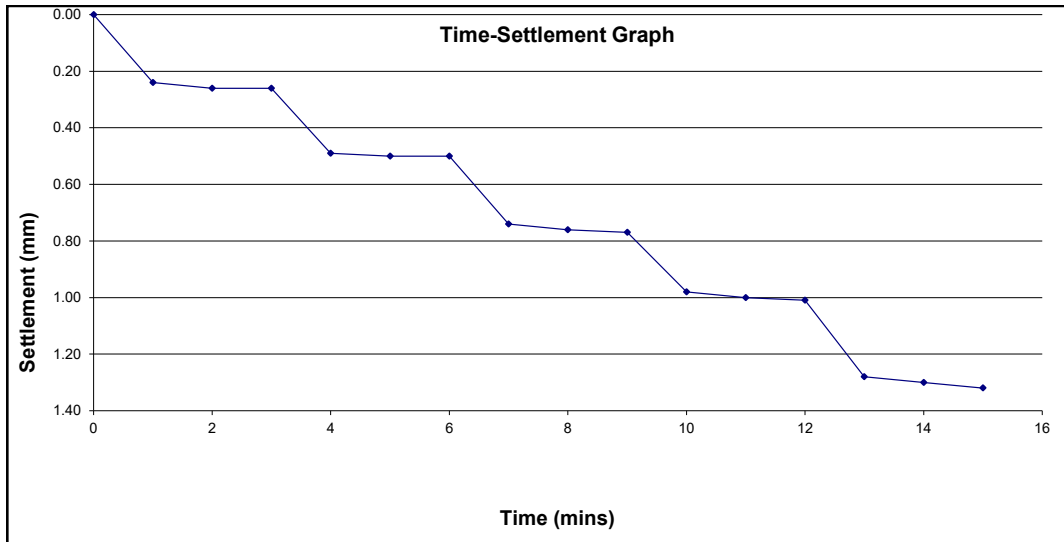
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18106  
**Date Tested:** 20/05/21





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 25/05/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18107  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 20/05/21  
**Test conducted by:** WB

**Test location:** AY17 @ 600  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Sun  
**Test depth (m):** 0 **Max Min temp:** 12°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	5.4
<b>Applied Pressure at 1.25mm (KPa):</b>	81	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	38

**Comments:**

See attached graphs

**Signed:**For & on behalf of  
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- G Dresser (Director)
- C. Spencer (Fieldwork Supervisor)

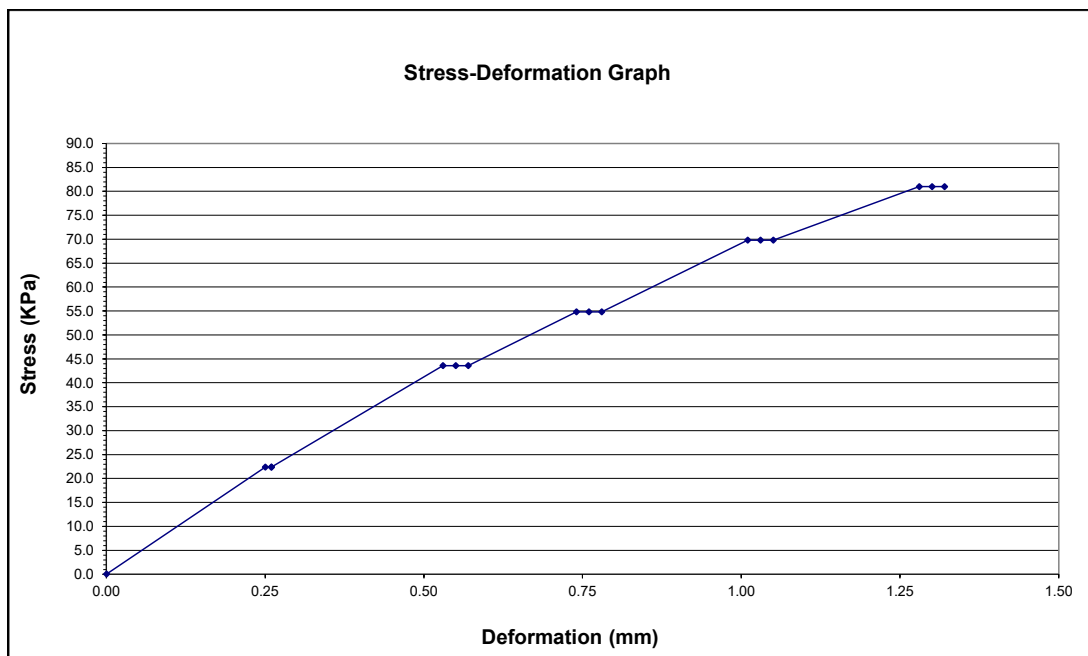
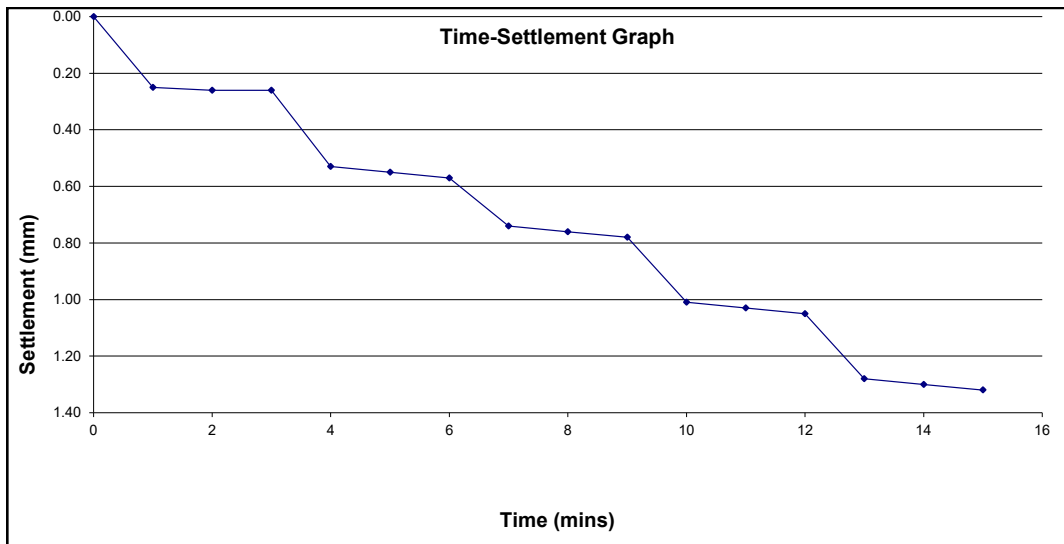
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18107  
**Date Tested:** 20/05/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 18/06/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18718  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 15/06/21  
**Test conducted by:** WB


**Test location:** AW17 @ 1700MS  
**Material description:** Mudstone **Reaction load:** 18t Excavator  
**Plate diameter (mm):** 455 **Weather conditions:** Sun  
**Test depth (m):** 0 **Max Min temp:** 20°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	89.9
<b>Applied Pressure at 1.25mm (KPa):</b>	378	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	187.6

**Comments:**

See attached graphs

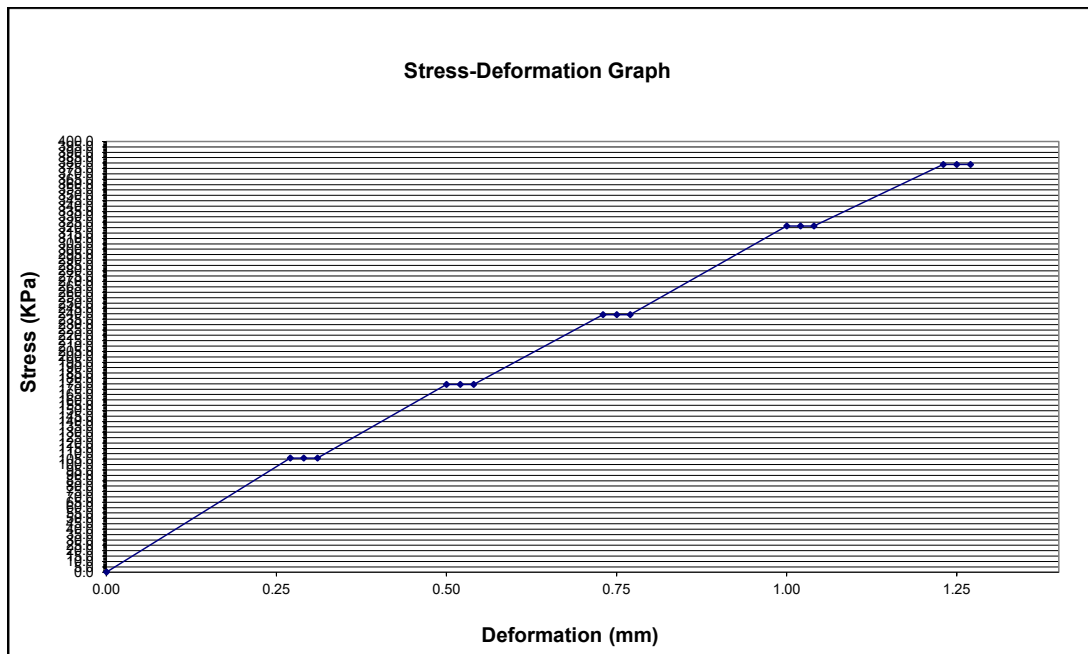
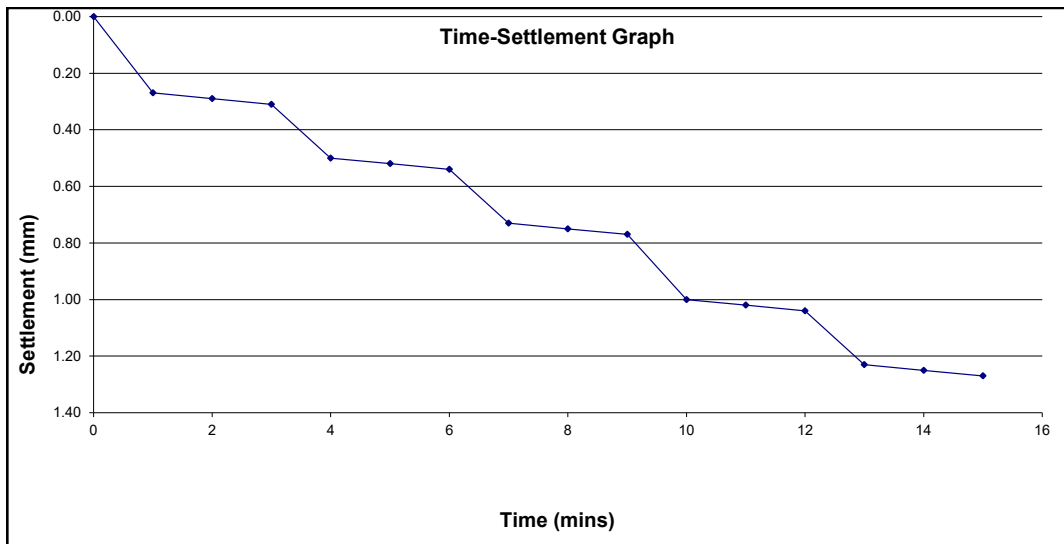
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## Test Results

Site: British Steel, Redcar  
Client: Seymour Civils

Lab ref: MT0318 - 18718  
Date Tested: 15/06/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 18/06/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18719  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 15/06/21  
**Test conducted by:** WB


**Test location:** AU17 @ 2100MS  
**Material description:** Mudstone **Reaction load:** 18t Excavator  
**Plate diameter (mm):** 455 **Weather conditions:** Sun  
**Test depth (m):** 0 **Max Min temp:** 20°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	77.3
<b>Applied Pressure at 1.25mm (KPa):</b>	361	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	179

**Comments:**

See attached graphs

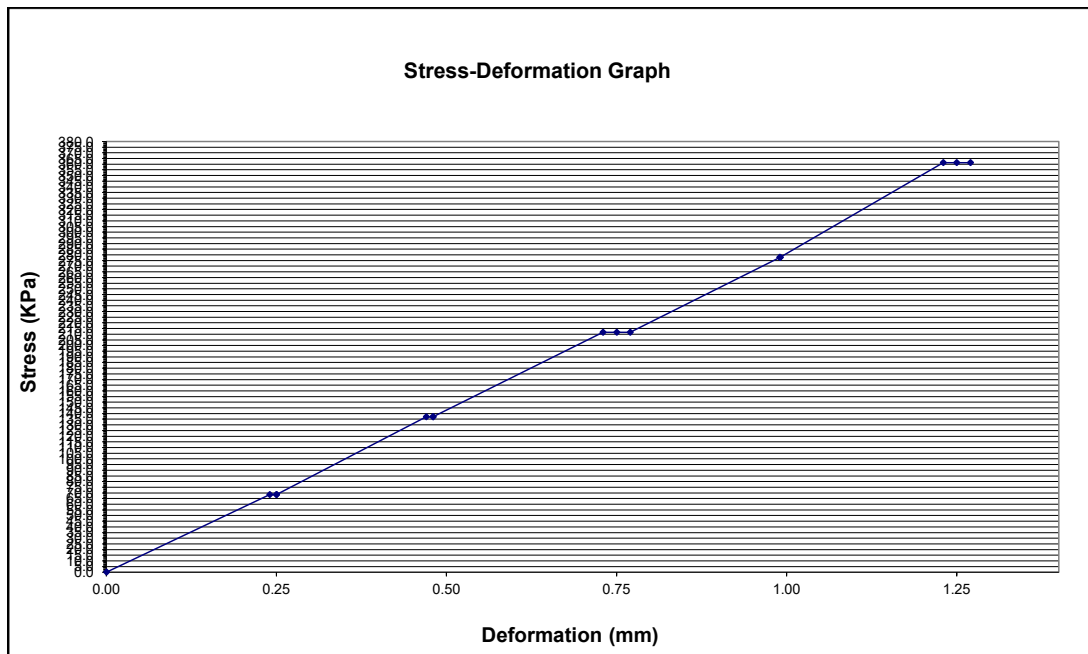
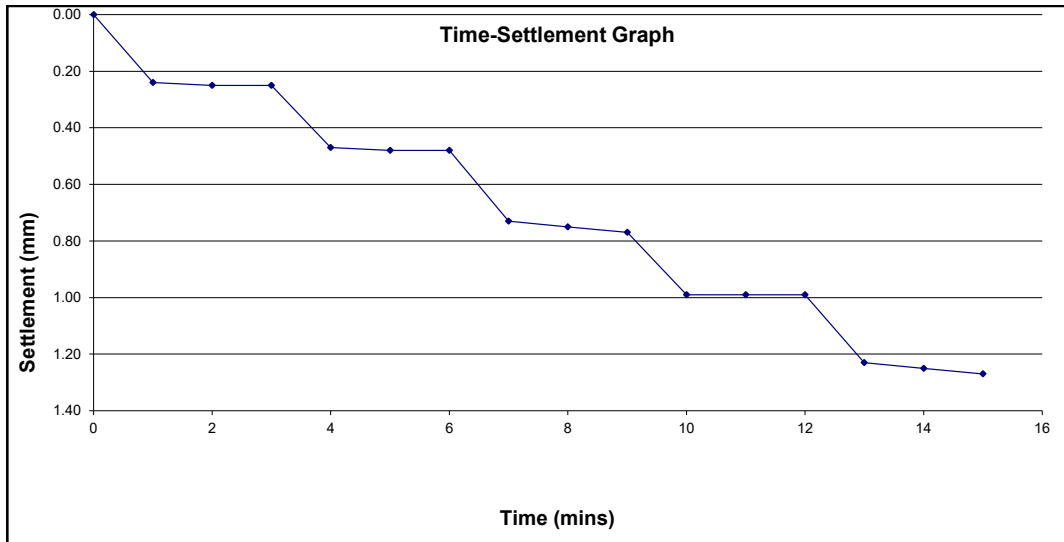
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[ ] G Dresser (Director)  
[✓] C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 - 18719  
**Date Tested:** 15/06/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 18/06/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18720  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 15/06/21  
**Test conducted by:** WB


**Test location:** AU19 @ 1900MS  
**Material description:** Mudstone **Reaction load:** 18t Excavator  
**Plate diameter (mm):** 455 **Weather conditions:** Sun  
**Test depth (m):** 0 **Max Min temp:** 20°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	28.9
<b>Applied Pressure at 1.25mm (KPa):</b>	201	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	101.5

**Comments:**

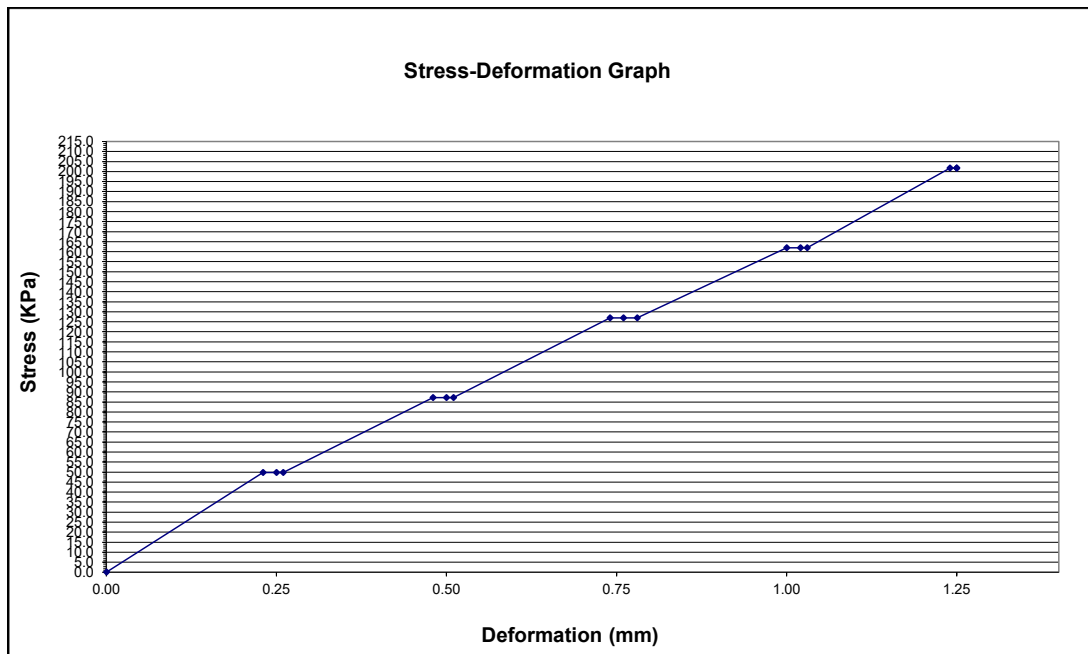
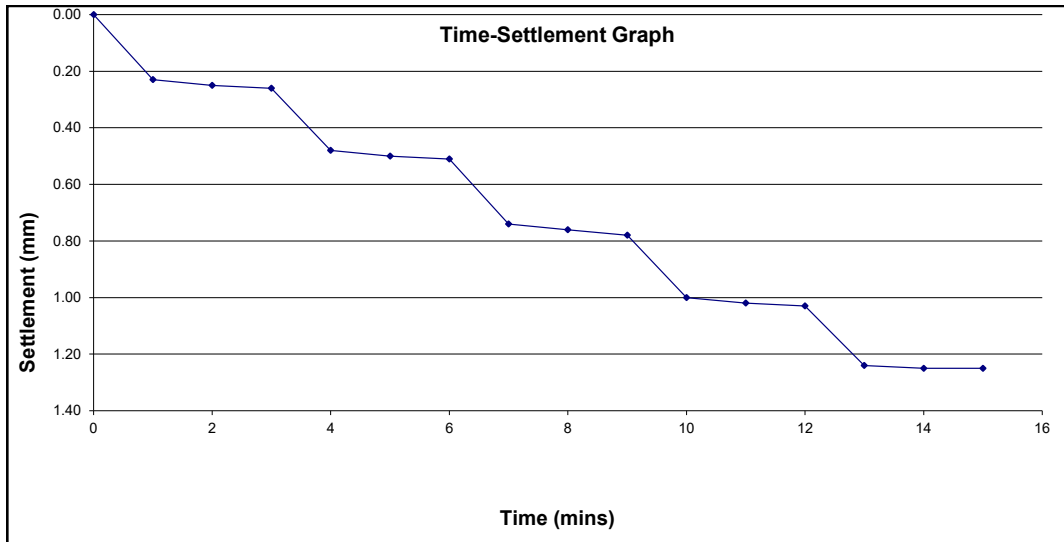
See attached graphs

**Signed:**  
For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

## Test Results

Site: British Steel, Redcar  
Client: Seymour Civils

Lab ref: MT0318 - 18720  
Date Tested: 15/06/21





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test**  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1 **Report Date:** 22/06/21

**Client:** Seymour Civils **Test ref:** MT0318 – 18780

**Site:** British Steel, Redcar **Client ref:** -

**Test location:** AQ25 @ 1800 **Date tested:** 17/06/21

**Material description:** Spoil **Test conducted by:** WB

**Plate diameter (mm):** 455 **Reaction load:** 19t Dozer

**Test depth (m):** 0 **Weather conditions:** Dry, Sunny

**Max Min temp:** 17°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	5.5
<b>Applied Pressure at 1.25mm (KPa):</b>	81	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	38.9

**Comments:**

See attached graphs

**Signed:**For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

- M. Aiston (Director)
- G Dresser (Director)
- C. Spencer (Fieldwork Supervisor)

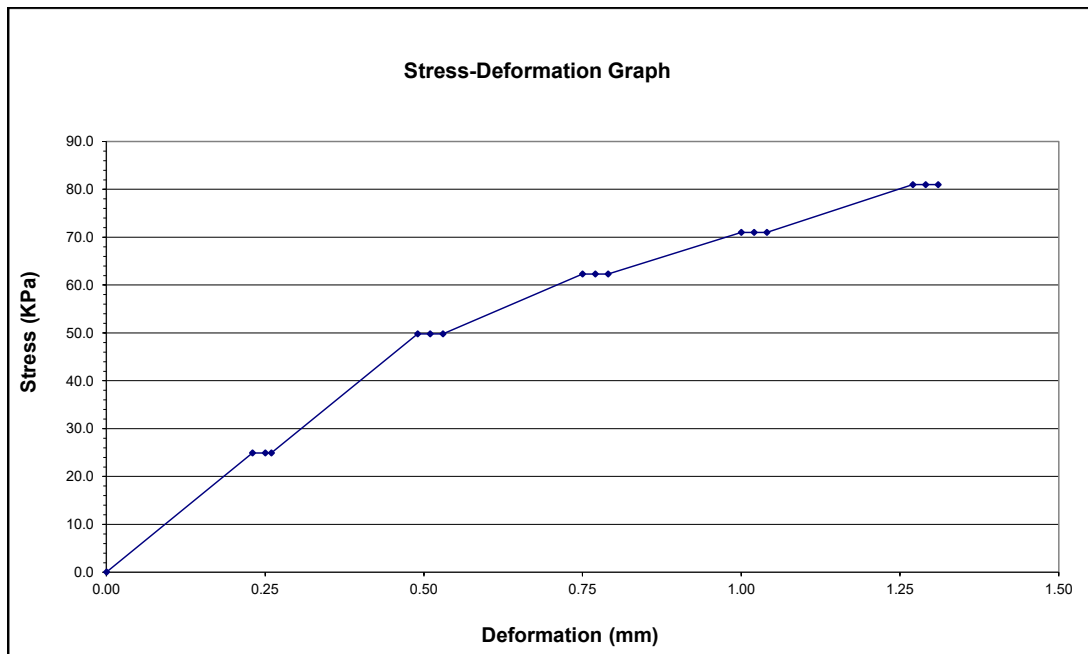
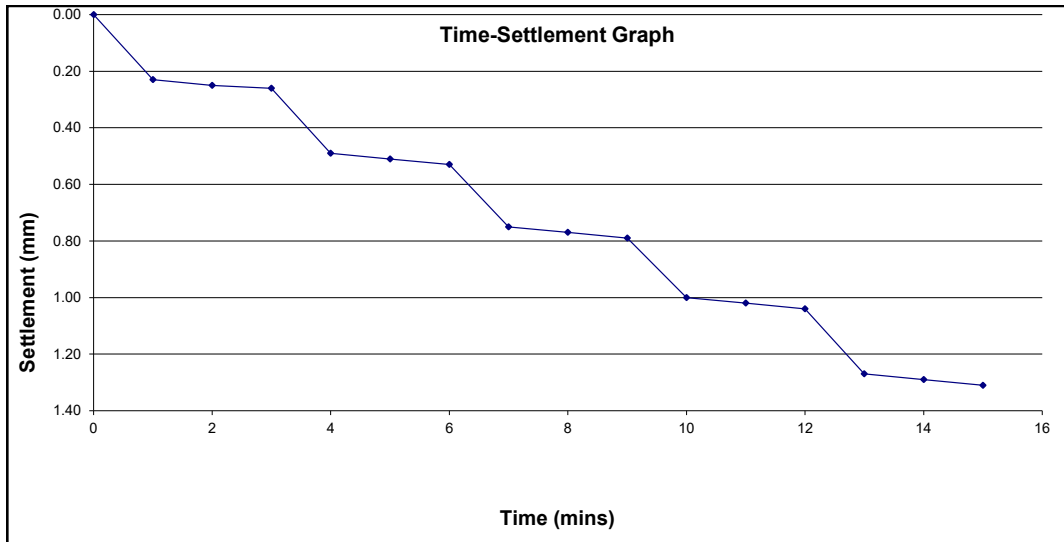
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18780  
**Date Tested:** 17/06/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 22/06/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18781  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 17/06/21  
**Test conducted by:** WB


**Test location:** AS25 @ 600  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** 0 **Max Min temp:** 17°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	11.1
<b>Applied Pressure at 1.25mm (KPa):</b>	120.9	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	58.5

**Comments:**

See attached graphs

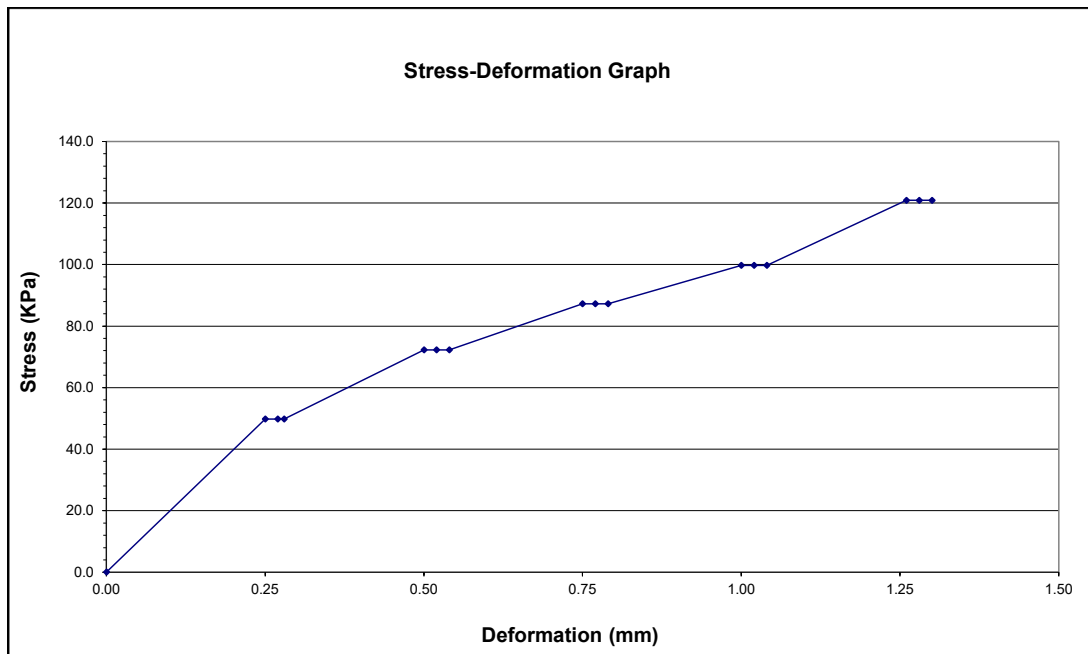
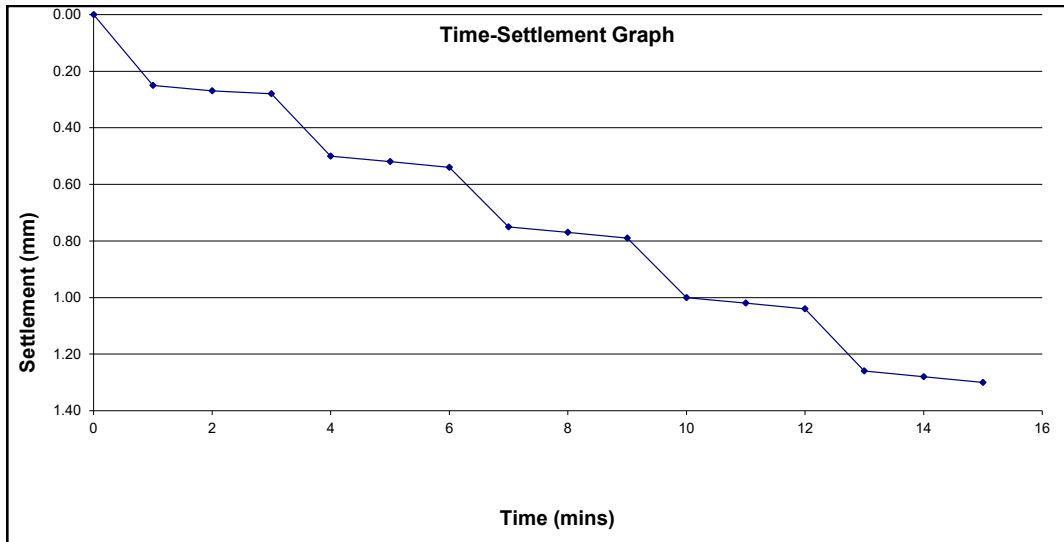
**Signed:**  
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[ ] G Dresser (Director)  
[✓] C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18781  
**Date Tested:** 17/06/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 22/06/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18782  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 17/06/21  
**Test conducted by:** WB


**Test location:** AQ23F  
**Material description:** Brown, slightly gravelly, sandy, silty CLAY **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** 0 **Max Min temp:** 17°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	11.1
<b>Applied Pressure at 1.25mm (KPa):</b>	120.9	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	58.5

**Comments:**

See attached graphs

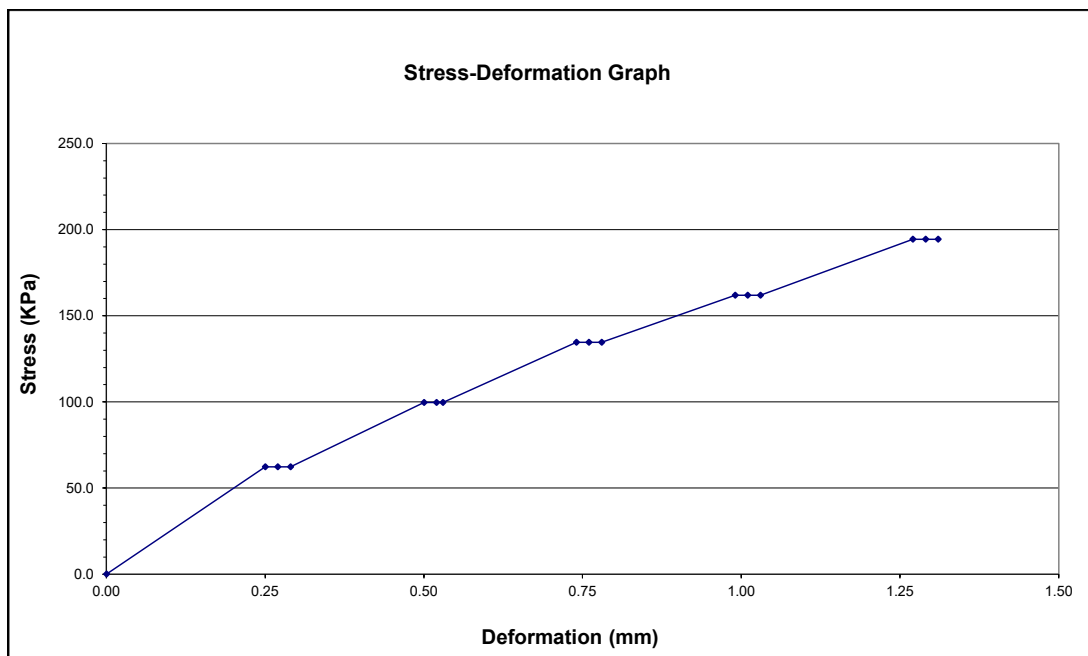
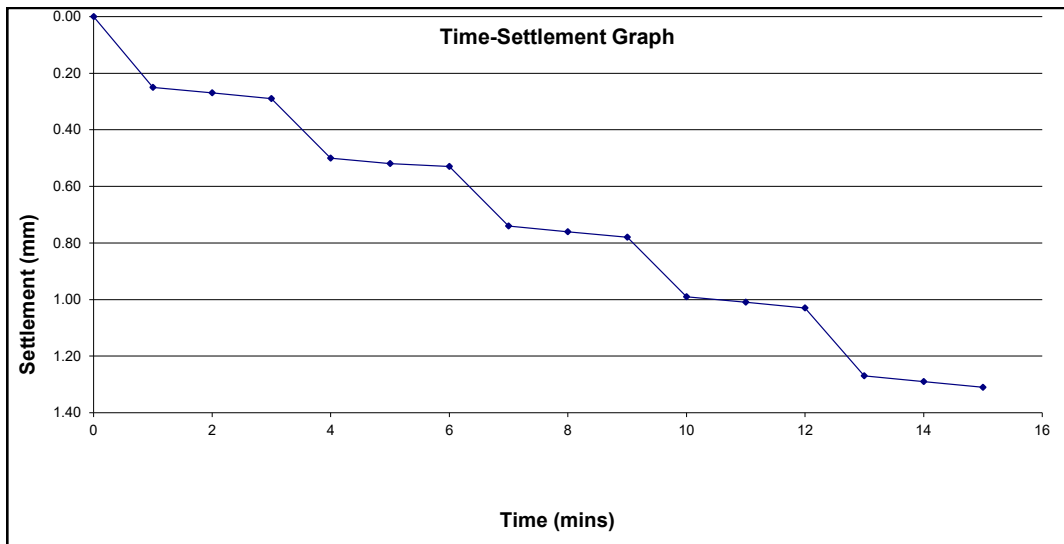
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[ ] G Dresser (Director)  
[✓] C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18782  
**Date Tested:** 17/06/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 22/06/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18820  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 16/06/21  
**Test conducted by:** WB

**Test location:** AW25F  
**Material description:** Brown sandy CLAY **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** 0 **Max Min temp:** 24°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	5.6
<b>Applied Pressure at 1.25mm (KPa):</b>	81	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	39.2

**Comments:**

See attached graphs

**Signed:**For & on behalf of  
**Dunelm Testing Ltd**

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- G Dresser (Director)
- C. Spencer (Fieldwork Supervisor)

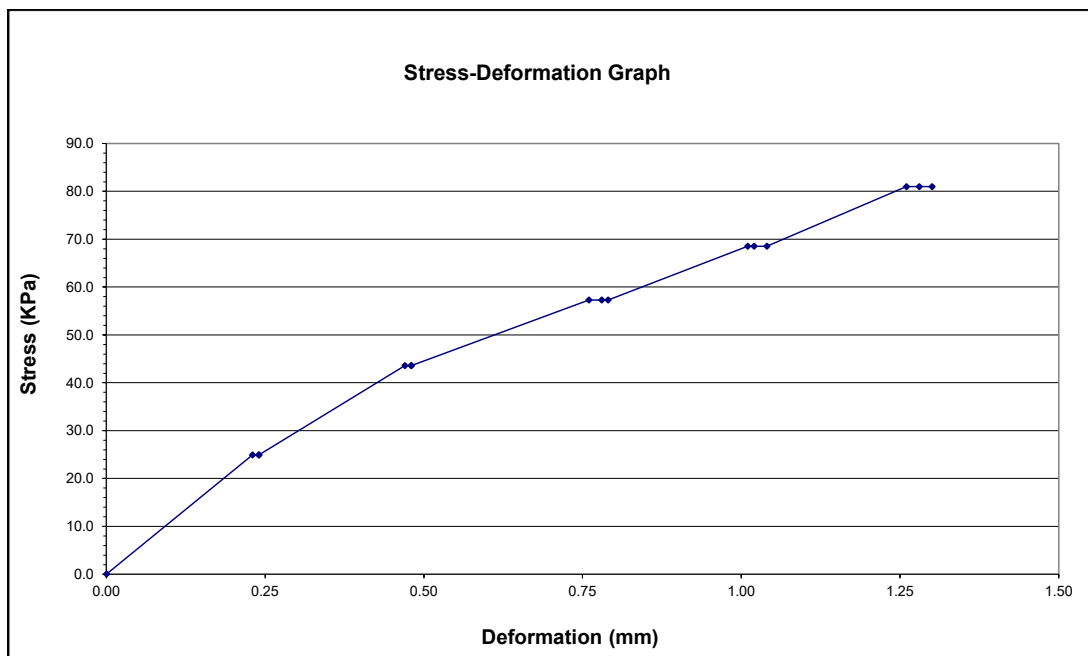
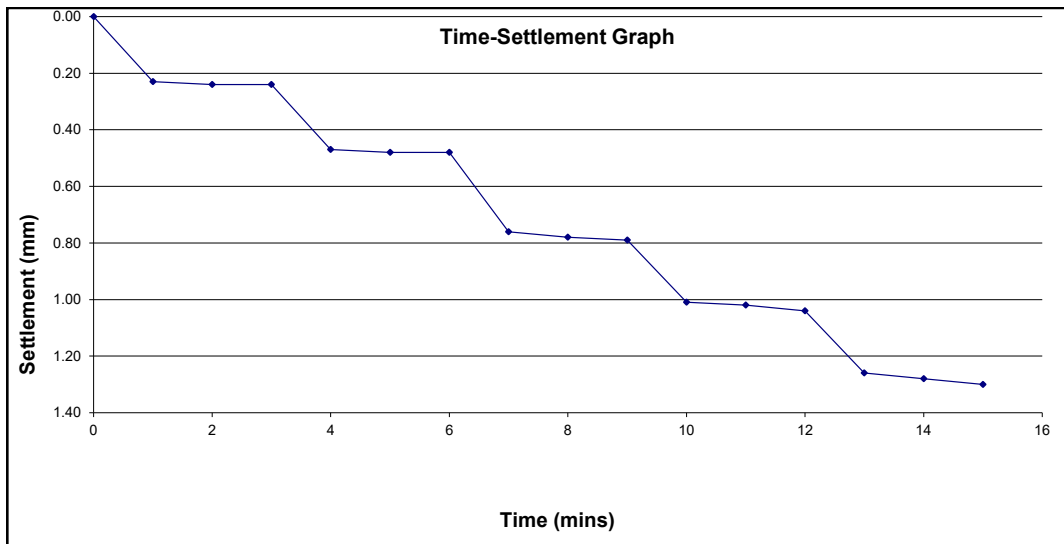
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18820  
**Date Tested:** 16/06/21





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 22/06/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18821  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 16/06/21  
**Test conducted by:** WB


**Test location:** AW25 @ 900  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** 0 **Max Min temp:** 24°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	9.3
<b>Applied Pressure at 1.25mm (KPa):</b>	108	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	52.9

**Comments:**

See attached graphs

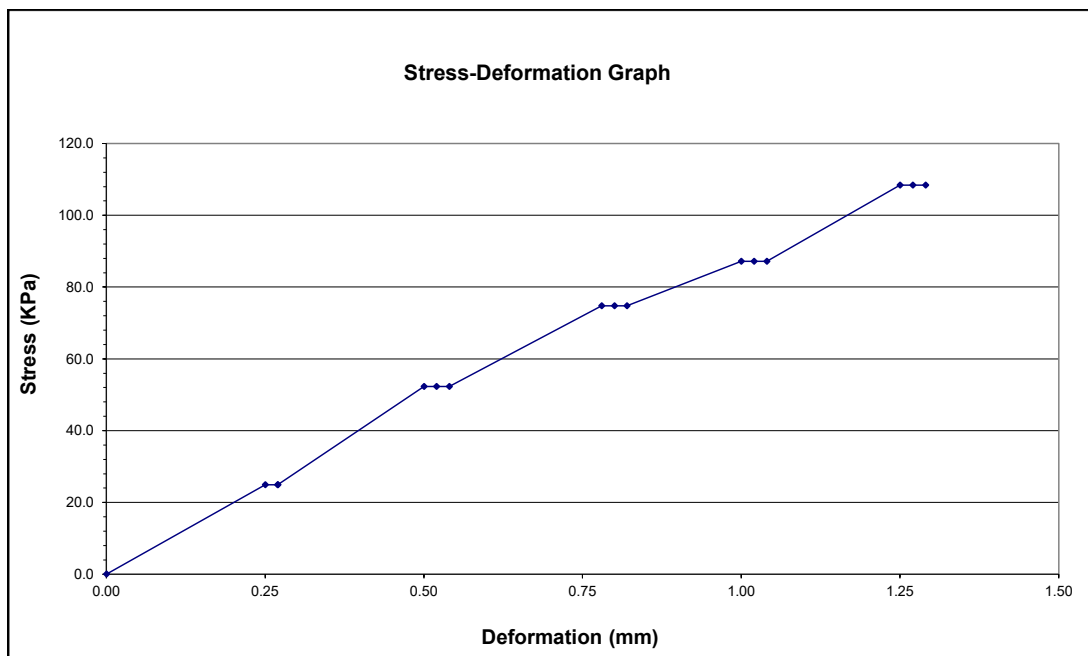
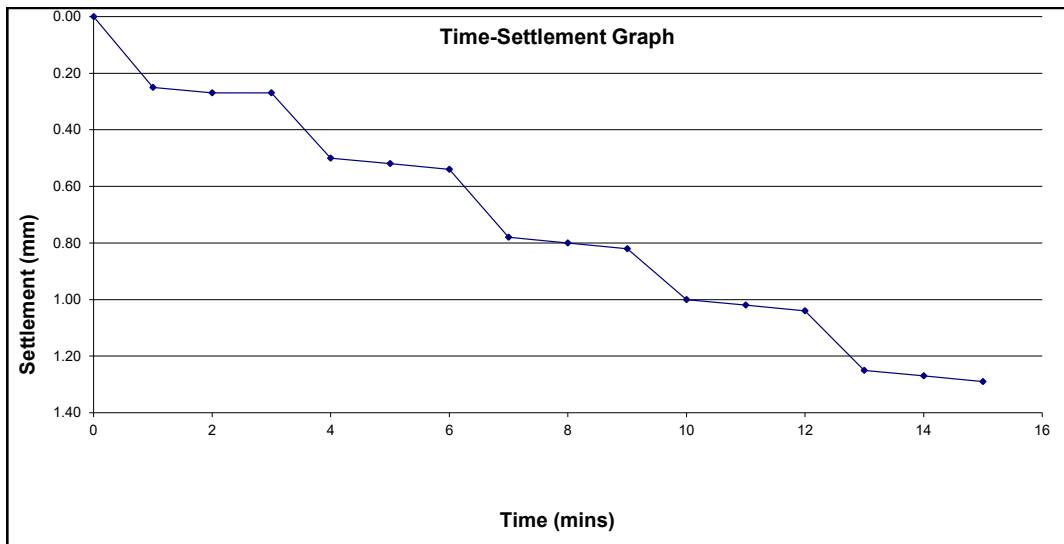
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[ ] G Dresser (Director)  
[✓] C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18821  
**Date Tested:** 16/06/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 28.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18927  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 23.06.2021  
**Test conducted by:** WB

**Test location:** AS27-F  
**Material description:** Firm, Brown CLAY **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** Formation **Max Min temp:** 18°C

### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	6.2
<b>Applied Pressure at 1.25mm (KPa):</b>	87.2	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	41.9

### Comments:

See attached graphs

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)

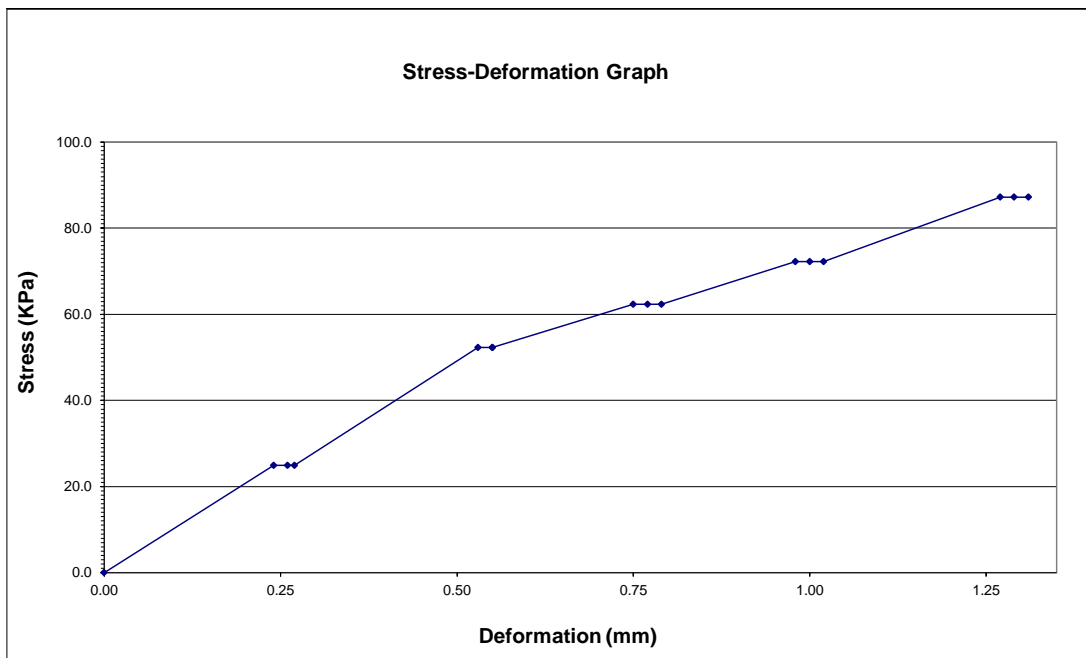
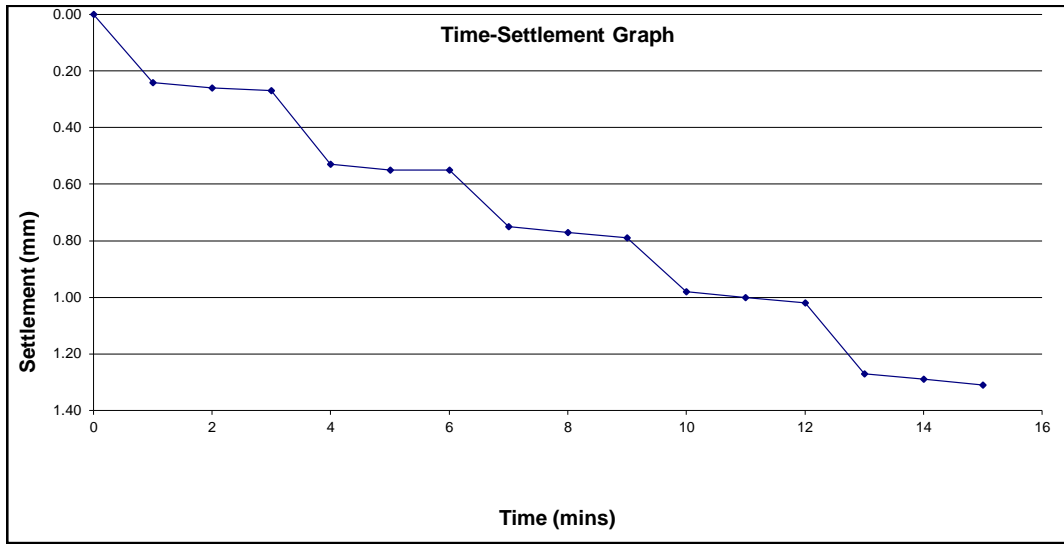
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18927  
**Date Tested:** 23.06.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 25.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18928  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 23.06.2021  
**Test conducted by:** WB

**Test location:** AW19 @1200 MS  
**Material description:** Mudstone **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** 1200 from Formation **Max Min temp:** 21°C


### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	70
<b>Applied Pressure at 1.25mm (KPa):</b>	348.9	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	168.8

### Comments:

See attached graphs

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)

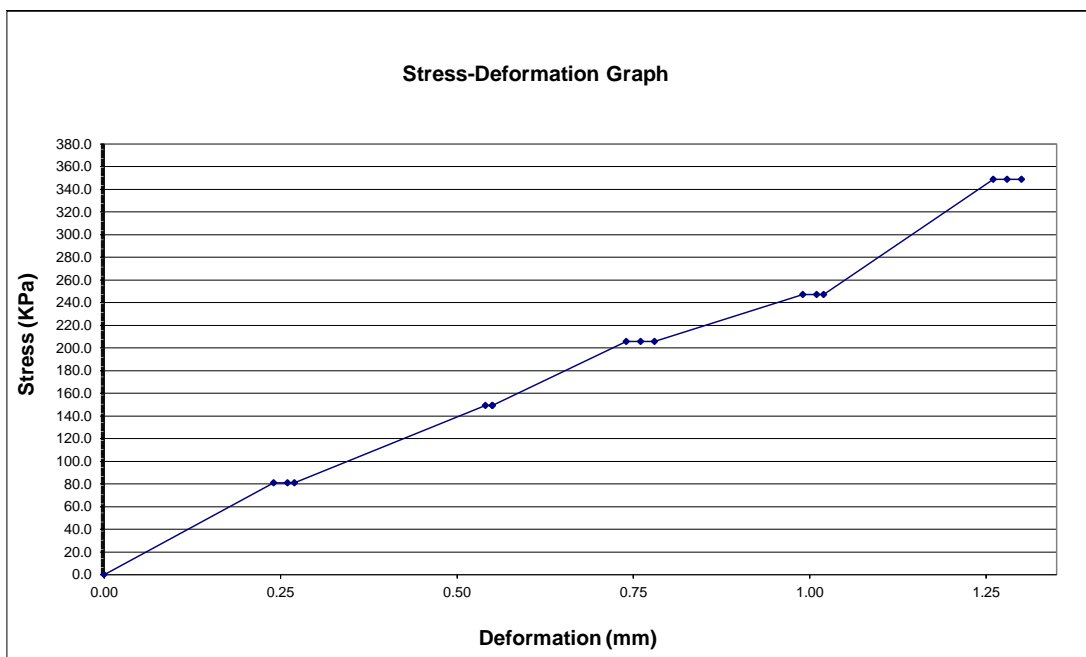
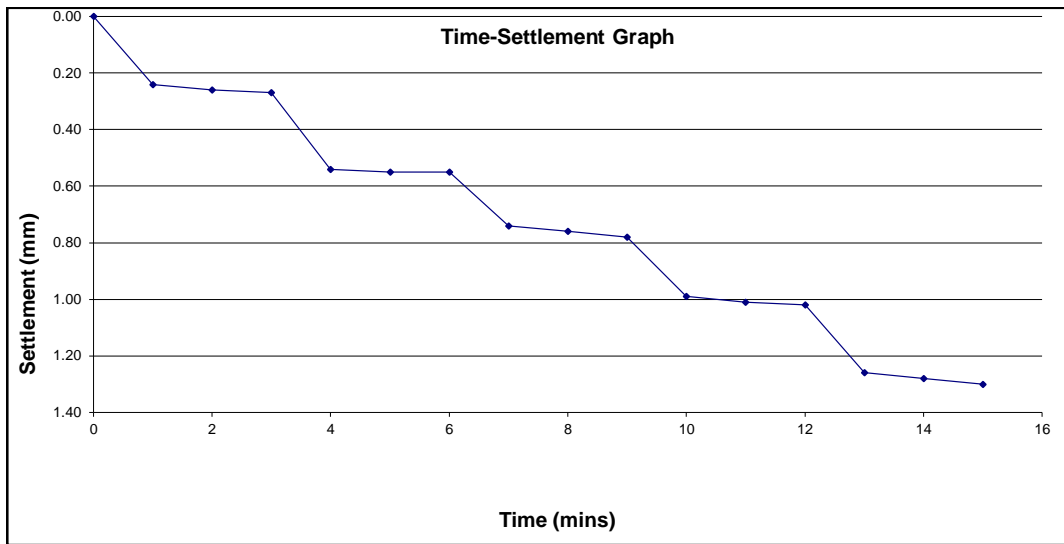
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18927  
**Date Tested:** 23.06.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 28.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18937  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 24.06.2021  
**Test conducted by:** WB

**Test location:** AW17 @2300 MS  
**Material description:** Mudstone **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** Formation **Max Min temp:** 18°C

### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	37
<b>Applied Pressure at 1.25mm (KPa):</b>	240.5	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	117.3

### Comments:

See attached graphs

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)

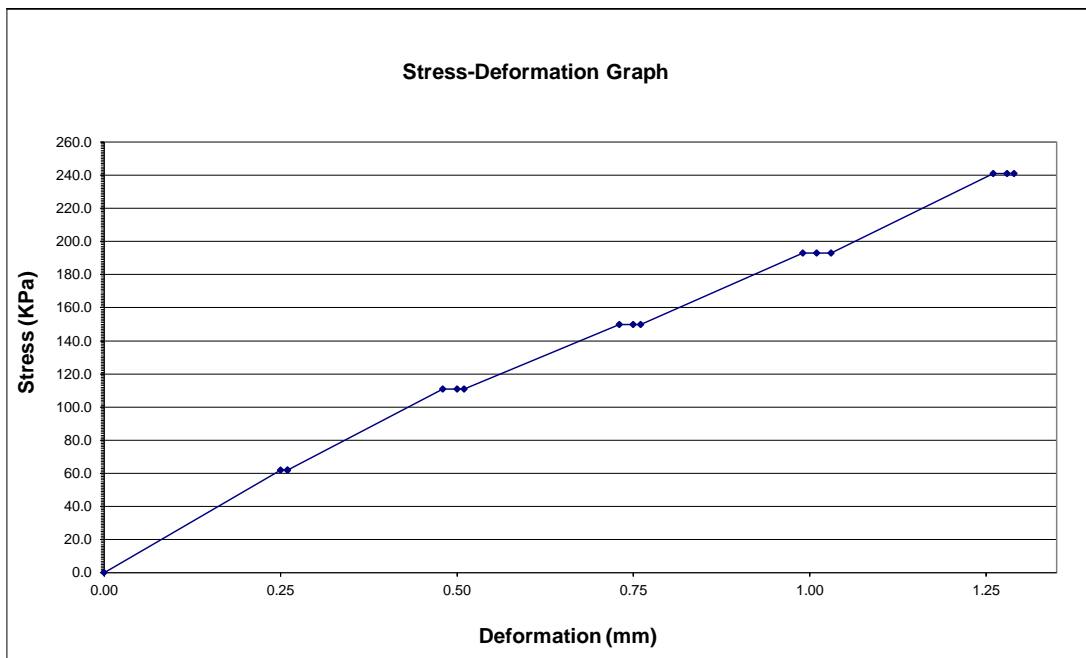
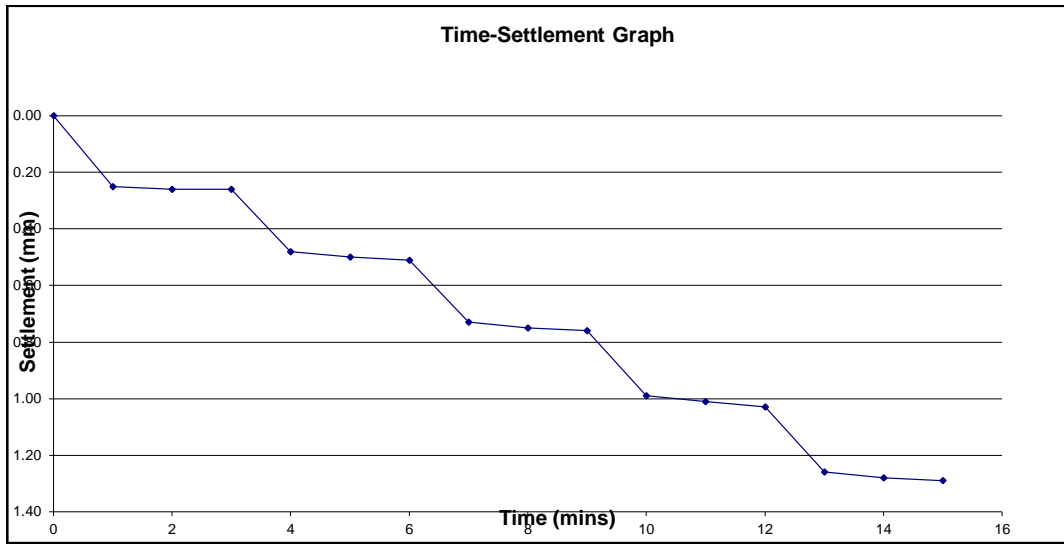
**Page:** 1 of 2

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## Test Results

Site: British Steel, Redcar  
Client: Seymour Civils

Lab ref: MT0318 – 18937  
Date Tested: 24.06.2021





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 28.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18938  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 24.06.2021  
**Test conducted by:** WB

**Test location:** AU17 @2500 MS  
**Material description:** Mudstone **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** Formation **Max Min temp:** 18°C

### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	78
<b>Applied Pressure at 1.25mm (KPa):</b>	373.8	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	179.6

### Comments:

See attached graphs

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)  
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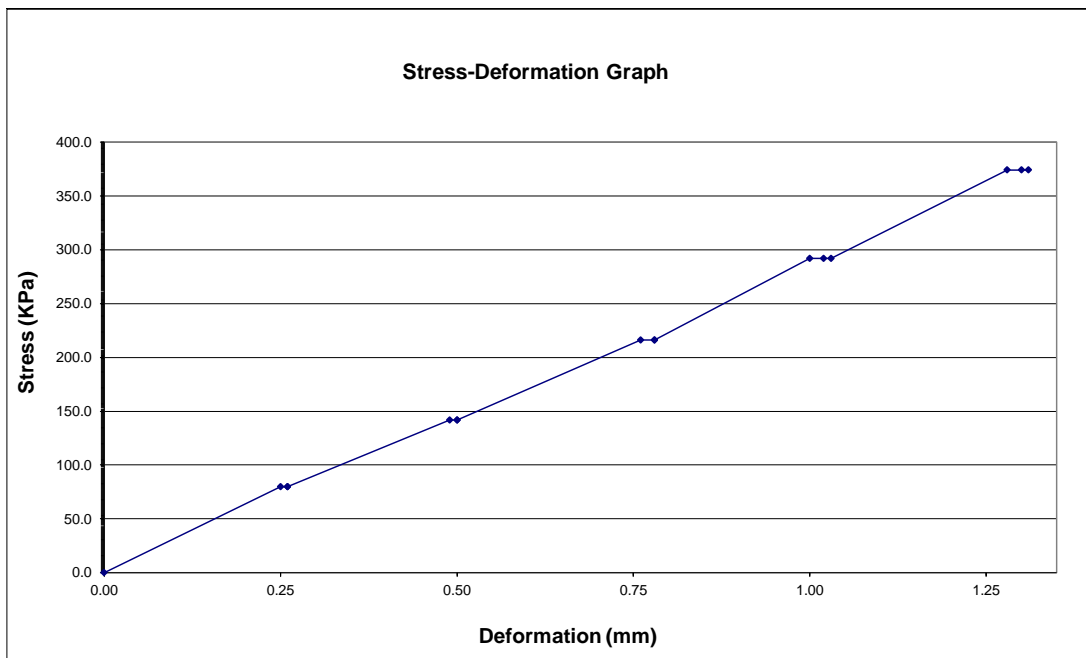
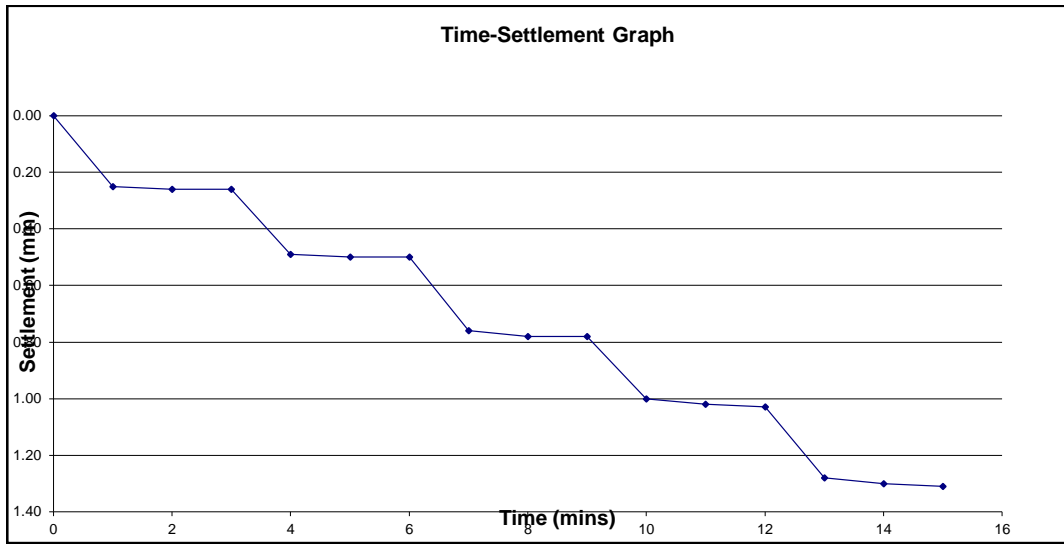
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18938  
**Date Tested:** 24.06.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 28.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18939  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 24.06.2021  
**Test conducted by:** WB

**Test location:** AU17 @2500 MS  
**Material description:** Mudstone **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** Formation **Max Min temp:** 18°C

### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	187.3
<b>Applied Pressure at 1.25mm (KPa):</b>	381.3	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	84

### Comments:

See attached graphs

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

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 M. Aiston (Director)  
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 C. Spencer (Fieldwork Supervisor)

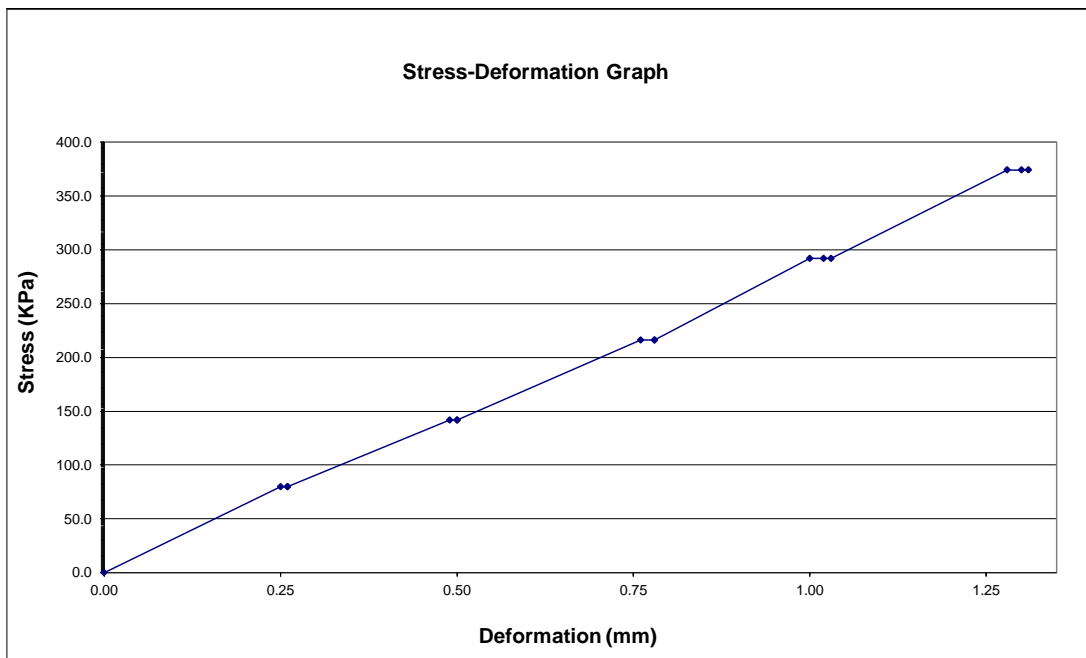
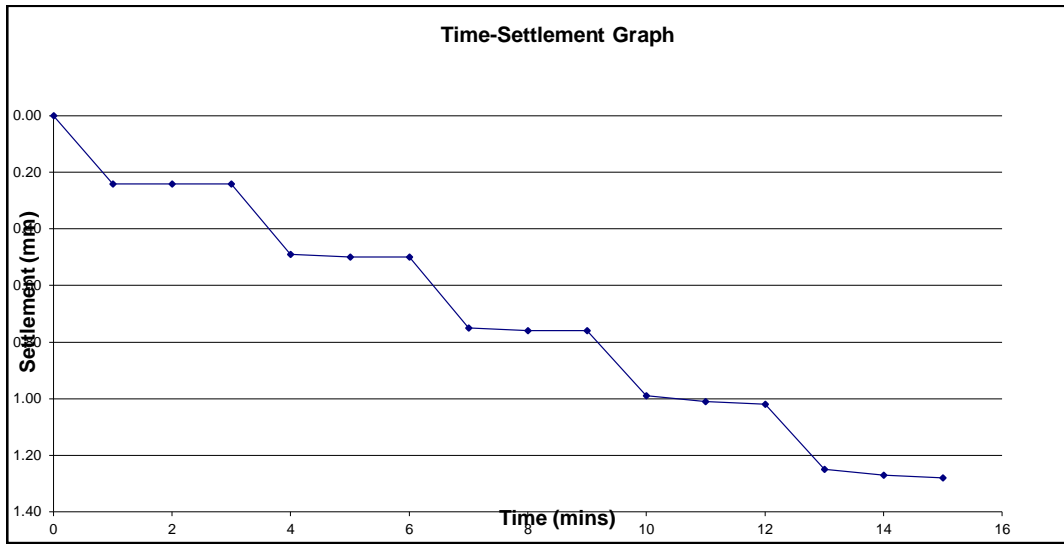
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18939  
**Date Tested:** 24.06.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 29.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 19008  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 28.06.2021  
**Test conducted by:** WB

**Test location:** AW27-F  
**Material description:** Firm Brown Silty Clay **Reaction load:** 38.2t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** Formation **Max Min temp:** 19°C


### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	15
<b>Applied Pressure at 1.25mm (KPa):</b>	143.3	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	70.4

### Comments:

See attached graphs

**Signed:**



For & on behalf of  
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Authorised Signatories:  
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 C. Spencer (Fieldwork Supervisor)

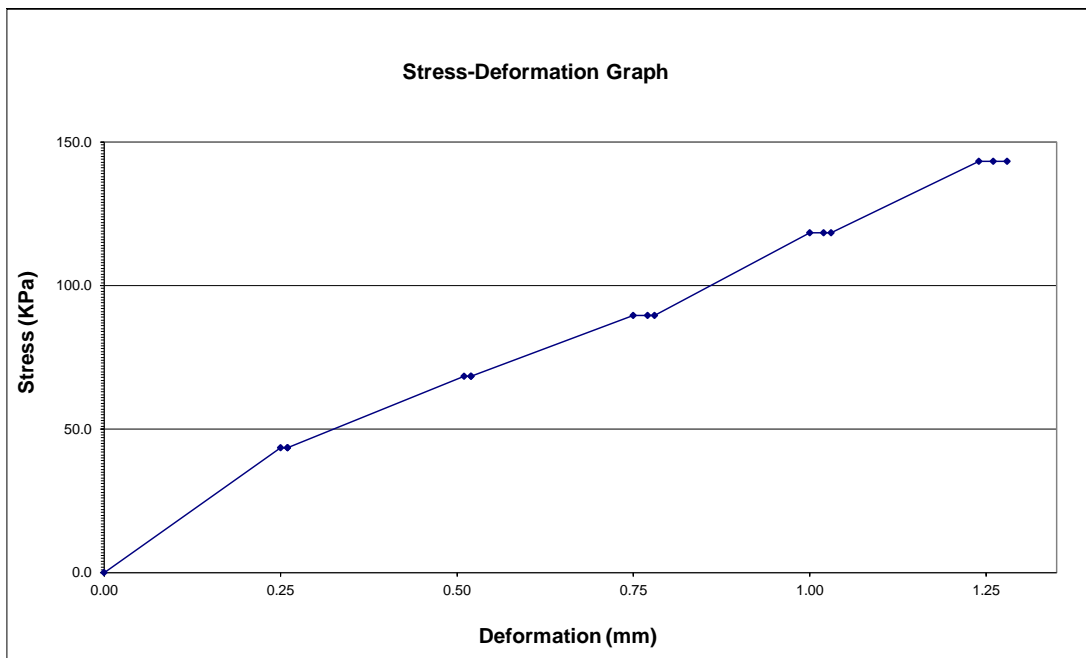
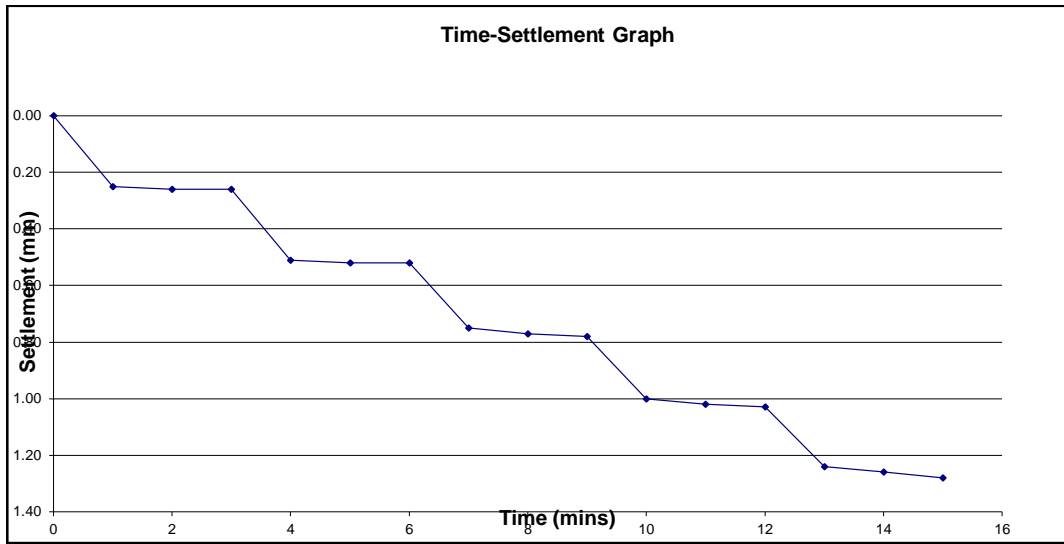
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 19008  
**Date Tested:** 28.06.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 03.07.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 19187  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 01.07.2021  
**Test conducted by:** WB

**Test location:** AW19 @1200 MS  
**Material description:** Mudstone **Reaction load:** 15.5t Ex  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** **Max Min temp:** 14°C

### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	31
<b>Applied Pressure at 1.25mm (KPa):</b>	223	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	106.3

### Comments:

See attached graphs

**Signed:**



For & on behalf of  
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Authorised Signatories:  
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 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)

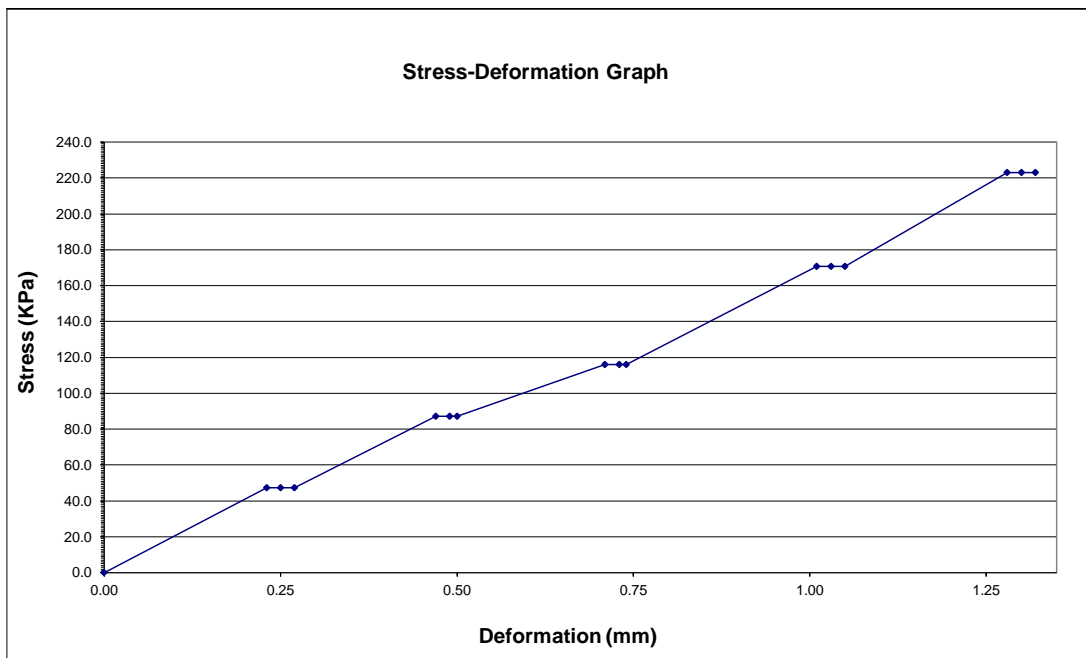
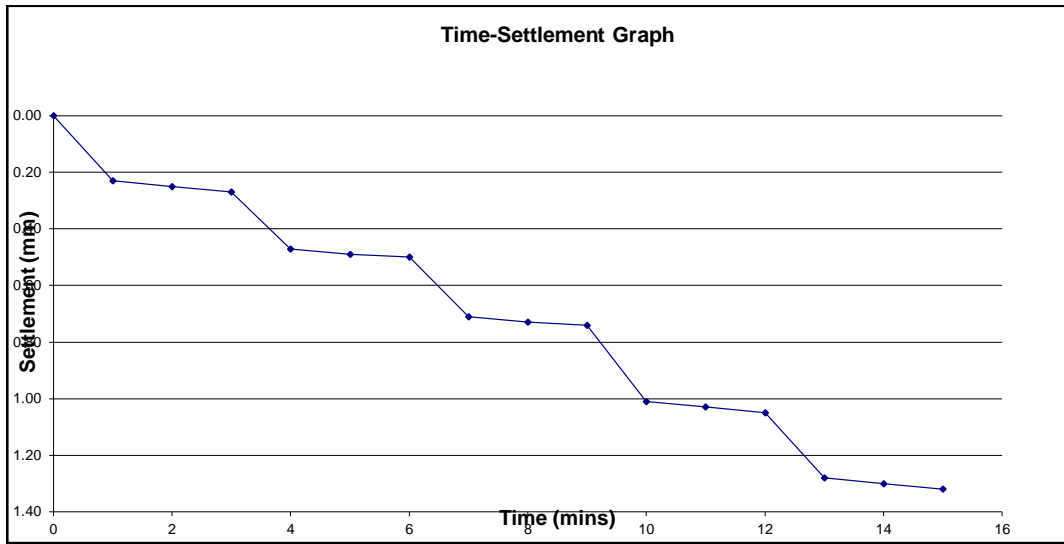
**Page:** 1 of 2

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## Test Results

Site: British Steel, Redcar  
Client: Seymour Civils

Lab ref: MT0318 – 19187  
Date Tested: 01.07.2021





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 03.07.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 19188  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 01.07.2021  
**Test conducted by:** WB

**Test location:** AU19 @2500 MS  
**Material description:** Mudstone **Reaction load:** 15.5t Ex  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** **Max Min temp:** 14°C

### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	7.4
<b>Applied Pressure at 1.25mm (KPa):</b>	93.5	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	46.3

### Comments:

See attached graphs

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
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 G Dresser (Director)  
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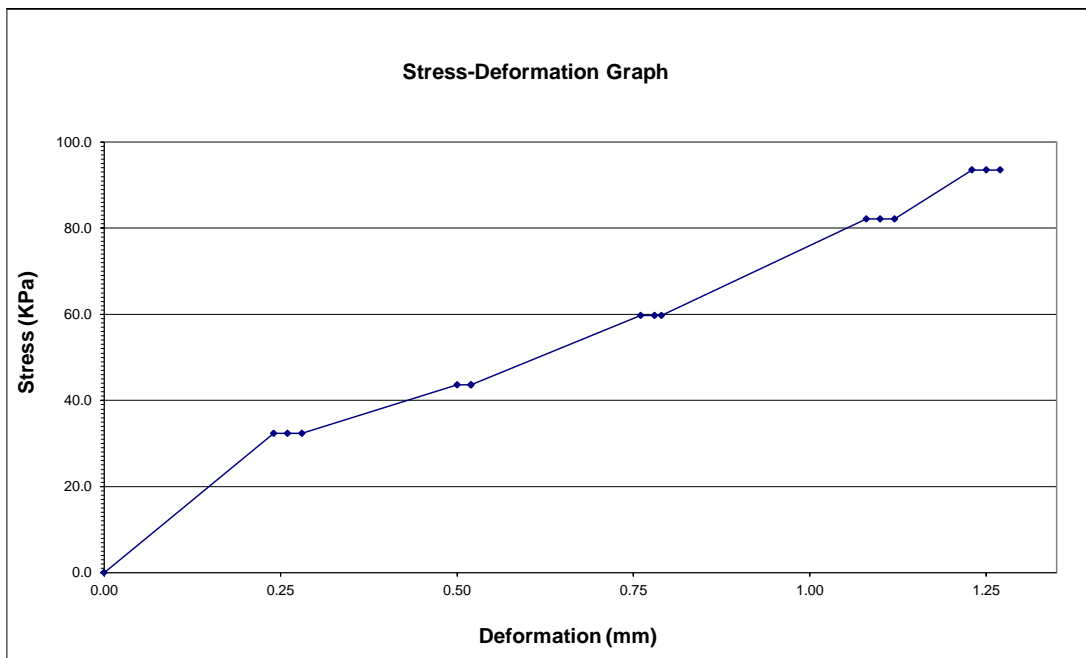
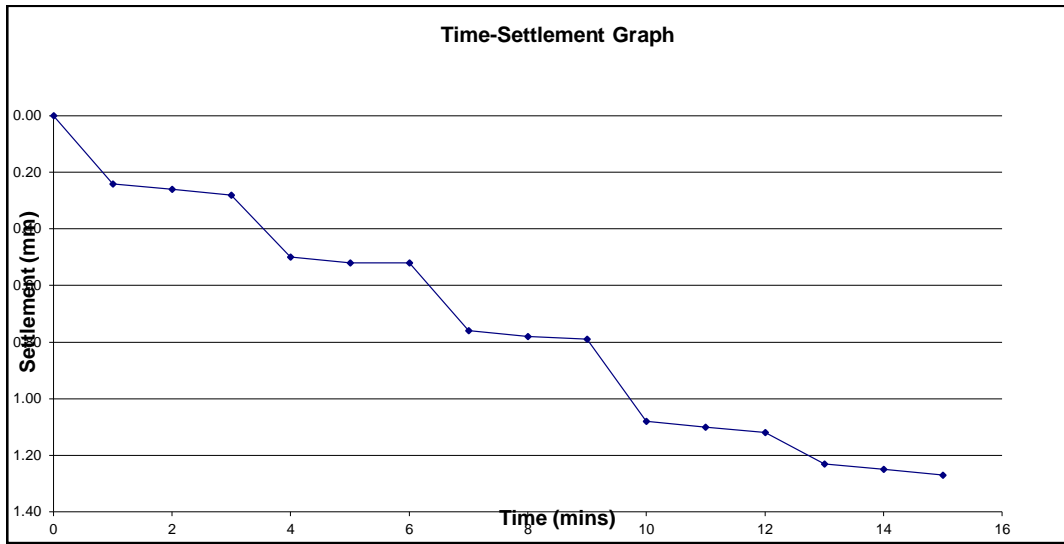
**Page:** 1 of 2

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## Test Results

Site: British Steel, Redcar  
Client: Seymour Civils

Lab ref: MT0318 – 19188  
Date Tested: 01.07.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 03.07.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 19189  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 01.07.2021  
**Test conducted by:** WB

**Test location:** AU17 @3200  
**Material description:** Crushed Concrete **Reaction load:** 15.5t Ex  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** **Max Min temp:** 17°C

### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	28
<b>Applied Pressure at 1.25mm (KPa):</b>	210.6	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	100.4

### Comments:

See attached graphs

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)

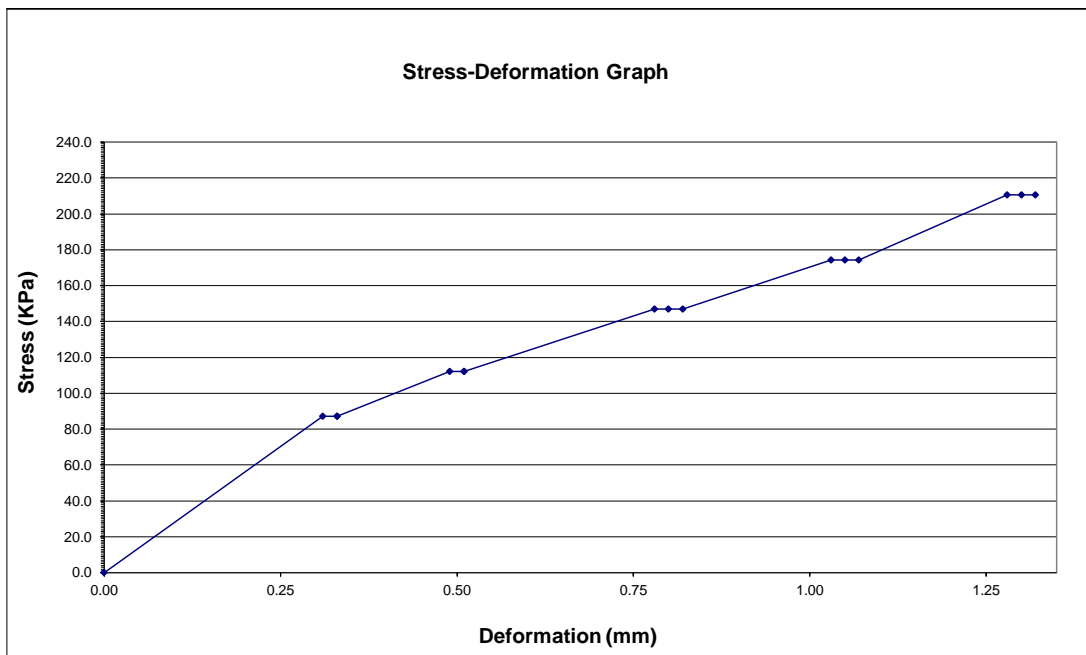
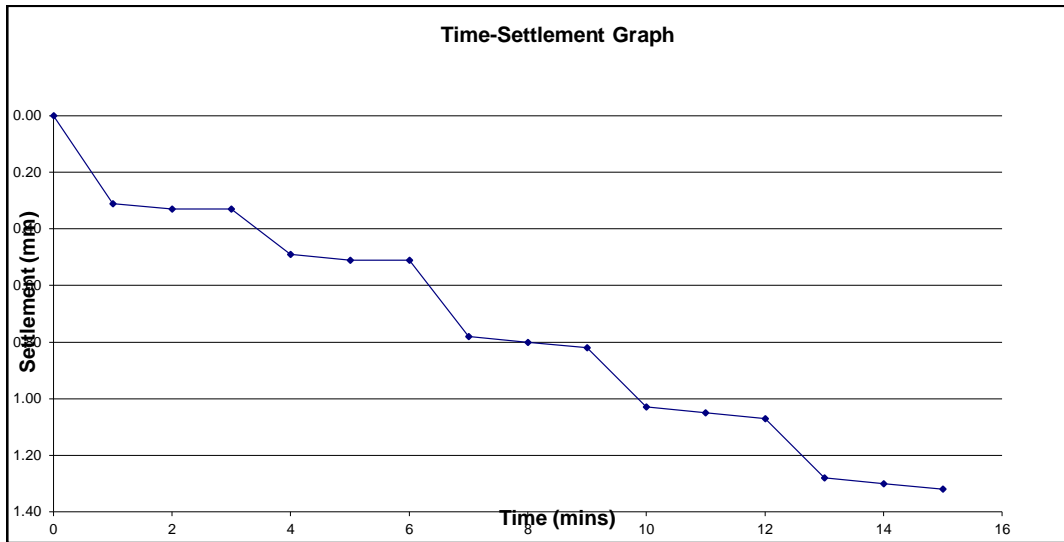
**Page:** 1 of 2

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## Test Results

Site: British Steel, Redcar  
Client: Seymour Civils

Lab ref: MT0318 – 19189  
Date Tested: 01.07.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 03.07.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 19190  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 01.07.2021  
**Test conducted by:** WB


**Test location:** AW19 @1500  
**Material description:** Crushed Concrete **Reaction load:** 23.5t Ex  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** - **Max Min temp:** 17°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	42
<b>Applied Pressure at 1.25mm (KPa):</b>	259.2	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	125.4

**Comments:**

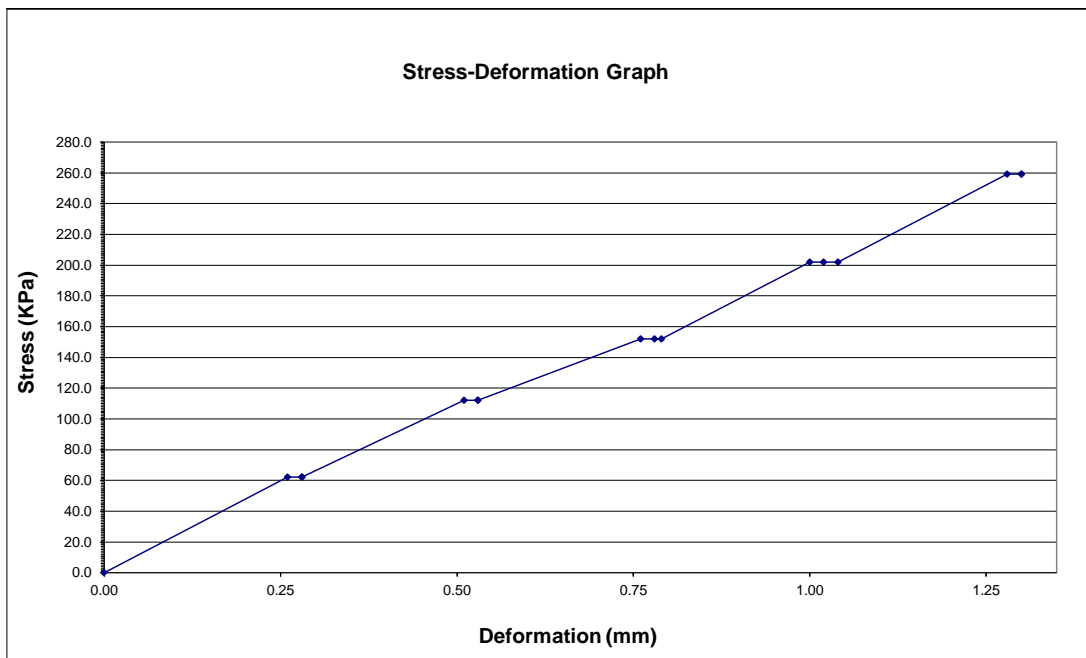
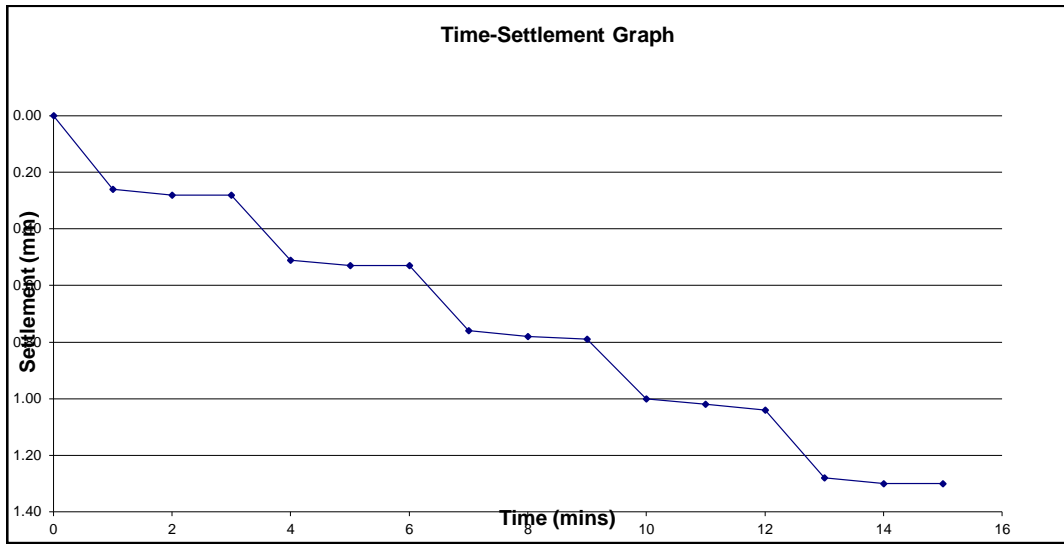
See attached graphs

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 M. Aiston (Director)  
 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 19190  
**Date Tested:** 01.07.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 02.07.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 19192  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 01.07.2021  
**Test conducted by:** WB

**Test location:** AW23 - S4  
**Material description:** Spoil **Reaction load:** 38.2t Ex  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** **Max Min temp:** 17°C

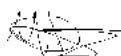
### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	9.5
<b>Applied Pressure at 1.25mm (KPa):</b>	112.1	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	53.4

### Comments:

See attached graphs

**Signed:**



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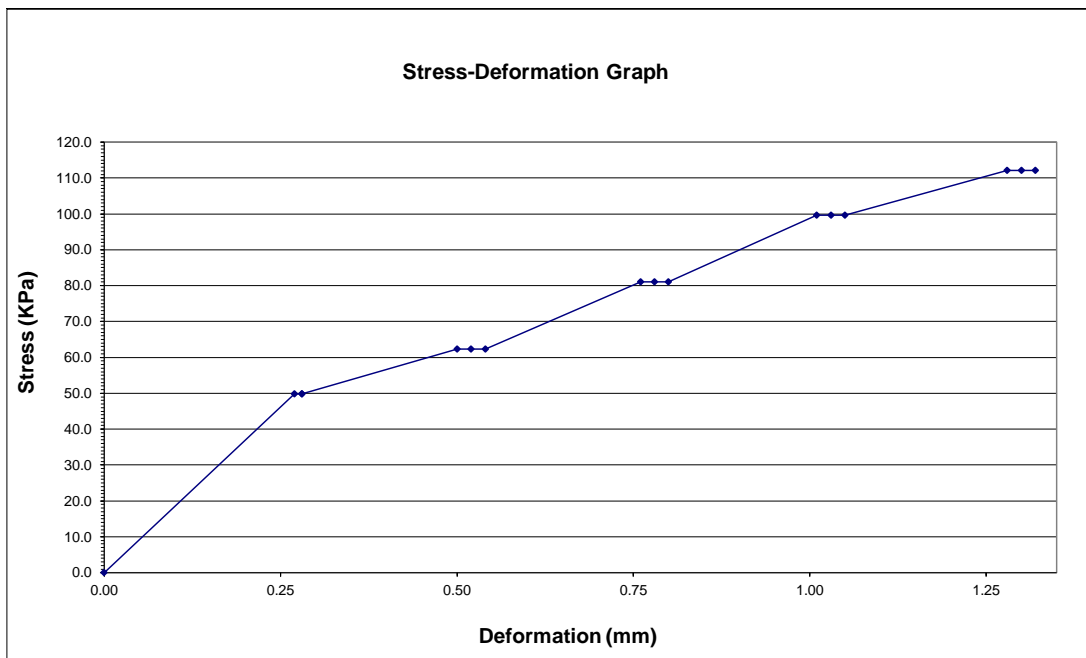
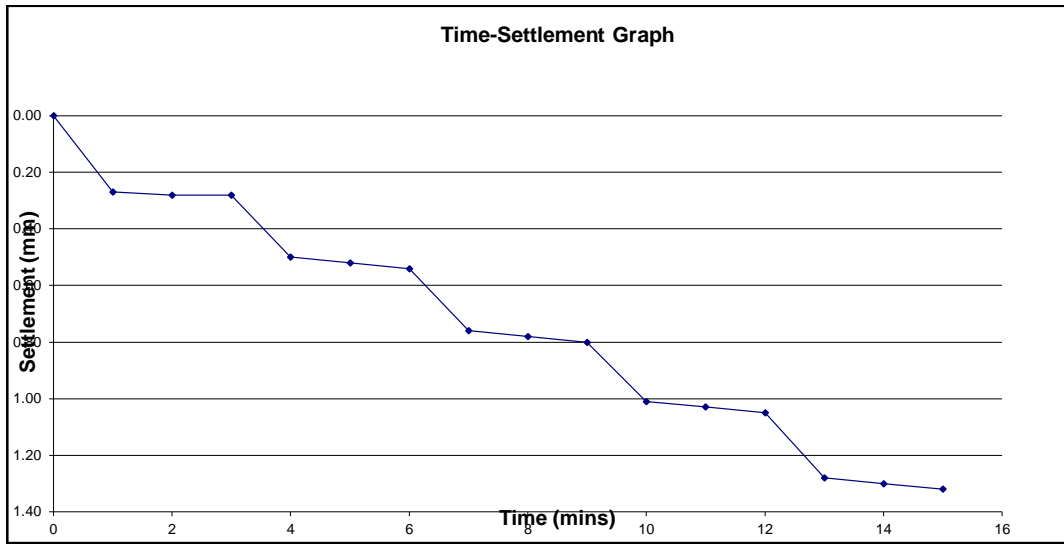
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 19192  
**Date Tested:** 01.07.2021





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 03.07.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour CE Ltd **Test ref:** MT0318 – 19210  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 02.07.2021  
**Test conducted by:** WB

**Test location:** AW17 @3200  
**Material description:** Crushed Concrete **Reaction load:** 31.3t Ex  
**Plate diameter (mm):** 455 **Weather conditions:** Cloudy  
**Test depth (m):** - **Max Min temp:** 17°C

### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	37
<b>Applied Pressure at 1.25mm (KPa):</b>	249.2	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	116.1

### Comments:

See attached graphs

**Signed:**



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 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)

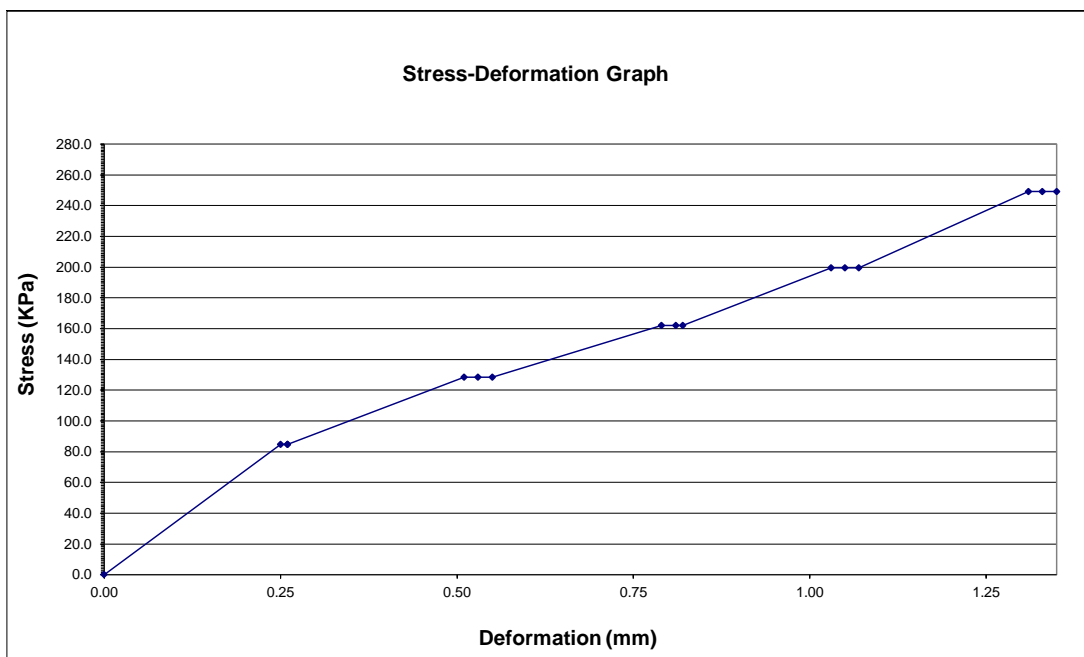
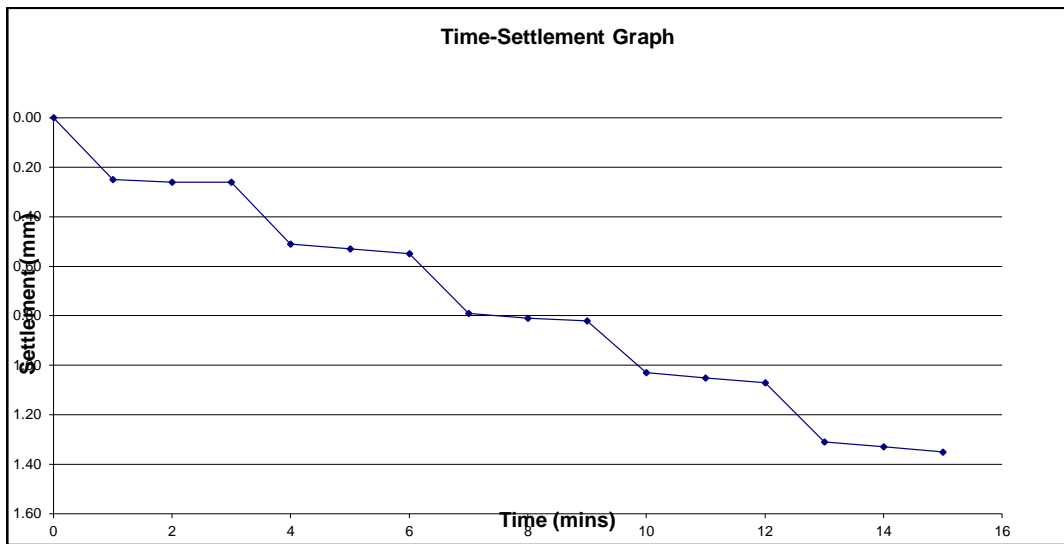
**Page:** 1 of 2

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## Test Results

Site: British Steel, Redcar  
Client: Seymour CE Ltd

Lab ref: MT0318 – 19210  
Date Tested: 02.07.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 03.07.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour CE Ltd **Test ref:** MT0318 – 19211  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 02.07.2021  
**Test conducted by:** WB

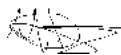
**Test location:** AU19 @2900  
**Material description:** Spoil **Reaction load:** 31.3t Ex  
**Plate diameter (mm):** 455 **Weather conditions:** Cloudy  
**Test depth (m):** **Max Min temp:** 17°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	11
<b>Applied Pressure at 1.25mm (KPa):</b>	122.1	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	59.1

**Comments:**

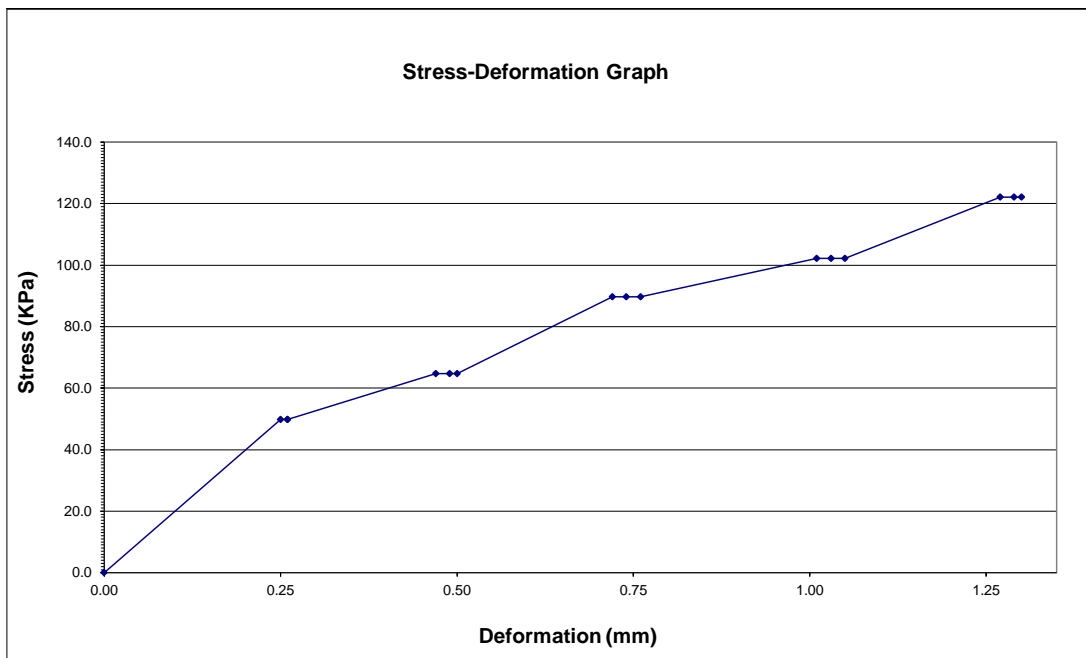
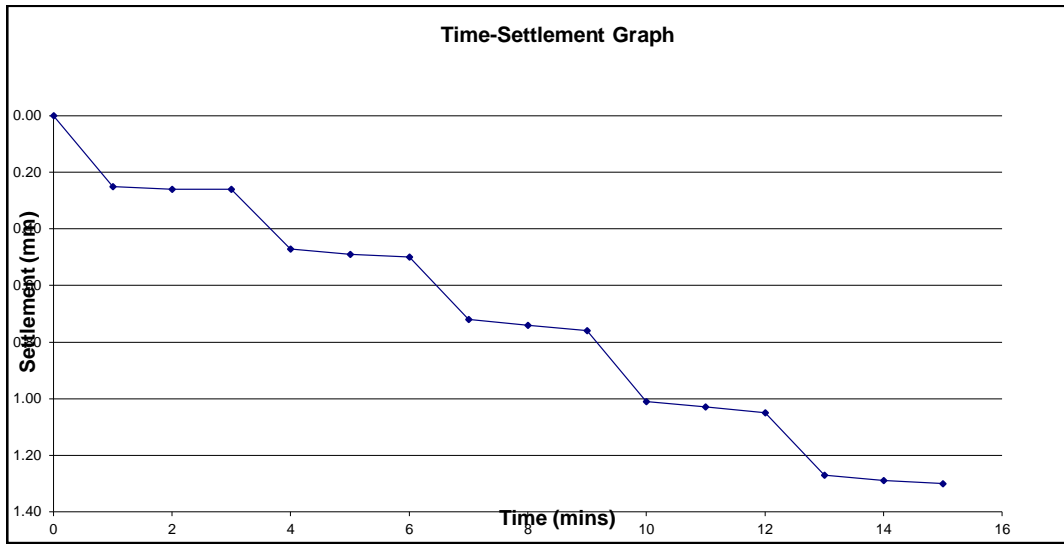
See attached graphs

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 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour CE Ltd

**Lab ref:** MT0318 – 19211  
**Date Tested:** 02.07.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 03.07.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour CE Ltd **Test ref:** MT0318 – 19212  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 02.07.2021  
**Test conducted by:** WB

**Test location:** AW19 @1700  
**Material description:** Spoil **Reaction load:** 31.3t Ex  
**Plate diameter (mm):** 455 **Weather conditions:** Cloudy  
**Test depth (m):** **Max Min temp:** 17°C


### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	42
<b>Applied Pressure at 1.25mm (KPa):</b>	255.4	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	126.5

### Comments:

See attached graphs

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For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)

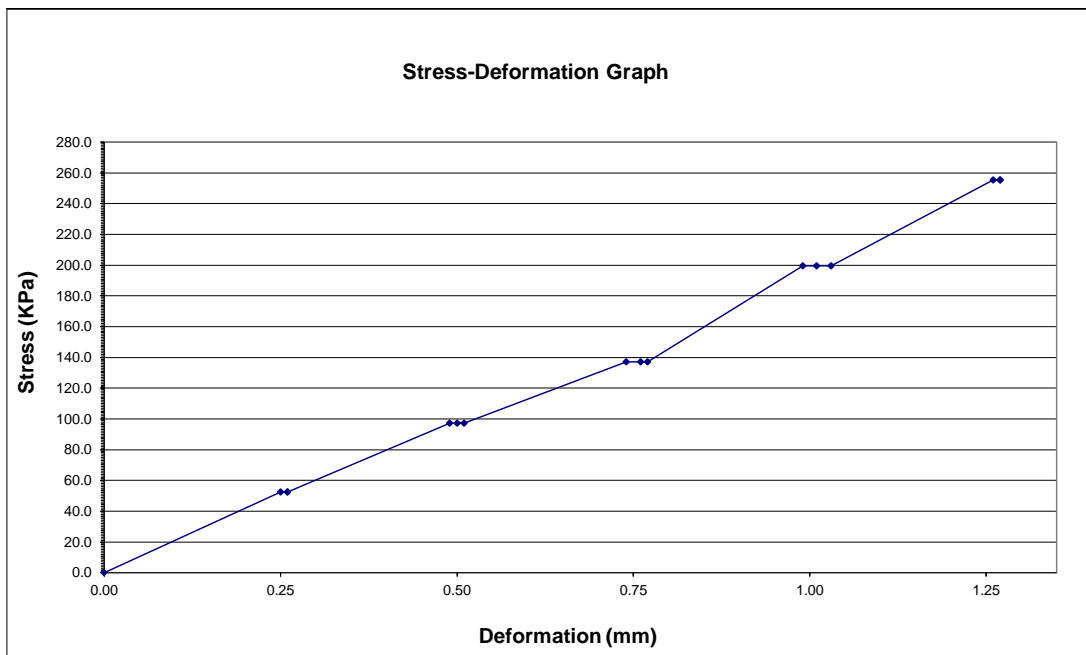
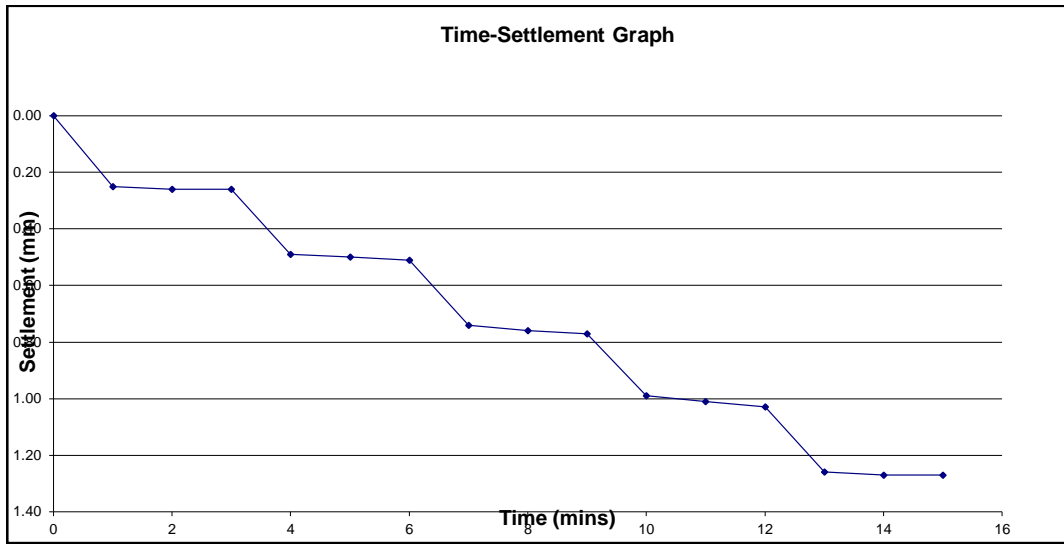
**Page:** 1 of 2

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## Test Results

Site: British Steel, Redcar  
Client: Seymour CE Ltd

Lab ref: MT0318 – 19212  
Date Tested: 02.07.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 05.07.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour CE Ltd **Test ref:** MT0318 – 19242  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 03.07.2021  
**Test conducted by:** WB

**Test location:** AW 17  
**Material description:** Spoil **Reaction load:** 23.5t Ex  
**Plate diameter (mm):** 455 **Weather conditions:** Rainy  
**Test depth (m):** **Max Min temp:** 19°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	55
<b>Applied Pressure at 1.25mm (KPa):</b>	299	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	145.8

**Comments:**

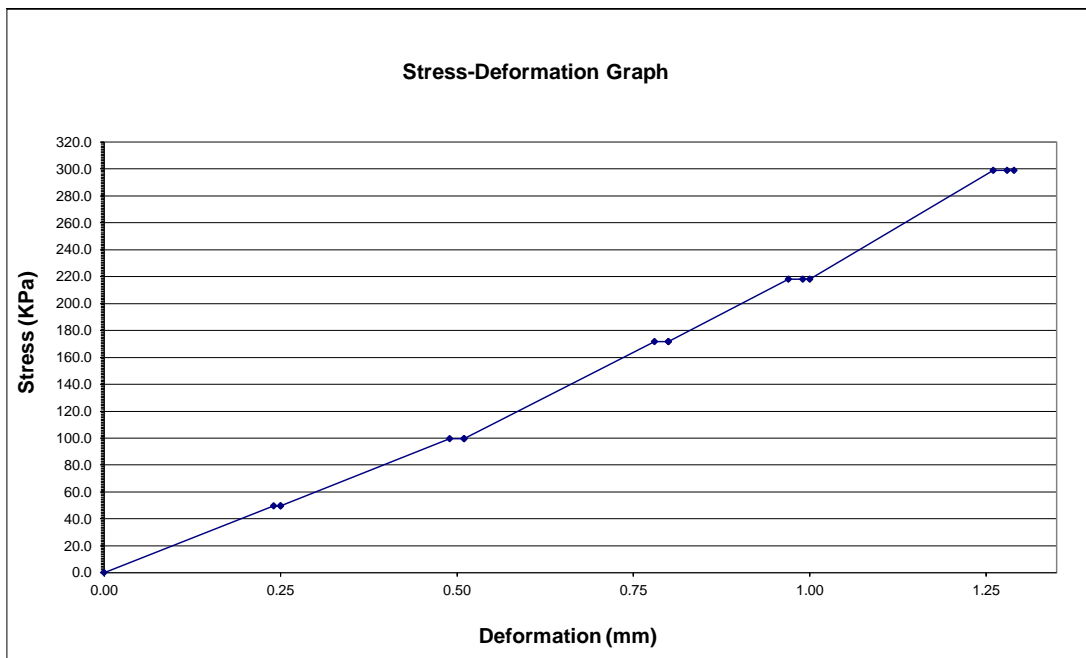
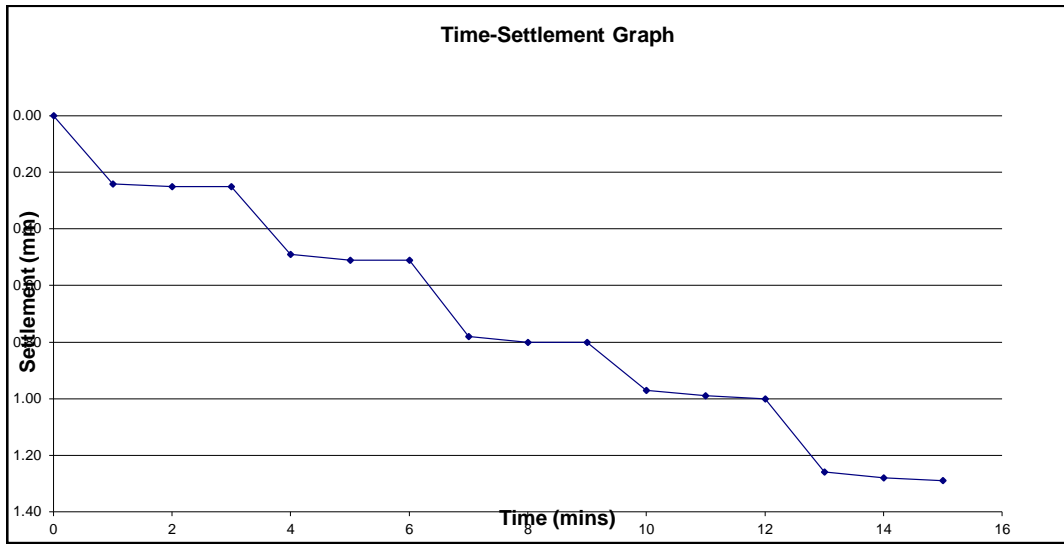
See attached graphs

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 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

## Test Results

Site: British Steel, Redcar  
Client: Seymour Civils

Lab ref: MT0318 – 19242  
Date Tested: 03.07.2021





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 05.07.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour CE Ltd **Test ref:** MT0318 – 19243  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 03.07.2021  
**Test conducted by:** WB

**Test location:** AU 17  
**Material description:** Spoil **Reaction load:** 23.5t Ex  
**Plate diameter (mm):** 455 **Weather conditions:** Rainy  
**Test depth (m):** **Max Min temp:** 19°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	47
<b>Applied Pressure at 1.25mm (KPa):</b>	277.9	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	134.5

**Comments:**

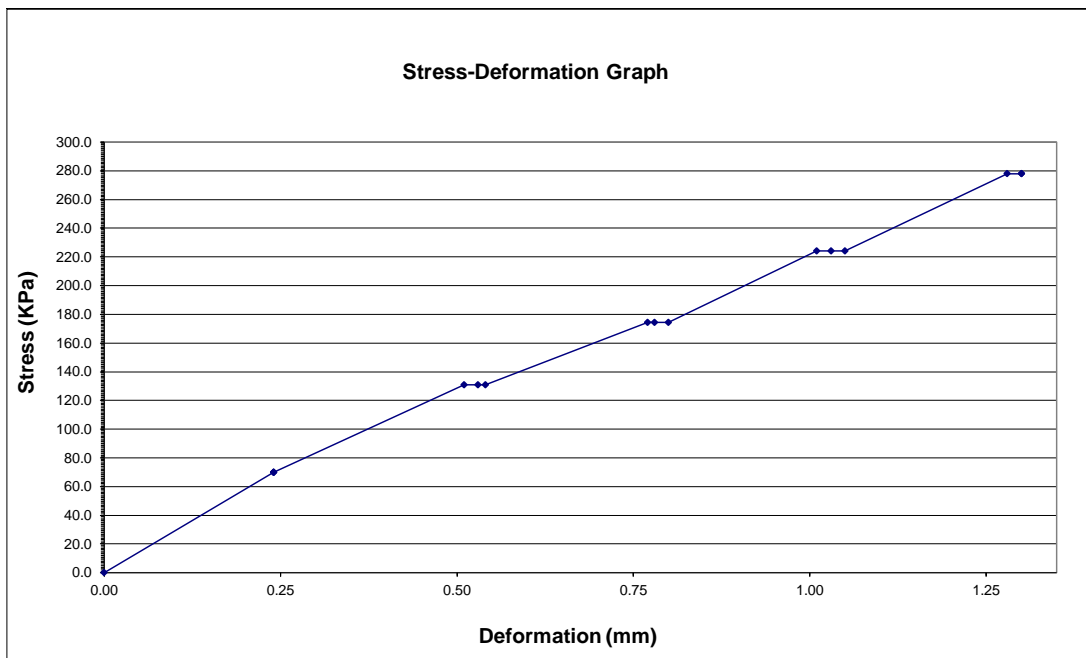
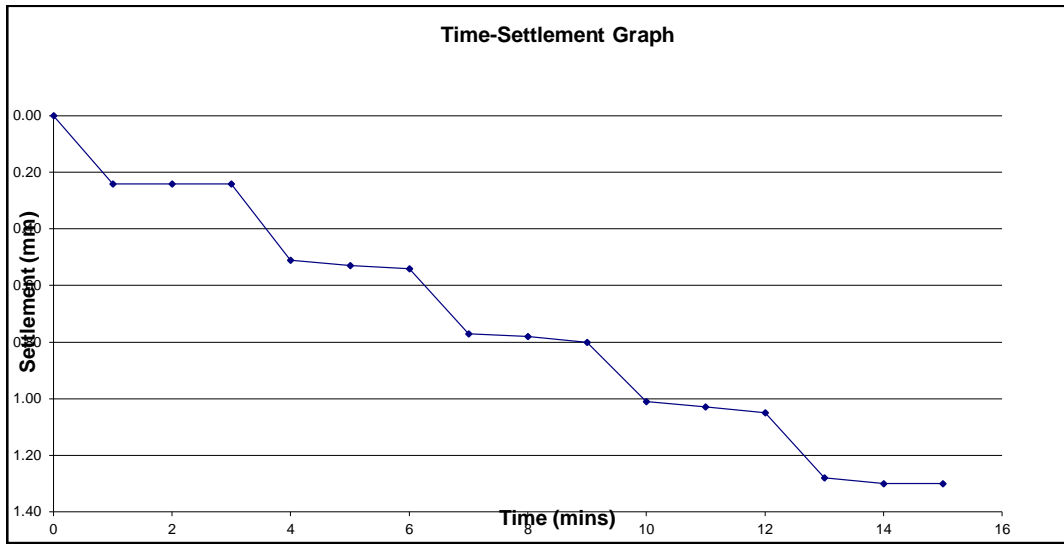
See attached graphs

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**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

## Test Results

Site: British Steel, Redcar  
Client: Seymour CE Ltd

Lab ref: MT0318 – 19243  
Date Tested: 03.07.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 05.07.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour CE Ltd **Test ref:** MT0318 – 19244  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 03.07.2021  
**Test conducted by:** WB

**Test location:** AU19  
**Material description:** Crushed Concrete **Reaction load:** 23.5t Ex  
**Plate diameter (mm):** 455 **Weather conditions:** Rainy  
**Test depth (m):** **Max Min temp:** 19°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	24.4
<b>Applied Pressure at 1.25mm (KPa):</b>	184.4	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	92.1

**Comments:**

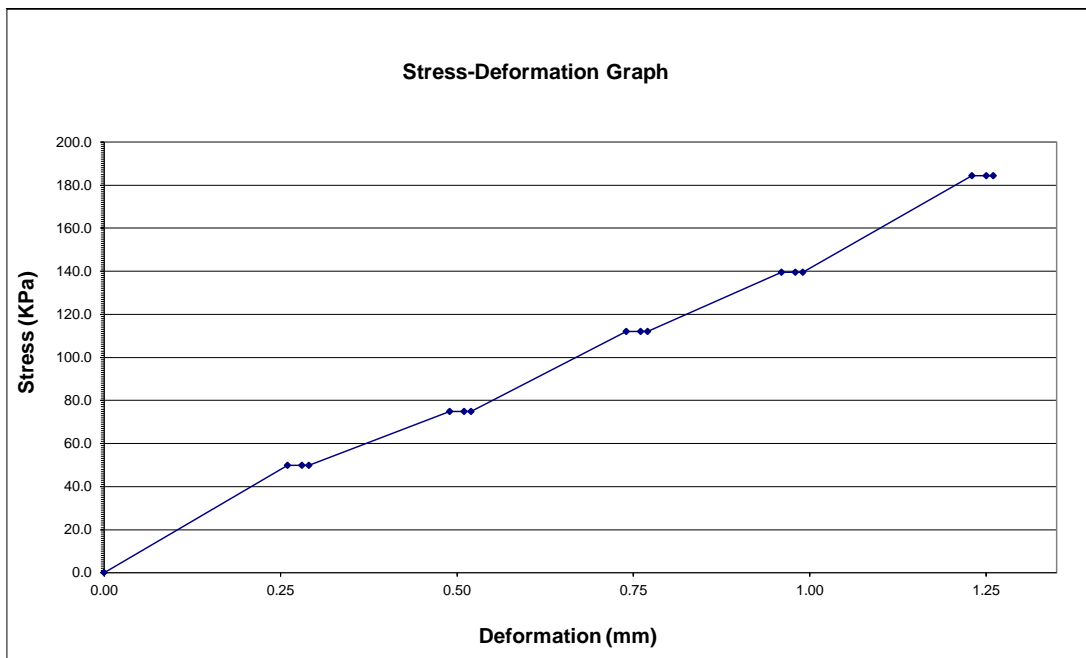
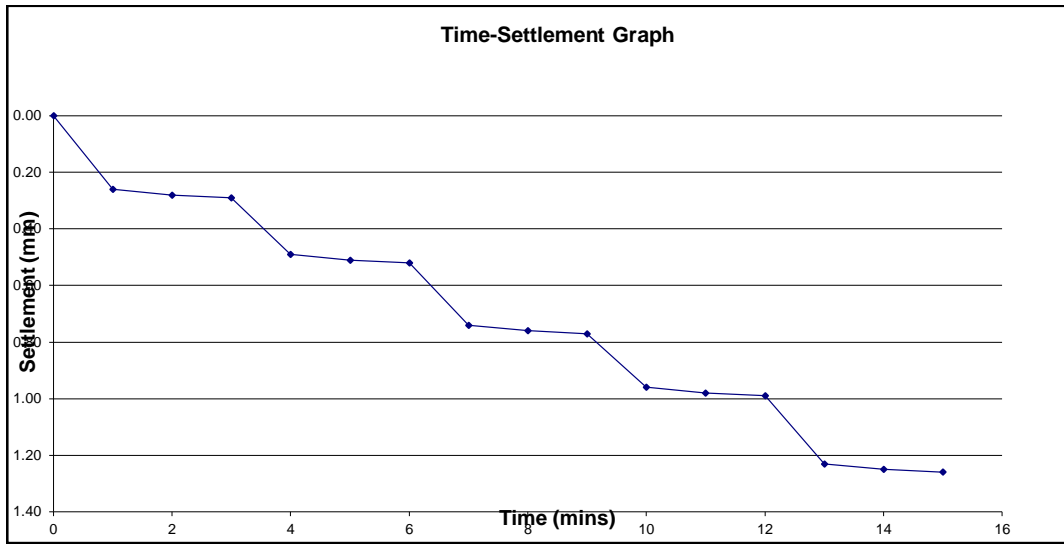
See attached graphs

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**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour CE Ltd

**Lab ref:** MT0318 – 19244  
**Date Tested:** 03.07.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 08.07.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour CE Ltd **Test ref:** MT0318 – 19417  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 07.07.2021  
**Test conducted by:** WB

**Test location:** AY21 @3000  
**Material description:** Spoil **Reaction load:** 31t Ex  
**Plate diameter (mm):** 455 **Weather conditions:** Sunny  
**Test depth (m):** **Max Min temp:** 16°C


### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	34
<b>Applied Pressure at 1.25mm (KPa):</b>	236.7	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	111.1

### Comments:

See attached graphs

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

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 M. Aiston (Director)  
 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)

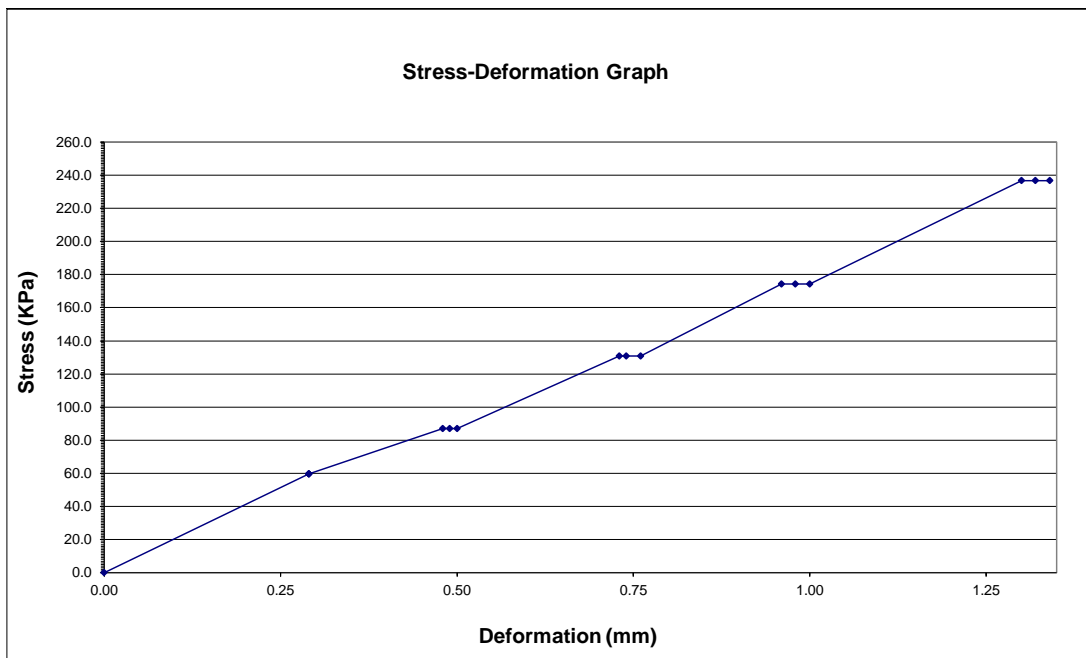
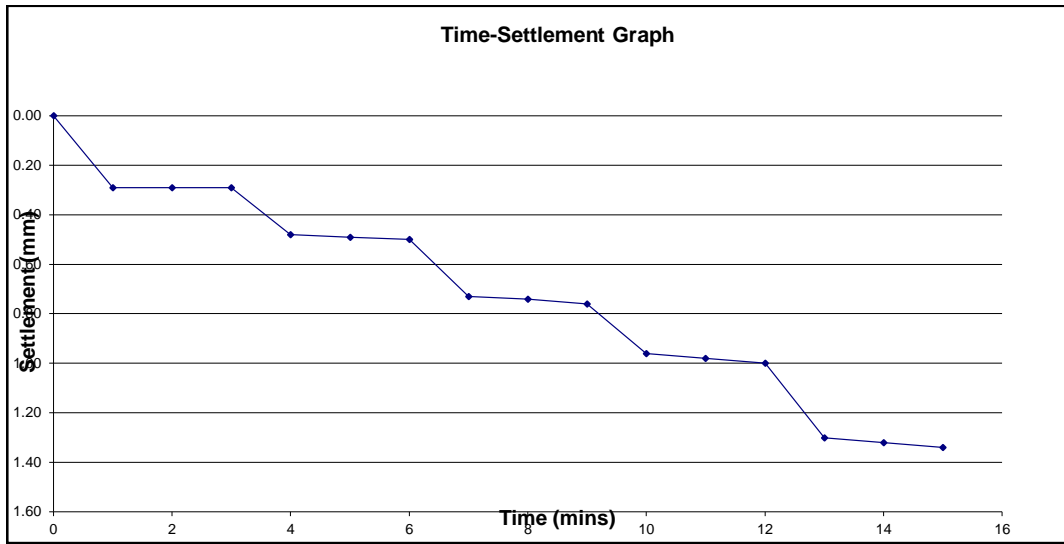
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour CE Ltd

**Lab ref:** MT0318 – 19417  
**Date Tested:** 07.07.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 08.07.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour CE Ltd **Test ref:** MT0318 – 19418  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 07.07.2021  
**Test conducted by:** WB

**Test location:** AY19 @1700  
**Material description:** Crushed Concrete ex. Halls **Reaction load:** 31t Ex  
**Plate diameter (mm):** 455 **Weather conditions:** Sunny  
**Test depth (m):** **Max Min temp:** 19°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	27
<b>Applied Pressure at 1.25mm (KPa):</b>	203.1	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	98.3

**Comments:**

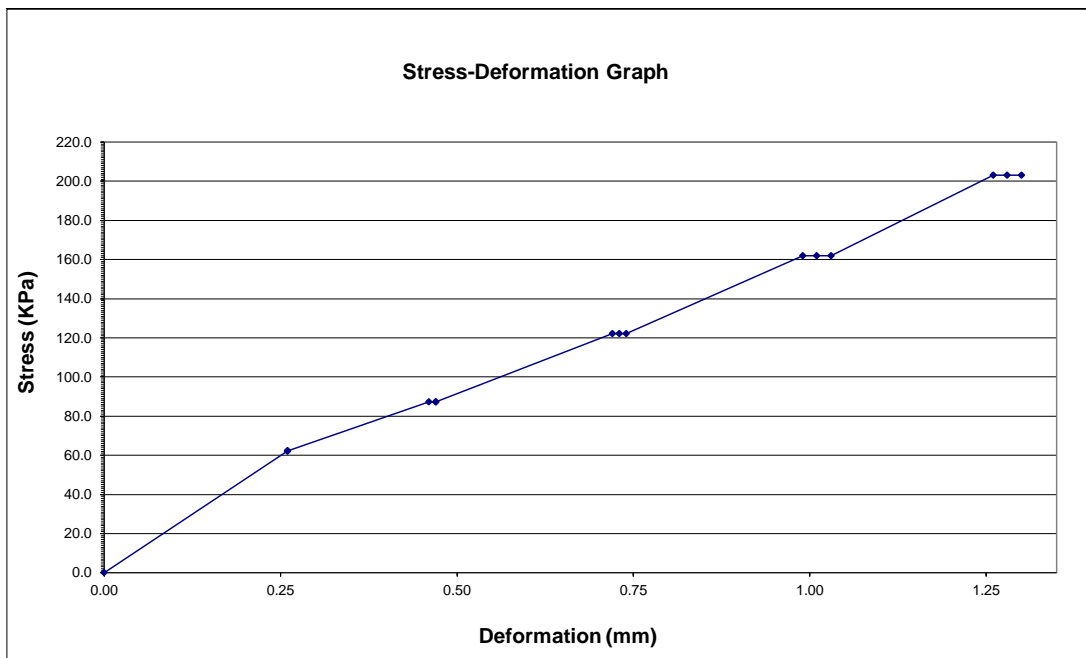
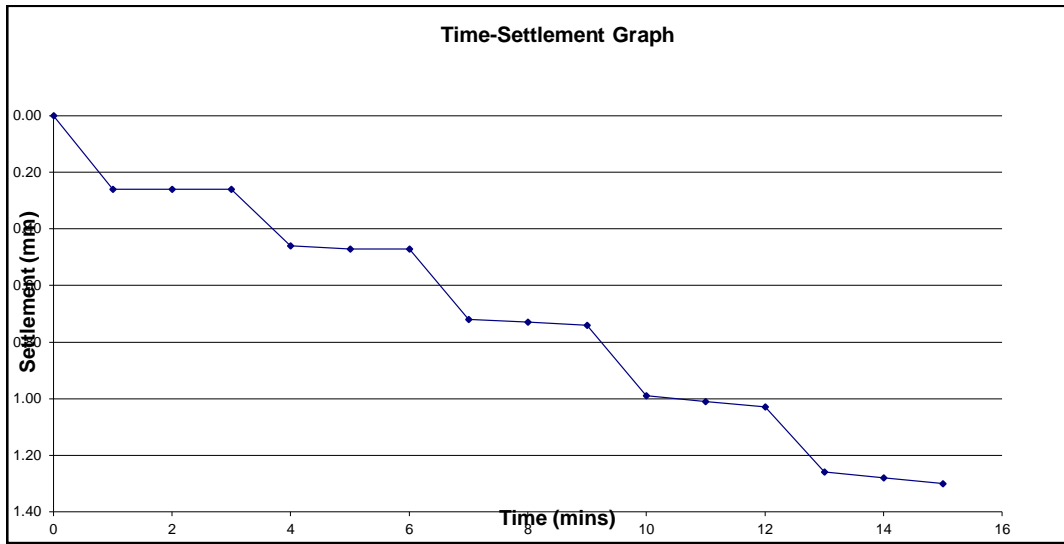
See attached graphs

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 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour CE Ltd

**Lab ref:** MT0318 – 19418  
**Date Tested:** 07.07.2021





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 08.07.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 19419  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 07.07.2021  
**Test conducted by:** WB

**Test location:** AW19 @2200  
**Material description:** Spoil **Reaction load:** 31t Br  
**Plate diameter (mm):** 455 **Weather conditions:** Sunny  
**Test depth (m):** **Max Min temp:** 16°C


### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	20
<b>Applied Pressure at 1.25mm (KPa):</b>	162	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	80.9

### Comments:

See attached graphs

**Signed:**



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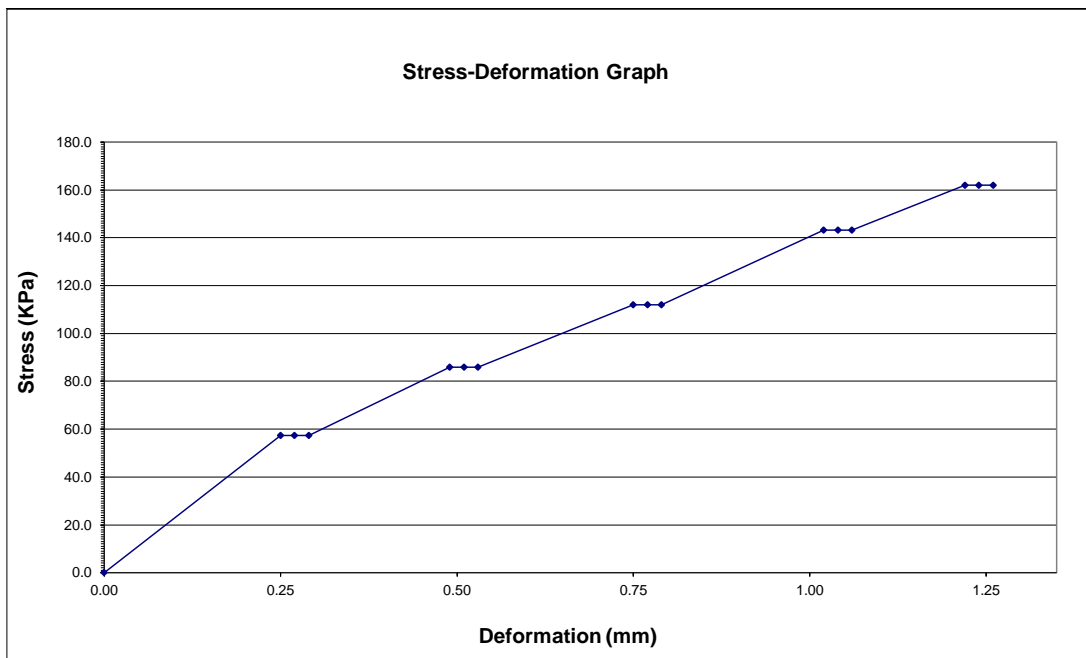
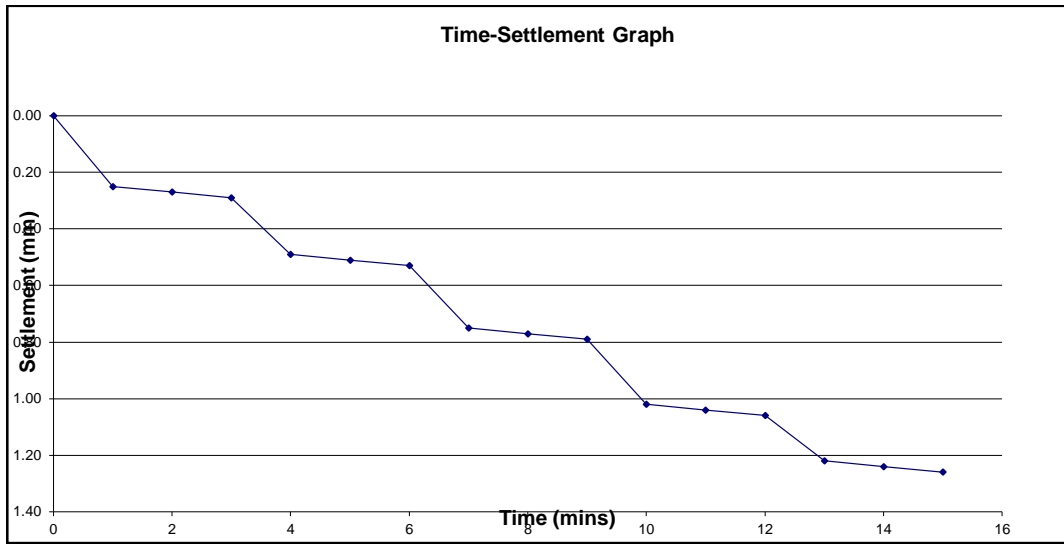
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour CE Ltd

**Lab ref:** MT0318 – 19419  
**Date Tested:** 07.07.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 08.07.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour CE Ltd **Test ref:** MT0318 – 19420  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 07.07.2021  
**Test conducted by:** WB

**Test location:** AU19 @3400  
**Material description:** Spoil **Reaction load:** 31t Br  
**Plate diameter (mm):** 455 **Weather conditions:** Sunny  
**Test depth (m):** **Max Min temp:** 19°C

### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	16
<b>Applied Pressure at 1.25mm (KPa):</b>	145.8	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	72.8

### Comments:

See attached graphs

**Signed:**



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 G Dresser (Director)  
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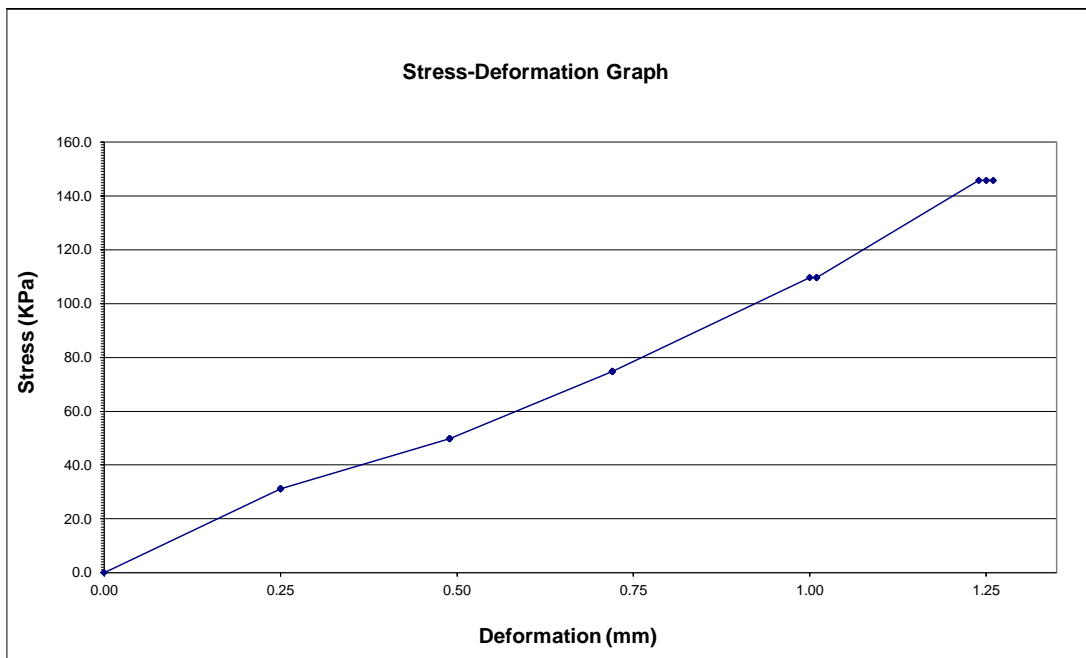
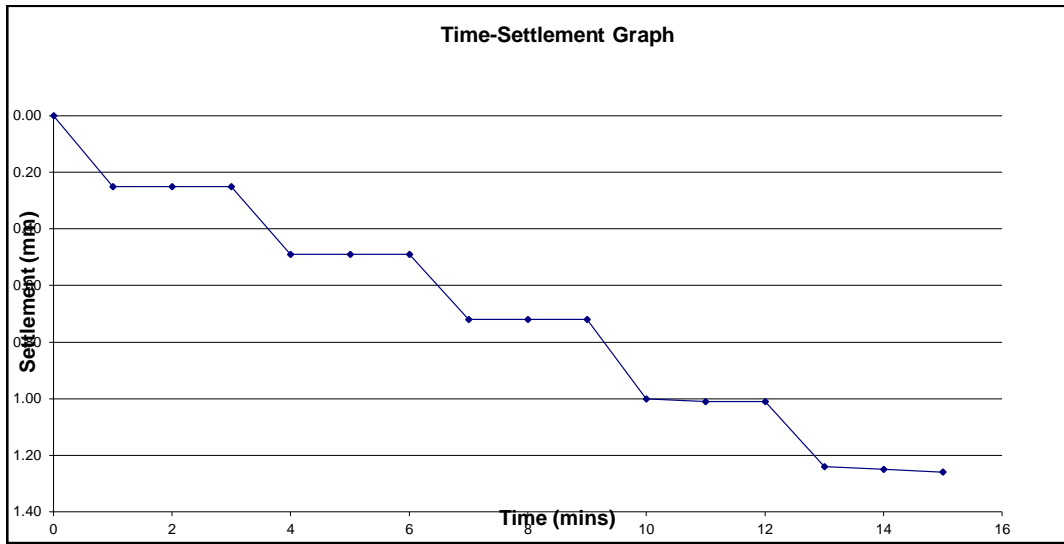
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour CE Ltd

**Lab ref:** MT0318 – 19420  
**Date Tested:** 07.07.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 05/05/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17431  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 19.04.2021  
**Test conducted by:** JK

**Test location:** BA19 @300  
**Material description:** Course grey gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** 0 **Max Min temp:** 4-9°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	21
<b>Applied Pressure at 1.25mm (KPa):</b>	174.5	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	84.4

**Comments:**

See attached graphs

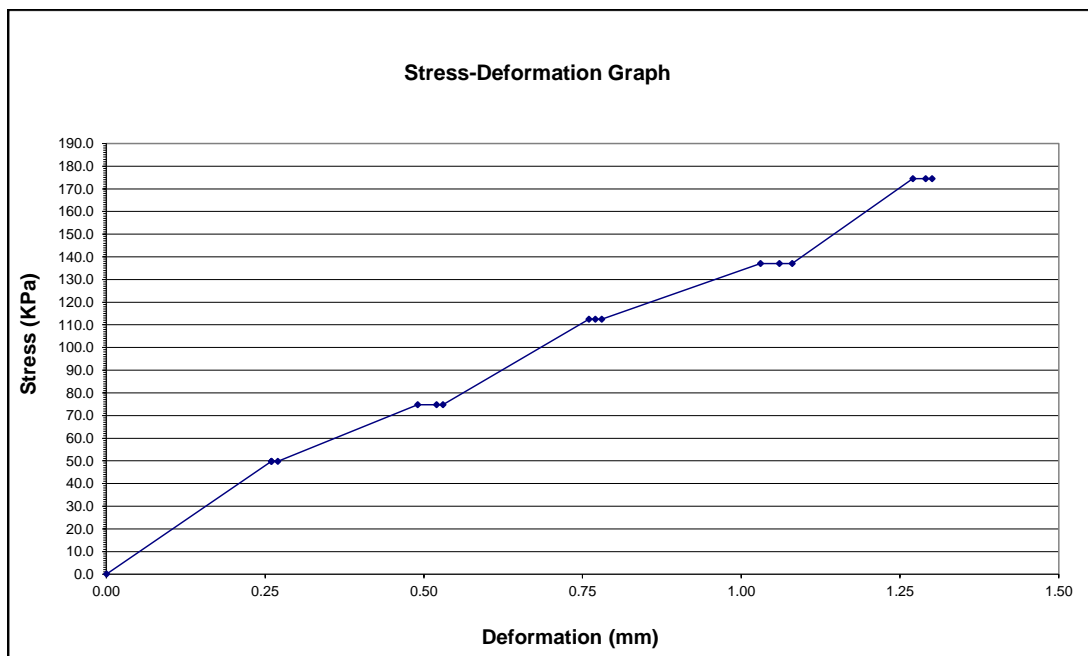
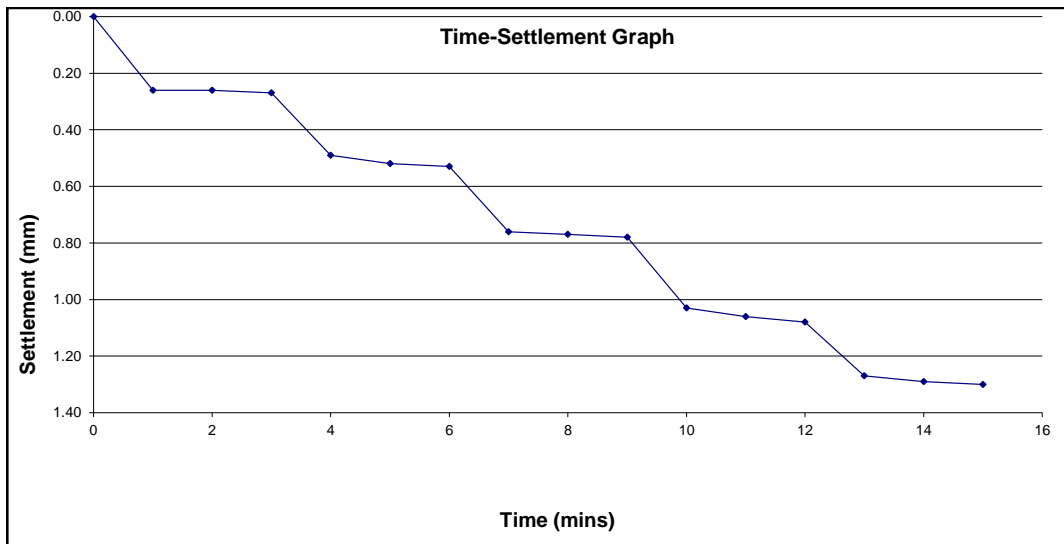
**Signed:**For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
[  ] M. Aiston (Director)  
[  ] G Dresser (Director)  
[  ] C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17431  
**Date Tested:** 19/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 05/05/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17432  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 19.04.2021  
**Test conducted by:** JK

**Test location:** AY21 @900  
**Material description:** Course grey gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** 0 **Max Min temp:** 4-9°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	39
<b>Applied Pressure at 1.25mm (KPa):</b>	249.2	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	121.6

**Comments:**

See attached graphs

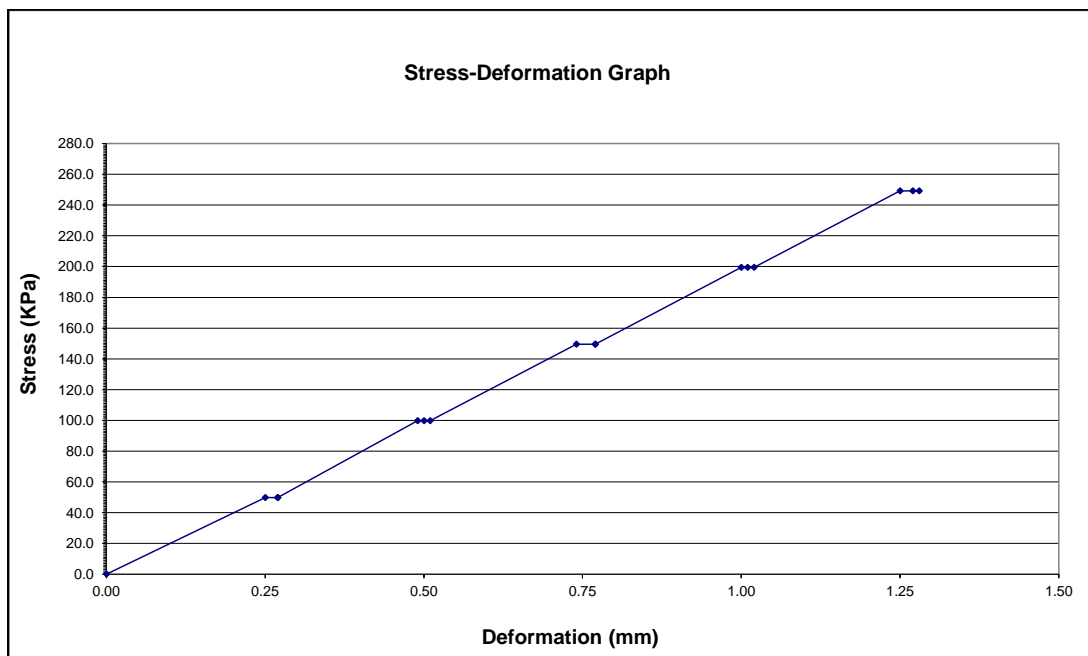
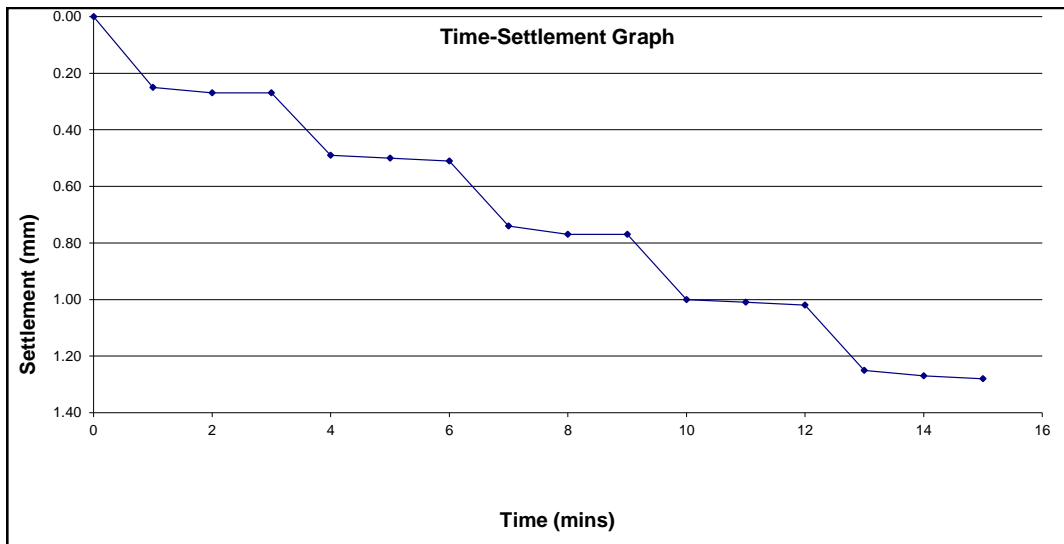
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17432  
**Date Tested:** 19/04/21





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 05/05/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17433  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 19.04.2021  
**Test conducted by:** JK

**Test location:** AY21@F  
**Material description:** Brown CLAY **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** 0 **Max Min temp:** 4-9°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	12
<b>Applied Pressure at 1.25mm (KPa):</b>	124.6	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	60.3

**Comments:**

See attached graphs

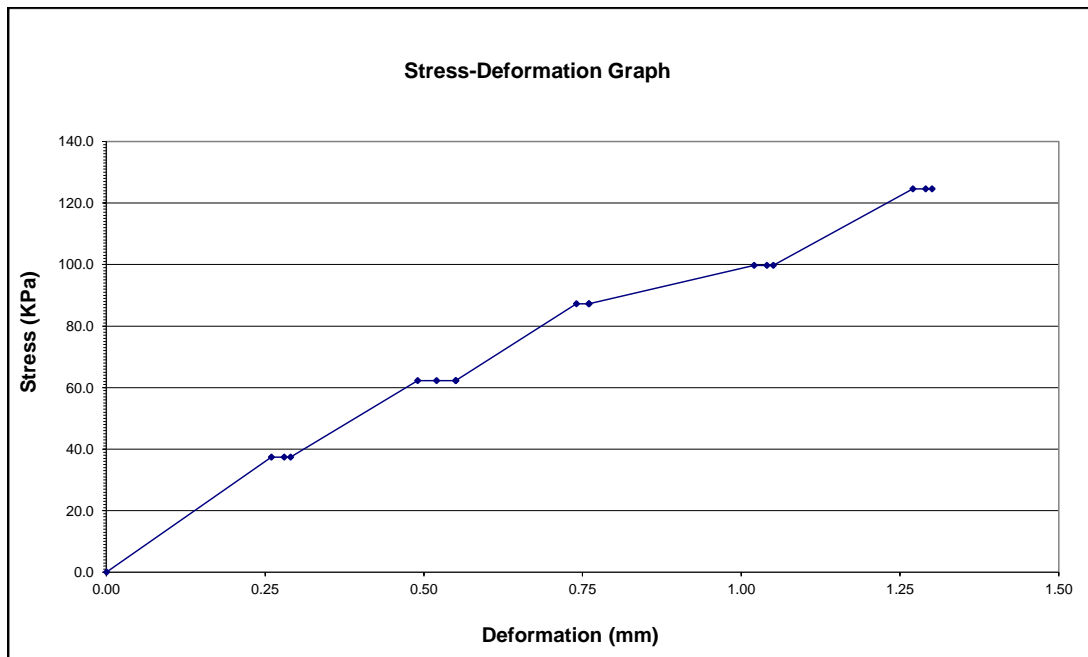
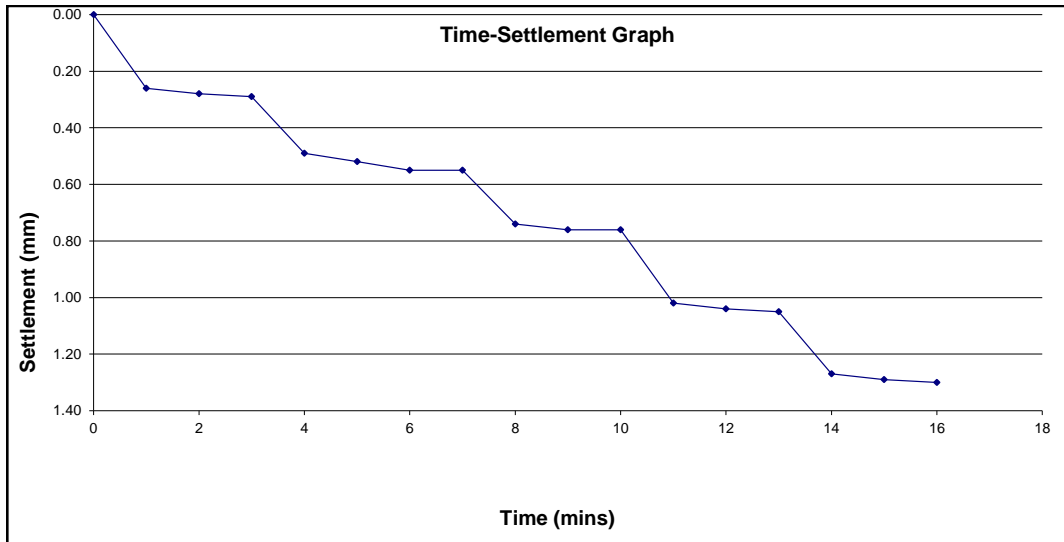
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17433  
**Date Tested:** 19/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 05/05/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17434  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 19.04.2021  
**Test conducted by:** JK

**Test location:** BA23@1500  
**Material description:** Course Gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** 0 **Max Min temp:** 4-9°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	15
<b>Applied Pressure at 1.25mm (KPa):</b>	149.3	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	70.1

**Comments:**

See attached graphs

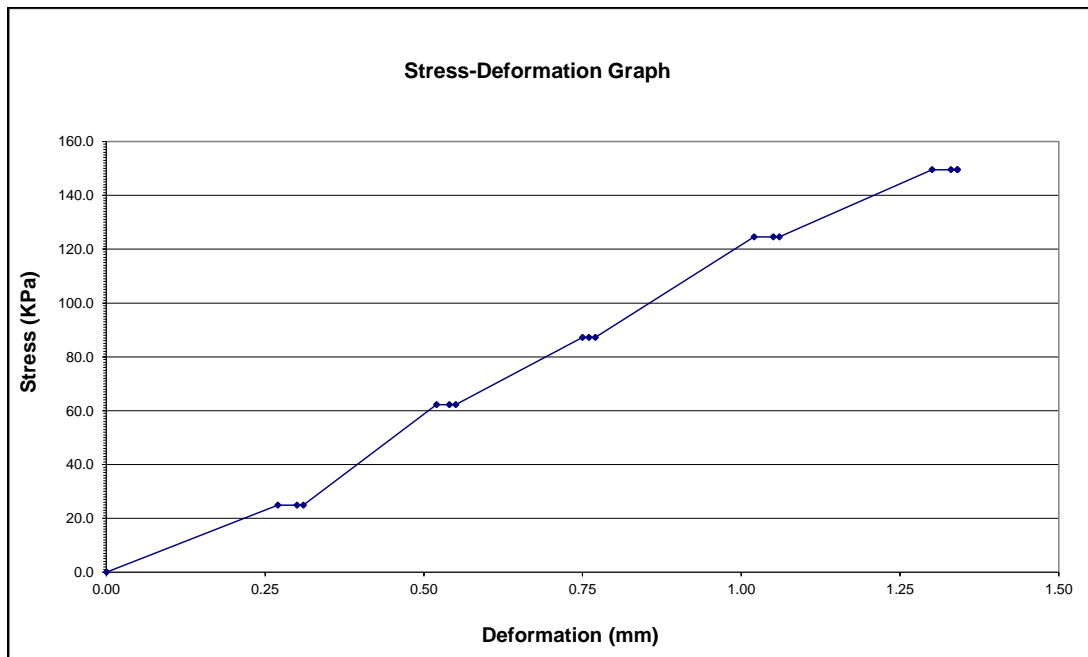
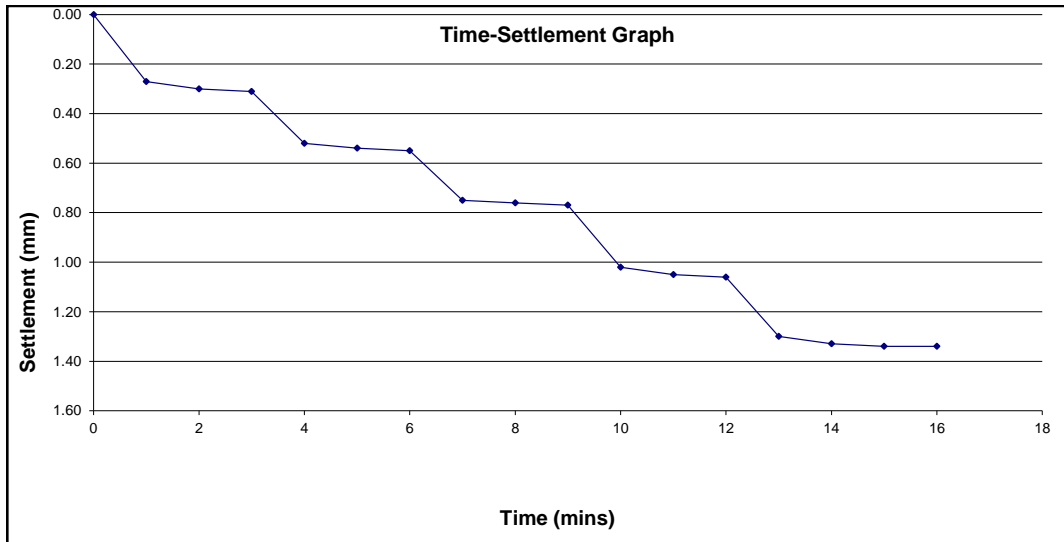
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17434  
**Date Tested:** 19/04/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 05/05/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17720  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 29/04/21  
**Test conducted by:** JK

**Test location:** AY19 @ 900  
**Material description:** Gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** 0 **Max Min temp:** 4-9°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	34.8
<b>Applied Pressure at 1.25mm (KPa):</b>	236	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	112

**Comments:**

See attached graphs

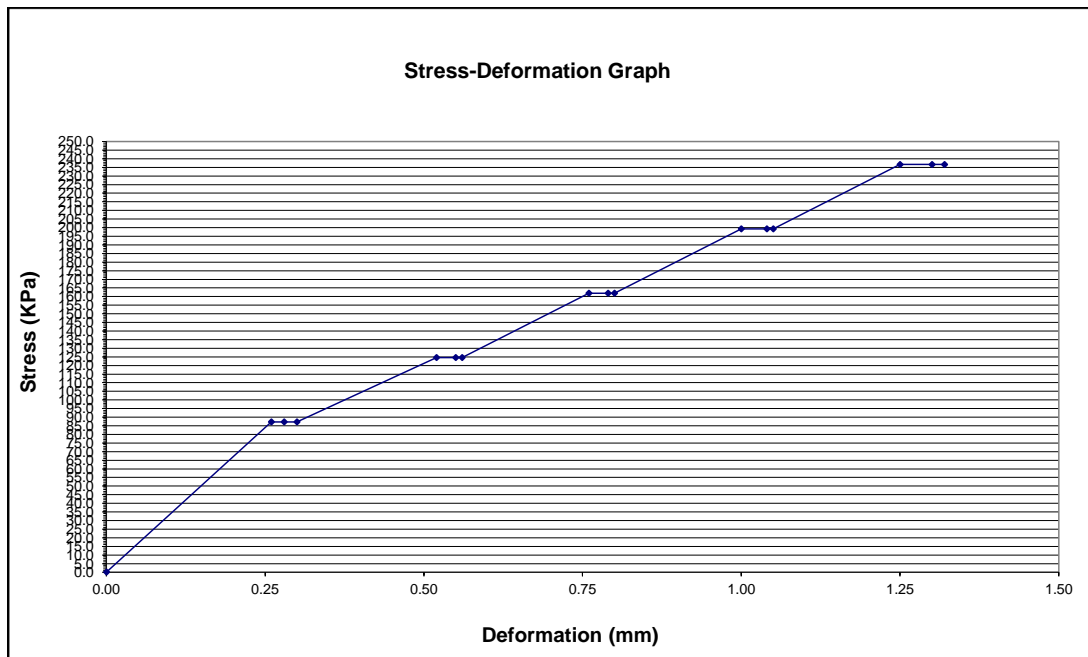
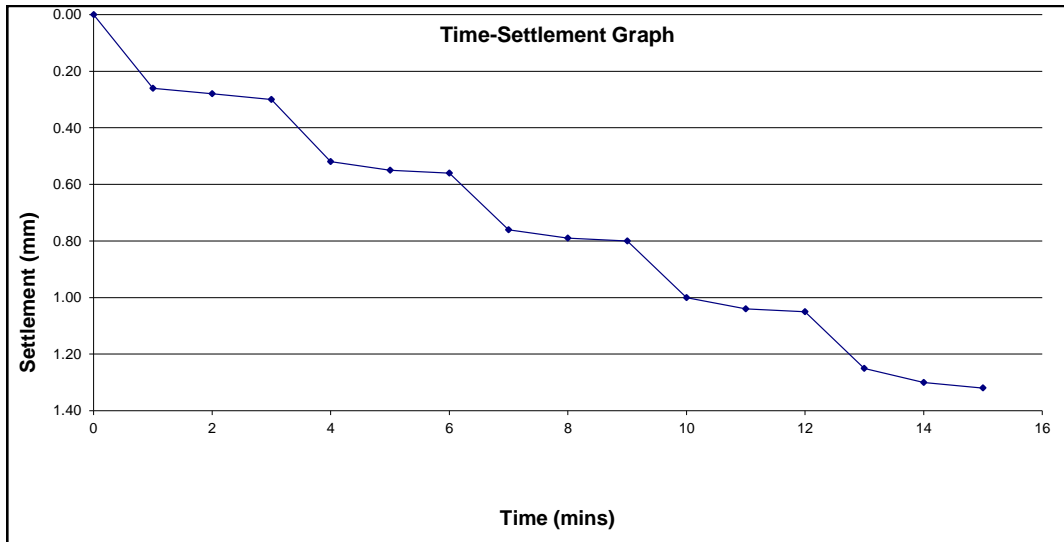
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17720  
**Date Tested:** 29/04/21



<b>Test Report:</b>	<b>Determination of Equivalent CBR Value by Plate Bearing Test</b> BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1	<b>Report Date:</b>	16.05.2021
<b>Client:</b>	Seymour Civils	<b>Test ref:</b>	MT0318 – 17806
<b>Site:</b>	British Steel, Redcar	<b>Client ref:</b>	-
<b>Test location:</b>	AW19 F	<b>Date tested:</b>	10.05.2021
<b>Material description:</b>	Brown Silty CLAY	<b>Test conducted by:</b>	WB
<b>Plate diameter (mm):</b>	455	<b>Reaction load:</b>	19t Dozer
<b>Test depth (m):</b>	Formation	<b>Weather conditions:</b>	Overcast
		<b>Max Min temp:</b>	10-12°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	4.8
<b>Applied Pressure at 1.25mm (KPa):</b>	74.5	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	35.8

**Comments:**

See attached graphs

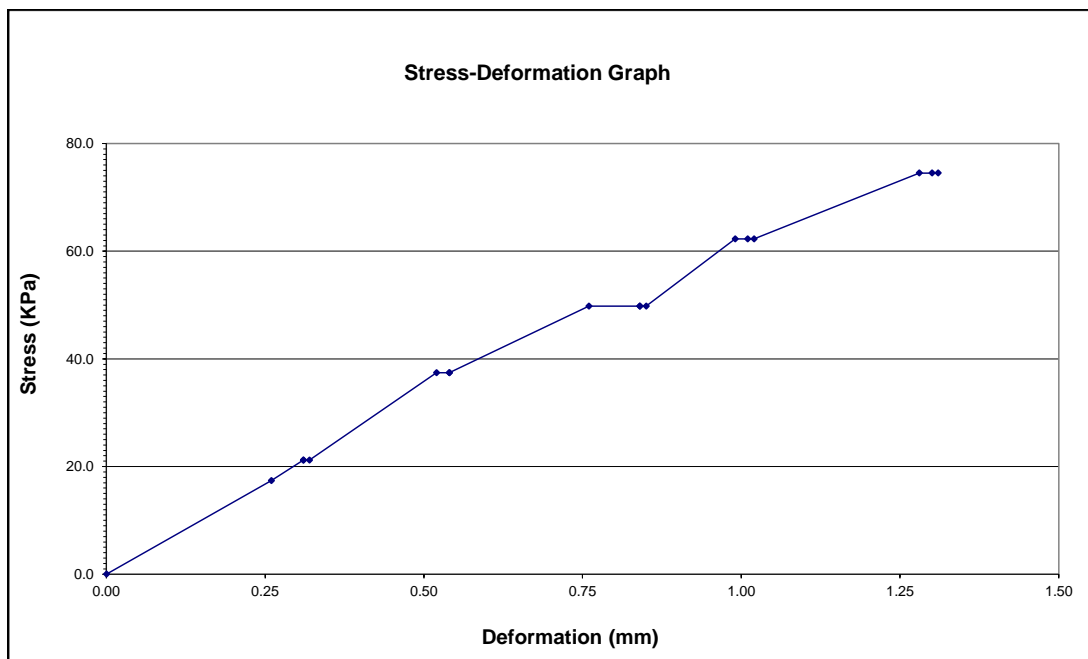
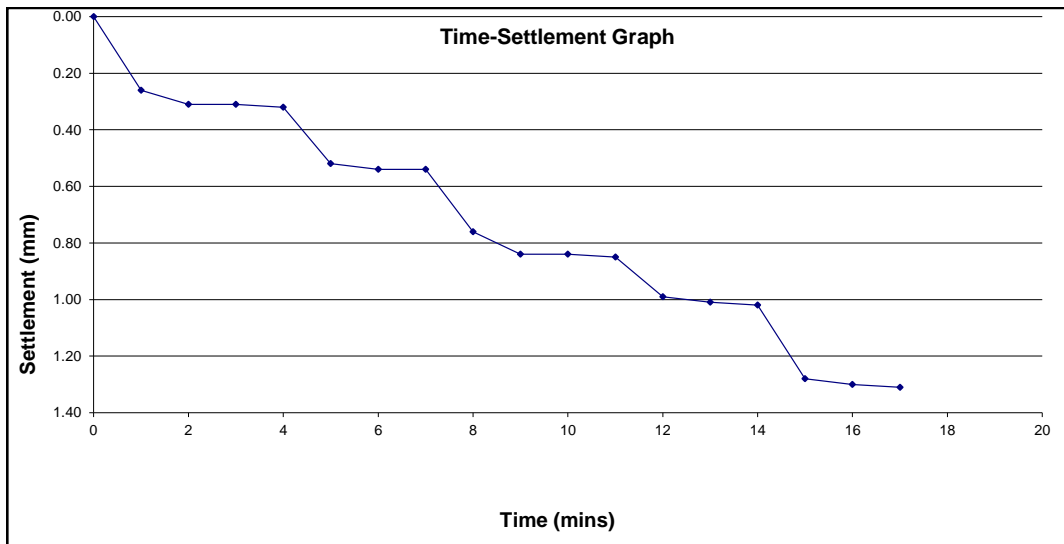
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17806  
**Date Tested:** 10.05.2021





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 16.05.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17807  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 10.05.2021  
**Test conducted by:** WB

**Test location:** AU19@900 CD  
**Material description:** Coarse Gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** 0 **Max Min temp:** 10-12°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	3.6
<b>Applied Pressure at 1.25mm (KPa):</b>	63.5	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	30.7

**Comments:**

See attached graphs

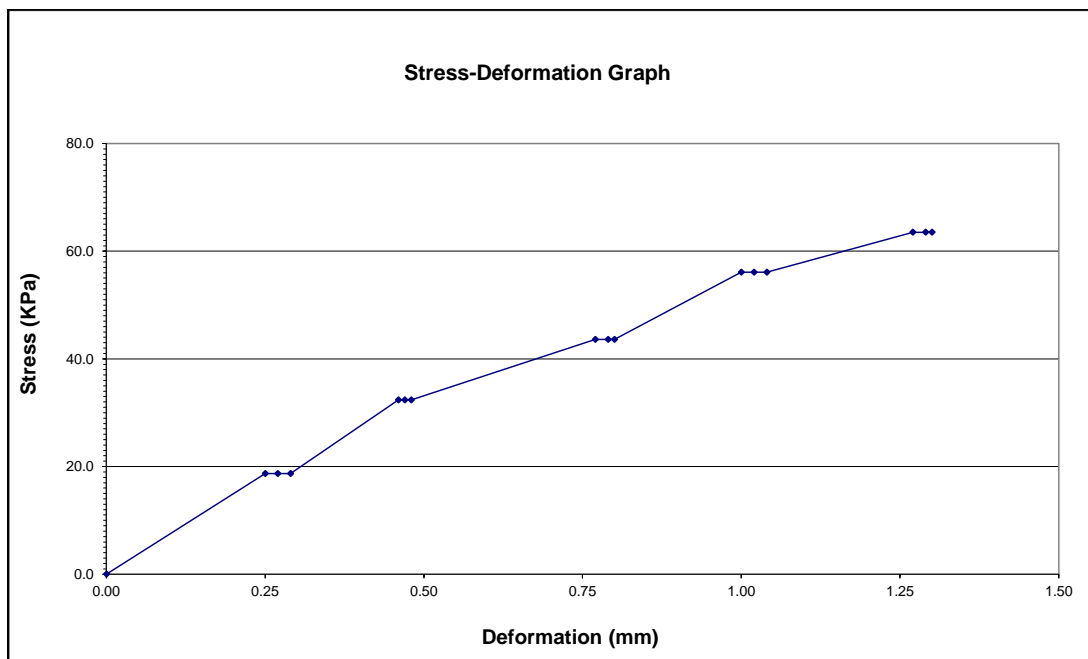
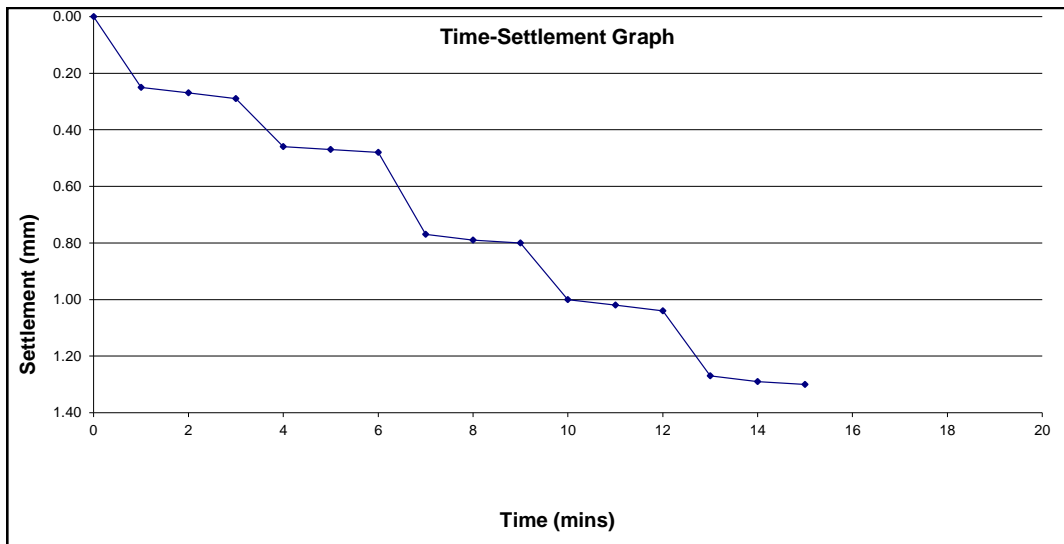
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17807  
**Date Tested:** 10.05.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 16.05.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17808  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 10.05.2021  
**Test conducted by:** WB

**Test location:** AU19@300 (2)  
**Material description:** Coarse Gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** 0 **Max Min temp:** 10-12°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	7.3
<b>Applied Pressure at 1.25mm (KPa):</b>	93.5	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	46.0

**Comments:**

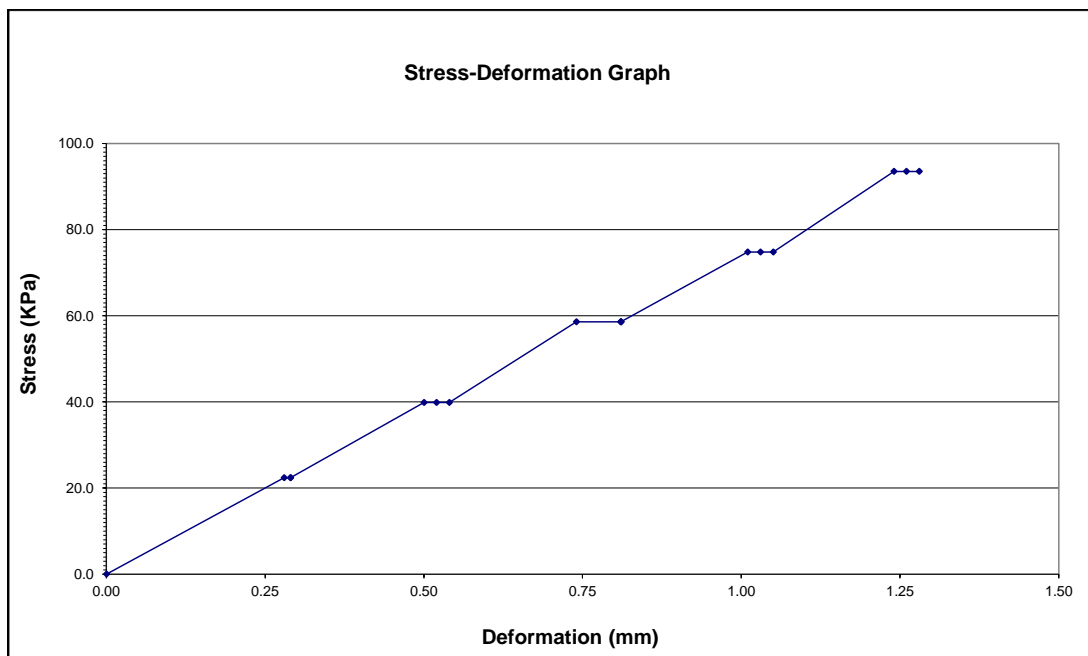
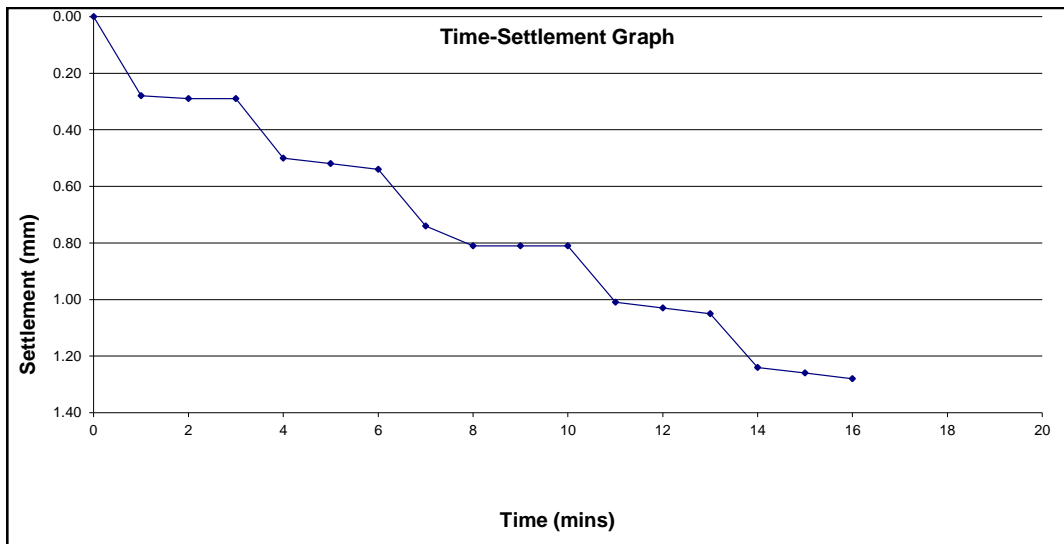
See attached graphs

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17808  
**Date Tested:** 10.05.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 16.05.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17809

**Site:** British Steel, Redcar **Client ref:** -

**Test location:** AY15@300 WBE **Date tested:** 10.05.2021

**Material description:** Coarse Gravel **Test conducted by:** WB

**Plate diameter (mm):** 455 **Reaction load:** 19t Dozer

**Test depth (m):** 0 **Weather conditions:** Overcast

**Max Min temp:** 10-12°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	6.5
<b>Applied Pressure at 1.25mm (KPa):</b>	87.2	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	42.9

**Comments:**

See attached graphs

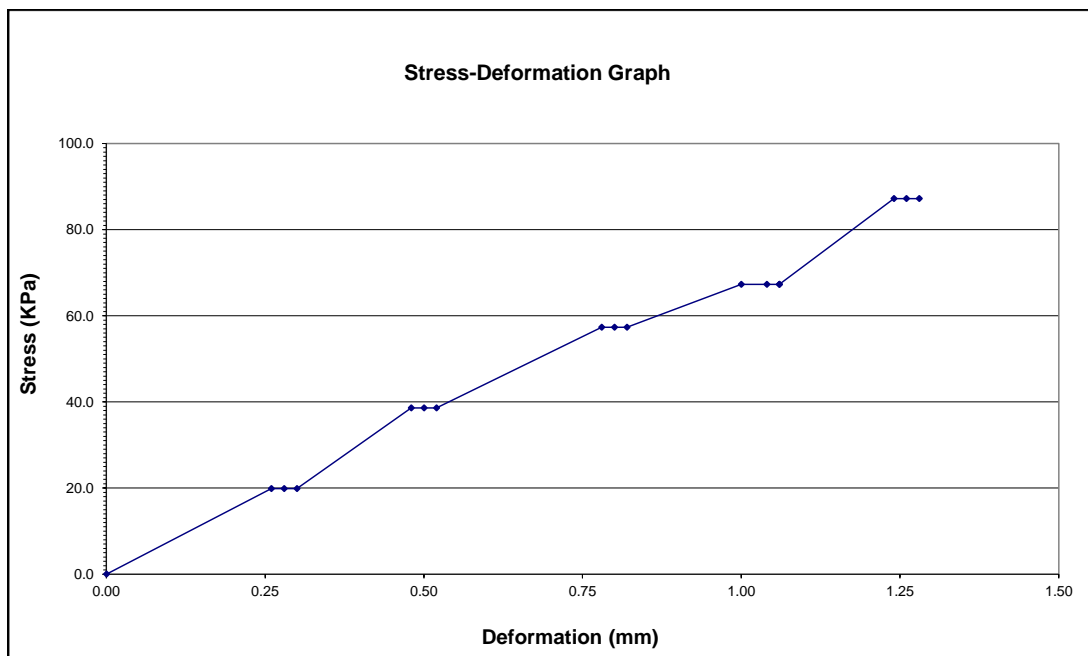
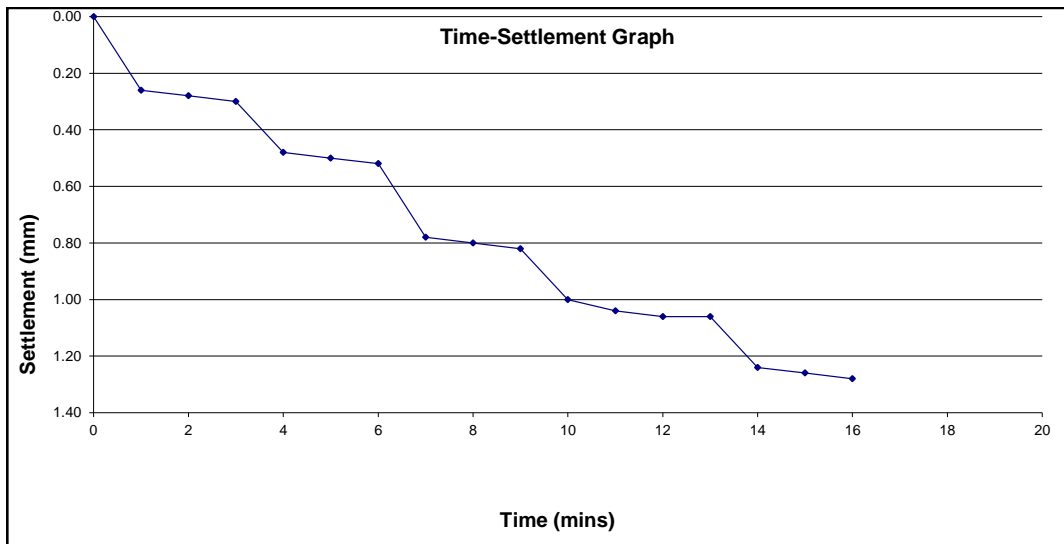
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17809  
**Date Tested:** 10.05.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 16.05.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17865  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 12.05.2021  
**Test conducted by:** WB

**Test location:** AU19@1200 CD  
**Material description:** Course Gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** 0 **Max Min temp:** 10-12°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	7.2
<b>Applied Pressure at 1.25mm (KPa):</b>	93.5	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	45.6

**Comments:**

See attached graphs

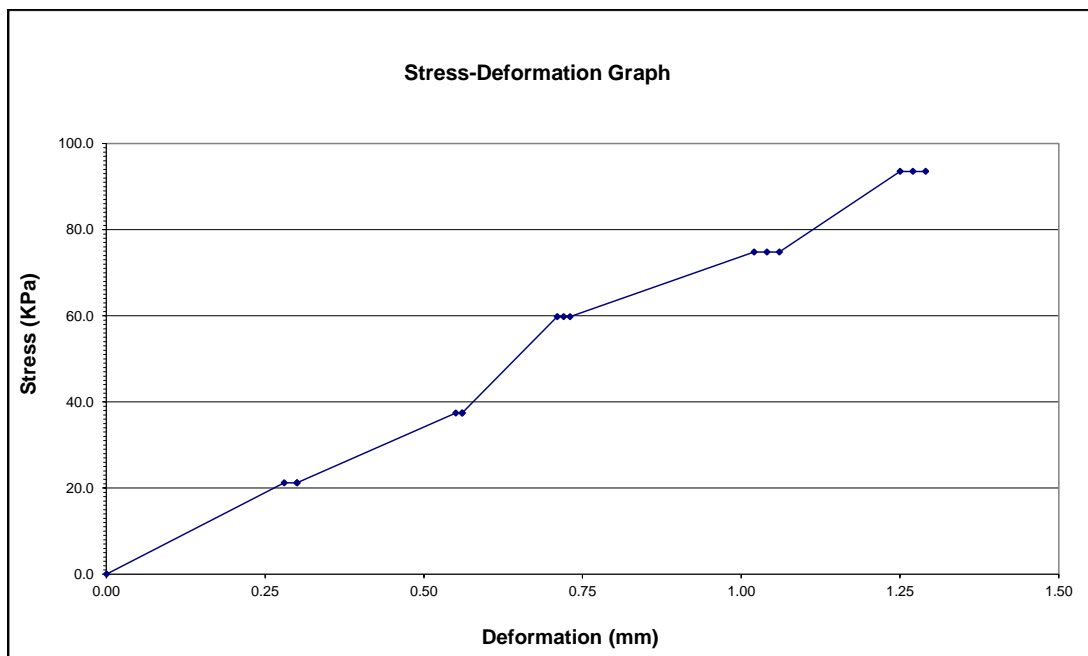
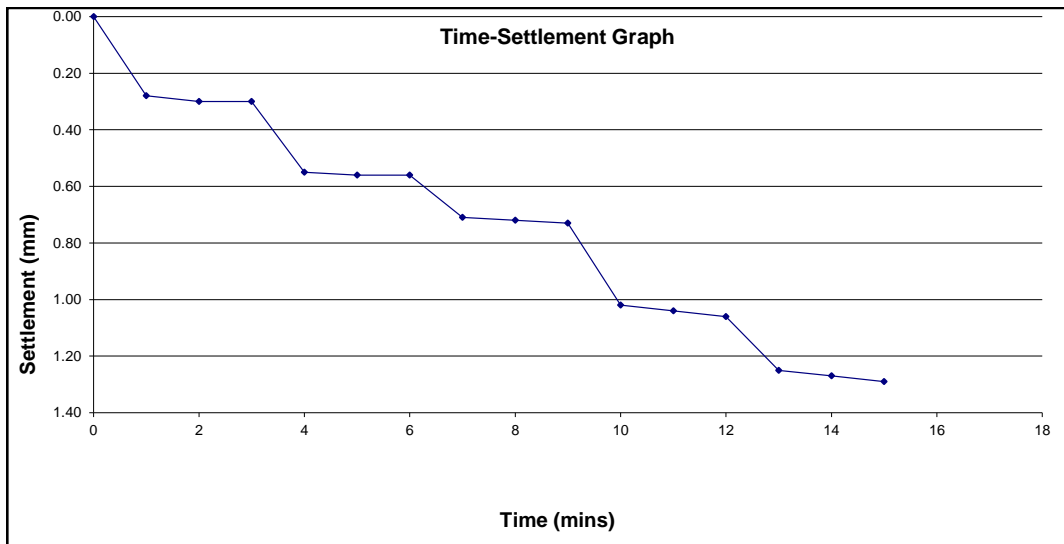
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17865  
**Date Tested:** 12.05.2021





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 16.05.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17866  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 12.05.2021  
**Test conducted by:** WB

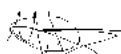
**Test location:** AY17@2100  
**Material description:** Course Gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** 0 **Max Min temp:** 10-12°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	7.1
<b>Applied Pressure at 1.25mm (KPa):</b>	97.2	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	45.3

**Comments:**

See attached graphs

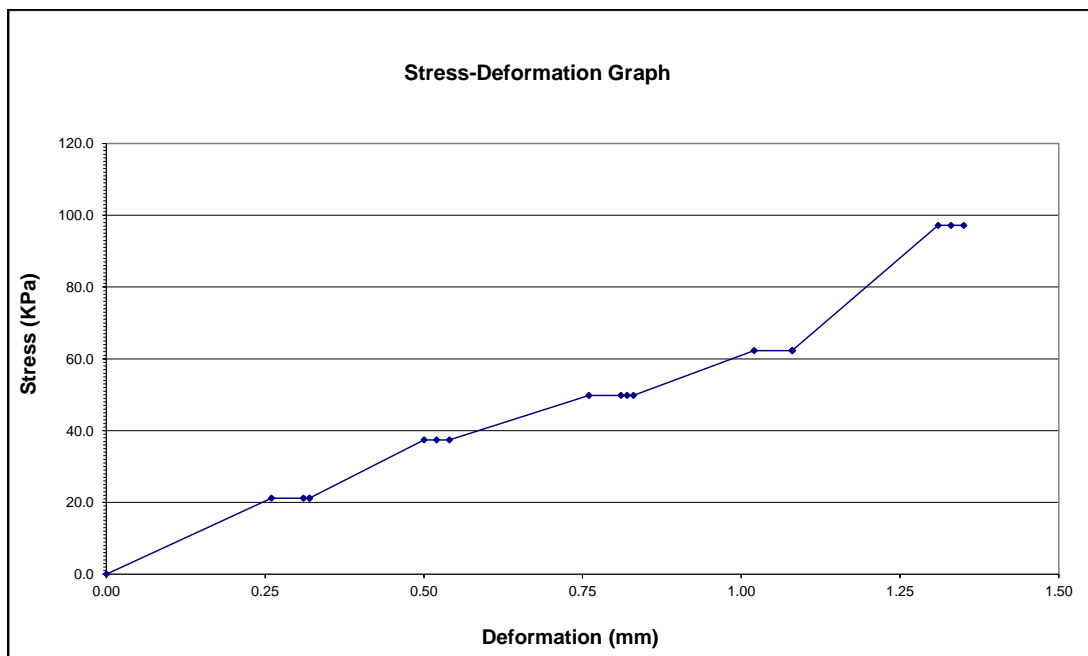
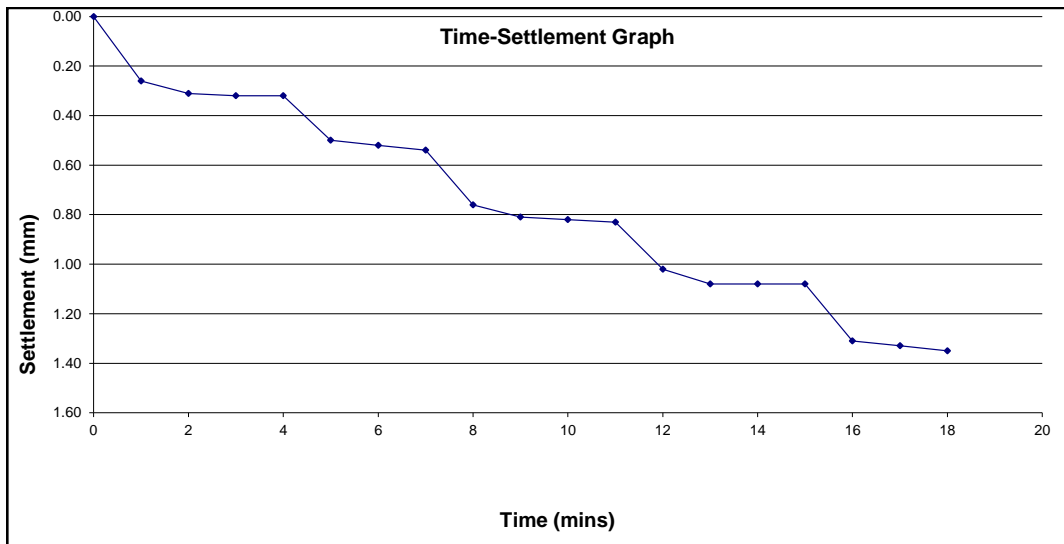
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17866  
**Date Tested:** 12.05.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 16.05.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17867  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 12.05.2021  
**Test conducted by:** WB

**Test location:** AY17@300  
**Material description:** Course Gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** 0 **Max Min temp:** 10-12°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	3.3
<b>Applied Pressure at 1.25mm (KPa):</b>	59.8	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	28.9

**Comments:**

See attached graphs

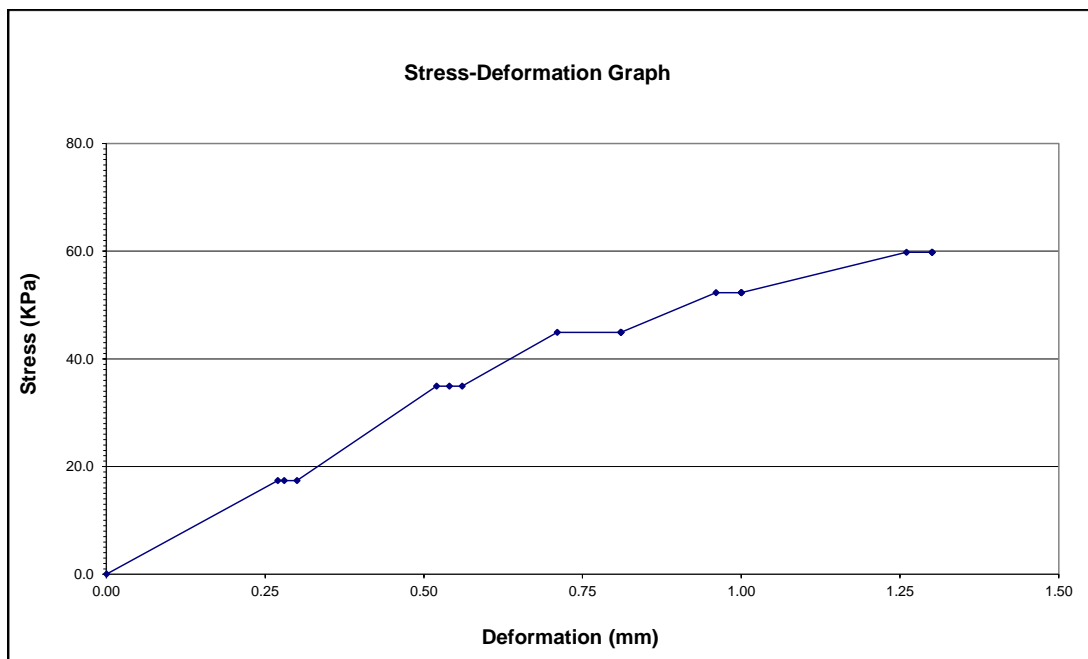
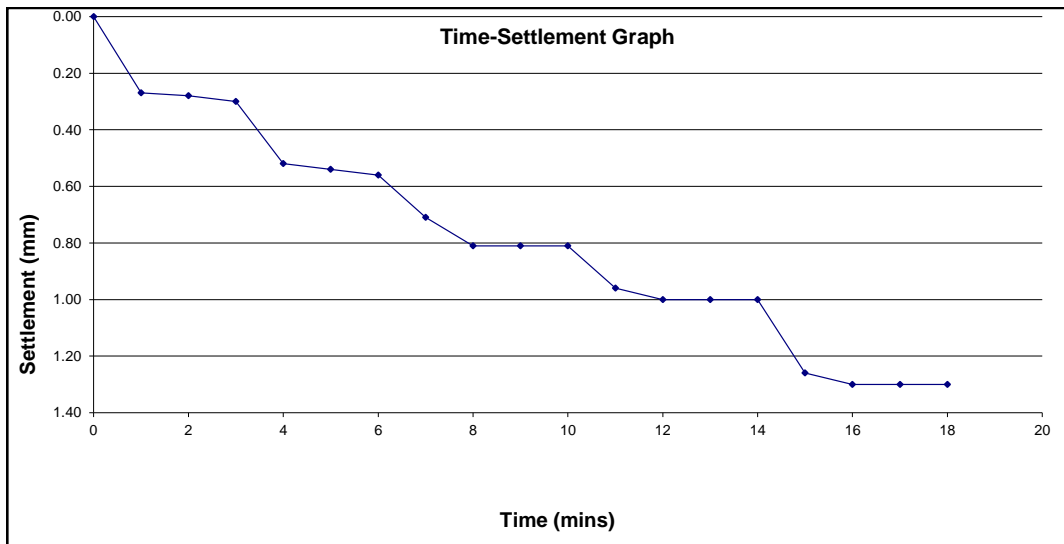
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17867  
**Date Tested:** 12.05.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 16.05.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 17868  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 12.05.2021  
**Test conducted by:** WB

**Test location:** AW19@900  
**Material description:** Course Gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** 0 **Max Min temp:** 10-12°c

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	3.8
<b>Applied Pressure at 1.25mm (KPa):</b>	67.3	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	31.4

**Comments:**

See attached graphs

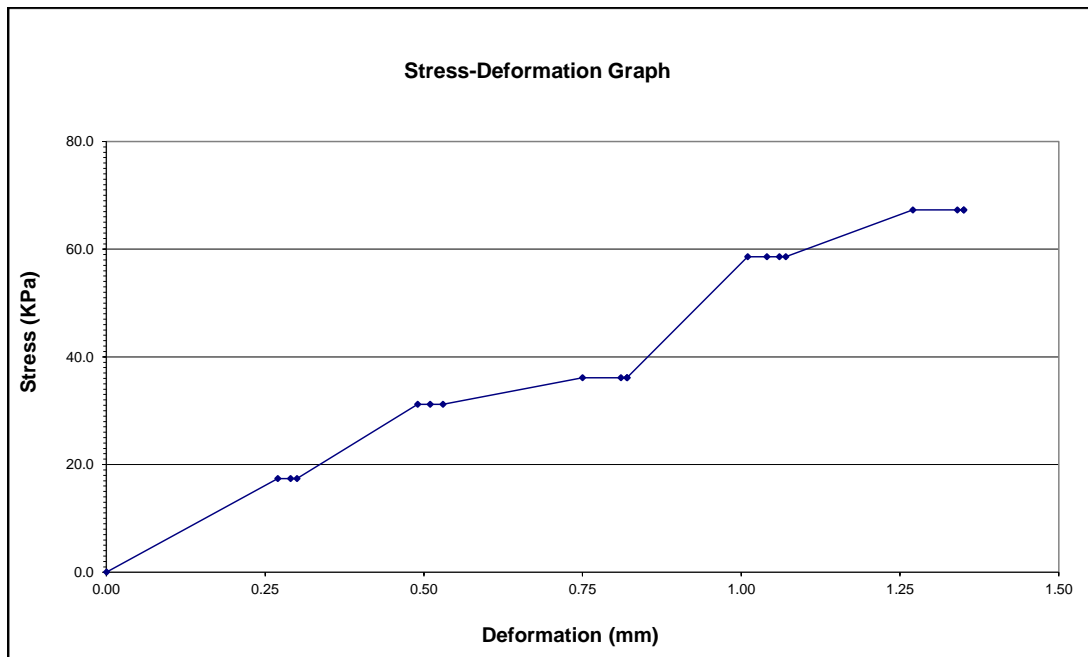
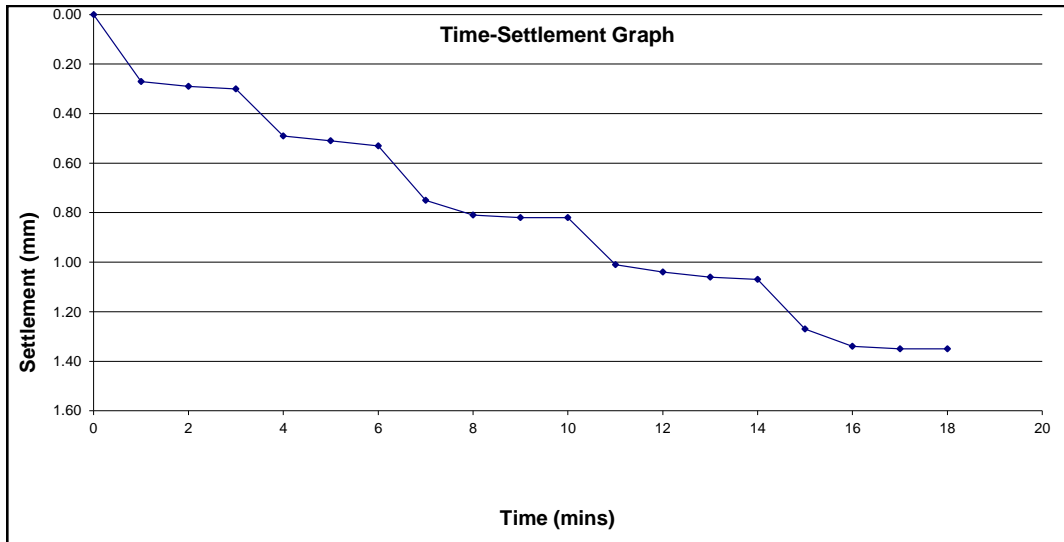
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 17868  
**Date Tested:** 12.05.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 18.05.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18009  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 14.05.2021  
**Test conducted by:** WB

**Test location:** AU19@900 CD  
**Material description:** Coarse Gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** 0 **Max Min temp:** 10-12°c

### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	20
<b>Applied Pressure at 1.25mm (KPa):</b>	174.4	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	81.9

### Comments:

See attached graphs

**Signed:**



For & on behalf of  
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Authorised Signatories:  
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 C. Spencer (Fieldwork Supervisor)

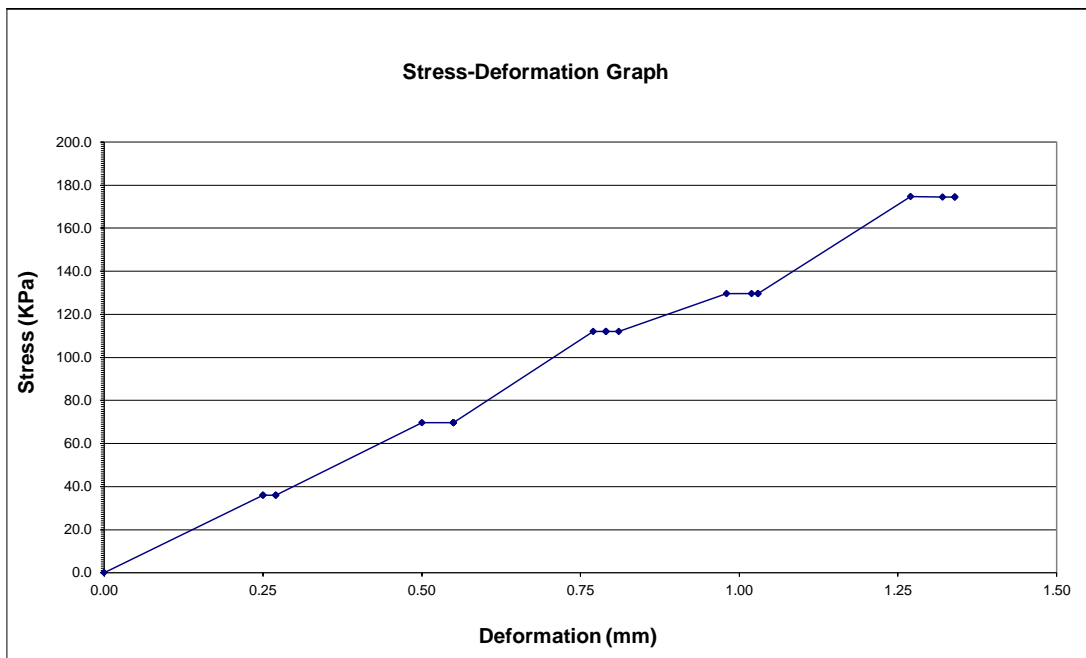
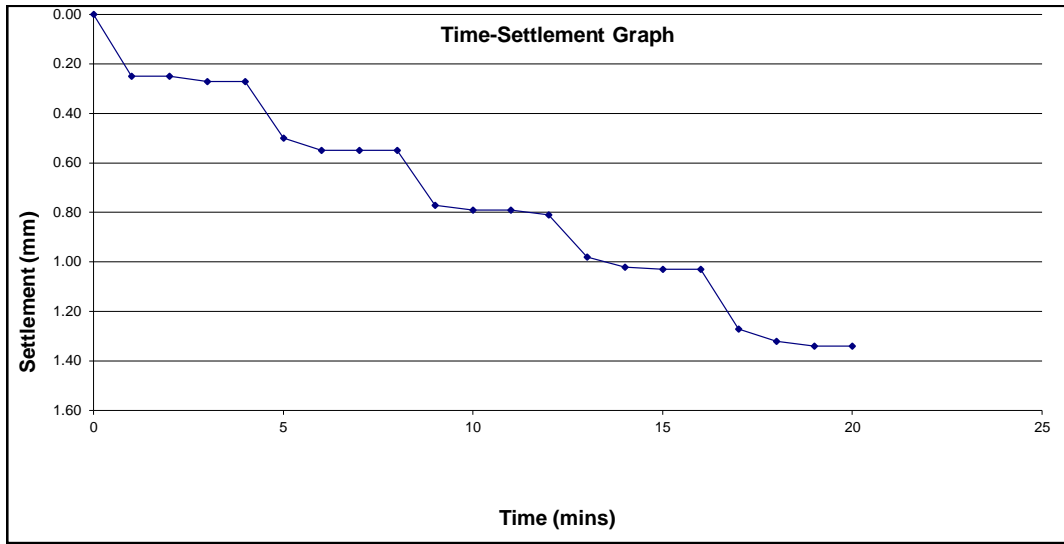
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18009  
**Date Tested:** 14.05.2021





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 18.05.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18010  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 14.05.2021  
**Test conducted by:** WB

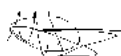
**Test location:** AY15F2  
**Material description:** Firm Brown Clay **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** 0 **Max Min temp:** 10-12°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	4.3
<b>Applied Pressure at 1.25mm (KPa):</b>	72.3	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	33.9

**Comments:**

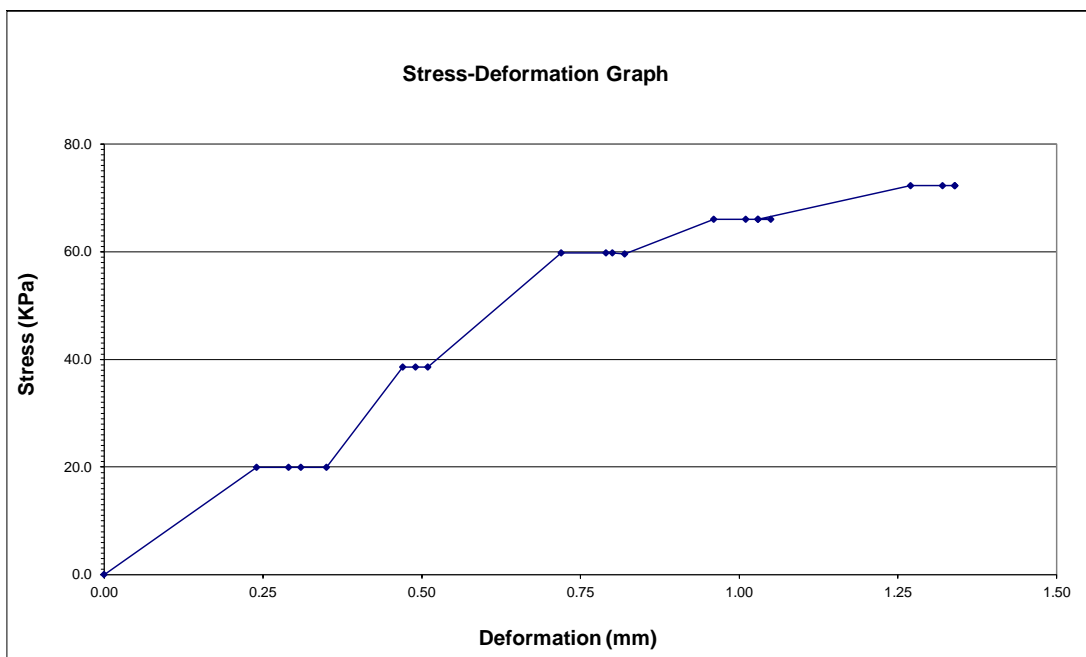
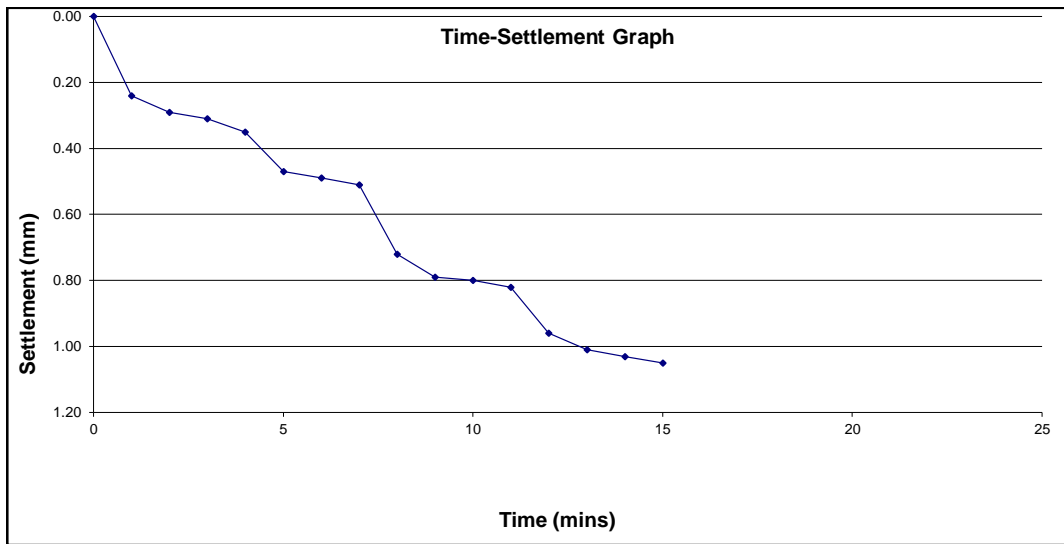
See attached graphs

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 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18010  
**Date Tested:** 14.05.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 26.05.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18159  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 25.05.2021  
**Test conducted by:** JK

**Test location:** AW21@2.56  
**Material description:** Course Gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** Formation **Max Min temp:** 10°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	50
<b>Applied Pressure at 1.25mm (KPa):</b>	286.6	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	138.7

**Comments:**

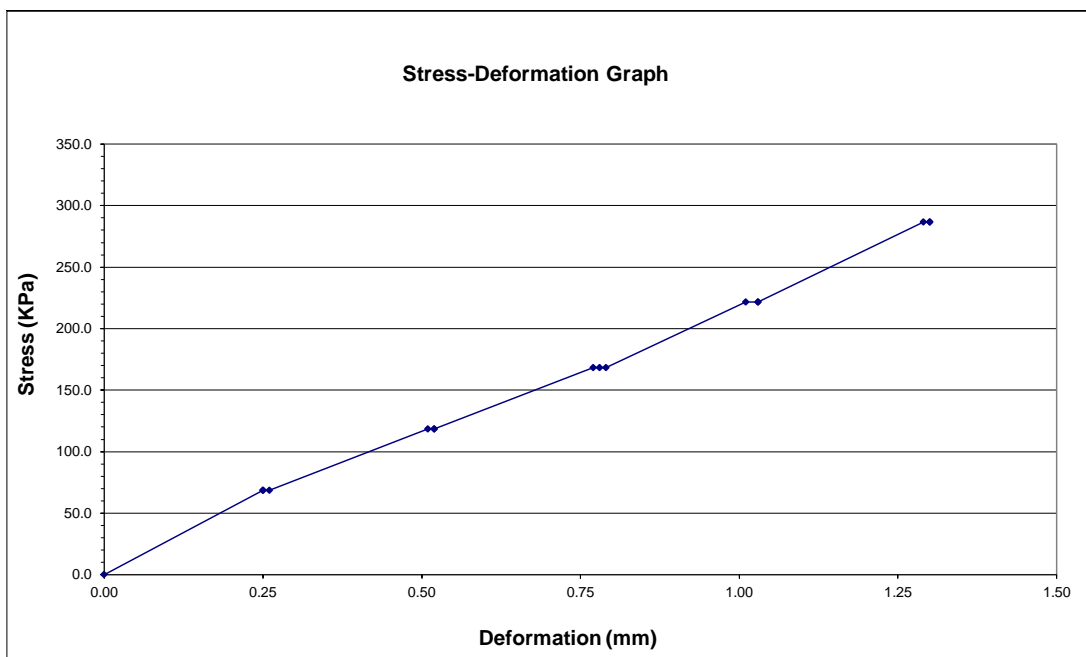
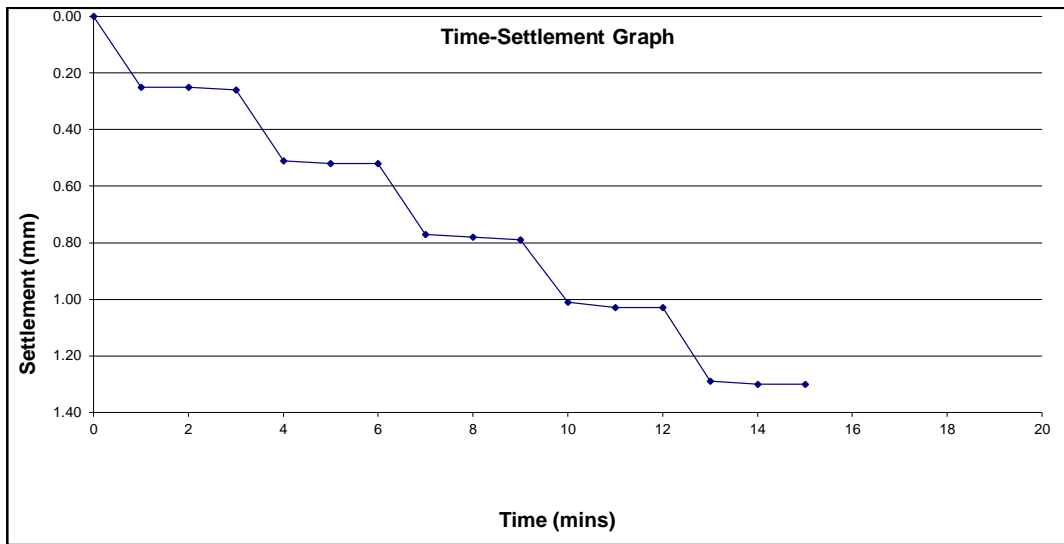
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 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18159  
**Date Tested:** 25.05.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 26.05.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18161  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 25.05.2021  
**Test conducted by:** JK

**Test location:** AS21@6.04  
**Material description:** Course Gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** Formation **Max Min temp:** 10°C

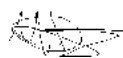
### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	40
<b>Applied Pressure at 1.25mm (KPa):</b>	255.4	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	121.7

### Comments:

See attached graphs

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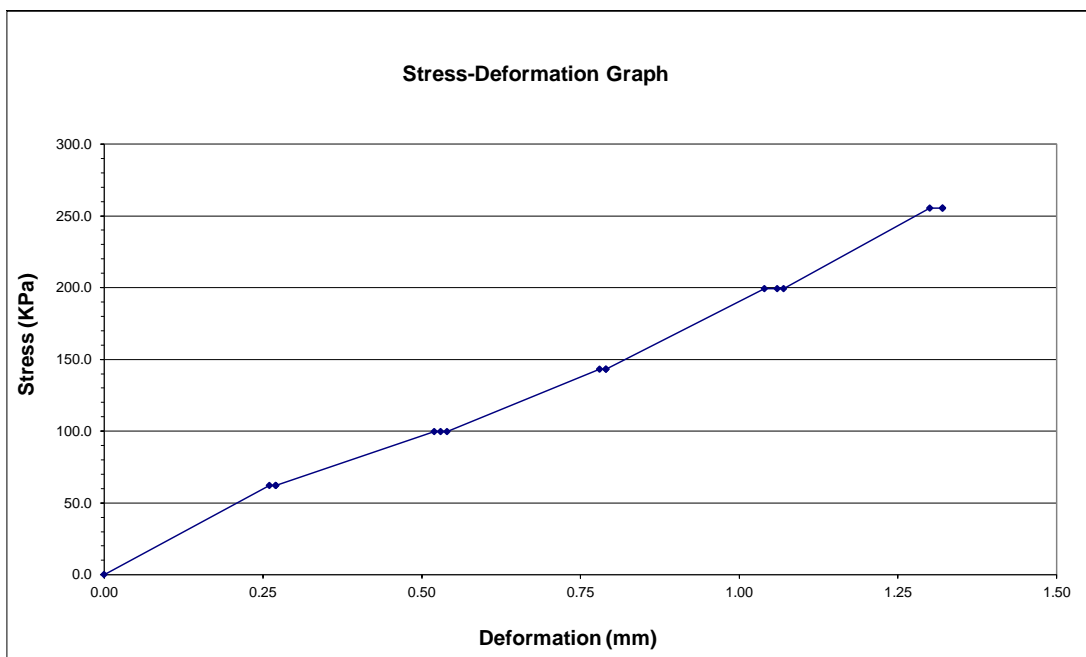
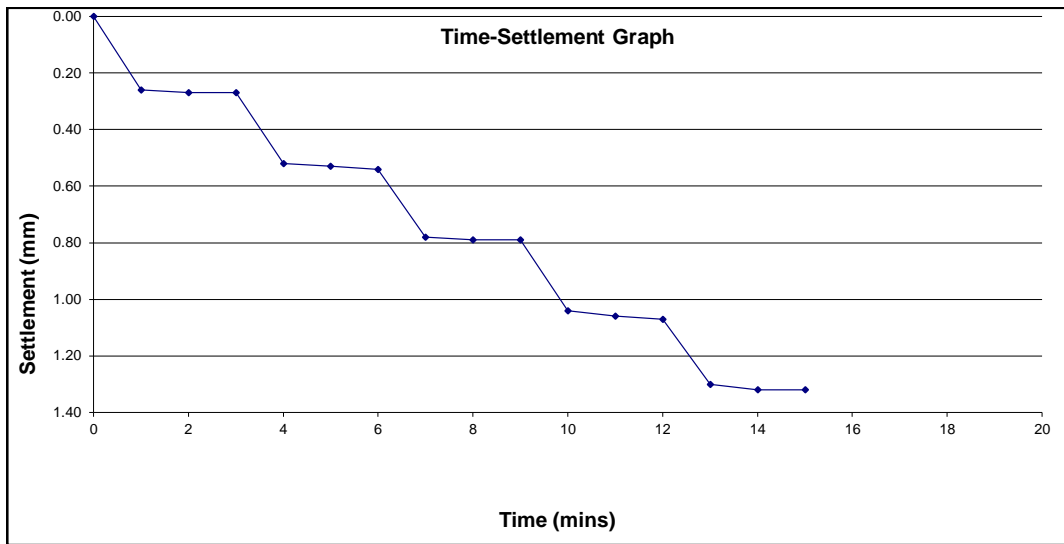
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18161  
**Date Tested:** 25.05.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 26.05.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18163  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 25.05.2021  
**Test conducted by:** JK

**Test location:** AW21F  
**Material description:** Brown Sandy Gravelly CLAY **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Overcast  
**Test depth (m):** Formation **Max Min temp:** 10°C

### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	17
<b>Applied Pressure at 1.25mm (KPa):</b>	155.8	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	74.8

### Comments:

See attached graphs

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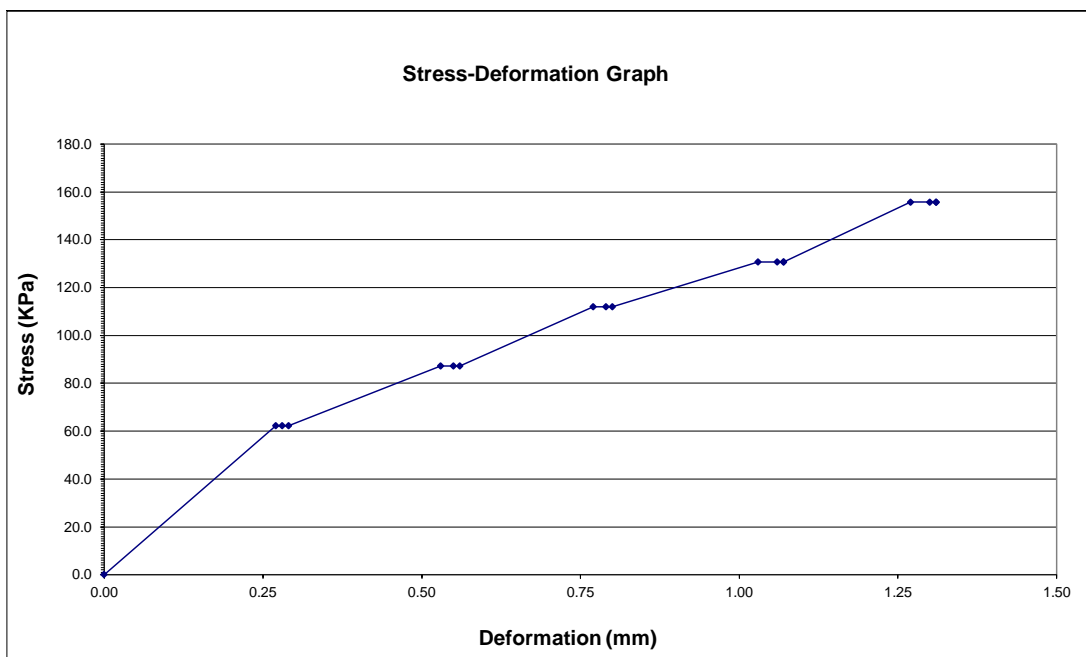
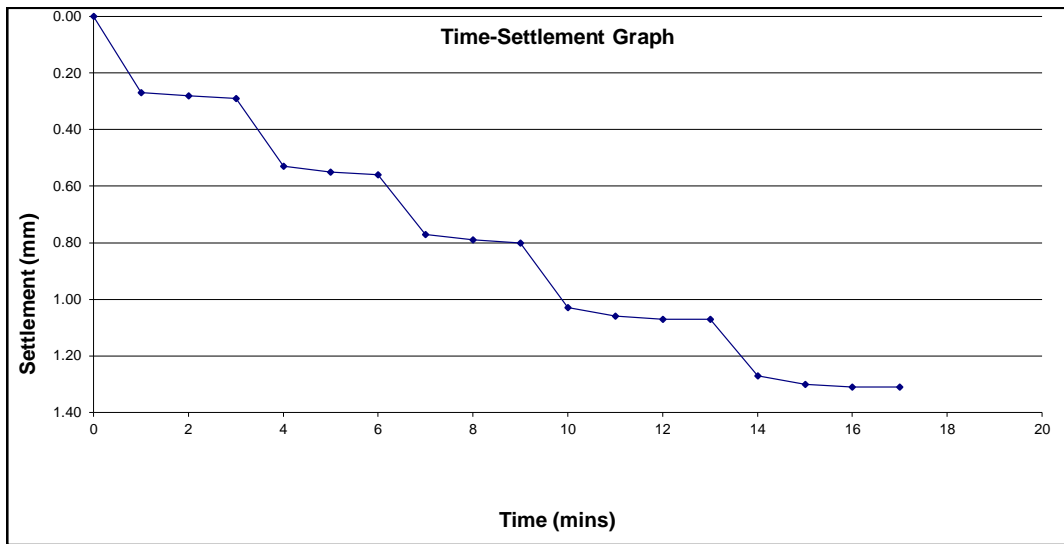
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18163  
**Date Tested:** 25.05.2021





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 28.05.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18219  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 27.05.2021  
**Test conducted by:** EA

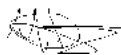
**Test location:** AW17 F  
**Material description:** Brown Slightly Sandy Slightly Gravelly CLAY **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** Formation **Max Min temp:** 13°C-15°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	5.8
<b>Applied Pressure at 1.25mm (KPa):</b>	85.7	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	40.2

**Comments:**

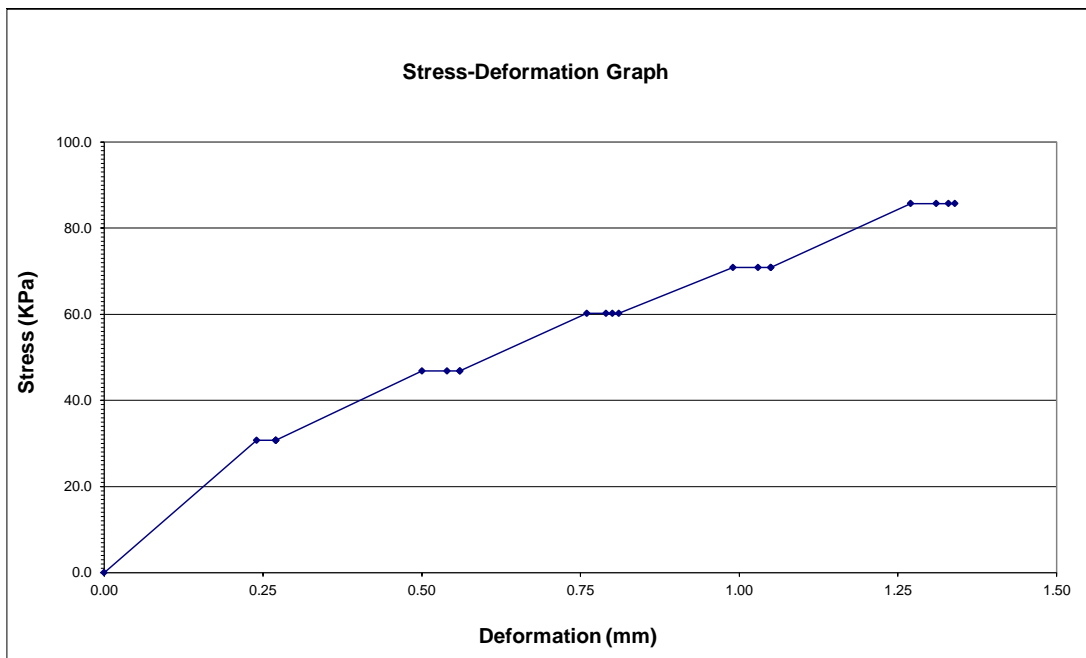
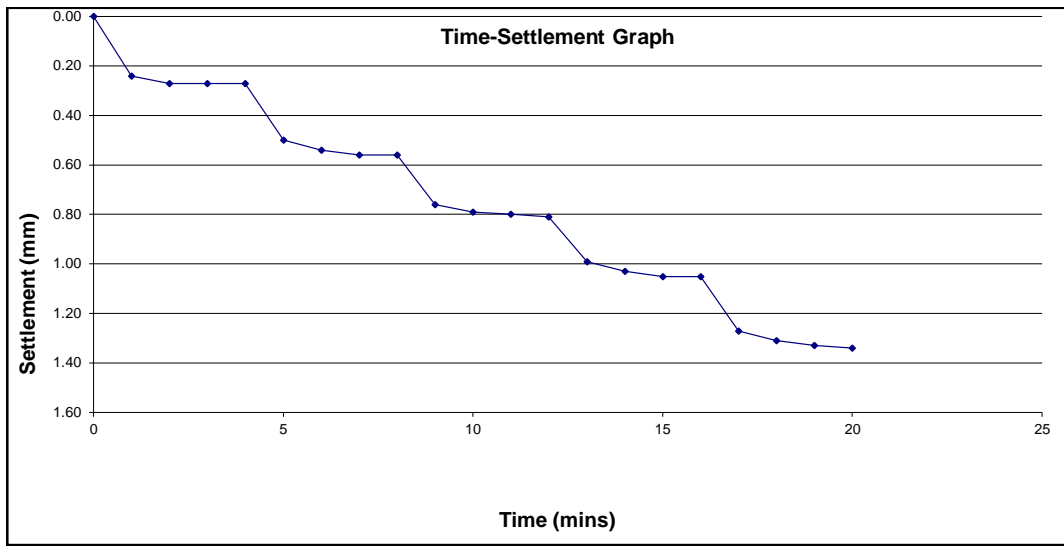
See attached graphs

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18219  
**Date Tested:** 27.05.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 28.05.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18220  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 27.05.2021  
**Test conducted by:** EA

**Test location:** AW17 @ 600  
**Material description:** Coarse Gravel **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** 600mm above Formation level **Max Min temp:** 14°C-16°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	8.7
<b>Applied Pressure at 1.25mm (KPa):</b>	89.6	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	50.8

**Comments:**

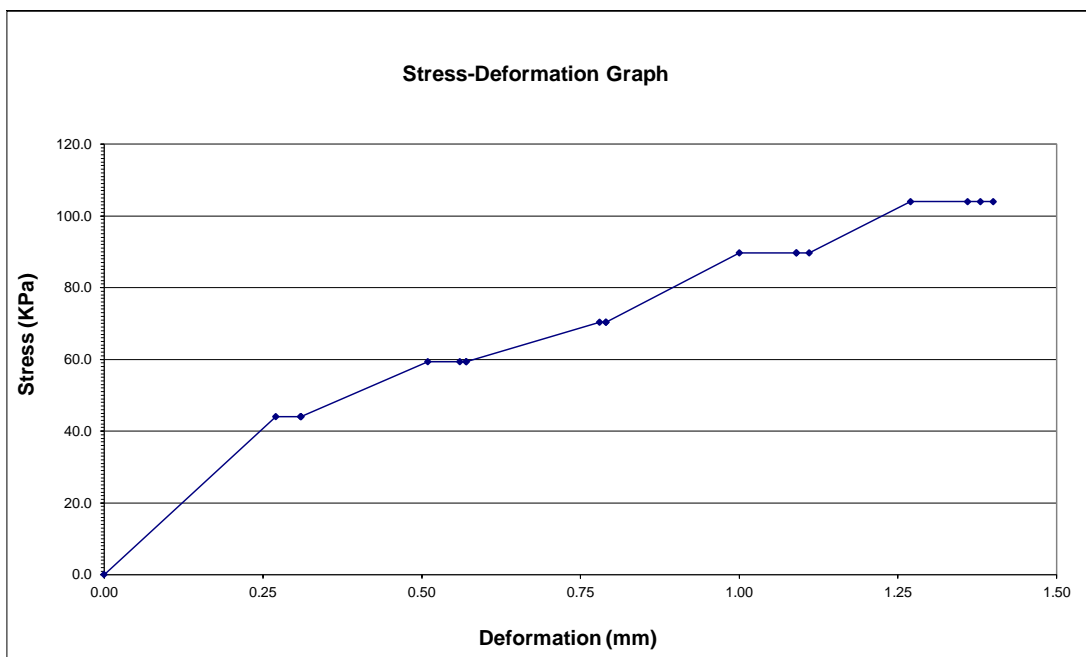
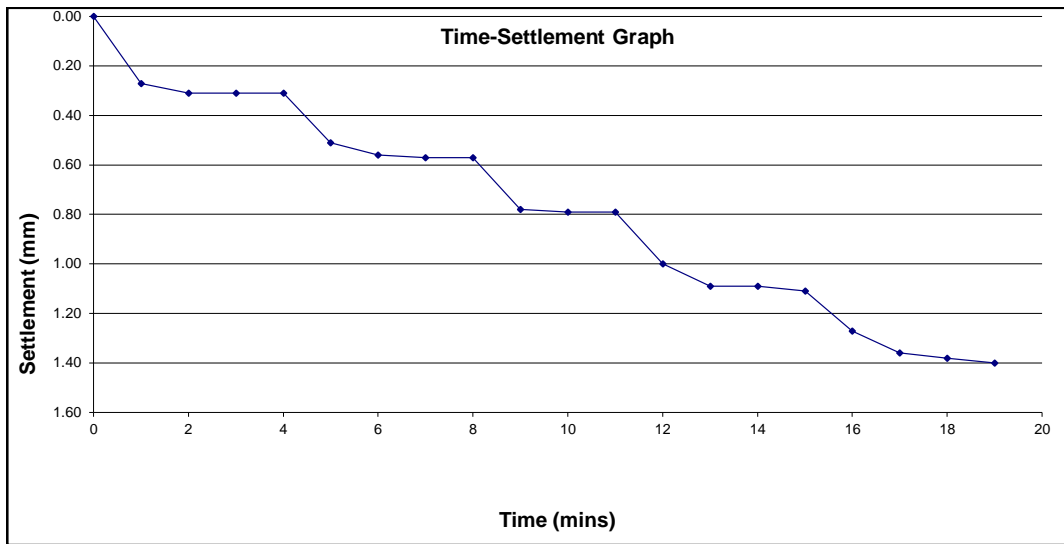
See attached graphs

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 G Dresser (Director)  
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18220  
**Date Tested:** 27.05.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 28.05.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18222  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 27.05.2021  
**Test conducted by:** EA

**Test location:** AW21 F CD  
**Material description:** Brown Slightly Sandy CLAY **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** Formation **Max Min temp:** 14°C-16°C

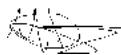
### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	6.2
<b>Applied Pressure at 1.25mm (KPa):</b>	84.6	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	41.9

### Comments:

See attached graphs

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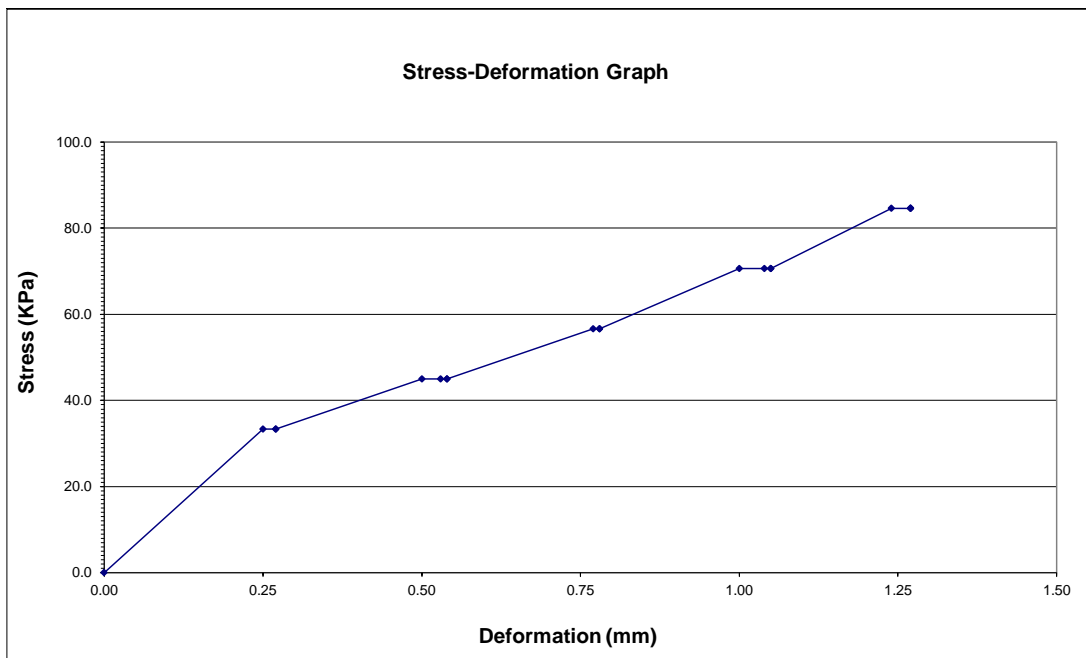
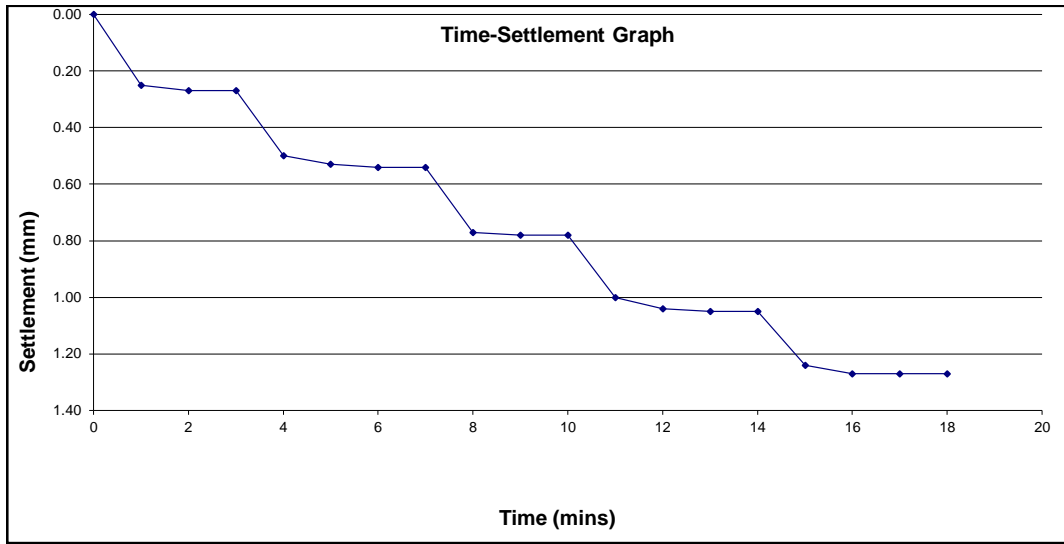
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18222  
**Date Tested:** 27.05.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 05.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18310  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 02.06.2021  
**Test conducted by:** WB

**Test location:** AU23-F  
**Material description:** Firm Brown slightly Silty CLAY **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** Formation **Max Min temp:** 16°C

### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	8.2
<b>Applied Pressure at 1.25mm (KPa):</b>	99.7	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	49

### Comments:

See attached graphs

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 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)

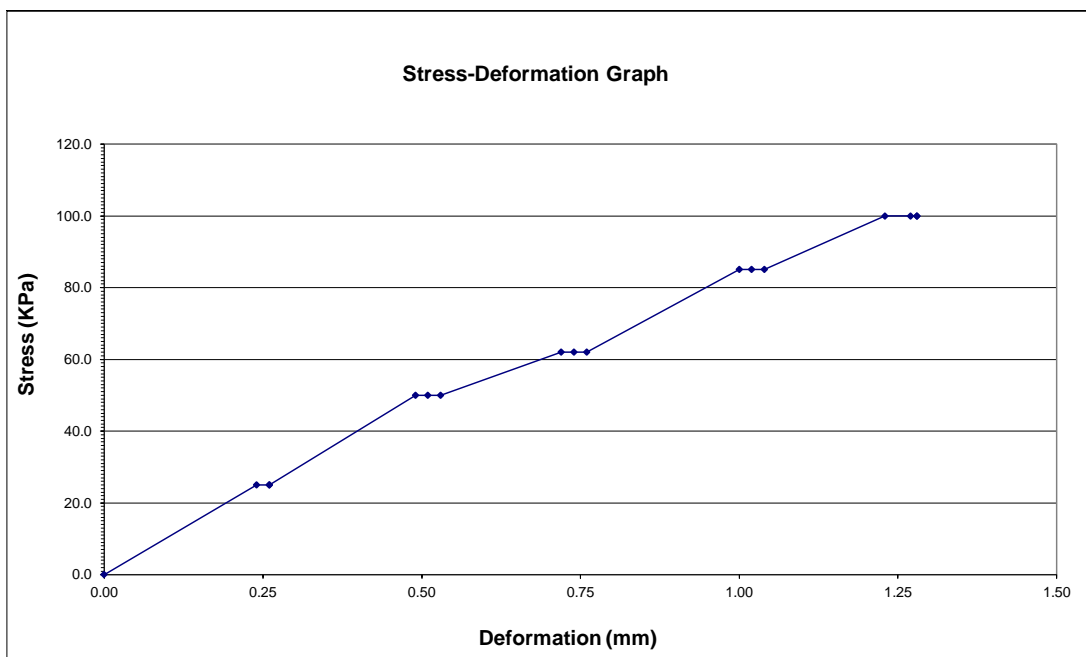
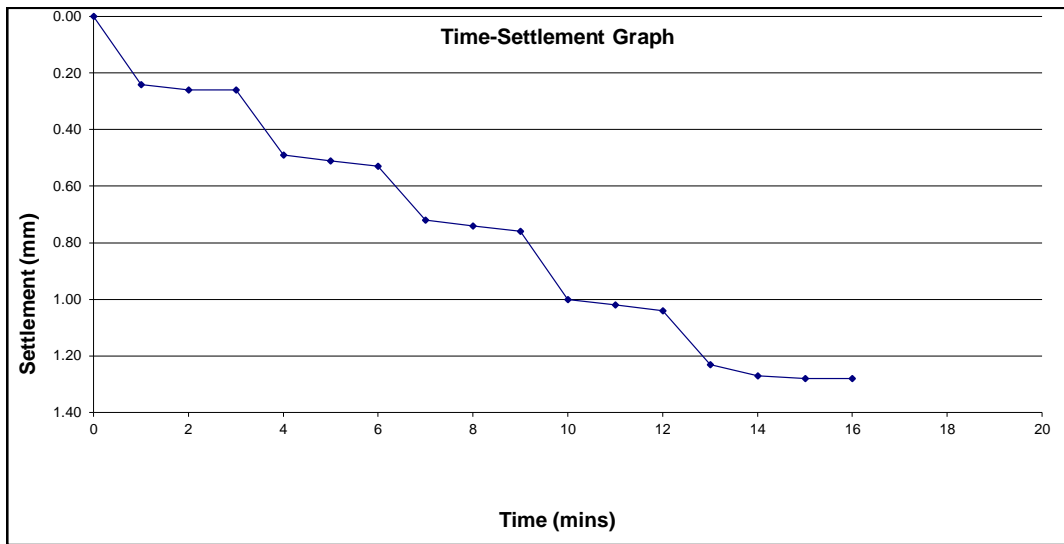
**Page:** 1 of 2

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## Test Results

Site: British Steel, Redcar  
Client: Seymour Civils

Lab ref: MT0318 – 18310  
Date Tested: 02.06.2021





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 05.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18311  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 02.06.2021  
**Test conducted by:** WB

**Test location:** AU21@600 (2)  
**Material description:** Grey Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** Formation **Max Min temp:** 16°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	6.7
<b>Applied Pressure at 1.25mm (KPa):</b>	89.7	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	43.7

**Comments:**

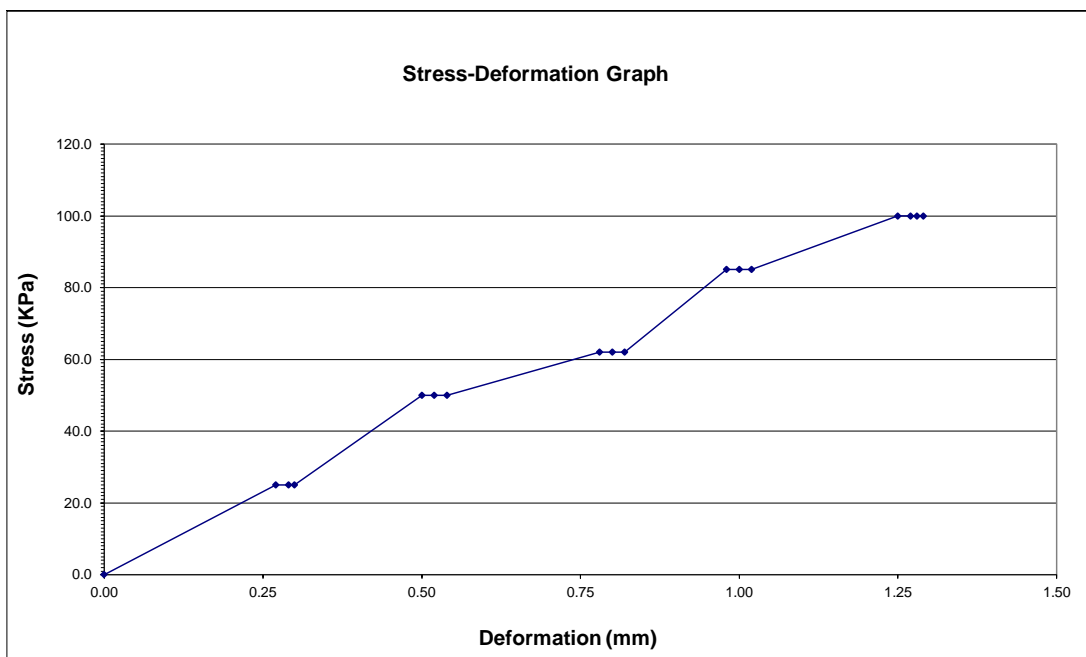
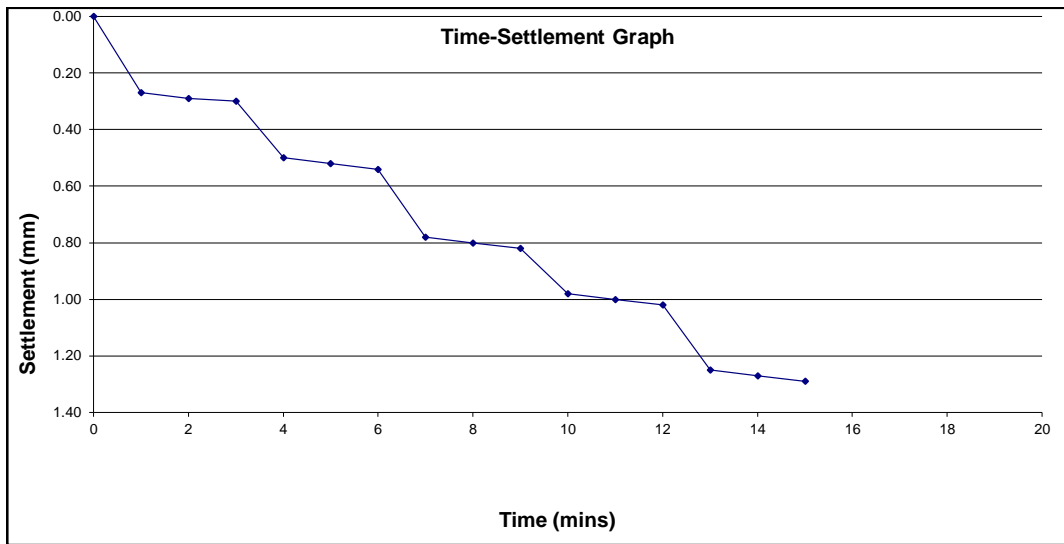
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18311  
**Date Tested:** 02.06.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 05.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18312  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 02.06.2021  
**Test conducted by:** WB

**Test location:** AU17-S3  
**Material description:** Grey Mudstone **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** Formation **Max Min temp:** 16°C

### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	6.2
<b>Applied Pressure at 1.25mm (KPa):</b>	87.2	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	41.9

### Comments:

See attached graphs

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 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)

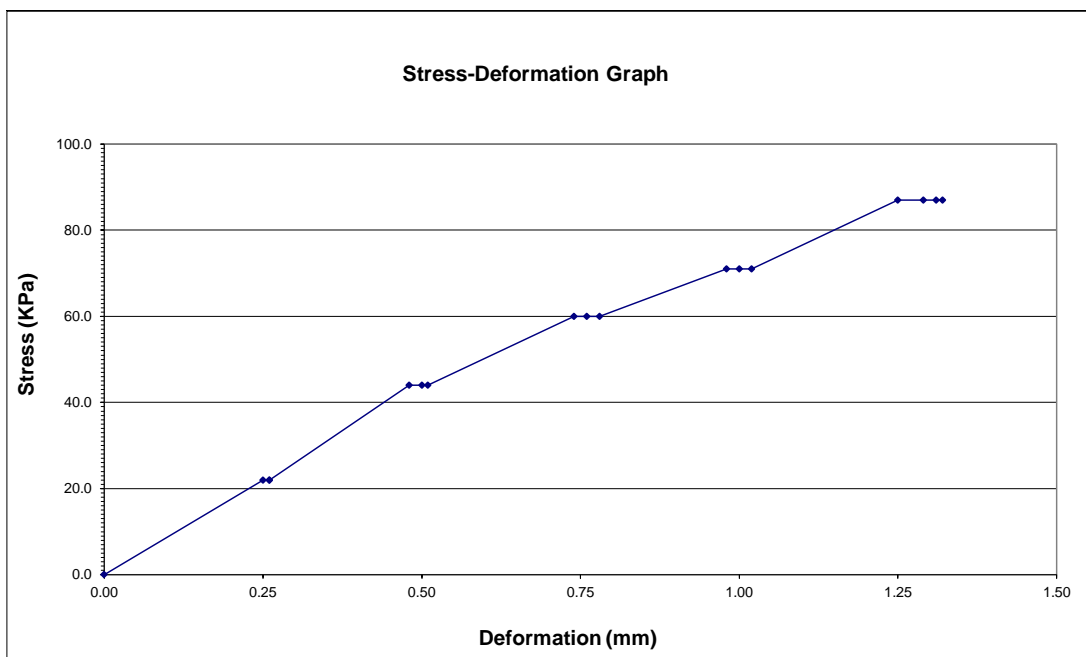
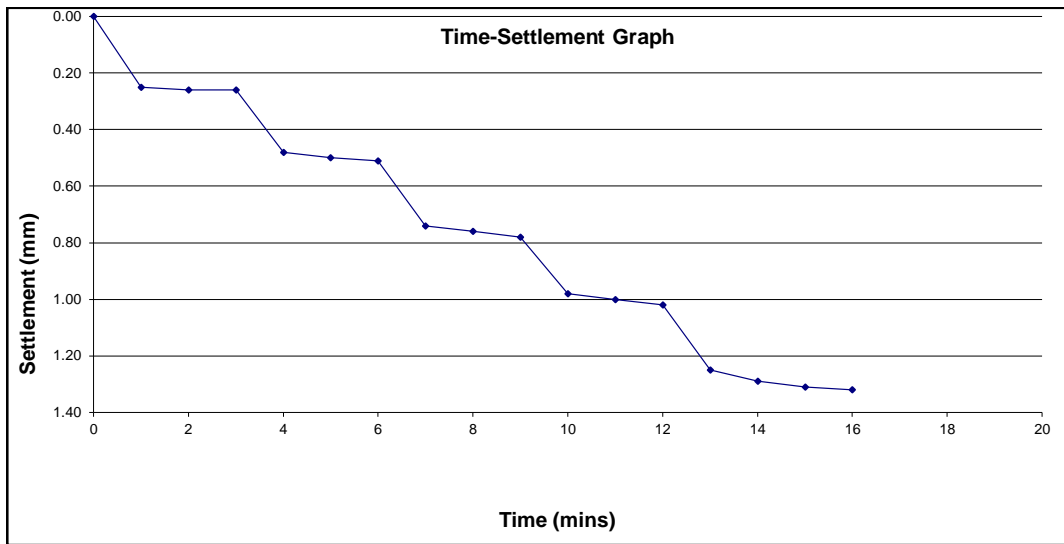
**Page:** 1 of 2

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## Test Results

Site: British Steel, Redcar  
Client: Seymour Civils

Lab ref: MT0318 – 18312  
Date Tested: 02.06.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 09.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18442  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 08.06.2021  
**Test conducted by:** WB

**Test location:** AW19 @ 1200  
**Material description:** Grey Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** 1200mm above Formation Level **Max Min temp:** 20°C - 22°C


### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	4.6
<b>Applied Pressure at 1.25mm (KPa):</b>	74.8	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	35.1

### Comments:

See attached graphs

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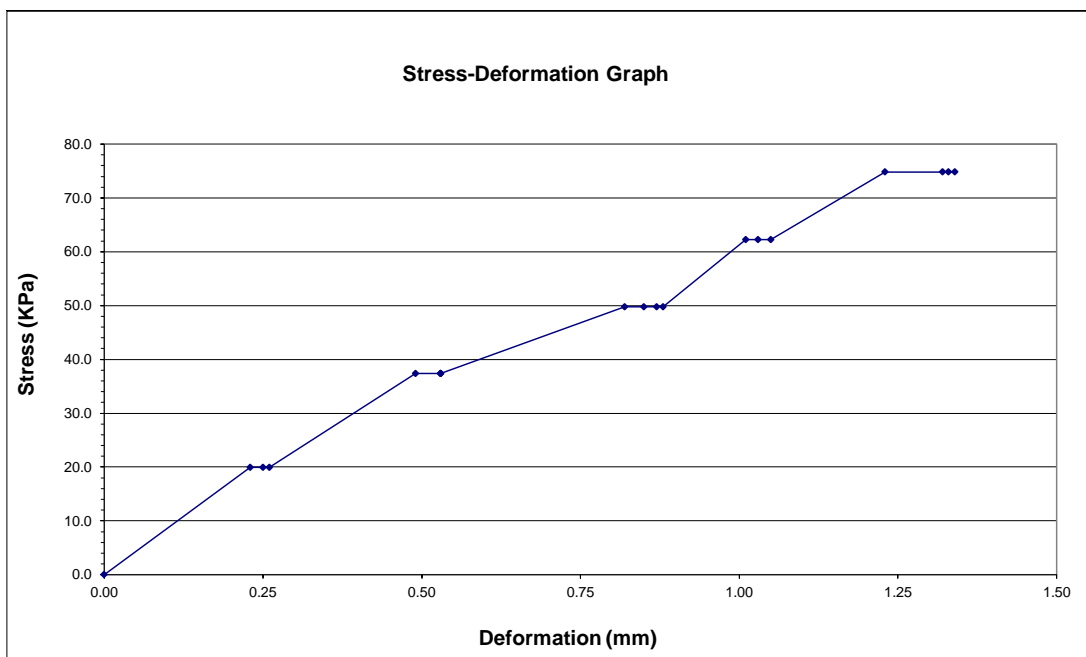
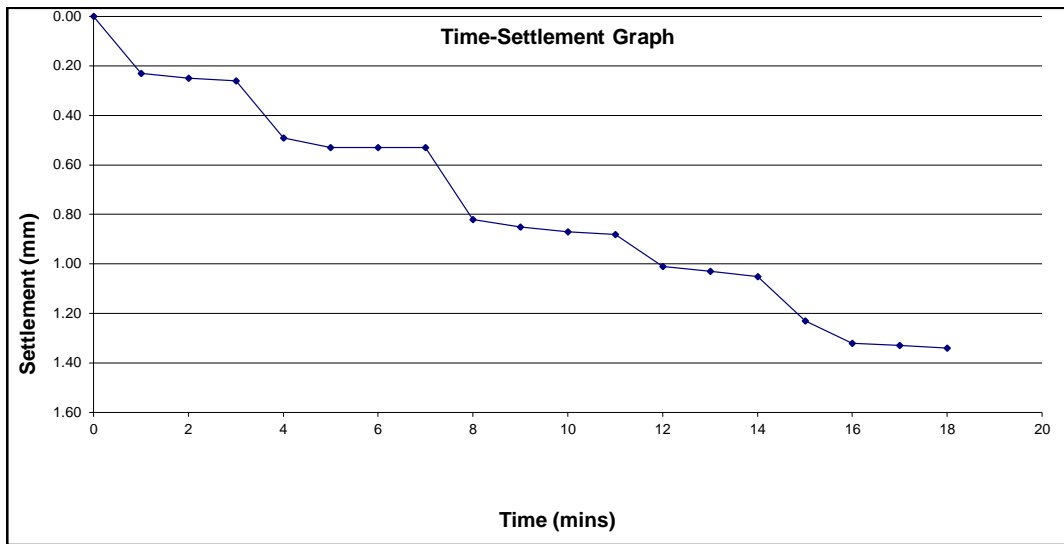
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18442  
**Date Tested:** 08.06.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 09.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18443  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 08.06.2021  
**Test conducted by:** WB

**Test location:** AU19 @ 1200 MS  
**Material description:** Mudstone **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** 1200mm above Formation Level **Max Min temp:** 20°C - 22°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	38
<b>Applied Pressure at 1.25mm (KPa):</b>	261.7	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	118.4

**Comments:**

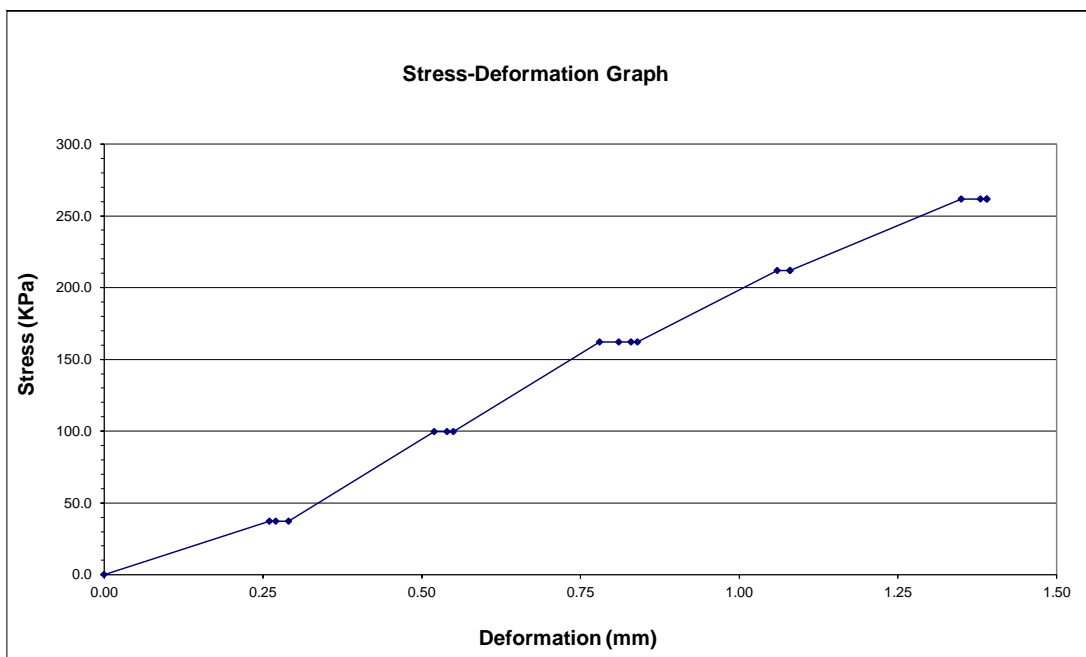
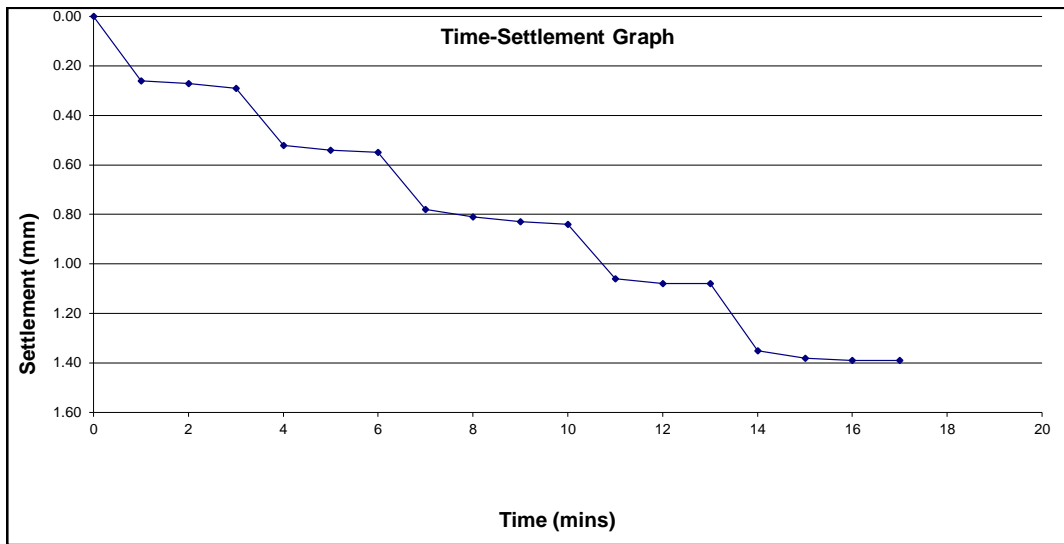
See attached graphs

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 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18443  
**Date Tested:** 08.06.2021





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 09.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18448  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 07.06.2021  
**Test conducted by:** WB


**Test location:** AW23 @ 900 MS  
**Material description:** Mudstone **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** 900mm above Formation Level **Max Min temp:** 18°C - 20°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	17
<b>Applied Pressure at 1.25mm (KPa):</b>	149.5	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	73.5

**Comments:**

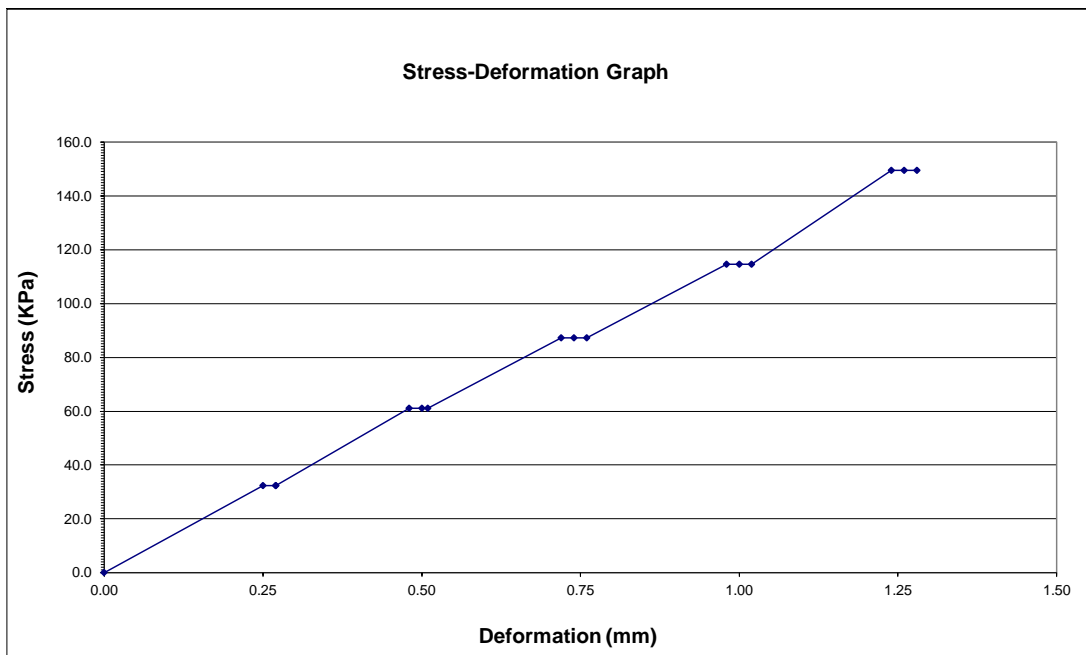
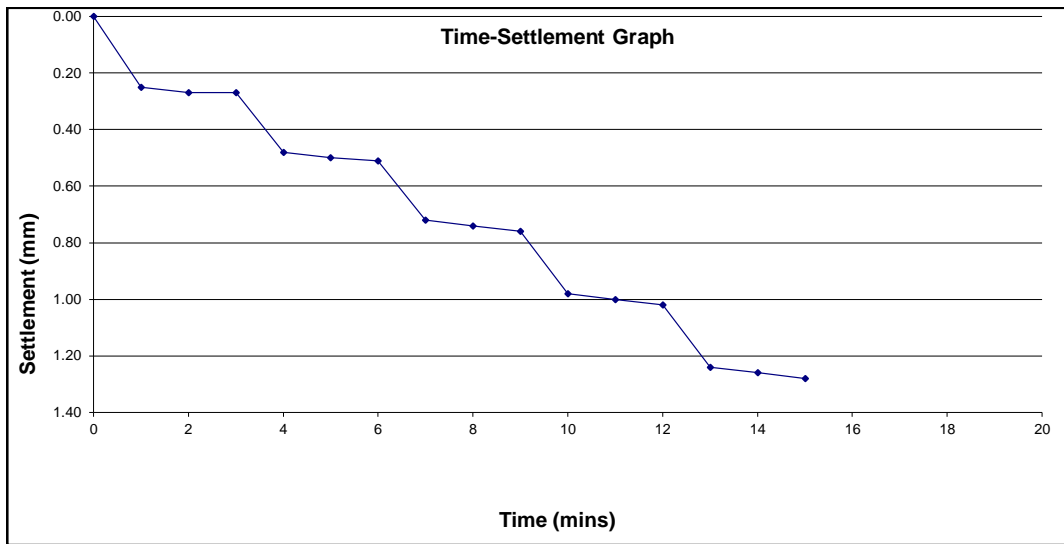
See attached graphs

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**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

## Test Results

Site: British Steel, Redcar  
Client: Seymour Civils

Lab ref: MT0318 – 18448  
Date Tested: 07.06.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 09.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18449  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 07.06.2021  
**Test conducted by:** WB

**Test location:** AU19 @ 900 MS  
**Material description:** Mudstone **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** 900mm above Formation Level **Max Min temp:** 18°C - 20°C

### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	24
<b>Applied Pressure at 1.25mm (KPa):</b>	184.4	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	91.3

### Comments:

See attached graphs

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**Dunelm Testing Ltd**

Authorised Signatories:  
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 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)

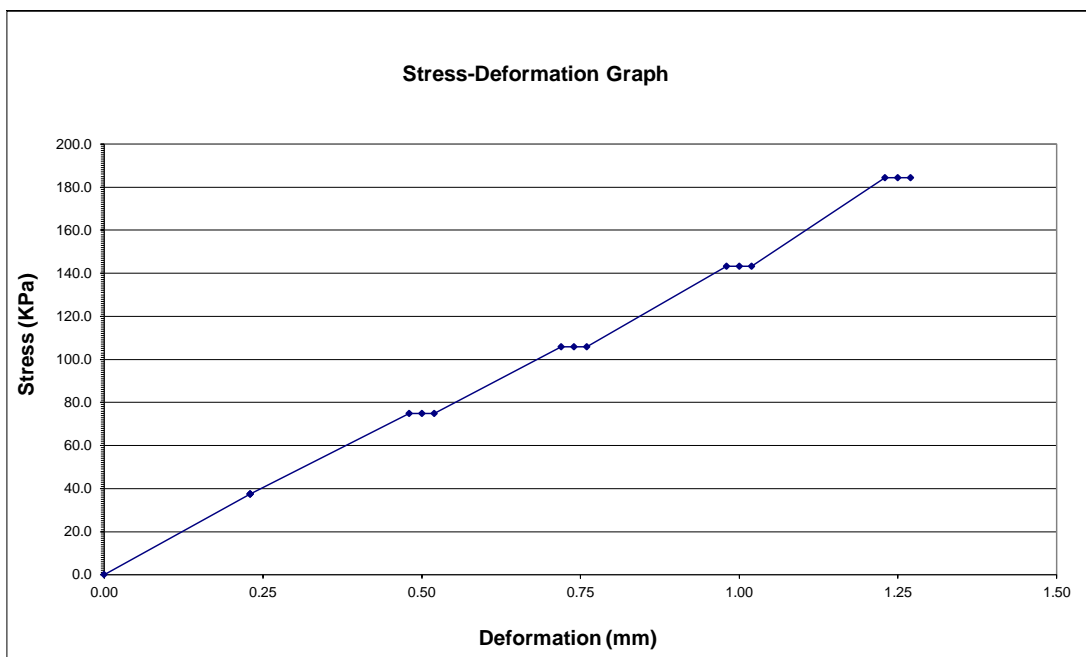
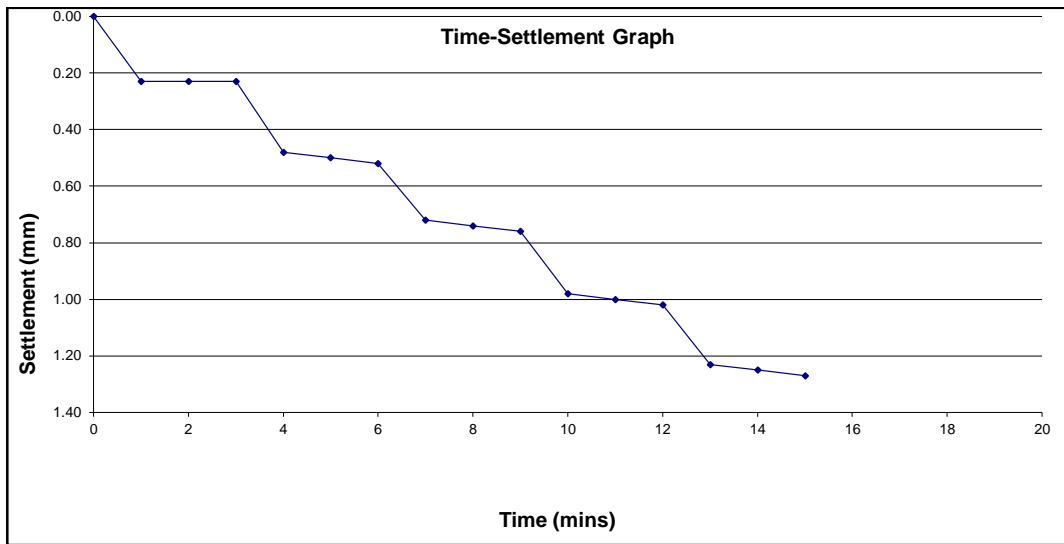
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18449  
**Date Tested:** 07.06.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 09.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18450  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 07.06.2021  
**Test conducted by:** WB

**Test location:** AW17 @ 900 MS  
**Material description:** Mudstone **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** 900mm above Formation Level **Max Min temp:** 18°C - 20°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	53
<b>Applied Pressure at 1.25mm (KPa):</b>	286.6	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	143.1

**Comments:**

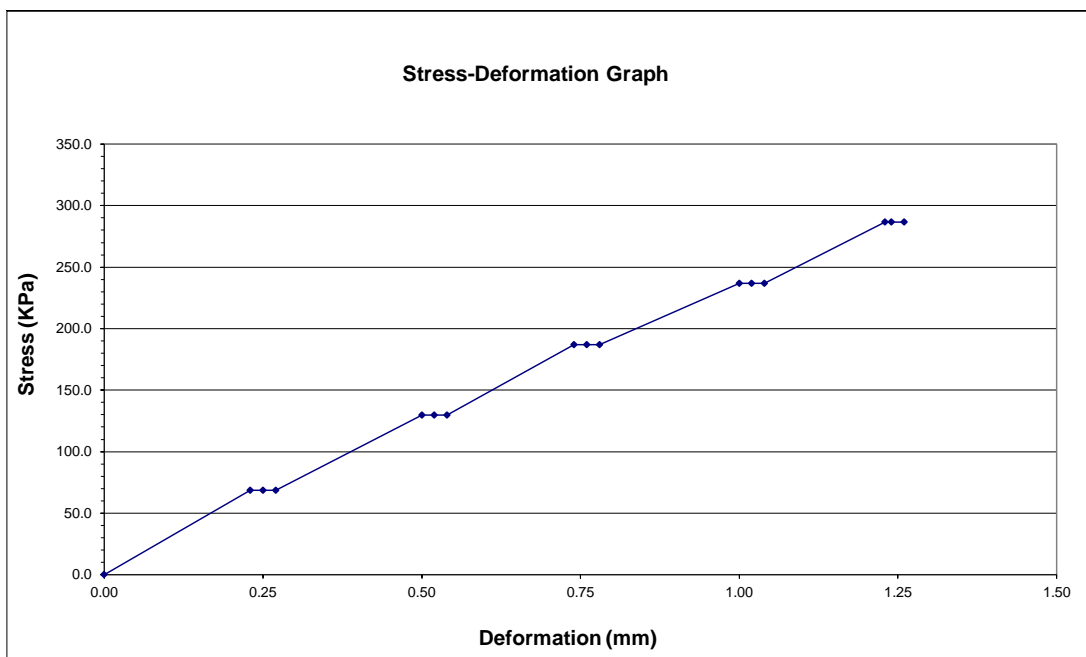
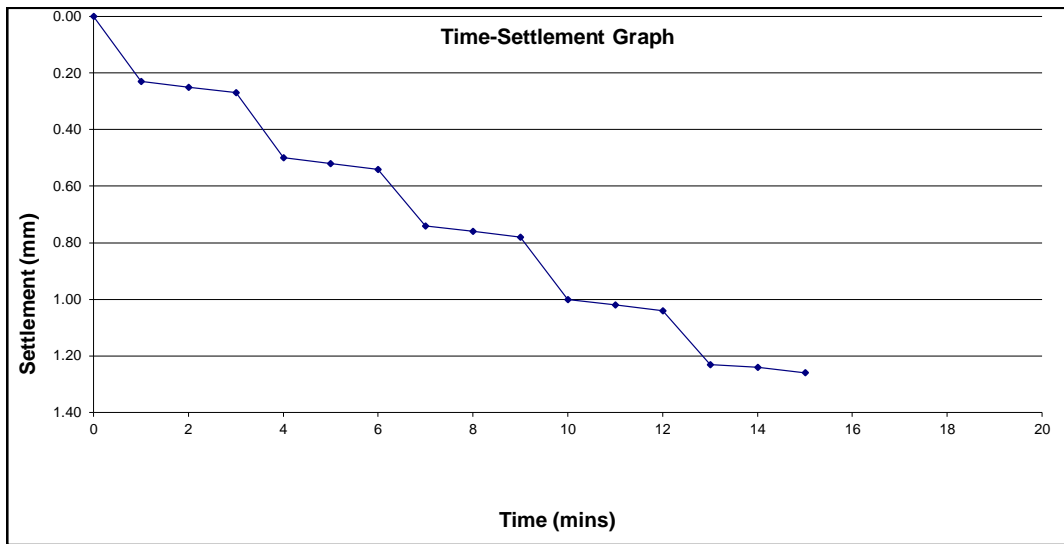
See attached graphs

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18450  
**Date Tested:** 07.06.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 09.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18451  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 07.06.2021  
**Test conducted by:** WB

**Test location:** AQ25 F  
**Material description:** Brown Sandy CLAY **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** Formation **Max Min temp:** 20°C - 22°C

### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	3.3
<b>Applied Pressure at 1.25mm (KPa):</b>	59.8	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	29.2

### Comments:

See attached graphs

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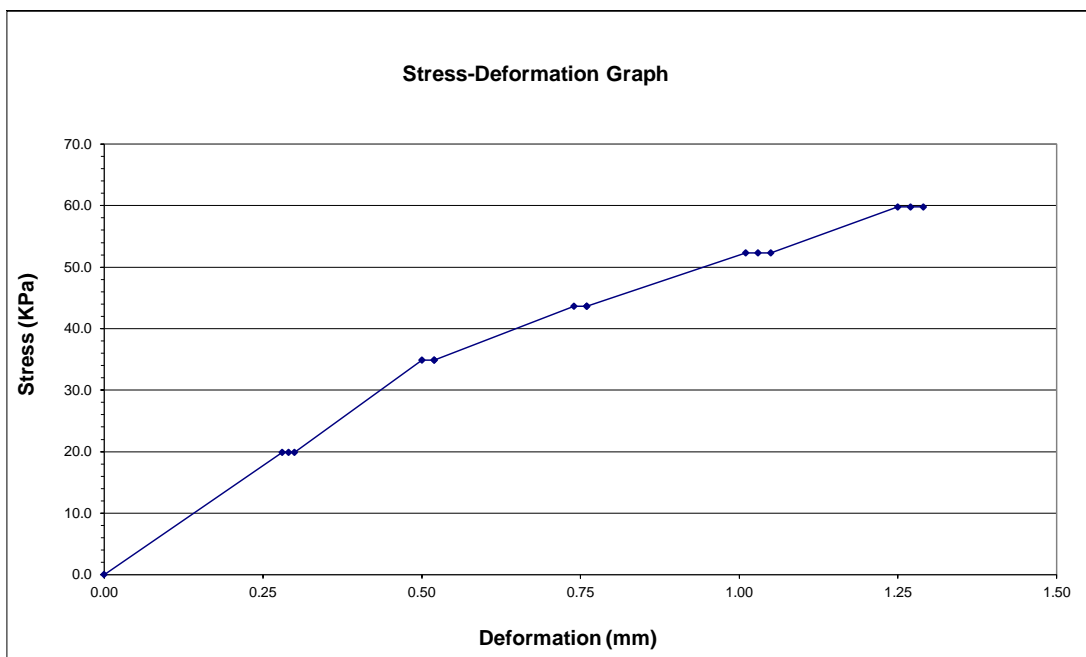
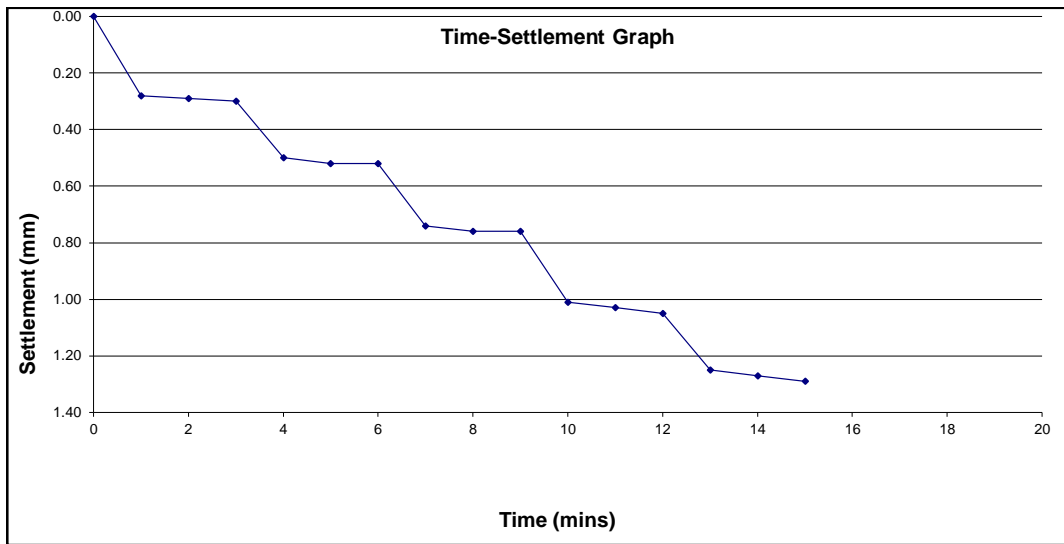
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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18451  
**Date Tested:** 07.06.2021





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 09.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18452  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 07.06.2021  
**Test conducted by:** WB

**Test location:** AY21 @ 1500  
**Material description:** Grey Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** 1500mm above Formation Level **Max Min temp:** 20°C - 22°C

### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	8.0
<b>Applied Pressure at 1.25mm (KPa):</b>	99.7	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	48.2

### Comments:

See attached graphs

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**Dunelm Testing Ltd**

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 C. Spencer (Fieldwork Supervisor)

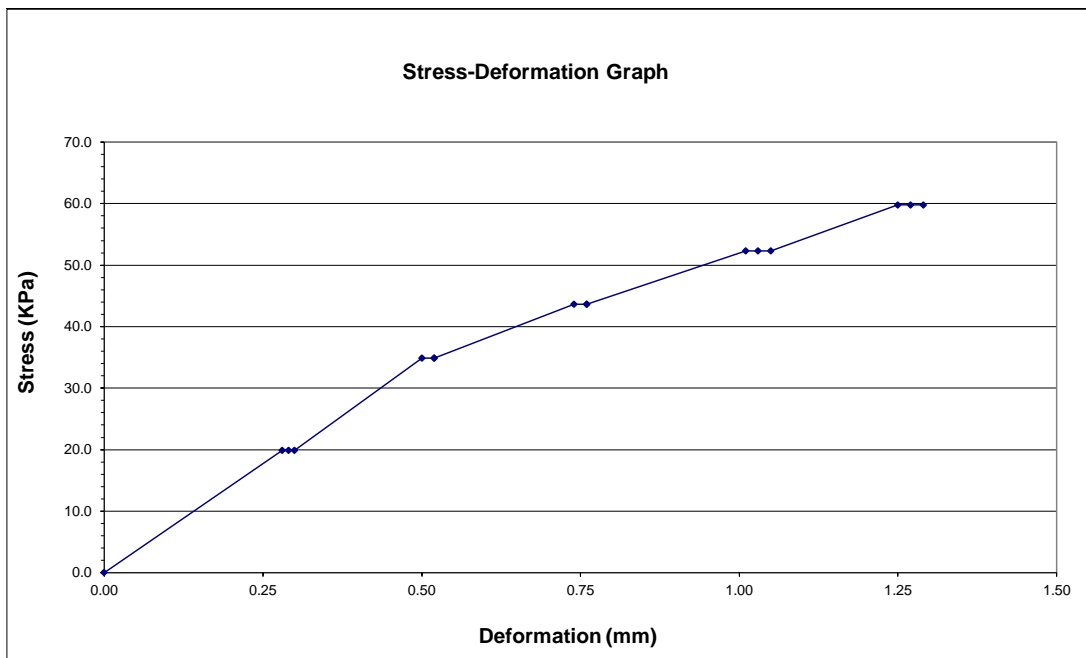
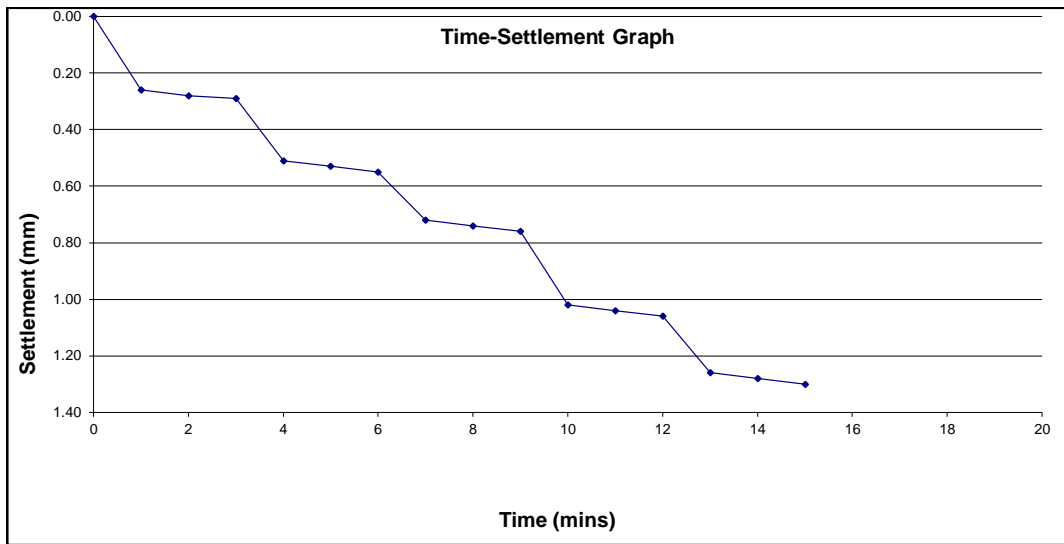
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18452  
**Date Tested:** 07.06.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 16.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18545  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 11.06.2021  
**Test conducted by:** WB

**Test location:** AW16 @ 1200 MS  
**Material description:** Mudstone **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** 1500mm above Formation Level **Max Min temp:** 20°C - 22°C

### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	27
<b>Applied Pressure at 1.25mm (KPa):</b>	196.9	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	97.6

### Comments:

See attached graphs

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**Dunelm Testing Ltd**

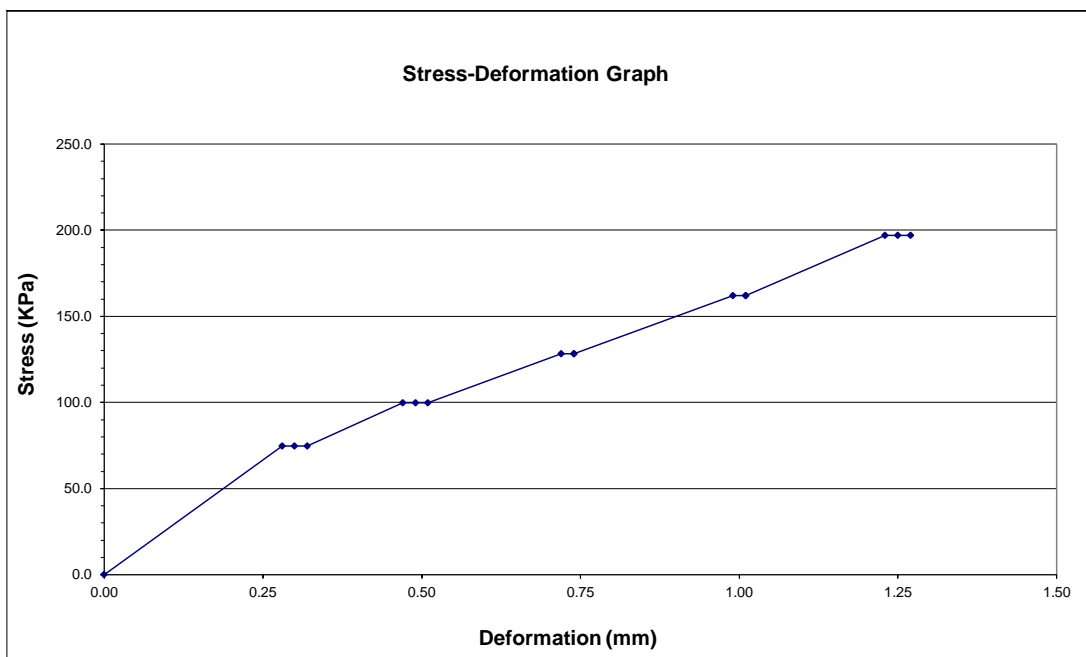
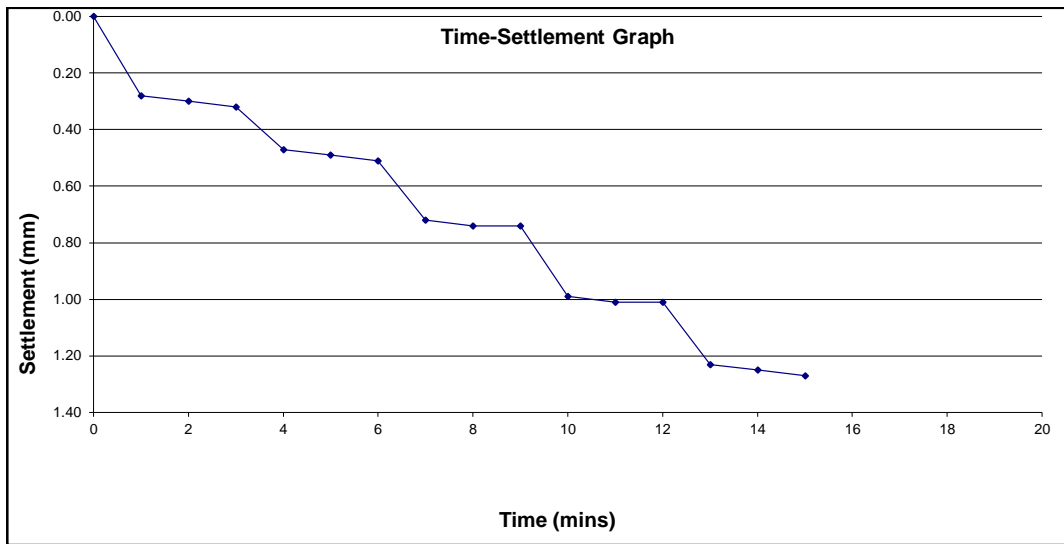
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**Page:** 1 of 2

**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18545  
**Date Tested:** 11.06.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 16.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18546  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 11.06.2021  
**Test conducted by:** WB

**Test location:** AW19 @ 600 MS  
**Material description:** Mudstone **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** 1500mm above Formation Level **Max Min temp:** 20°C - 22°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	77
<b>Applied Pressure at 1.25mm (KPa):</b>	367.6	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	178.1

**Comments:**

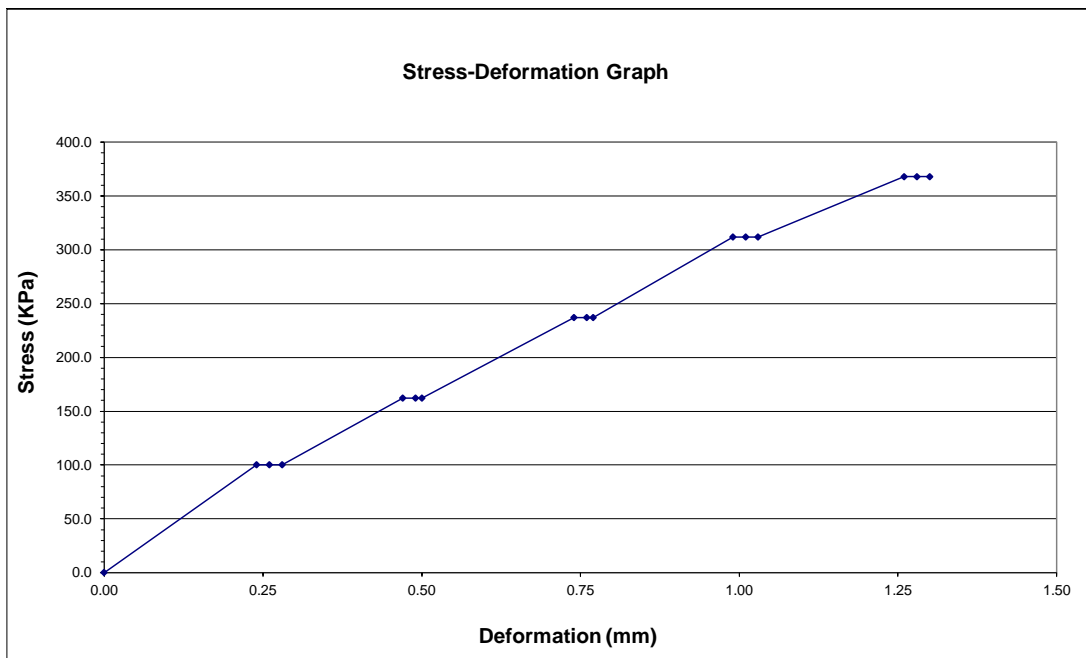
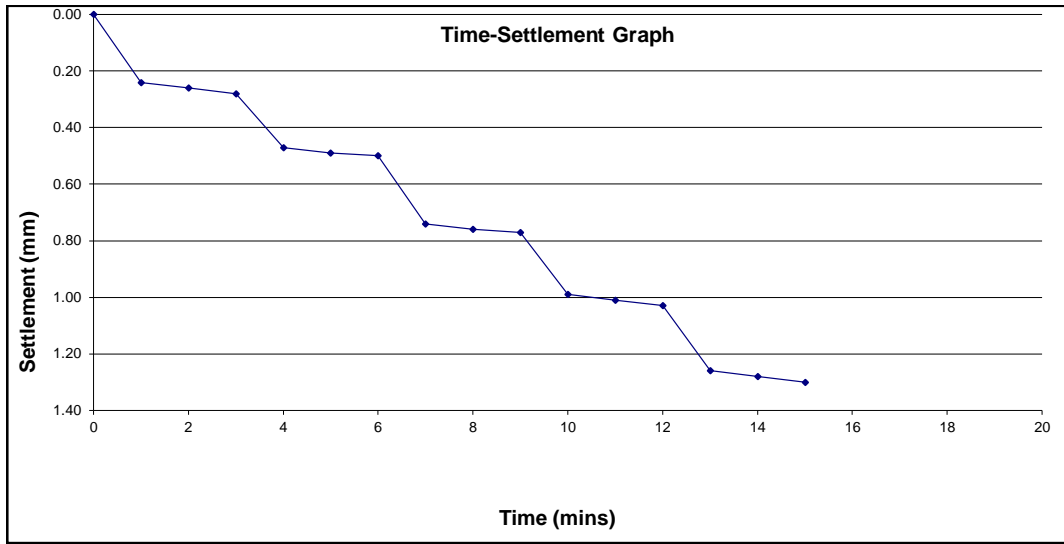
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 G Dresser (Director)  
 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18546  
**Date Tested:** 11.06.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 16.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18547  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 11.06.2021  
**Test conducted by:** WB

**Test location:** AW17 @ 1800 MS  
**Material description:** Mudstone **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** 1500mm above Formation Level **Max Min temp:** 20°C - 22°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	37
<b>Applied Pressure at 1.25mm (KPa):</b>	234.2	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	116.9

**Comments:**

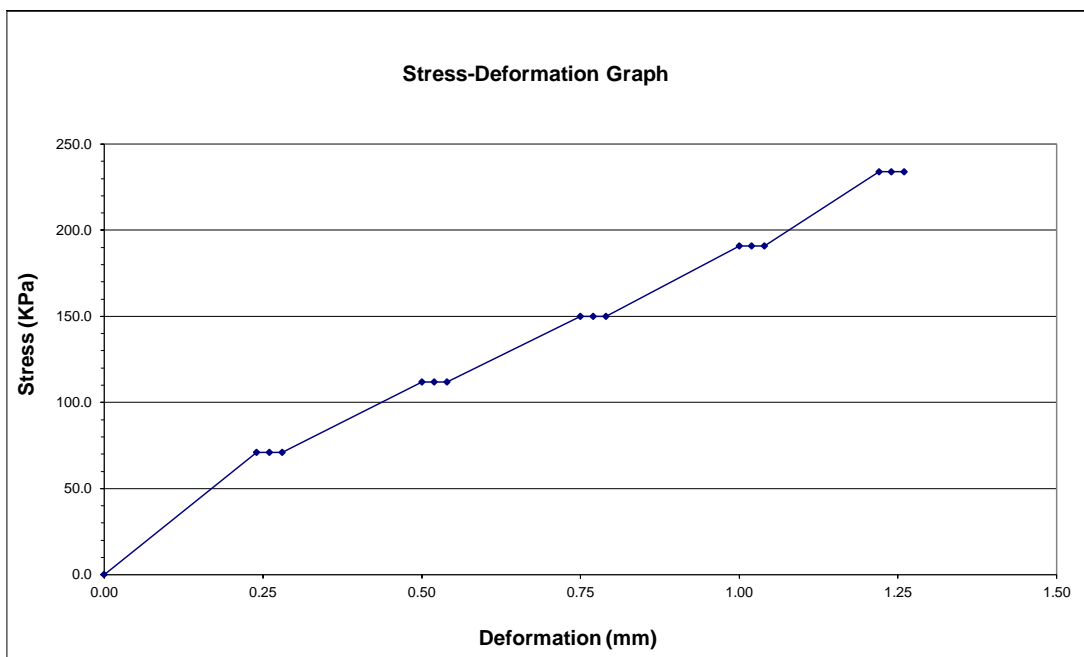
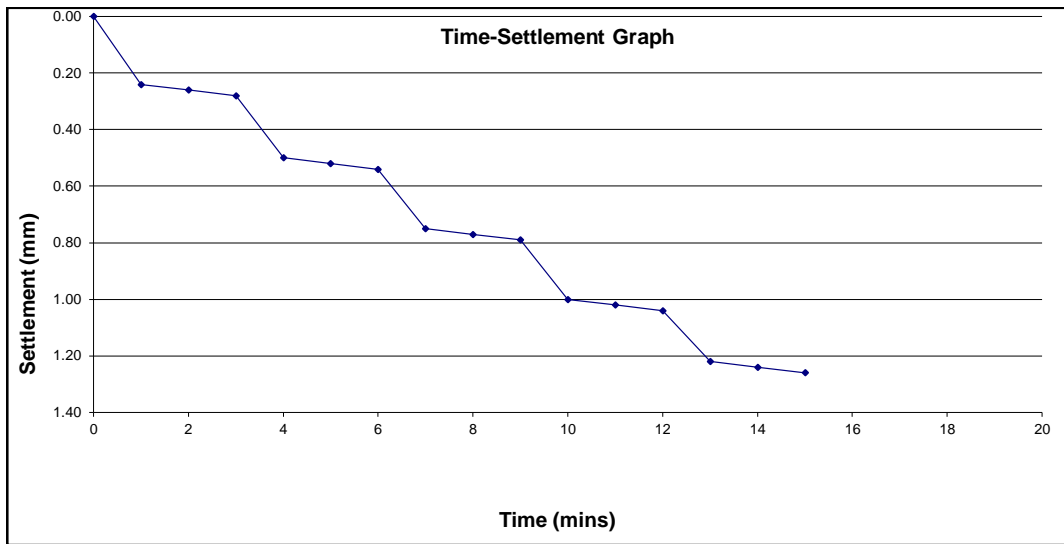
See attached graphs

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 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18547  
**Date Tested:** 11.06.2021





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 16.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18580  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 10.06.2021  
**Test conducted by:** WB

**Test location:** AU19 @ 1500 MS  
**Material description:** Mudstone **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** 1500mm above Formation Level **Max Min temp:** 19°C - 20°C

### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	>100
<b>Applied Pressure at 1.25mm (KPa):</b>	473.5	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	294.9

### Comments:

See attached graphs

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

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 G Dresser (Director)  
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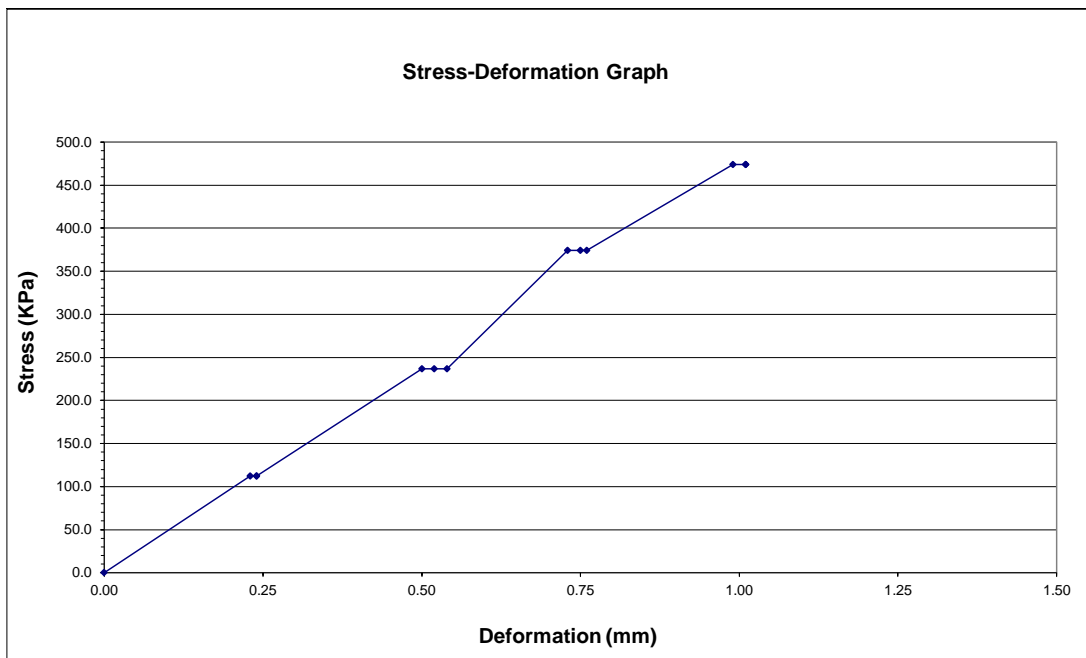
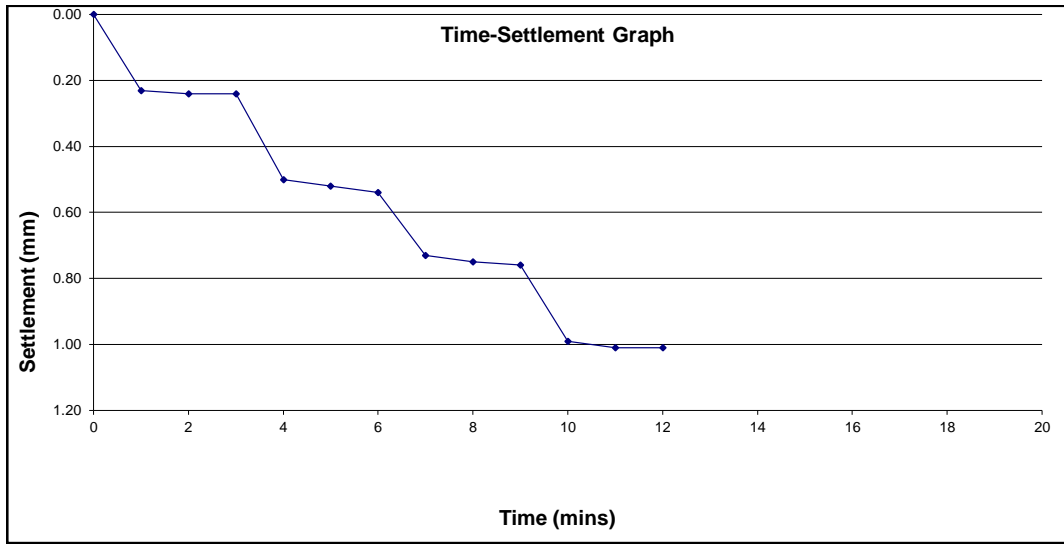
**Page:** 1 of 2

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## Test Results

Site: British Steel, Redcar  
Client: Seymour Civils

Lab ref: MT0318 – 18580  
Date Tested: 10.06.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 16.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18581  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 10.06.2021  
**Test conducted by:** WB

**Test location:** AU17 @ 1500 MS  
**Material description:** Mudstone **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** 1500mm above Formation Level **Max Min temp:** 19°C - 20°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	23
<b>Applied Pressure at 1.25mm (KPa):</b>	168.2	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	89.7

**Comments:**

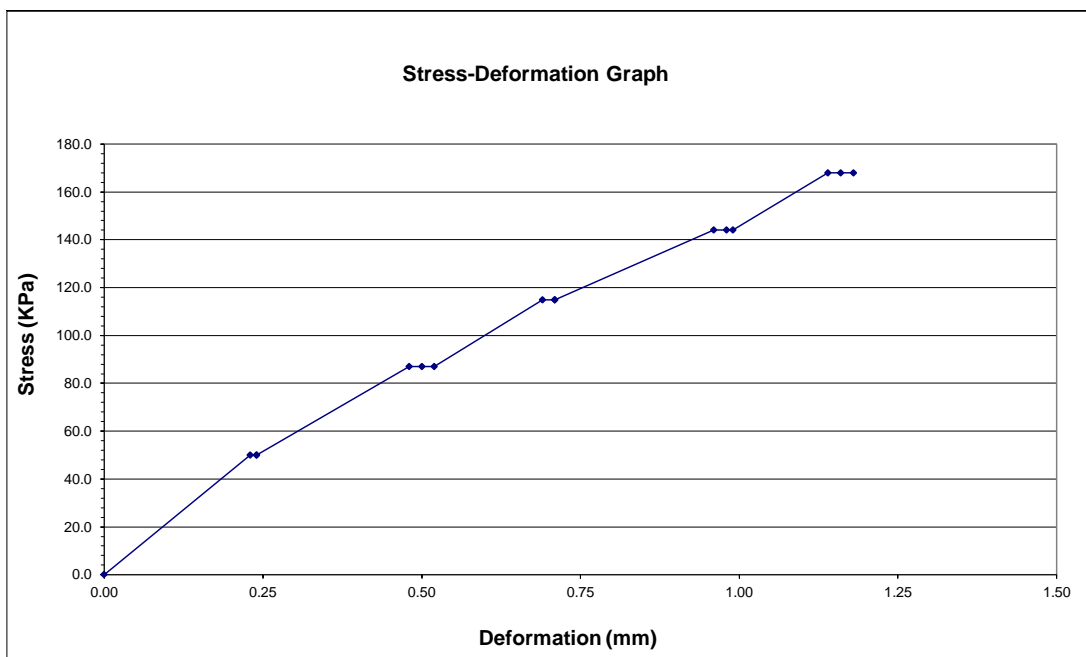
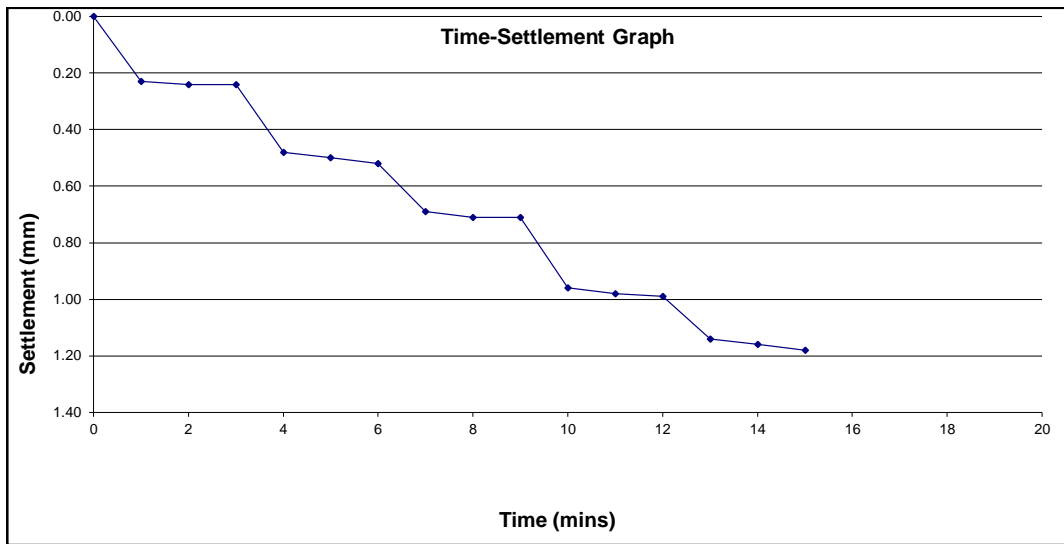
See attached graphs

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 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18581  
**Date Tested:** 10.06.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 16.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18582  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 10.06.2021  
**Test conducted by:** WB

**Test location:** AU19 @ 300 MS  
**Material description:** Mudstone **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** 1500mm above Formation Level **Max Min temp:** 19°C - 20°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	91
<b>Applied Pressure at 1.25mm (KPa):</b>	323.9	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	195.9

**Comments:**

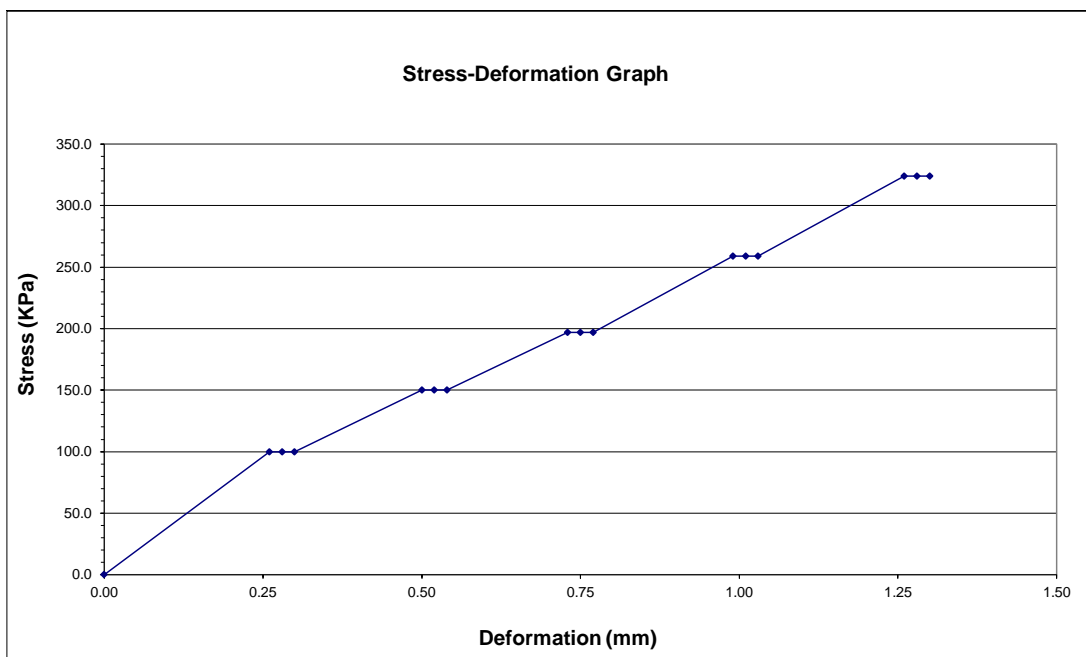
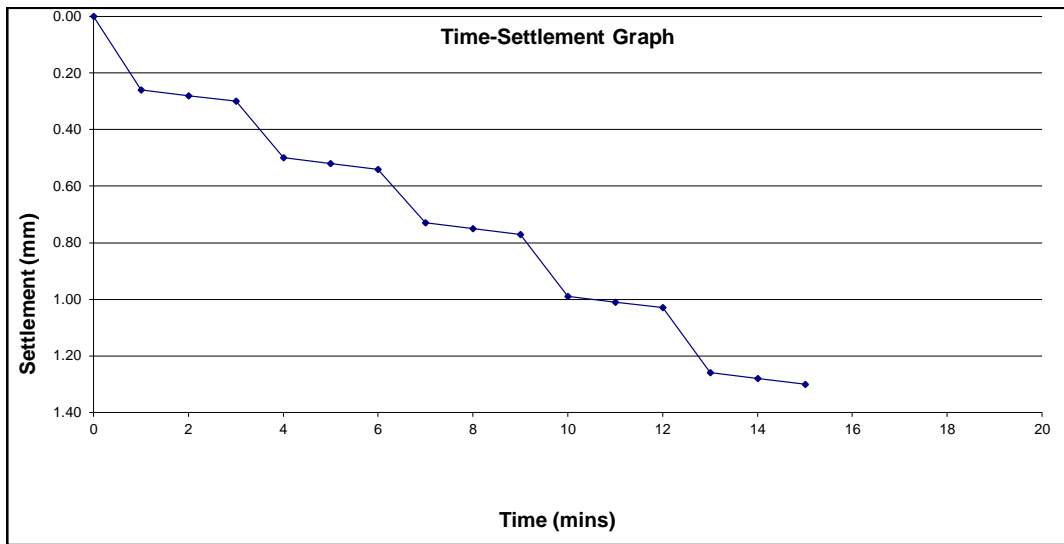
See attached graphs

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 C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18582  
**Date Tested:** 10.06.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 16.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18583  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 10.06.2021  
**Test conducted by:** WB

**Test location:** AU23 @2100 MS  
**Material description:** Mudstone **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** 1500mm above Formation Level **Max Min temp:** 19°C - 20°C

### Test Results

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	51
<b>Applied Pressure at 1.25mm (KPa):</b>	292.7	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	140.6

### Comments:

See attached graphs

**Signed:**



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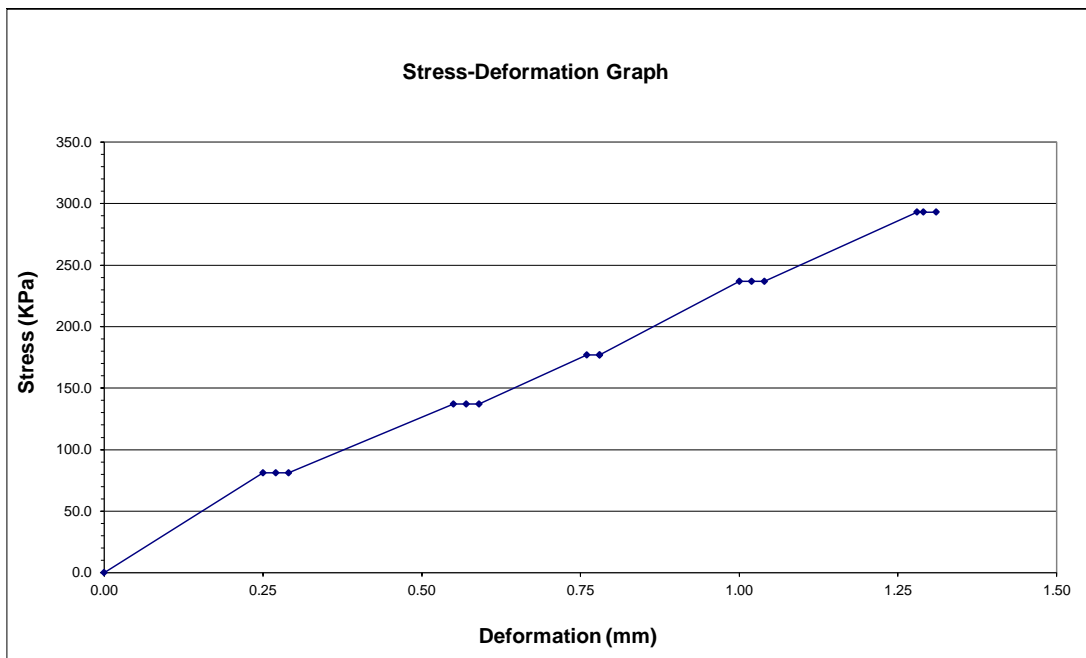
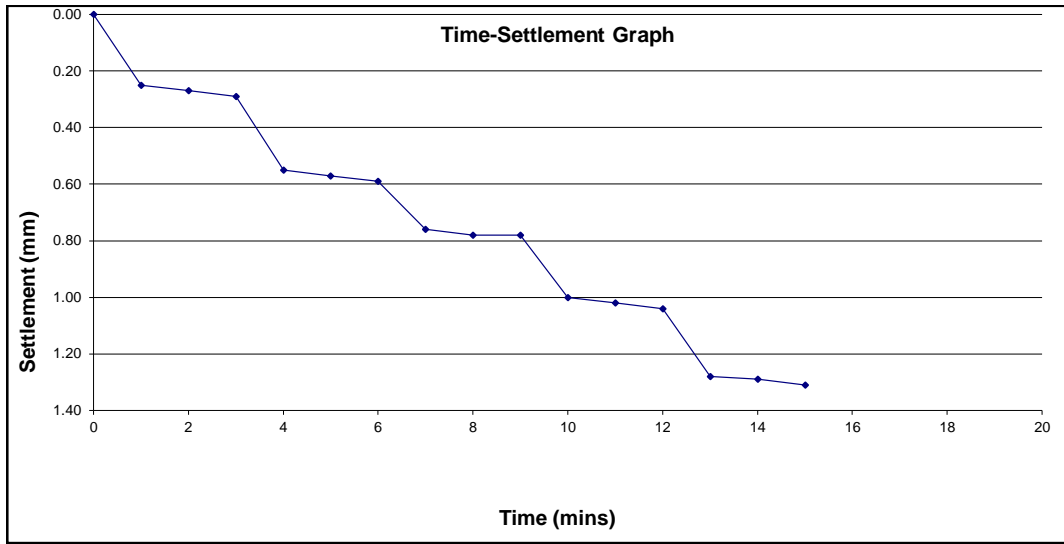
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18583  
**Date Tested:** 10.06.2021





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 16/06/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18609  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 14/06/21  
**Test conducted by:** WB


**Test location:** AU17 @ 1900MS  
**Material description:** Mudstone **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** 0 **Max Min temp:** 17°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	70.6
<b>Applied Pressure at 1.25mm (KPa):</b>	340	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	169.9

**Comments:**

See attached graphs

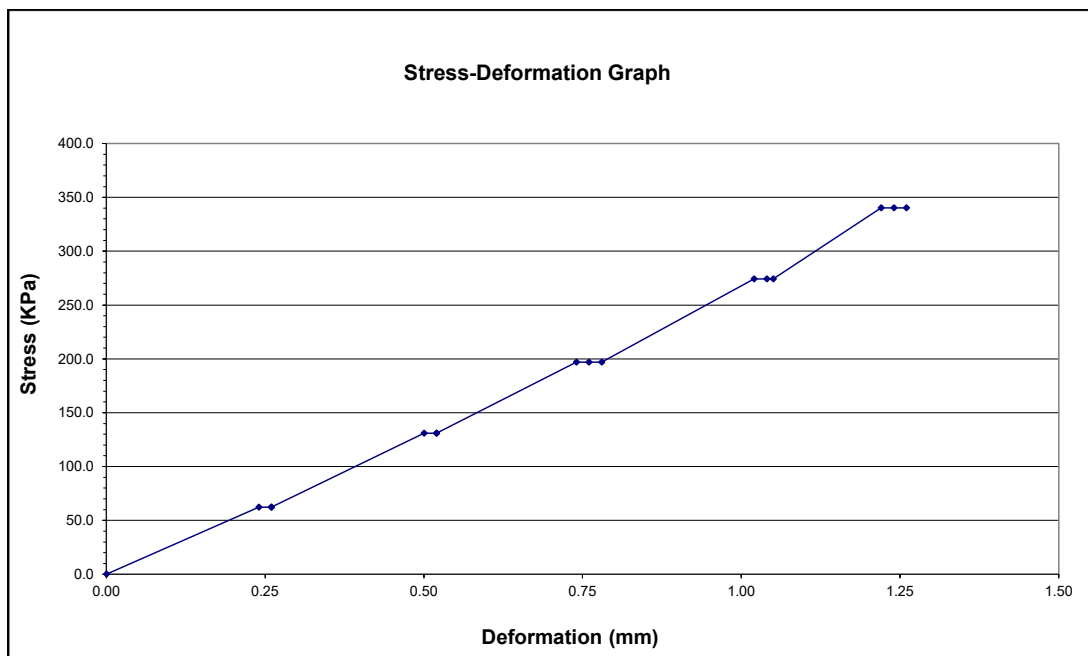
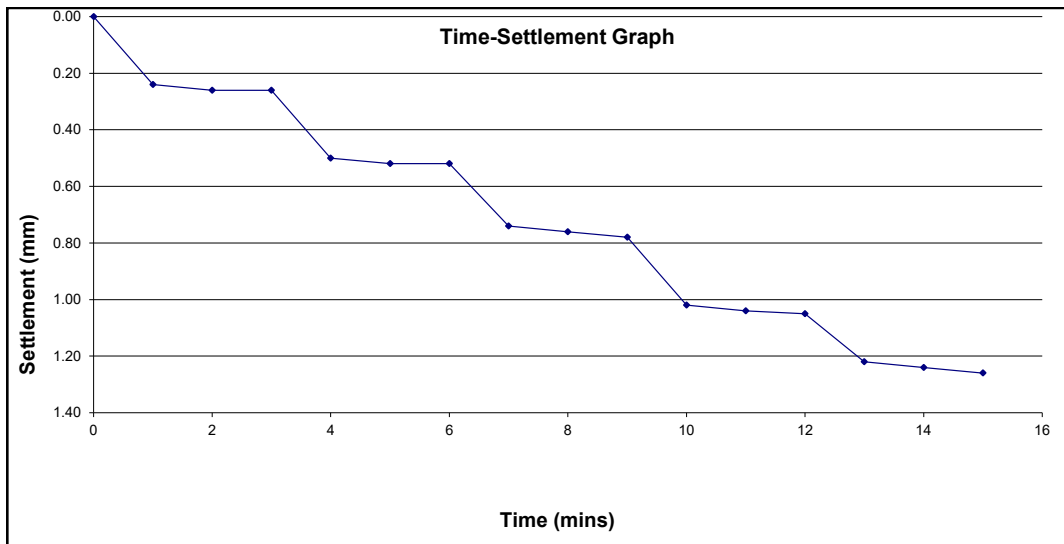
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[ ] G Dresser (Director)  
[✓] C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18609  
**Date Tested:** 14/06/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 16/06/21  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18610  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 14/06/21  
**Test conducted by:** WB

**Test location:** AU21 @ 1800  
**Material description:** Spoil **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** 0 **Max Min temp:** 17°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	3.6
<b>Applied Pressure at 1.25mm (KPa):</b>	62	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	30.4

**Comments:**

See attached graphs

**Signed:**For & on behalf of  
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Authorised Signatories:

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[ ] G Dresser (Director)

[✓] C. Spencer (Fieldwork Supervisor)

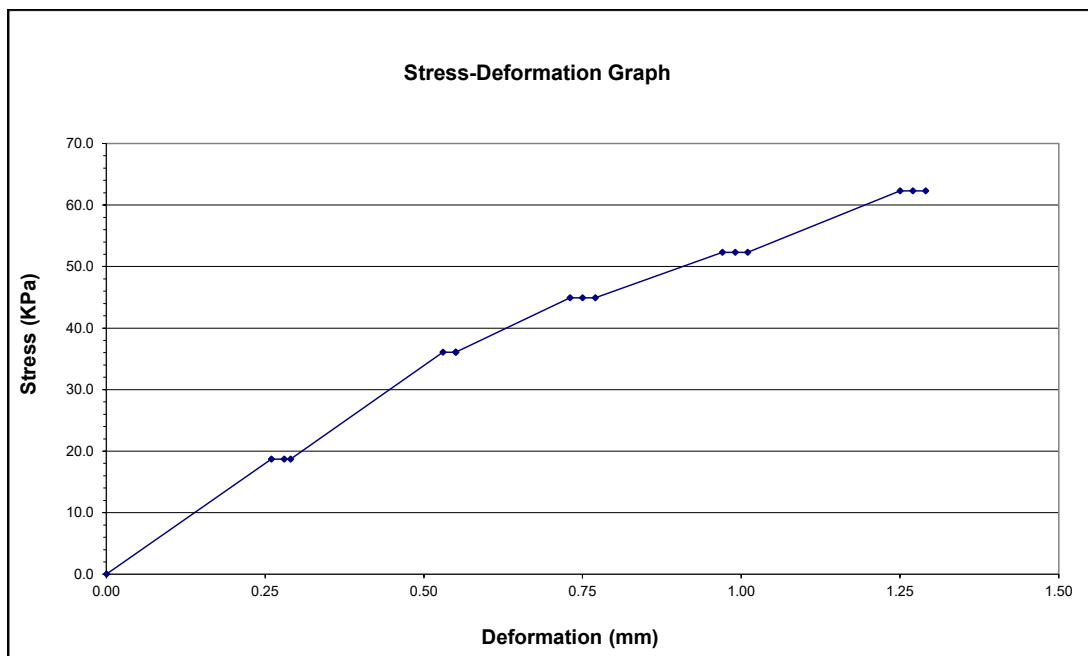
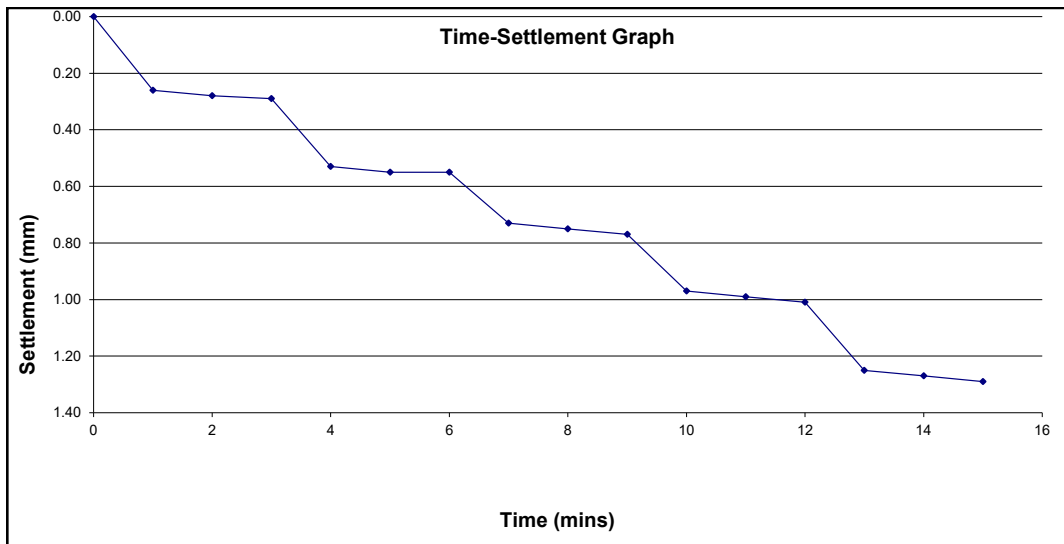
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18610  
**Date Tested:** 14/06/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test**  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1 **Report Date:** 16/06/21

**Client:** Seymour Civils **Test ref:** MT0318 – 18611

**Site:** British Steel, Redcar **Client ref:** -

**Test location:** AU19 @ 1700MS **Date tested:** 14/06/21

**Material description:** Mudstone **Test conducted by:** WB

**Plate diameter (mm):** 455 **Reaction load:** 19t Dozer

**Test depth (m):** 0 **Weather conditions:** Dry, Sunny

**Max Min temp:** 17°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	77.1
<b>Applied Pressure at 1.25mm (KPa):</b>	355	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	178.7

**Comments:**

See attached graphs

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- G Dresser (Director)
- C. Spencer (Fieldwork Supervisor)

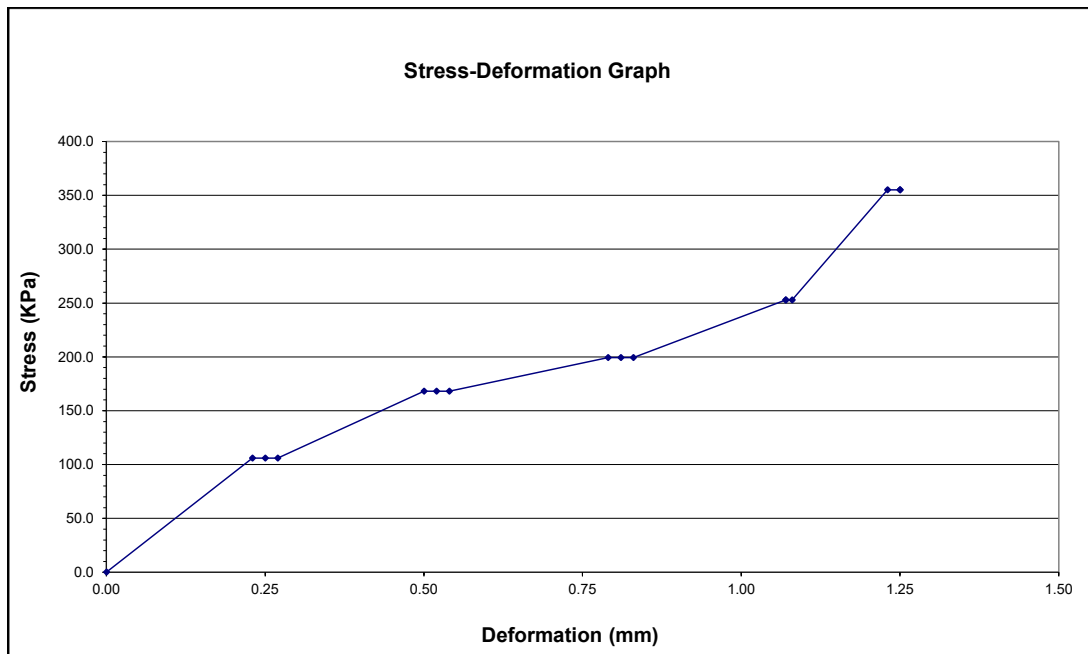
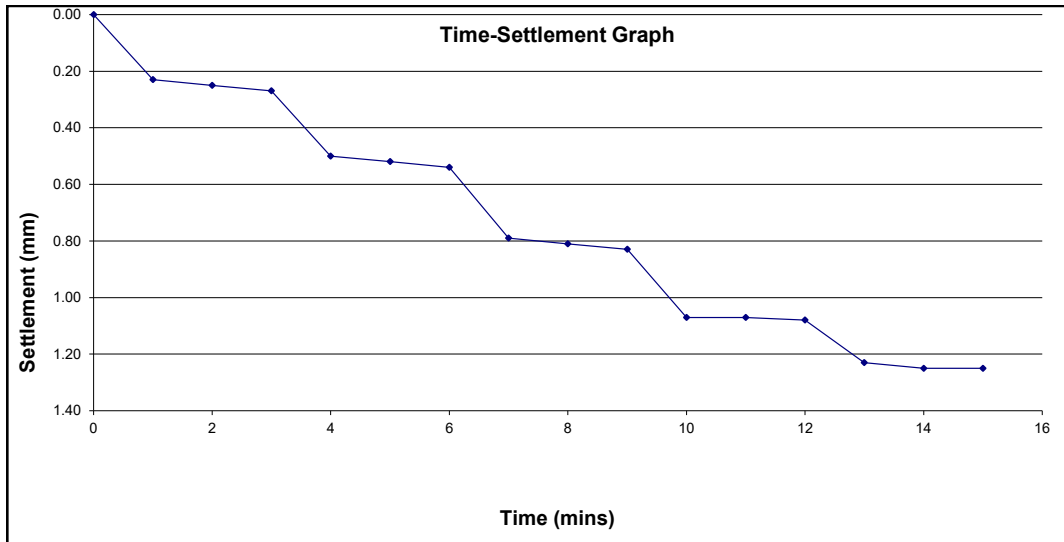
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18611  
**Date Tested:** 14/06/21



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test**  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1 **Report Date:** 16/06/21

**Client:** Seymour Civils **Test ref:** MT0318 – 18612

**Site:** British Steel, Redcar **Client ref:** -

**Test location:** AS17 @ 400MS **Date tested:** 14/06/21

**Material description:** Mudstone **Test conducted by:** WB

**Plate diameter (mm):** 455 **Reaction load:** 19t Dozer

**Test depth (m):** 0 **Weather conditions:** Dry, Sunny


**Max Min temp:** 17°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	14.0
<b>Applied Pressure at 1.25mm (KPa):</b>	137	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	66.9

**Comments:**

See attached graphs

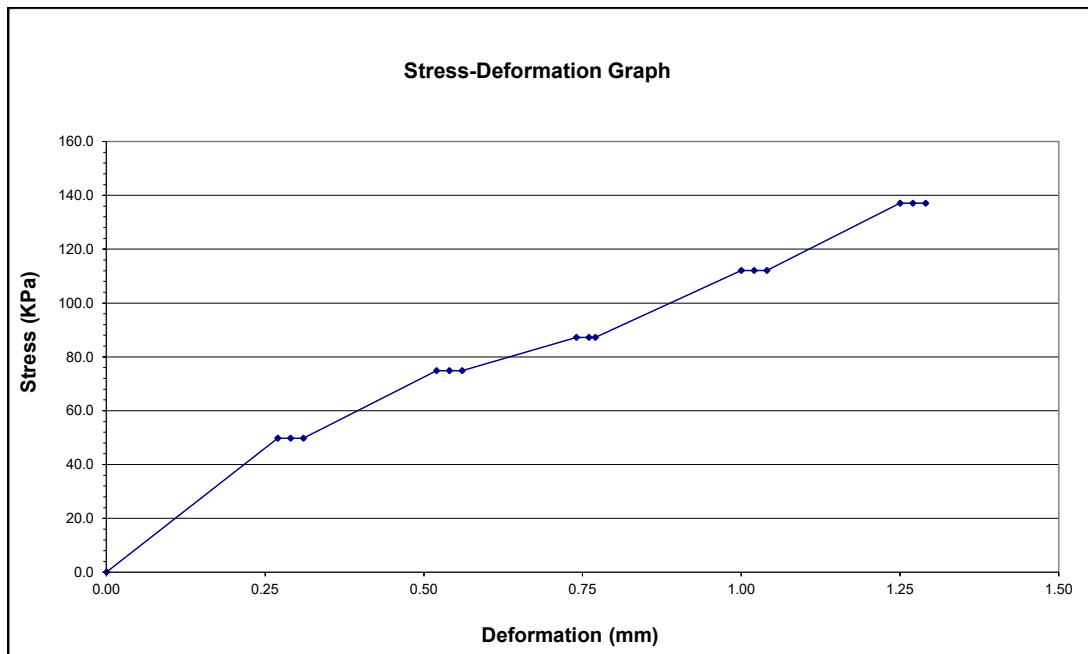
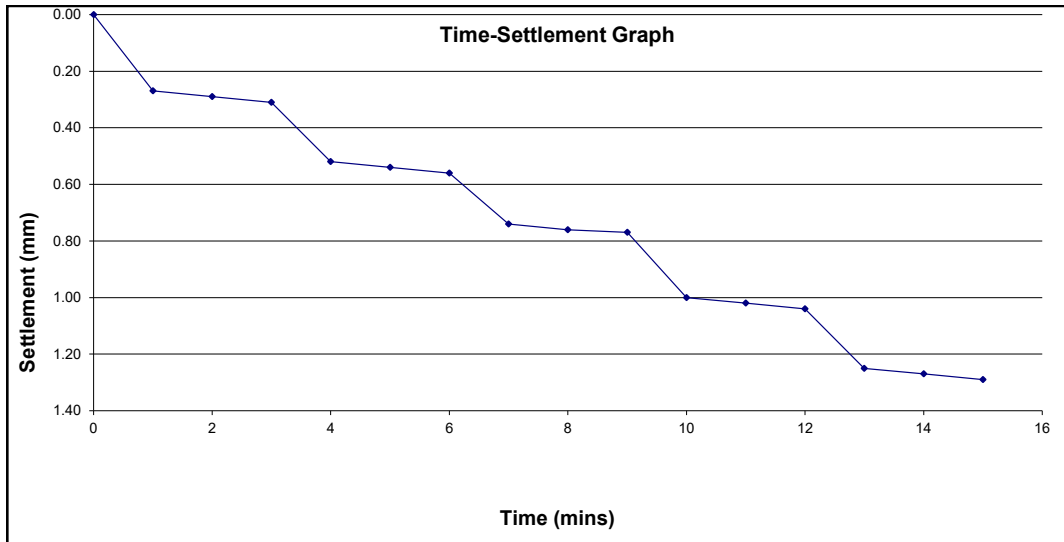
**Signed:**  
For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
[ ] M. Aiston (Director)  
[ ] G Dresser (Director)  
[✓] C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18612  
**Date Tested:** 14/06/21





**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 17.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18759  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 09.06.2021  
**Test conducted by:** WB

**Test location:** AU21 @ 1200MS  
**Material description:** Mudstone **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** Formation **Max Min temp:** 23°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	8.1
<b>Applied Pressure at 1.25mm (KPa):</b>	99.7	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	48.6

**Comments:**

See attached graphs

**Signed:**For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

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- G Dresser (Director)
- C. Spencer (Fieldwork Supervisor)

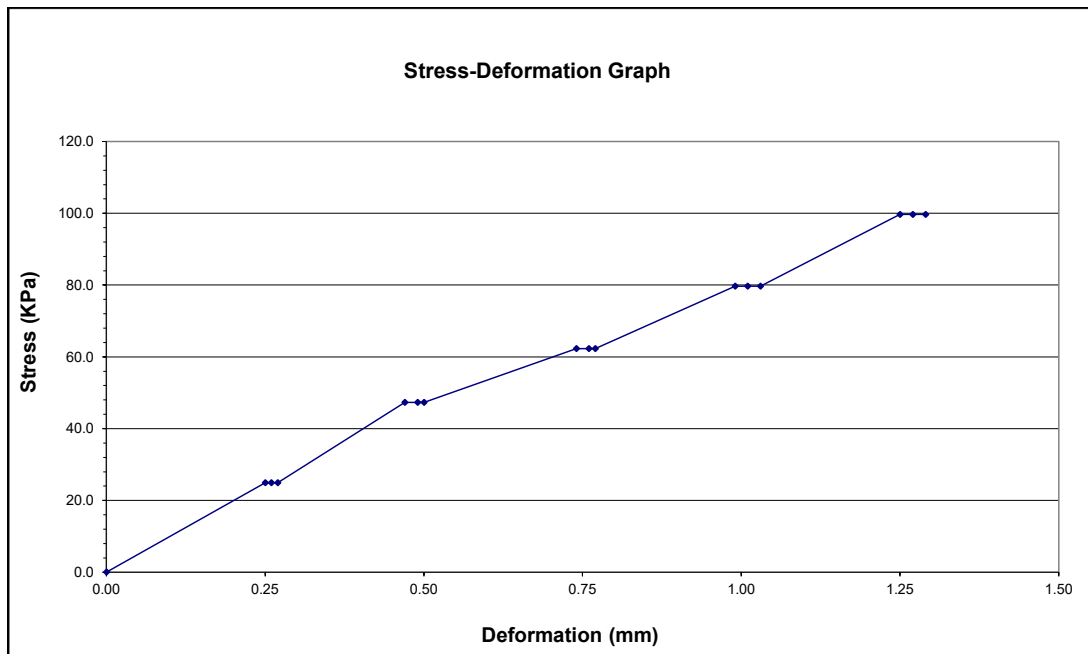
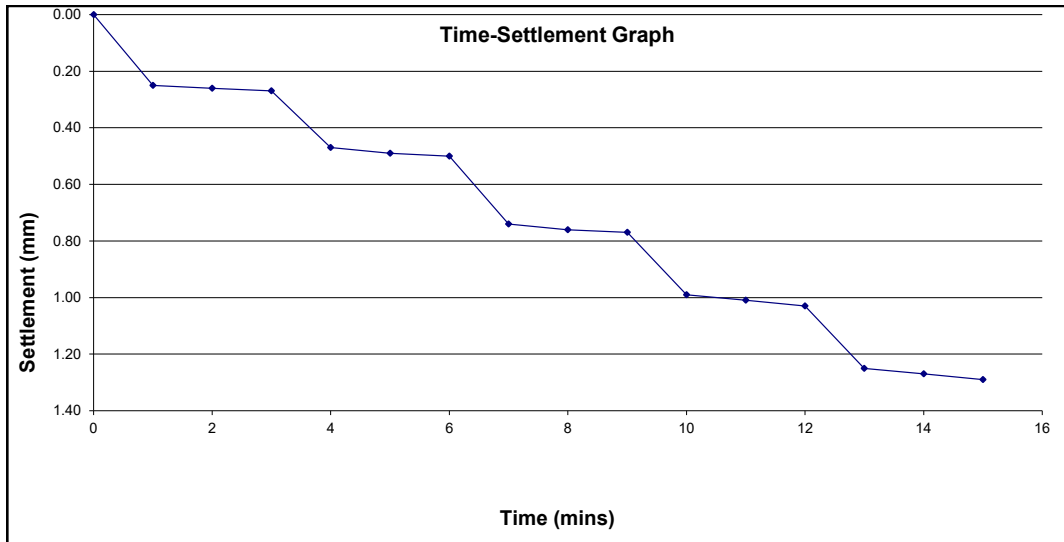
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18759  
**Date Tested:** 09.06.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 16.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18470  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 09.06.2021  
**Test conducted by:** WB

**Test location:** AW23 @ 1800MS  
**Material description:** Mudstone **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** Formation **Max Min temp:** 23°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	16.6
<b>Applied Pressure at 1.25mm (KPa):</b>	155	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	73.7

**Comments:**

See attached graphs

**Signed:**For & on behalf of  
**Dunelm Testing Ltd**

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- G Dresser (Director)
- C. Spencer (Fieldwork Supervisor)

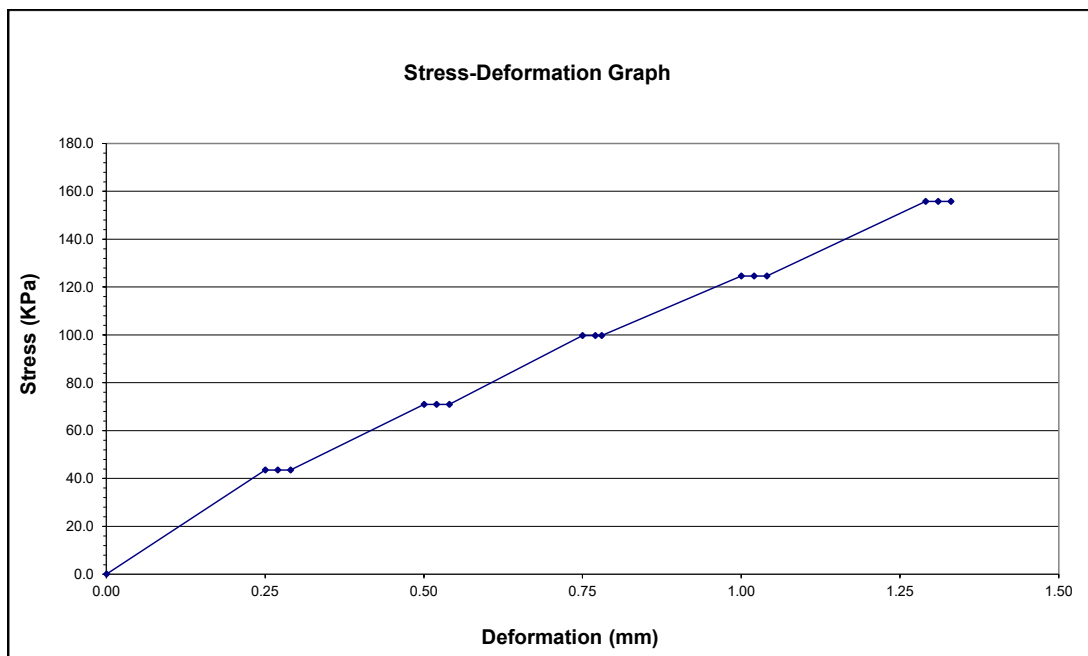
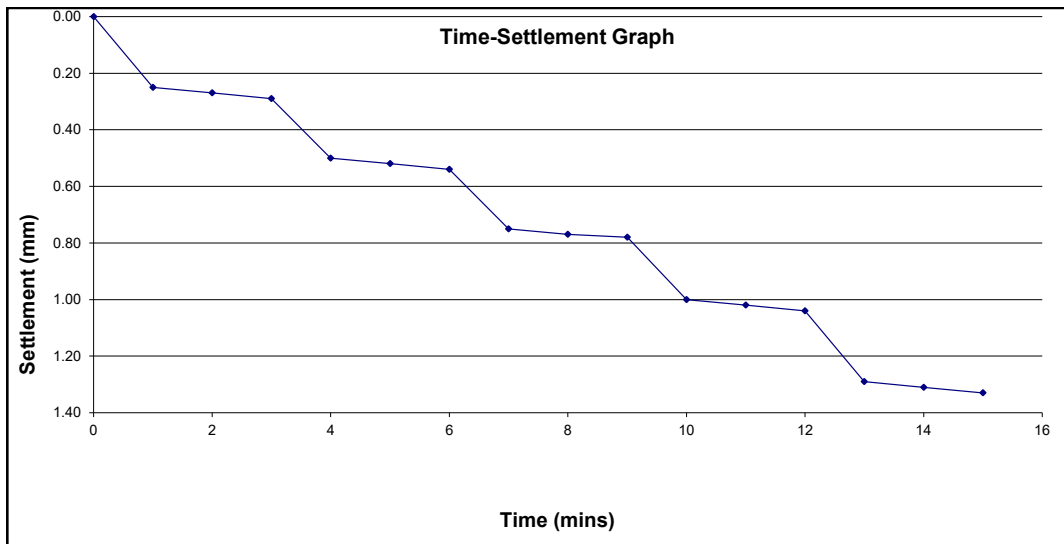
**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18470  
**Date Tested:** 09.06.2021



**Test Report:** **Determination of Equivalent CBR Value by Plate Bearing Test** **Report Date:** 17.06.2021  
BS 1377: Part 9: 1990 and DMRB Vol. 7 Sec. 2, IAN 73/06 Rev. 1

**Client:** Seymour Civils **Test ref:** MT0318 – 18761  
**Client ref:** -

**Site:** British Steel, Redcar **Date tested:** 09.06.2021  
**Test conducted by:** WB


**Test location:** AW17 @ 1500MS  
**Material description:** Mudstone **Reaction load:** 19t Dozer  
**Plate diameter (mm):** 455 **Weather conditions:** Dry, Sunny  
**Test depth (m):** Formation **Max Min temp:** 23°C

**Test Results**

<b>Plate Correction Factor:</b>	0.62910	<b>Equivalent CBR Value (%):</b>	11.1
<b>Applied Pressure at 1.25mm (KPa):</b>	119	<b>Modulus of Sub-Grade Reaction (kN/m<sup>2</sup>/mm):</b>	58.3

**Comments:**

See attached graphs

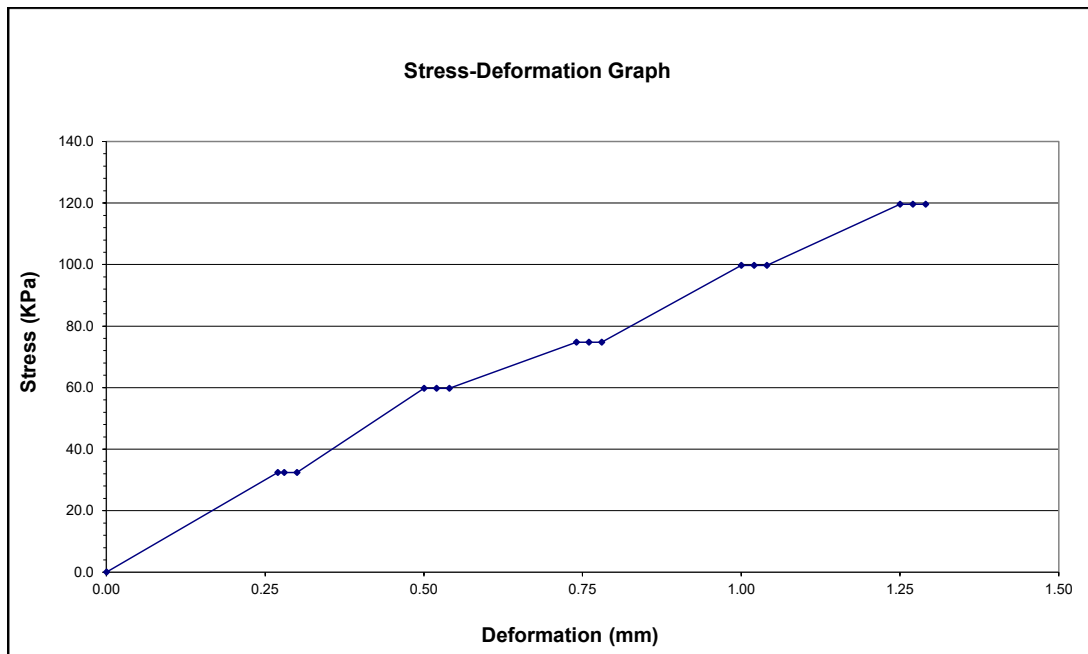
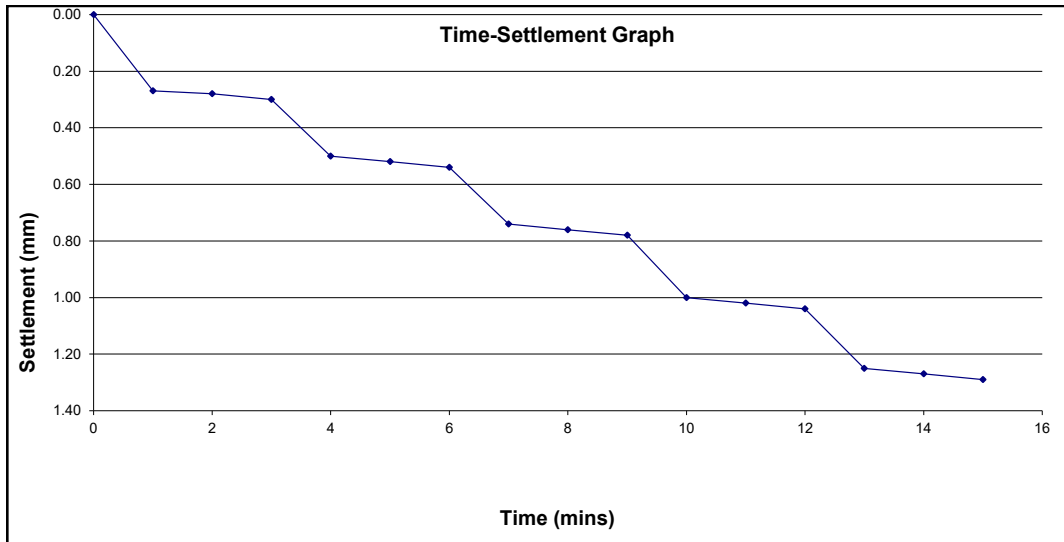
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[ ] G Dresser (Director)  
[✓] C. Spencer (Fieldwork Supervisor)**Page:** 1 of 2

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**Test Results**

**Site:** British Steel, Redcar  
**Client:** Seymour Civils

**Lab ref:** MT0318 – 18761  
**Date Tested:** 09.06.2021



**Test Report:** **Insitu-Density Test – Sand Replacement Method** **Report Date:** 13.05.2021  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder)

**Client:** Seymour CE Ltd **Lab ref:** MT0318-17775-17777

**Site:** British Steel, Redcar **Client ref:** -  
**Date Sampled:** 06.05.2021  
**Date Received:** 06.05.2021

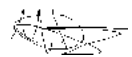
**Sample location:** As below **Test conducted by:** JK

**Material description:** Course grey Gravel **Variation from Standard Method:** None

**Test Method:** 2.2-Large Pouring Cylinder

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
AU 17@300 17775	2.02	12	1.80		
AU 17@600 17776	2.20	12	1.96		
AU 19@600 17777	2.09	13	1.85		

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 G Dresser (Director)**Page:** 1 of 1

<b>Test Report:</b>	<b>Insitu-Density Test - Sand Replacement Method</b> BS 1377: Part 9: Clause 2.2 (Large pouring cylinder)	<b>Report Date:</b>	05.07.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab Ref:</b>	19245-19246
<b>Site:</b>	British Steel, Redcar	<b>Client Ref:</b>	
<b>Sample Location:</b>	See Below	<b>Date Sampled:</b>	03.07.21
<b>Material Description:</b>	Spoil	<b>Date Received:</b>	03.07.21
<b>Test Method:</b>	2.2- Large Pouring Cylinder	<b>Test conducted by:</b>	WB WB
		<b>Sampled By:</b>	None
		<b>Variation from Standard Method:</b>	

**Test Results**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D Mg/m <sup>3</sup>	Compaction %
AW17 19245	2.172	12	1.938		
AU17 19246	2.215	11	2.003		

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

- M. Aiston (Director)
- G. Dresser (Director)
- C. Spencer (Site Works Supervisor)
- M. Caulfield (Laboratory Supervisor)



<b>Test Report:</b>	<b>Insitu-Density Test - Sand Replacement Method</b> BS 1377: Part 9: Clause 2.2 (Large pouring cylinder)	<b>Report Date:</b>	05.07.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab Ref:</b>	19447-19448
<b>Site:</b>	British Steel, Redcar	<b>Client Ref:</b>	
<b>Sample Location:</b>	See Below	<b>Date Sampled:</b>	05.07.21
<b>Material Description:</b>	Spoil	<b>Date Received:</b>	05.07.21
<b>Test Method:</b>	2.2- Large Pouring Cylinder	<b>Test conducted by:</b>	WB
		<b>Sampled By:</b>	WB
		<b>Variation from Standard Method:</b>	None

**Test Results**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D Mg/m <sup>3</sup>	Compaction %
AU19 HCC @6.2	2.3	7.2	2.15		
AW19 HCC @6.2	2.29	6.9	2.14		

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

- M. Aiston (Director)
- G. Dresser (Director)
- C. Spencer (Site Works Supervisor)
- M. Caulfield (Laboratory Supervisor)







**Test Report:** Insitu-Density Test – Sand Replacement Method  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder) **Report Date:** 11.03.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318-16692-16694

**Site:** British Steel, Redcar **Client ref:** -  
**Date Sampled:** 08.03.2021  
**Date Received:** 08.03.2021

**Sample location:** As below **Test conducted by:** WB

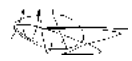
**Material description:** Black-grey sandy GRAVEL **Variation from Standard Method:** None

**Test Method:** 2.2-Large Pouring Cylinder

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
16692 BA23 @ 600	2.25	12	2.02	2.05	98.5
16693 AY27 @ 300	2.44	11	2.21	2.05	>100
16694 BA25 @ 300 V	2.14	13	1.89	2.05	92.2

**Comments:** Compaction data derived from DMR Report MT0318-16406 Sampled 24.02.2021

**Signed:**  
For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1





**Test Report:** Insitu-Density Test – Sand Replacement Method  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder) **Report Date:** 26.03.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318-16939-16942

**Site:** British Steel, Redcar **Client ref:** -  
**Date Sampled:** 22.03.2021  
**Date Received:** 22.03.2021

**Sample location:** As below **Test conducted by:** NY

**Material description:** Coarse Black-grey sandy gravelly spoil **Variation from Standard Method:** None

**Test Method:** 2.2-Large Pouring Cylinder

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
16939 BE27 @1200WBE	2.19	13	1.94		
16940 BC25 @1200WBE	2.09	9.2	1.91		
16941 BC29 @ 1500ELR	2.08	12	1.85		
16942 BA27 @ 900	2.19	12	1.95		

**Comments:****Signed:**For & on behalf of  
Dunelm Testing LtdAuthorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

Page: 1 of 1



**Test Report:** **Insitu-Density Test – Sand Replacement Method** **Report Date:** 20.04.2021  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder)

**Client:** Seymour CE Ltd **Lab ref:** MT0318-17344-17347

**Site:** British Steel, Redcar **Client ref:** -  
**Date Sampled:** 14.04.2021  
**Date Received:** 14.04.2021

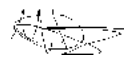
**Sample location:** As below **Test conducted by:** WB

**Material description:** Grey Spoil with crushed concrete and brick

**Test Method:** 2.2-Large Pouring Cylinder **Variation from Standard Method:** None

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
BC29 @200 17344	1.72	8.0	1.59		
BC27 @200 17345	1.94	7.87	1.80		
BC 25 @1800 17346	1.93	11	1.73		
BC 25 @2400 17347	2.04	11	1.84		

**Comments:****Signed:**  
For & on behalf of  
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 M. Aiston (Director)  
 G Dresser (Director)**Page:** 1 of 1

**Test Report:** **Insitu-Density Test – Sand Replacement Method** **Report Date:** 30.04.2021  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder)

**Client:** Seymour CE Ltd **Lab ref:** MT0318-17435-17437

**Site:** British Steel, Redcar **Client ref:** -  
**Date Sampled:** 19.04.2021  
**Date Received:** 20.04.2021

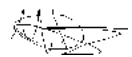
**Sample location:** As below **Test conducted by:** JK

**Material description:** Grey Spoil with crushed brick

**Test Method:** 2.2-Large Pouring Cylinder **Variation from Standard Method:** None

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
BA19 @300 17435	1.93	10	1.75		
AY21 @900 17436	1.86	12	1.67		
BA23 @500 17437	1.99	7.8	1.85		

**Comments:****Signed:**  
For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)**Page:** 1 of 1

**Test Report:** Insitu-Density Test – Sand Replacement Method  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder) **Report Date:** 13.04.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318-17304-17307

**Site:** British Steel, Redcar **Client ref:** -  
**Date Sampled:** 08.04.2021  
**Date Received:** 08.04.2021

**Sample location:** As below **Test conducted by:** WB

**Material description:** Grey Spoil with crushed concrete and brick

**Test Method:** 2.2-Large Pouring Cylinder **Variation from Standard Method:** None

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
AY 25@1800 17304	2.14	12	1.90		
BA21 @600 17305	2.03	12	1.81		
AY25@ 150017306	2.08	10	1.88		
BA 23@ 900 17307	1.87	11	1.69		

**Comments:****Signed:**For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)**Page:** 1 of 1



**Test Report:** **Insitu-Density Test – Sand Replacement Method** **Report Date:** 05/03/2021  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder)

**Client:** Seymour CE Ltd **Lab ref:** MT0318-16630-16632

**Site:** British Steel, Redcar **Client ref:** -  
**Date Sampled:** 02.03.2021  
**Date Received:** 02.03.2021

**Sample location:** As below **Test conducted by:** WB


**Material description:** Black-grey sandy GRAVEL (Recycled Type 1) **Variation from Standard Method:** None

**Test Method:** 2.2-Large Pouring Cylinder

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
16630 BC27 @ 900 (ELR)	2.23	15	1.95	2.05	95.1
16631 BC25 @ 900	2.13	14	1.87	2.05	91.2
16632 BA27 @ 900V	2.23	15	1.97	2.05	96.1

**Comments:** Compaction data derived from DMR Report MT0318-16406 Sampled 24.02.2021

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For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
[  ] M. Aiston (Director)  
[  ] G Dresser (Director)**Page:** 1 of 1









**Test Report:** **Insitu-Density Test – Sand Replacement Method** **Report Date:** 13.04.2021  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder)

**Client:** Seymour CE Ltd **Lab ref:** MT0318-17287-17289

**Site:** British Steel, Redcar **Client ref:** -  
**Date Sampled:** 09.04.2021  
**Date Received:** 09.04.2021

**Sample location:** As below **Test conducted by:** WB

**Material description:** Grey Spoil with crushed concrete and brick

**Test Method:** 2.2-Large Pouring Cylinder **Variation from Standard Method:** None

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
AY 27@1500 17287	1.84	11	1.65		
BA25 @600 17288	1.95	11	1.76		
17289	2.04	13	1.81		

**Comments:****Signed:**  
For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)**Page:** 1 of 1



**Test Report:** Insitu-Density Test – Sand Replacement Method  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder) **Report Date:** 09.04.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318-17236-17239

**Site:** British Steel, Redcar **Client ref:** -  
**Date Sampled:** 31.03.2021  
**Date Received:** 31.03.2021

**Sample location:** As below **Test conducted by:** WB

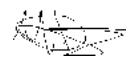
**Material description:** Brown/Grey clayey gravelly concrete & SPOIL  
**Variation from Standard Method:** None

**Test Method:** 2.2-Large Pouring Cylinder

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
AY27 @1200 17236	2.26	11	2.03	2.05	99.0
BA 25 @1200 17237	2.28	10	2.06	2.05	>100
BA 21 @900 WBE 17239	2.14	12	1.91	2.05	93.2

**Comments:** Compaction data derived from DMR Report MT0318-16406 Sampled 24.02.2021

**Signed:**  
For & on behalf of  
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Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

**Test Report:** **Insitu-Density Test – Sand Replacement Method** **Report Date:** 16.06.2021  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder)

**Client:** Seymour CE Ltd **Lab ref:** MT0318-18613-18616

**Site:** British Steel, Redcar **Client ref:** -  
**Date Sampled:** 14.06.2021  
**Date Received:** 15.06.2021

**Sample location:** As Below **Test conducted by:** WB

**Material description:** AU17@1900 MS, AU@1700 MS, AS17@ 400  
MS Mudstone  
AY 21 @ 1800 (Recycled made ground)

**Test Method:** 2.2-Large Pouring Cylinder **Variation from Standard Method:** None

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
18613 AU17 @ 1900 MS	2.23	4.4	2.13		
18614 AY 21 @ 1800	2.24	16	1.93		
18615 AU @ 1700 MS	2.36	5.3	2.24		
18616 AS 17 @ 400 MS	2.27	5.2	2.16		

**Comments:****Signed:**For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)**Page:** 1 of 1







**Test Report:** Insitu-Density Test – Sand Replacement Method  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder) **Report Date:** 30.04.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318-17498-17501

**Site:** British Steel, Redcar **Client ref:** -  
**Date Sampled:** 21.04.2021  
**Date Received:** 21.04.2021

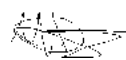
**Sample location:** As below **Test conducted by:** JK

**Material description:** Grey Spoil with crushed brick

**Test Method:** 2.2-Large Pouring Cylinder **Variation from Standard Method:** None

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
BC27 @ 1200 ELR 17498	1.91	9.6	1.75		
BA29 @ 2100 ELR 17499	2.04	12	1.82		
AY21 @ 900 17500	2.12	9.8	1.93		
AY23 @ 600 17501	1.99	12	1.78		

**Comments:****Signed:**For & on behalf of  
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 M. Aiston (Director)  
 G Dresser (Director)**Page:** 1 of 1



**Test Report:** Insitu-Density Test – Sand Replacement Method  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder) **Report Date:** 16.05.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318-17869-17872

**Site:** British Steel, Redcar **Client ref:** -  
**Date Sampled:** 12.05.2021  
**Date Received:** 12.05.2021

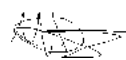
**Sample location:** As below **Test conducted by:** WB

**Material description:** Course grey Gravel **Variation from Standard Method:** None

**Test Method:** 2.2-Large Pouring Cylinder

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
AU19@1200 CD 17869	2.00	12	1.78		
AY17@2100 17870	2.01	13	1.78		
AY17@300 17871	1.99	10	1.81		
AW19@900 17872	2.00	11	1.80		

**Comments:****Signed:**For & on behalf of  
Dunelm Testing LtdAuthorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)**Page:** 1 of 1





**Test Report:** **Insitu-Density Test – Sand Replacement Method** **Report Date:** 09.04.2021  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder)

**Client:** Seymour CE Ltd **Lab ref:** MT0318-17163-17166

**Site:** British Steel, Redcar **Client ref:** -  
**Date Sampled:** 31.03.2021  
**Date Received:** 31.03.2021

**Sample location:** As below **Test conducted by:** WB

**Material description:** Brown/Grey clayey gravelly concrete & SPOIL  
**Variation from Standard Method:** None

**Test Method:** 2.2-Large Pouring Cylinder

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
AY25@1200 17163	2.46	12	2.20	2.05	>100
AY27@900 17164	2.14	13	1.89	2.05	92.1
BC23@900WBE 17165	2.19	14	1.93	2.05	94.1
BE27@1800 WBE 17166	2.37	11	2.13	2.05	>100

**Comments:** Compaction data derived from DMR Report MT0318-16406 Sampled 24.02.2021

**Signed:**

For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
[  ] M. Aiston (Director)  
[  ] G Dresser (Director)

**Page:** 1 of 1



**Test Report:** **Insitu-Density Test – Sand Replacement Method** **Report Date:** 08.06.2021  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder)

**Client:** Seymour CE Ltd **Lab ref:** MT0318-18373

**Site:** British Steel, Redcar **Client ref:** -  
**Date Sampled:** 03.06.2021  
**Date Received:** 04.06.2021

**Sample location:** As Below **Test conducted by:** WB

**Material description:** Grey Spoil

**Test Method:** 2.2-Large Pouring Cylinder **Variation from Standard Method:** None

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
AW17 @ 600 MS 18373	2.07	4.8	1.97		

**Comments:****Signed:**For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)**Page:** 1 of 1



**Test Report:** **Insitu-Density Test – Sand Replacement Method** **Report Date:** 04/03/2021  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder)

**Client:** Seymour CE Ltd **Lab ref:** MT0318-16481-16482

**Site:** British Steel, Redcar **Client ref:** -  
**Date Sampled:** 26.02.2021  
**Date Received:** 26.02.2021

**Sample location:** BC 25-27@600 **Test conducted by:** MC


**Material description:** Black-grey sandy GRAVEL (Recycled Type 1) **Variation from Standard Method:** None

**Test Method:** 2.2-Large Pouring Cylinder

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
16481 B 27@ 600	2.18	13	1.91	2.05	93.1
16481 B 25@ 600	2.27	12	2.02	2.05	98.6

**Comments:** Compaction data derived from DMR Report MT0318-16406 Sampled 24.02.2021

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For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1





**Test Report:** Insitu-Density Test – Sand Replacement Method  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder) **Report Date:** 09.06.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318-18444-18445

**Site:** British Steel, Redcar **Client ref:** -  
**Date Sampled:** 08.06.2021  
**Date Received:** 08.06.2021

**Sample location:** As Below **Test conducted by:** WB

**Material description:** 18444 Grey Soil 18445 Mudstone

**Test Method:** 2.2-Large Pouring Cylinder **Variation from Standard Method:** None

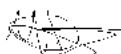
**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
18444 AW19 @1200	2.20	12	1.98		
18445 AU19 @1200 MS	2.34	4.5	2.24		

**Comments:**

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 M. Aiston (Director)  
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**Page:** 1 of 1

**Test Report:** **Insitu-Density Test – Sand Replacement Method** **Report Date:** 09.06.2021  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder)

**Client:** Seymour CE Ltd **Lab ref:** MT0318-18453-18456

**Site:** British Steel, Redcar **Client ref:** -  
**Date Sampled:** 07.06.2021  
**Date Received:** 07.06.2021


**Sample location:** As Below **Test conducted by:** WB

**Material description:** 18453—18456 Mudstone **Variation from Standard Method:** None

**Test Method:** 2.2-Large Pouring Cylinder

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
18543 AW23 @ 900 MS	2.42	4.8	2.31		
18454 AU19 @ 900 MS	2.28	4.7	2.18		
18455 AW17 @ 900 MS	2.24	6.6	2.10		
18456 AY21 @ 1500	2.08	12	1.85		

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 M. Aiston (Director)  
 G Dresser (Director)**Page:** 1 of 1



**Test Report:** **Insitu-Density Test – Sand Replacement Method** **Report Date:** 03.03.2021  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder)

**Client:** Seymour CE Ltd **Lab ref:** MT0318-16411-16412

**Site:** British Steel , Redcar **Client ref:** -  
**Date Sampled:** 24.02.2021  
**Date Received:** 24.02.2021

**Sample location:** BC 25 @ Formation & BC 27@ Formation **Test conducted by:** MC

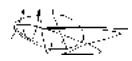
**Material description:** Black-grey sandy GRAVEL (Recycled Type 1) **Variation from Standard Method:** None

**Test Method:** 2.2-Large Pouring Cylinder

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
16411 BC 25	2.30	13	2.04	2.05	99.5
16412 BC 27	2.14	12	1.91	2.05	93.2

**Comments:** Compaction data derived from DMR Report MT0318-16406 sampled 24.02.2021

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**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

**Test Report:** **Insitu-Density Test – Sand Replacement Method** **Report Date:** 20.04.2021  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder)

**Client:** Seymour CE Ltd **Lab ref:** MT0318-17420-17422

**Site:** British Steel, Redcar **Client ref:** -  
**Date Sampled:** 16.04.2021  
**Date Received:** 16.04.2021

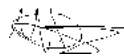
**Sample location:** As below **Test conducted by:** WB

**Material description:** Grey Spoil with crushed concrete and brick

**Test Method:** 2.2-Large Pouring Cylinder **Variation from Standard Method:** None

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
VH 1 AY21 @600 17420	2.08	11	1.87		
VH 4 BA 17@300 17421	2.11	11	1.90		
VH 5 BA23@1200 17422	2.01	11	1.82		

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 M. Aiston (Director)  
 G Dresser (Director)**Page:** 1 of 1



<b>Test Report:</b>	<b>Insitu-Density Test - Sand Replacement Method</b> BS 1377: Part 9: Clause 2.2 (Large pouring cylinder)	<b>Report Date:</b>	05.07.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab Ref:</b>	MT0318 19213-19215
<b>Site:</b>	British Steel, Redcar	<b>Client Ref:</b>	
<b>Sample Location:</b>	As Below	<b>Date Sampled:</b>	02.07.21
<b>Material Description:</b>	19213 Crushed Concrete, 19214-19215 Spoil	<b>Date Received:</b>	02.07.21
<b>Test Method:</b>	2.2- Large Pouring Cylinder	<b>Test conducted by:</b>	WB
		<b>Sampled By:</b>	WB
		<b>Variation from Standard Method:</b>	None

**Test Results**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D Mg/m <sup>3</sup>	Compaction %
AW17 @ 3200 19213	2.37	7	2.22		
AU19 @ 2900 19214	2.12	9.4	1.94		
AW19 @ 1700 19215	2.14	9.7	1.95		

**Comments:**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

- M. Aiston (Director)
- G. Dresser (Director)
- C. Spencer (Site Works Supervisor)
- M. Caulfield (Laboratory Supervisor)



**Test Report:** **Insitu-Density Test – Sand Replacement Method** **Report Date:** 15.03.2021  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder)

**Client:** Seymour CE Ltd **Lab ref:** MT0318-16725-16726

**Site:** British Steel, Redcar **Client ref:** -  
**Date Sampled:** 10.03.2021  
**Date Received:** 10.03.2021

**Sample location:** As below **Test conducted by:** WB

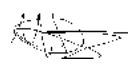
**Material description:** Black-grey sandy GRAVEL **Variation from Standard Method:** None

**Test Method:** 2.2-Large Pouring Cylinder

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
16725 BA 23 @600	2.33	5.3	2.22	2.05	>100
16726 BA 25 @300	2.28	6.5	2.14	2.05	>100

**Comments:** Compaction data derived from DMR Report MT0318-16406 Sampled 24.02.2021

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 M. Aiston (Director)  
 G Dresser (Director)**Page:** 1 of 1



<b>Test Report:</b>	<b>Insitu-Density Test - Sand Replacement Method</b> BS 1377: Part 9: Clause 2.2 (Large pouring cylinder)	<b>Report Date:</b>	03.07.2021
<b>Client:</b>	Seymour	<b>Lab Ref:</b>	MT0318 19193-19196
<b>Site:</b>	British Steel	<b>Client Ref:</b>	
<b>Sample Location:</b>	See Below	<b>Date Sampled:</b>	01.07.2021
<b>Material Description:</b>	19193-19195 Mudstone 19196 Crushed Concrete	<b>Date Received:</b>	01.07.2021
<b>Test Method:</b>	2.2- Large Pouring Cylinder	<b>Test conducted by:</b>	WB
		<b>Sampled By:</b>	WB
		<b>Variation from Standard Method:</b>	None

**Test Results**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D Mg/m <sup>3</sup>	Compaction %
AW19 @ 1200MS 19193	2.47	5.1	2.35		
AU19 @ 2500MS 19194	2.44	5	2.32		
AU17 @ 3200 19195	2.3	6.7	2.11		
AW19 @ 1500 19196	2.05	9.9	1.86		

**Comments:**

**Signed:**

For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:

- M. Aiston (Director)
- G. Dresser (Director)
- C. Spencer (Site Works Supervisor)
- M. Caulfield (Laboratory Supervisor)

**Test Report:** Insitu-Density Test – Sand Replacement Method  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder) **Report Date:** 10.03.2021

**Client:** Seymour CE Ltd **Lab ref:** MT0318-16634-16636

**Site:** British Steel, Redcar **Client ref:** -

**Sample location:** BA 29@ 300-600mm & BC 29 @ 600mm **Date Sampled:** 04.03.2021

**Material description:** Black-grey sandy GRAVEL (Recycled Type 1) **Date Received:** 04.03.2021

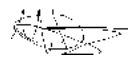
**Test Method:** 2.2-Large Pouring Cylinder **Test conducted by:** WB

**Variation from Standard Method:** None

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
16634 BA 29@ 300	2.42	13	2.14	2.05	>100
16635 BA 29@ 600	2.03	13	1.80	2.05	87.8
16636 BC 29@ 600	2.43	13	2.15	2.05	>100

**Comments:** Compaction data derived from DMR Report MT0318-16406 Sampled 24.02.2021

**Signed:**  
For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

**Test Report:** **Insitu-Density Test – Sand Replacement Method** **Report Date:** 26.03.2021  
BS 1377: Part 9: 1990 clause 2.2 (large pouring cylinder)

**Client:** Seymour CE Ltd **Lab ref:** MT0318-17017-17019

**Site:** British Steel, Redcar **Client ref:** -  
**Date Sampled:** 24.03.2021  
**Date Received:** 24.03.2021

**Sample location:** As below **Test conducted by:** WB

**Material description:** Course gravelly spoil with concrete **Variation from Standard Method:** None

**Test Method:** 2.2-Large Pouring Cylinder

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
17017 AY 25 @ 600	2.23	12	1.99		
17018 BA 29 @ 1800	2.41	14	2.11		
17019 AY 25 @ 300(2)	2.43	14	2.14		

**Comments:****Signed:**For & on behalf of  
**Dunelm Testing Ltd**Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)**Page:** 1 of 1















<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	04.03.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-16481-16482
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	26.02.2021
		<b>Tested By:</b>	MC
<b>Sample location:</b>	BC 25-27@600	<b>Date Received:</b>	26.02.2021
<b>Material description:</b>	Black-grey sandy GRAVEL (Recycled Type 1)	<b>Weather Conditions:</b>	Overcast 6°C
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	6°C	<b>Correction Factor:</b>	WD +2.8 /MC -10.0%

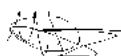
**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max Dry Density Mg/m <sup>3</sup>	Compaction %
16481 B 27@ 600	2.29	11	2.06	2.05	>100
16482 B 25@ 600	2.27	10	2.06	2.05	>100

**Comments**

Compaction data derived from DMR Report MT0318-16406 Sampled 24.02.2021

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	05/03/2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-16630-16632
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	02.03.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	See Below	<b>Date Received:</b>	02.03.2021
<b>Material description:</b>	Black-grey sandy GRAVEL (Recycled Type 1)	<b>Weather Conditions:</b>	Cloudy 8°C
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	8°C	<b>Correction Factor:</b>	WD +2.8 /MC -10.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max Dry Density Mg/m <sup>3</sup>	Compaction %
16630 BC27 @ 900 (ELR)	2.25	15	1.96	2.05	95.6
16631 BC25 @ 900	2.20	14	1.93	2.05	94.1
16632 BA27 @ 900V	2.42	17	2.07	2.05	>100

**Comments**

Compaction data derived from DMR Report MT0318-16406 Sampled 24.02.2021

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)



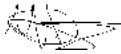
<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	11.03.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-16634-16636
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	04.03.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	BA29 @ 300-600 & BC29 @ 600	<b>Date Received:</b>	04.03.2021
<b>Material description:</b>	Black-grey sandy GRAVEL (Recycled Type 1)	<b>Weather Conditions:</b>	Cloudy 7°C
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	7°C	<b>Correction Factor:</b>	WD +2.8 /MC -10.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max Dry Density Mg/m <sup>3</sup>	Compaction %
16634 BA 29@ 300	2.45	14	2.15	2.05	>100
16635 BA 29@ 600	2.09	8.3	1.93	2.05	94.2
16636 BC 29@ 600	2.21	10	2.01	2.05	98.0

**Comments**

Compaction data derived from DMR Report MT0318-16406 Sampled 24.02.2021

**Signed:** 

For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)





<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	11.03.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-16692-16694
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	04.03.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	As below	<b>Date Received:</b>	04.03.2021
<b>Material description:</b>	Black-grey sandy GRAVEL	<b>Weather Conditions:</b>	Cloudy 7°C
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	180mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	7°C	<b>Correction Factor:</b>	WD +2.8 /MC -10.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
16692 BA23 @ 600	2.23	10	2.03	2.05	99.0
16693 AY27 @ 300	2.20	9.5	2.01	2.05	98.0
16694 BA25 @ 300 V	2.31	12	2.07	2.05	>100

**Comments**

Compaction data derived from DMR Report MT0318-16406 Sampled 24.02.2021

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

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<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	09.04.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-17086-17089
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	29.03.2021
		<b>Tested By:</b>	NY
<b>Sample location:</b>	As below	<b>Date Received:</b>	29.03.2021
<b>Material description:</b>	Brown/Grey clayey gravelly concrete & SPOIL	<b>Weather Conditions:</b>	Overcast 6°C
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	6°C	<b>Correction Factor:</b>	WD +2.8 /MC -10.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max Dry Density Mg/m <sup>3</sup>	Compaction %
AY25 @ 4200 EX2 17086	2.43	12	2.17	2.05	>100
AY27 @ 3900 CD 17087	2.18	12	1.95	2.05	95.1
AY27 @ 600 17088	2.22	12	1.99	2.05	97.0
AY25 @ 900 17089	2.25	11	2.03	2.05	99.0

**Comments**

Compaction data derived from DMR Report MT0318-16406 Sampled 24.02.2021

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

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<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	09.04.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-17163-17166
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	31.03.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	As below	<b>Date Received:</b>	31.03.2021
<b>Material description:</b>	Brown/Grey clayey gravelly concrete & SPOIL	<b>Weather Conditions:</b>	Sunny
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	13°C	<b>Correction Factor:</b>	WD +2.8 /MC -10.0%


**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max Dry Density Mg/m <sup>3</sup>	Compaction %
AY25@1200 17163	2.31	11	2.08	2.05	>100
AY27@900 17164	2.18	10	1.98	2.05	96.5
BC23@900WBE 17165	2.13	9.8	1.94	2.05	94.6
BE27@1800 WBE 17166	2.34	10.9	2.11	2.05	>100

**Comments**

Compaction data derived from DMR Report MT0318-16406 Sampled 24.02.2021

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

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<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	12.04.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-17234-17235
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	07.04.2021
		<b>Tested By:</b>	NY
<b>Sample location:</b>	As below	<b>Date Received:</b>	07.04.2021
<b>Material description:</b>	Brown/Grey clayey gravelly concrete & SPOIL	<b>Weather Conditions:</b>	Overcast Dry 9°c
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	9-11°C	<b>Correction Factor:</b>	WD +2.8 /MC -10.0%


**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max Dry Density Mg/m <sup>3</sup>	Compaction %
BA21 @ 1200 17234	2.31	10	2.01	2.05	>100
AY25 @1500 17235	2.17	9.3	1.97	2.05	95.1

**Comments**

Compaction data derived from DMR Report MT0318-16406 Sampled 24.02.2021

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	09.04.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-17236-17239
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	06.04.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	As below	<b>Date Received:</b>	06.04.2021
<b>Material description:</b>	Brown/Grey clayey gravelly concrete & SPOIL	<b>Weather Conditions:</b>	Sunny
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	5°C	<b>Correction Factor:</b>	WD +2.8 /MC -10.0%

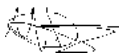
**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max Dry Density Mg/m <sup>3</sup>	Compaction %
AY25@1200 17236	2.24	12	2.00	2.05	97.6
BA25@1200 17237	2.24	10	2.03	2.05	99.0
BA21@900 WBE 17239	2.20	12	1.97	2.05	96.1

**Comments**

Compaction data derived from DMR Report MT0318-16406 Sampled 24.02.2021

**Signed:**



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**Dunelm Testing Ltd**

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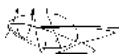
<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	13.04.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-17287-17289
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	09.04.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	As below	<b>Date Received:</b>	09.04.2021
<b>Material description:</b>	Grey Spoil with crushed concrete and brick	<b>Weather Conditions:</b>	Overcast Dry 9°c
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	9-11°C	<b>Correction Factor:</b>	WD +2.8 /MC -10.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max Dry Density Mg/m <sup>3</sup>	Compaction %
AY 27@1500 17287	1.98	12	1.77		
BA25 @600 17288	2.02	12	1.80		
17289	1.99	12	1.78		

**Comments**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

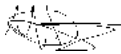
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<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	13.04.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-17304-17307
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	08.04.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	As below	<b>Date Received:</b>	08.04.2021
<b>Material description:</b>	Grey Spoil with crushed concrete and brick	<b>Weather Conditions:</b>	Overcast Dry 9°c
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	9-11°C	<b>Correction Factor:</b>	WD +2.8 /MC -10.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max Dry Density Mg/m <sup>3</sup>	Compaction %
AY25@1800 17304	2.18	12	1.95		
BA21 @600 17305	2.11	12	1.88		
AY25@ 1500 17306	2.13	12	1.90		
BA23@ 900 17307	1.96	12	1.75		

**Comments**

**Signed:** 

For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
[  ] M. Aiston (Director)  
[  ] G Dresser (Director)

**Page:** 1 of 1

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<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	26/03/2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-16766
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	12.03.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	See Below	<b>Date Received:</b>	12.03.2021
<b>Material description:</b>	Black-grey sandy GRAVEL	<b>Weather Conditions:</b>	Cloudy 8°C
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	8°C	<b>Correction Factor:</b>	WD +2.8 /MC -10.0%

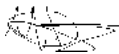
**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
16766 BA 25 @900	2.20	12	1.96	2.05	95.9

**Comments**

Compaction data derived from DMR Report MT0318-16406 Sampled 24.02.2021

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

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Tel (0191) 349 9210 www. dunelmtesting.co.uk



<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	26/03/2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-16872-16875
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	18.03.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	See Below	<b>Date Received:</b>	19.03.2021
<b>Material description:</b>	Coarse Black-grey sandy GRAVEL	<b>Weather Conditions:</b>	Cloudy 7°C
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	11-14°C	<b>Correction Factor:</b>	WD -2.6 /MC -4.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
16872 BC25 @ 300 WBE	2.00	8.3	1.85		
16873 BA27 @ 300	2.11	14	1.85		
16874 BA25 @ 600	2.06	13	1.82		
16875 BA23 @ 300 (2)	2.14	15	1.86		

**Comments**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

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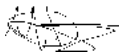
<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	26/03/2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-16939-16942
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	22.03.2021
		<b>Tested By:</b>	NY
<b>Sample location:</b>	See Below	<b>Date Received:</b>	22.03.2021
<b>Material description:</b>	Coarse Black-grey sandy gravelly spoil	<b>Weather Conditions:</b>	Cloudy 9°C
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	11-14°C	<b>Correction Factor:</b>	WD -2.6 /MC -4.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
16939 BE27 @1200WBE	2.31	15	2.00		
16940 BC25 @1200WBE	2.32	15	2.01		
16941 BC29 @ 1500ELR	2.28	15	1.98		
16942 BA27 @ 900	2.20	15	1.91		

**Comments**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

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<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	26/03/2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-17009-17011
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	25.03.2021
		<b>Tested By:</b>	NY
<b>Sample location:</b>	See Below	<b>Date Received:</b>	25.03.2021
<b>Material description:</b>	Clayey sandy GRAVEL spoil	<b>Weather Conditions:</b>	Overcast Dry 9°c
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	10°C	<b>Correction Factor:</b>	WD +.04 /MC +6.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
17009 BA27 @ 1200	2.31	15	2.01		
17010 AY25 @ 600 EX2	2.30	15	2.00		
17011 AY27 @ 500 CD	2.48	15	2.16		

**Comments**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

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[  ] M. Aiston (Director)  
[  ] G Dresser (Director)

**Page:** 1 of 1

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<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	26/03/2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-17017-17019
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	24.03.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	See Below	<b>Date Received:</b>	24.03.2021
<b>Material description:</b>	Course gravelly spoil with concrete	<b>Weather Conditions:</b>	Overcast Dry 11°C
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	11°C	<b>Correction Factor:</b>	WD -2.6 /MC -4.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
17017 AY 25 @ 600	2.28	11	2.05		
17018 17018 BA 29 @ 1800	2.34	11	2.11		
17019 17019 AY 25 @ 300(2)	2.36	12	2.11		

**Comments**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
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 G Dresser (Director)

**Page:** 1 of 1

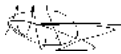
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<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	20.04.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-17293-17296
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	09.04.2021
		<b>Tested By:</b>	EA
<b>Sample location:</b>	As below	<b>Date Received:</b>	09.04.2021
<b>Material description:</b>	Grey Spoil with crushed concrete and brick	<b>Weather Conditions:</b>	Sunny 9°C
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	14°C	<b>Correction Factor:</b>	WD +2.8 /MC -10.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max Dry Density Mg/m <sup>3</sup>	Compaction %
AY 27@ 1800 17293	2.03	10	1.77		
AY 25@ 1200 (2) 17296	2.02	9.7	1.80		

**Comments**

**Signed:** 

For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)


<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	20.04.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-17344-17347
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	14.04.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	As below	<b>Date Received:</b>	14.04.2021
<b>Material description:</b>	Grey Spoil with crushed concrete and brick	<b>Weather Conditions:</b>	Sunny 2-8°C
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	18°C	<b>Correction Factor:</b>	WD +2.8 /MC -10.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max Dry Density Mg/m <sup>3</sup>	Compaction %
BC29@200 17344	1.96	8.9	1.80		
BC27@1500 17345	2.05	9.0	1.87		
BA25@1800 17346	2.06	10	1.86		
BC25@2400 17347	1.94	9.7	1.77		

**Comments**

**Signed:**



For & on behalf of  
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[ ✓ ] M. Aiston (Director)  
[ ] G Dresser (Director)

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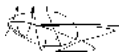
<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	30.04.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-17435-17437
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	19.04.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	See Below	<b>Date Received:</b>	20.04.2021
<b>Material description:</b>	Grey Spoil with crushed brick	<b>Weather Conditions:</b>	Overcast Dry 11°C
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	14°C	<b>Correction Factor:</b>	WD -2.6 /MC -4.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
BA19 @300 17435	1.98	9.5	1.81		
AY21 @900 17436	1.93	9.6	1.76		
BA23 @500 17437	1.93	9.4	1.76		

**Comments**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

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<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	30.04.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-17498-17501
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	21.04.2021
		<b>Tested By:</b>	JK
<b>Sample location:</b>	See Below	<b>Date Received:</b>	21.04.2021
<b>Material description:</b>	Grey Spoil with crushed brick	<b>Weather Conditions:</b>	Sunny 16°C
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	16°C	<b>Correction Factor:</b>	WD -2.6 /MC -4.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
BC27 @ 1200 ELR 17498	2.04	8.6	1.87		
BA29 @ 2100 ELR 17499	2.05	8.7	1.89		
AY21 @ 900 17500	2.10	9.5	1.92		
AY23 @ 600 17501	1.96	8.5	1.81		

**Comments**

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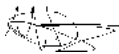
<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	30.04.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-17542
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	23.04.2021
		<b>Tested By:</b>	EA
<b>Sample location:</b>	See Below	<b>Date Received:</b>	23.04.2021
<b>Material description:</b>	Grey Spoil with crushed brick	<b>Weather Conditions:</b>	Sunny 16°C
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	21°C	<b>Correction Factor:</b>	WD -2.6 /MC -4.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
AY19 @1500 17542	2.05	5.8	1.93		

**Comments**

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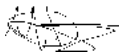
<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	30.04.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-17575-17577
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	26.04.2021
		<b>Tested By:</b>	EA
<b>Sample location:</b>	See Below	<b>Date Received:</b>	27.04.2021
<b>Material description:</b>	Course grey Gravel	<b>Weather Conditions:</b>	Cloudy, dry
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	17°C	<b>Correction Factor:</b>	WD -2.6 /MC -4.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
AU19@300 17575	2.11	13	1.87		
AS17@900 17576	2.20	13	1.95		
AY 21@ 1200 17577	2.18	13	1.93		

**Comments**

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For & on behalf of  
**Dunelm Testing Ltd**

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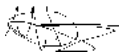
<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	16.05.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-17810-17812
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	10.05.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	See Below	<b>Date Received:</b>	10.05.2021
<b>Material description:</b>	Course grey Gravel	<b>Weather Conditions:</b>	Cloudy, dry
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	20°C	<b>Correction Factor:</b>	WD -2.6 /MC -4.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
AU19@900 CD 17810	2.04	9.7	1.86		
AU19@300 (2) 17811	2.07	11	1.86		
AY15@300 WBE 17812	2.06	9.1	1.89		

**Comments**

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[  ] M. Aiston (Director)  
[  ] G Dresser (Director)

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<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	16.05.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-17869-17872
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	12.05.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	See Below	<b>Date Received:</b>	12.05.2021
<b>Material description:</b>	Course grey Gravel	<b>Weather Conditions:</b>	Cloudy, dry
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	20°C	<b>Correction Factor:</b>	WD -2.6 /MC -4.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
AU19@1200 CD 17869	2.03	11	1.83		
AY17@2100 17870	1.99	13	1.76		
AY17@200 17871	2.07	10	1.88		
AW19@900 17872	1.99	9.6	1.82		

**Comments**

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<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	18.05.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-18011
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	14.05.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	See Below	<b>Date Received:</b>	14.05.2021
<b>Material description:</b>	Course grey Gravel	<b>Weather Conditions:</b>	Cloudy, dry
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	8°C	<b>Correction Factor:</b>	WD -2.6 /MC -4.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
AU19@900 18011	2.17	9.4	1.98		

**Comments**

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<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	20.05.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-18057
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	18.05.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	See Below	<b>Date Received:</b>	18.05.2021
<b>Material description:</b>	Coase Spoil	<b>Weather Conditions:</b>	Cloudy, dry
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	10°C	<b>Correction Factor:</b>	WD -2.6 /MC -4.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
AW21@300 18057	1.57	12	1.55		
AU21@900 18058	1.72	11	1.55		
AY21@300 18059	1.76	11	1.59		
AY21@2400 18060	1.71	12	1.53		

**Comments**

**Signed:**



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 G Dresser (Director)

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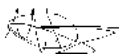
<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	27.05.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-18108-18109
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	20.05.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	See Below	<b>Date Received:</b>	20.05.2021
<b>Material description:</b>	Coase Spoil	<b>Weather Conditions:</b>	Rain
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	13°C	<b>Correction Factor:</b>	WD -2.6 /MC -4.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
AW17@300 18108	2.09	12	1.87		
AY17@600 18109	2.20	12	1.96		

**Comments**

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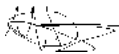
<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	26.05.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-18160-18162
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	25.05.2021
		<b>Tested By:</b>	JK
<b>Sample location:</b>	See Below	<b>Date Received:</b>	25.05.2021
<b>Material description:</b>	Course grey Gravel	<b>Weather Conditions:</b>	Overcast, Wet
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	14°C	<b>Correction Factor:</b>	WD -2.6 /MC +4.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
AW21 @ 2.56 18160	2.03	13	1.79		
AS21 @ 6.04 18162	2.00	13	1.77		

**Comments**

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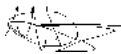
<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	28.05.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-18221
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	27.05.2021
		<b>Tested By:</b>	EA
<b>Sample location:</b>	See Below	<b>Date Received:</b>	27.05.2021
<b>Material description:</b>	Coarse Gravel	<b>Weather Conditions:</b>	Sunny, Dry
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	10°C	<b>Correction Factor:</b>	WD .06 /MC +8.0%

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
AW17 @ 600 18221	2.04	11	1.84		

**Comments**

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<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	05.06.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-18312-18313
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	02.06.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	As Below	<b>Date Received:</b>	02.06.2021
<b>Material description:</b>	18312 -Grey Spoil 18313 Grey Mudstone	<b>Weather Conditions:</b>	Sunny, Dry
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	24°C	<b>Correction Factor:</b>	Spoil WD -2.6 /MC -4.0% Mudstone WD-0.14 Mg/m3/ MC-1..0

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
AY21@600(2) 18312	1.94	10	1.76		
AU17-S3 18313	2.37	10	2.15		

**Comments**

**Signed:**



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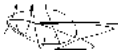
<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	05.06.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-18373
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	03.06.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	AW17 @ 600 MS	<b>Date Received:</b>	03.06.2021
<b>Material description:</b>	Grey Mudstone	<b>Weather Conditions:</b>	Sunny, Dry
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	24°C	<b>Correction Factor:</b>	WD-0.14 Mg/m3/ MC-1..0

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
AW17 @ 600 MS 18373	2.20	5.9	2.07		

**Comments**

**Signed:**



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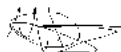
<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	08.06.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-18387-18389
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	04.06.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	Dee Below	<b>Date Received:</b>	04.06.2021
<b>Material description:</b>	18387-18388 Mudstone 18739 Grey Spoil	<b>Weather Conditions:</b>	Sunny, Dry
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	24°C	<b>Correction Factor:</b>	Spoil WD -2.6 /MC -4.0% Mudstone WD-0.14 Mg/m3/ MC-1..0

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
AY17 @ 600 MS 18387	2.14	4.6	2.05		
AU17 @ 600 MS 18388	2.24	6.4	2.10		
AY21 @ 900 (2) 18389	1.93	10	1.75		

**Comments**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
 M. Aiston (Director)  
 G Dresser (Director)

**Page:** 1 of 1

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**Test Report:** **In-Situ Density Test –Electromagnetic Density Gauge Method** **Report Date:** 09.06.2021  
In Accordance with ASTM: D7830/D7830M -14

**Client:** Seymour CE Ltd **Lab ref:** MT0318-18444-18445  
**Client ref:** -

**Site:** British Steel, Redcar **Date Tested:** 08.06.2021  
**Tested By:** WB

**Sample location:** See Below **Date Received:** 08.06.2021

**Material description:** 18444 Grey Soil 18445 Mudstone **Weather Conditions:** Sunny, Dry

**Test Method:** ASTM D7830/D7830M -14 **Test Depth:** 200mm

**Variation from Standard Method:** None **Gauge Serial Number:** SDG2001044


**Soil Temperature:** 25°C **Correction Factor:** Spoil WD -2.6 /MC -4.0%  
Mudstone WD-0.14 Mg/m3/  
MC-1..0

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
18444 AW19 @1200	2.20	8.0	2.04		
18445 AU19 @1200 MS	2.28	7.6	2.12		

**Comments**

**Signed:**



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 G Dresser (Director)

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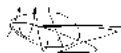
<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	09.06.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-18453-18456
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	07.06.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	See Below	<b>Date Received:</b>	07.06.2021
<b>Material description:</b>	18453—18456 Mudstone	<b>Weather Conditions:</b>	Sunny, Dry
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	24°C	<b>Correction Factor:</b>	Spoil WD -2.6 /MC -4.0% Mudstone WD-0.14 Mg/m3/ MC-1..0

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
18543 AW23 @ 900 MS	2.17	5.5	2.06		
18454 AU19 @ 900 MS	2.34	8.5	2.16		
18455 AW17 @ 900 MS	2.15	5.2	2.04		
18456 AY21 @ 1500	2.13	9.0	1.95		

**Comments**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
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 G Dresser (Director)

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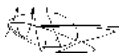
<b>Test Report:</b>	<b>In-Situ Density Test –Electromagnetic Density Gauge Method</b> In Accordance with ASTM: D7830/D7830M -14	<b>Report Date:</b>	16.06.2021
<b>Client:</b>	Seymour CE Ltd	<b>Lab ref:</b>	MT0318-18762-18764
		<b>Client ref:</b>	-
<b>Site:</b>	British Steel, Redcar	<b>Date Tested:</b>	09.06.2021
		<b>Tested By:</b>	WB
<b>Sample location:</b>	See Below	<b>Date Received:</b>	09.06.2021
<b>Material description:</b>	Mudstone	<b>Weather Conditions:</b>	Sunny, Dry
<b>Test Method</b>	ASTM D7830/D7830M -14	<b>Test Depth:</b>	200mm
<b>Variation from Standard Method:</b>	None	<b>Gauge Serial Number:</b>	SDG2001044
<b>Soil Temperature:</b>	23°C	<b>Correction Factor:</b>	WD-0.14 Mg/m3/ MC-1..0

**Test Results:**

Test No.	Bulk Density Mg/m <sup>3</sup>	Moisture Content %	Dry Density Mg/m <sup>3</sup>	Max D.D. Mg/m <sup>3</sup>	Compaction %
18762 AU21 @ 1200MS	2.22	5.3	2.11		
18763 AW23 @ 1800MS	2.29	6.7	2.15		
18764 AW17 @ 1500MS	2.34	7.3	2.18		

**Comments**

**Signed:**



For & on behalf of  
**Dunelm Testing Ltd**

Authorised Signatories:  
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 G Dresser (Director)

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**APPENDIX I**

**Laboratory Certificates – Slag Petrology**



# TRS REPORT

**Report Ref: KW1C26-29/SCA/RSW/TRS/07/21/RP2**  
**Date Issued: 06 July 2021**  
**TRS Sample Refs: KW1C26-29**  
**Order No: E-mail Jonathon Miles / Richard Small**

**EXAMINATION OF FOUR SAMPLES**  
**FROM**  
**REDCAR STEELWORKS**  
**FOR SEYMOUR CIVIL ENGINEERING**



**Thomas Research Services Ltd.**

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[www.slagtest.co.uk](http://www.slagtest.co.uk)

Unit 7, Tattershall Castle Court, Morgan Way, New Holland,  
North Lincolnshire, DN19 7PZ, United Kingdom

A Limited Company registered in England. Company Registration No: 2518421

**EXAMINATION OF FOUR SAMPLES  
FROM  
REDCAR STEELWORKS  
FOR SEYMOUR CIVIL ENGINEERING**

**1. BACKGROUND**

Four bulk samples were received from the above site on 25<sup>th</sup> March 2021. Each sample was weighed and allocated a unique TRS reference number, the details of which are recorded below:-

<b>TRS Ref</b>	<b>Site Ref</b>	<b>Mass/kg</b>
KW1C26	PRA-SP014-S9	5.5
KW1C27	PRA-SP007-S21	6.8
KW1C28	PRA-SP003-S12	6.1
KW1C29	PRA-SP002-S11	6.0

The purpose of the exercise was to identify the range and relative concentrations of any iron and steelmaking slags present in the samples, and whether there was any potential for volumetric instability from the materials.

## **2. SAMPLE PREPARATION & PROGRAMME OF ANALYSIS**

The samples were primary crushed to reduce particle size down to <50mm, portions then being selected and dried at low temperature to constant weight. The dried material was subjected to a regime of stage crushing and quartering to further reduce particle size down to <5mm. Portions of this <5mm material were made up into resin bound blocks, one face of which was ground flat and polished using diamond pastes. Further portions of the <5mm material were milled to a fine powder. Fractions of material were extracted throughout the preparation procedure to provide the materials necessary for the further tests and analyses required in the programme.

A petrological examination was made of the polished blocks using reflected light microscopy, the complete findings of which are recorded in appendix A. The results of this examination were issued in our summary report of 30<sup>th</sup> May 2021. On the basis of that report, the following tests and analyses were carried out on the samples:-

Samples KW1C26-29 were subjected to the following tests & analyses to assess the potential for expansion of mixed slag.

- Water soluble sulphate
- Acid soluble sulphate
- Total sulphur
- Free CaO
- Free MgO
- Thermal analysis (DTA & TGA)
- TRS accelerated expansion test (28 day duration)

### **3. DISCUSSION OF RESULTS**

#### **3.1 Petrology**

A petrological examination was made of the samples using reflected light microscopy. The complete findings of this examination are recorded in appendix A.

The samples comprised mainly of a mixture of blast furnace slag and basic steel slag. The table below shows a summary of the results:-

<b>TRS Ref</b>	<b>Blast furnace slag</b>	<b>Basic steel slag</b>	<b>Basic refractory</b>
<b>KW1C26</b>	m	m	-
<b>KW1C27</b>	m	m	-
<b>KW1C28</b>	m	l	vs
<b>KW1C29</b>	m	l	vs

#### **3.2 Sulphur Species**

The following range of analyses were performed on samples KW1C26-29. The results are recorded in table 1:-

- Water soluble sulphate
- Acid soluble sulphate
- Total sulphur

Total sulphur values were in the range 0.32 to 0.49 percent. Acid soluble sulphates were in the range 0.28 to 0.83 percent, with corresponding water soluble sulphates of 0.14 to 0.31 g/l. These sulphate and sulphur values were fairly normal for blast furnace slag. Care should be taken when specifying concrete that may come into contact with the slag. Calculations show that between 28 and 75 percent of the available sulphur is present as sulphate.

### **3.3 Thermal Analysis**

Simultaneous differential thermal analysis (DTA) and thermo-gravimetric analysis (TGA) were performed on samples KW1C26-29. The results are recorded in table three.

Ettringite was seen in one of the samples at 0.6 percent. The presence of ettringite would indicate past expansion of the blast furnace slag. Gypsum was present in two of the samples, at 0.7 and 1.2 percent.

Calcium hydroxide was recorded in one of the samples, at 0.7 percent. Magnesium hydroxide was recorded in one of the samples at 0.4 percent. These values were used to correct the free CaO and free MgO analyses recorded in table 2.

Calcite was present in all samples at between 3.7 and 14.1 percent. This product is an indicator as to the weathered state of the slag.

### **3.4 Free CaO & Free MgO**

Free CaO & free MgO analyses were carried out on samples KW1C26-29. The results are recorded in table 2. Both original and corrected values are recorded. The original values include both the oxide (CaO and MgO) and the hydroxide ((Ca(OH)<sub>2</sub> and Mg(OH)<sub>2</sub>) contents. The corrected values report only the oxide content (CaO and MgO) after correction using the hydroxide values from the thermal analyses. These corrected values are the more significant, as it is only the oxides that are still free to hydrate, i.e. expand.

Free lime was recorded in the samples at between 0.3 and 2.2 percent. Free magnesia was recorded at between 1.5 and 2.8 percent. These corrected free

lime and free magnesia levels record oxides that are potentially still free to hydrate (i.e. expand).

### **3.5 TRS Accelerated Expansion Test**

The TRS accelerated expansion test was performed on samples KW1C26-29. The results are recorded in table four. Note that the test measures potential for future expansion, and is not a measure of expansion that may have taken place in the past.

The samples recorded expansion results of between 0.37 and 2.55 percent.

## **4. CONCLUSIONS**

### **The following conclusions can be drawn:-**

- The samples comprised mainly of basic steel slag and blast furnace slag.
- Blast furnace slag was present in medium amounts in all samples. The slag showed moderate levels of alteration due to weathering. Old weathered blast furnace slag may contain pockets of potentially expansive material.
- Further testing of the blast furnace slag indicated some evidence of past expansion (presence of ettringite). The sulphate values should be taken into consideration when specifying concrete that may come into contact with the slag.
- Basic Steel slag was present in medium or large amounts in all samples. The slag was significantly altered due to weathering. This material may have significant potential for expansion.

- Expansion testing of the samples containing medium or more amounts of basic steel slag recorded expansion results of between 0.37 and 2.55 percent.
- Minor amounts of basic refractory material were seen in two samples. This material can have significant potential for expansion.
- Various other products were present in these samples in minor amounts.

**Note**

**These conclusions apply only to the samples tested and may not represent the bulk of the material on the site from which they were taken.**

*Ian D. Thomas*

**Ian D Thomas BSc(Hons)**

**06 July 2021**

**TABLE 1** **SULPHUR SPECIES ANALYSES**

TRS Ref	Site Ref	Water Sol.	Acid Sol.	Total S
		SO <sub>3</sub> (g/l)	SO <sub>3</sub> (%)	(%)
<b>KW1C26</b>	PRA-SPO14-S9	0.14	0.34	0.49
<b>KW1C27</b>	PRA-SP007-S21	0.17	0.50	0.44
<b>KW1C28</b>	PRA-SP003-S12	0.31	0.83	0.44
<b>KW1C29</b>	PRA-SP002-S11	0.21	0.28	0.32

**TABLE 2** **ANALYSIS FOR FREE CaO AND FREE MgO**

TRS Ref	Site Ref	Free CaO	Free CaO	Free MgO	Free MgO
		Original (%)	Corrected (%)	Original (%)	Corrected (%)
<b>KW1C26</b>	PRA-SPO14-S9	0.3	0.3	2.7	2.7
<b>KW1C27</b>	PRA-SP007-S21	0.3	0.3	2.8	2.8
<b>KW1C28</b>	PRA-SP003-S12	2.7	2.2	1.8	1.5
<b>KW1C29</b>	PRA-SP002-S11	1.7	1.7	2.2	2.2

**RESULTS FROM THERMAL ANALYSIS****TABLE 3**

TRS Ref	Site Ref	Mass % by Thermal Analysis					
		L.O.I.	Ettringite	Gypsum	Calcite	Ca(OH) <sub>2</sub>	Mg(OH) <sub>2</sub>
<b>KW1C26</b>	PRA-SPO14-S9	8.11	0.0	0.0	3.7	0.0	0.0
<b>KW1C27</b>	PRA-SP007-S21	10.78	0.0	0.7	10.3	0.0	0.0
<b>KW1C28</b>	PRA-SP003-S12	9.51	0.6	1.2	9.0	0.7	0.4
<b>KW1C29</b>	PRA-SP002-S11	27.04	0.0	0.0	14.1	0.0	0.0

**TRS ACCELERATED EXPANSION TEST****TABLE 4**

TRS Ref	Site Ref	7 day	14 day	21 day	28 day
		(%)	(%)	(%)	(%)
<b>KW1C26</b>	PRA-SPO14-S9	0.18	0.28	0.34	0.37
<b>KW1C27</b>	PRA-SP007-S21	0.48	0.57	0.65	0.69
<b>KW1C28</b>	PRA-SP003-S12	1.61	2.19	2.48	2.55
<b>KW1C29</b>	PRA-SP002-S11	1.87	1.99	2.05	2.07



## **APPENDIX A**

### **PETROLOGICAL SUMMARY ON SAMPLES KW1C 26-29**

This report summarises major points of petrological interest on four samples, KW1C 26-29. A general explanation of the phases, minerals, textures, etc. present is available separately that also gives the procedure used. The work is based solely using optical microscopy with incident light of the surface of polished, resin bonded blocks prepared from grit sized material, nominally –5mm.

The detailed results are given in the accompanying Table.

The samples are similar to one another and consist mainly of mixtures of particles of original blast furnace and basic steel slag together with their weathering products, particularly from the basic steel slag.

Blast furnace slag occurs in medium amounts in all four samples.

Basic steel slag occurs in medium to large amounts in the samples.

Basic (magnesian-rich) refractory material is present in minor amounts in samples 28 and 29.

Blast furnace slag. The variation in mineralogical composition is relatively small and the high content of melilite (Ca, Mg, Al silicate) with spinel (Mg, Al oxide) suggests stability. Secondary alteration is relatively low.

Basic steel slag. The unaltered slag is very variable in composition and microstructure from particle to particle and even within individual particles. However, it consists mainly of a small number of phases, notably dicalcium silicates and iron oxides. There are small amounts of lime phase (CaO with other elements in solid solution) and periclase (MgO with other elements in solid solution). Both are well dispersed, but are occasionally concentrated in pockets as a result of partial assimilation. The slag is extensively altered with the formation of secondary phases difficult to identify specifically under the microscope but are probably silicate hydrates.

Basic refractories. Small or very small amounts of basic refractory material are present in most samples. These consist of (1) partly assimilated, granular, magnesia consisting mainly of periclase and (2) very finely granular periclase and lime phase that are derived from dolomite refractories.

Other constituents. These include quartz (mainly as sand), iron ore, ironstone, iron as metal with associated rust, clay, limestone and coke. There are small to medium amounts of cementitious material binding the smaller and adherent to the larger particles. This appears to be similar to the slag alteration products including calcite but probably is partly clay.

**TRS SAMPLES KW1C 26-29**

	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>
<b>BLAST FURNACE SLAG</b>				
<b>Amount</b>	<b>m</b>	<b>m</b>	<b>m</b>	<b>m</b>
<b>Phases present:-</b>				
Melilite	l	l	l	l
Merwinite	-	-	-	-
Larnite & Bredigite	vs	-	vs	vs
Matrix & other silicates	s	s	s	s
Ca, Mn, Fe sulphides	vs	vs	vs	vs
Iron as metal	vs	s	vs	vs
Glassy slag	vs	vs	vs	vs
Siliceous clinker	-	-	-	-
Alteration products	s	s	s	s
Calcite	s	-	-	s
Gypsum	-	-	-	-
<b>BASIC STEEL SLAG</b>				
<b>Amount</b>	<b>m</b>	<b>m</b>	<b>l</b>	<b>l</b>
<b>Phases present:-</b>				
Dicalcium silicate	m	m	m	l
Tricalcium silicate	-	vs	-	-
RO phase	m	m	m	m
R3O4 & R2O3 phases	s	s	s	s
Ca ferrite phases	vs	vs	vs	vs
Metal & rust	s	s	s	vs
Lime phase	vs	vs	vs	vs
Periclase	-	-	vs	vs
Fluorite	-	-	vs	vs
Alteration products	l	l	l	l
<b>BASIC REFRACTORIES</b>				
<b>Amount</b>	<b>-</b>	<b>-</b>	<b>vs</b>	<b>vs</b>
<b>OTHER CONSTITUENTS</b>				
Alumino-silicate brick	-	m	m	m
Quartz, etc.	m	m	m	m
Metal, rust, scale, etc.	m	s	s	s
Fume	-	-	-	-
Limestone & dolomite	-	s	-	-
Iron ore, ironstone & sinter	m	m	m	s
Shale, etc.	-	s	s	s
Coke	m	s	m	s
Coal & char	s	s	s	vs
Cementitious/clay material	m	m	m	m

**L = very large, l = large, m = medium, s = small, vs = very small amounts**

## **APPENDIX B**

### **MECHANISMS OF VOLUMETRIC INSTABILITY IN IRON AND STEEL INDUSTRY SLAGS**

Volumetric change with time can occur in some types of iron and steel industry slags. These mechanisms are briefly described in this section.

#### **Blast Furnace Slags**

Fresh-make air-cooled, i.e. crystalline, blast furnace slags are almost always volumetrically stable after cooling. The two mechanisms for volumetric instability listed in BS1047:1983 – “Air Cooled Blast furnace Slag for use in Construction” are:-

- a) Beta to gamma inversion of dicalcium silicate.**
- b) Iron unsoundness.**

**a)** Research by G H Thomas on this phase transformation has shown the transformation to be athermal rather than isothermal. In practical terms this means that inversion, and the expansion associated with it, can only occur during the cooling cycle. In fully cooled material there would appear to be no further risk of instability from this mechanism.

**b)** Iron unsoundness is a very rare form of instability frequently associated with operating problems in the blast furnace. TRS know of only one instance in over 40 years. The mechanism, which is a hydrolysis reaction, is immediately triggered off by the presence of water. Once water has initiated the reaction, the mechanism proceeds to completion. It is impossible to arrest the process once started; at least by methods operating in normal ambient conditions.

It follows that the risk of late expansion from either of these mechanisms in blast furnace slag is remote.

#### **c) Sulphoaluminate Type Activity**

Some years ago, G. H. Thomas discovered a third mechanism that may give rise to volumetric instability. The process is possible only in some old blast furnace slag altered

by weathering. When the sulphide sulphur in the blast furnace slags is oxidised during weathering to sulphate, under some circumstances reactions can take place within the slag to produce an 'ettringite' type product. The process is somewhat analogous to sulphatic attack on concrete and has a similar result - expansion of the mass and associated disruption.

For the mechanism to have any significance, the slag needs to have residual potential for this reaction. Evidence of past activity does not necessarily indicate further reaction is possible.

The TRS accelerated expansion test is, we believe, uniquely capable of identifying such slags, as well as instability attributable to free CaO and free MgO in steel slag & etc.

### **Basic Steel Slags**

Basic steel slags commonly contain significant quantities of free CaO and free MgO. These free oxides are well known for the massive expansion associated with their hydration. In practical terms, it is impossible to forecast when hydration will take place, but it can be up to decades after the material was cooled – or placed. The reasons are complex, but include the varying density of the oxides, due to the variation in temperatures at which the products have been held in the furnace. Other factors influencing rate of hydration include:-

- the protection of slags by a reaction product at the oxide interface with the slag.
- the presence of the oxides as lime or magnesia rich solid solutions instead of the pure oxide.

The result is potential future volumetric instability but at an unforeseeable date. Periclase, i.e. free MgO, is relatively much slower than free CaO to hydrate.

### **Scrap High Magnesia Refractories**

These are particularly undesirable components in fill as they commonly result in high concentrations of free MgO. The problems associated with these concentrations are similar to those where periclase is found in basic steel slag.



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A Limited Company registered in England. Company Registration No: 2518421

## Phase I - Petrological Examination Summary

Client:	Seymour CivilEngineering / Arcadis
Site:	Redcar Steelworks
Date Received:	25/03/2021
Report Date:	30/05/2021

<u>TRS Ref</u>	<u>Site Ref</u>	<u>Mass/kg</u>	<u>Blast Furnace Slag</u>	<u>Basic Steel Slag</u>	<u>Basic Refractory</u>	<u>Further Testing</u>
KW1C26	PRA-SP014-S9	5.5	m	m	-	mixed slag
KW1C27	PRA-SP007-S21	6.8	m	m	-	mixed slag
KW1C28	PRA-SP003-S12	6.1	m	l	vs	mixed slag
KW1C29	PRA-SP002-S11	6.0	m	l	vs	mixed slag

**L =very large, l = large, m = medium, s = small, v s= very small amounts.**

### **Futher Testing**

Blast furnace slag: Water soluble sulphate, acid soluble sulphast, total sulphur, thermal analysis, TRS accelerated expansion test (14 day duration).

Basic steel slag: Free CaO, free MgO, thermal analysis, TRS accelerated expansion test (14 day duration).

Mixed slag: Water soluble sulphate, acid soluble sulphast, total sulphur, free CaO, free MgO, thermal analysis, TRS accelerated expansion test (14 day duration).



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Unit 7, Tattershall Castle Court, Morgan Way, New Holland,  
North Lincolnshire, DN19 7PZ, United Kingdom

A Limited Company registered in England. Company Registration No: 2518421

## Phase I - Petrological Examination Summary

Client: Hall Construction / Arcadis  
 Site: Redcar Steelworks  
 Date Received: 08/04/2021  
 Report Date: 30/05/2021

TRS Ref	Site Ref	Mass/kg	Blast Furnace Slag	Basic Steel Slag	Basic Refractory	Further Testing
KW1D06	PRA-SP027-S13	5.0	m	m	s	mixed slag
KW1D07	PRA-SP011-S31	5.8	l	s	s	blast furnace slag
KW1D08	PRA-SP014-S10	7.9	l	vs	vs	blast furnace slag
KW1D09	PRA-SP015-S9	5.1	l	m	vs	mixed slag
KW1D10	PRA-SP020-S6	5.5	l	m	s	mixed slag
KW1D11	PRA-SP028-S4	7.6	m	s	s	blast furnace slag
KW1D12	PRA-AY-33-S2	6.2	s	s	-	no further testing
KW1D13	PRA-AY-35-S2	5.2	s	m	-	basic steel slag
KW1D14	PRA-AY-37-S3	5.5	s	s	-	no further testing
KW1D15	PRA-BA-21-S3	11.1	l	-	-	blast furnace slag
KW1D16	PRA-BA-21-S4	9.0	m	-	-	blast furnace slag
KW1D17	PRA-BA-21-S5	10.9	m	vs	-	blast furnace slag

L = very large, l = large, m = medium, s = small, v s = very small amounts.

### Further Testing

Blast furnace slag: Water soluble sulphate, acid soluble sulphast, total sulphur, thermal analysis, TRS accelerated expansion test (14 day duration).

Basic steel slag: Free CaO, free MgO, thermal analysis, TRS accelerated expansion test (14 day duration).

Mixed slag: Water soluble sulphate, acid soluble sulphast, total sulphur, free CaO, free MgO, thermal analysis, TRS accelerated expansion test (14 day duration).

# TRS REPORT

**Report Ref: KW1E01-03/SCA/RSW/TRS/07/21/RP2**  
**Date Issued: 21 July 2021**  
**TRS Sample Refs: KW1E01-03**  
**Order No: E-mail Jonathon Miles / Richard Small**

**EXAMINATION OF THREE SAMPLES**  
**FROM**  
**REDCAR STEELWORKS**  
**FOR SEYMOUR CIVIL ENGINEERING**



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A Limited Company registered in England. Company Registration No: 2518421

**EXAMINATION OF THREE SAMPLES  
FROM  
REDCAR STEELWORKS  
FOR SEYMOUR CIVIL ENGINEERING**

**1. BACKGROUND**

Three bulk samples were received from the above site on 27<sup>th</sup> May 2021. Each sample was weighed and allocated a unique TRS reference number, the details of which are recorded below:-

<b>TRS Ref</b>	<b>Site Ref</b>	<b>Mass/kg</b>
KW1E01	SP031-S5	6.1
KW1E02	SP034-S5	6.1
KW1E03	SP035-S3	8.9

The purpose of the exercise was to identify the range and relative concentrations of any iron and steelmaking slags present in the samples, and whether there was any potential for volumetric instability from the materials.



## **2. SAMPLE PREPARATION & PROGRAMME OF ANALYSIS**

The samples were primary crushed to reduce particle size down to <50mm, portions then being selected and dried at low temperature to constant weight. The dried material was subjected to a regime of stage crushing and quartering to further reduce particle size down to <5mm. Portions of this <5mm material were made up into resin bound blocks, one face of which was ground flat and polished using diamond pastes. Further portions of the <5mm material were milled to a fine powder. Fractions of material were extracted throughout the preparation procedure to provide the materials necessary for the further tests and analyses required in the programme.

A petrological examination was made of the polished blocks using reflected light microscopy, the complete findings of which are recorded in appendix A. The results of this examination were issued in our summary report of 16<sup>th</sup> June 2021. On the basis of that report, the following tests and analyses were carried out on the samples:-

Samples KW1E01-03 were subjected to the following tests & analyses to assess the potential for expansion of blast furnace slag.

- Water soluble sulphate
- Acid soluble sulphate
- Total sulphur
- Thermal analysis (DTA & TGA)
- TRS accelerated expansion test (14 day duration)

### **3. DISCUSSION OF RESULTS**

#### **3.1 Petrology**

A petrological examination was made of the samples using reflected light microscopy. The complete findings of this examination are recorded in appendix A.

The samples comprised mainly of blast furnace slag with minor amounts of basic steel slag and basic refractory material in one of the samples. The table below shows a summary of the results:-

<b>TRS Ref</b>	<b>Blast furnace slag</b>	<b>Basic steel slag</b>	<b>Basic refractory</b>
<b>KW1E01</b>		S	VS
<b>KW1E02</b>		-	-
<b>KW1E03</b>		-	-

#### **3.2 Sulphur Species**

The following range of analyses were performed on samples KW1E01-03. The results are recorded in table 1:-

- Water soluble sulphate
- Acid soluble sulphate
- Total sulphur

Total sulphur values were in the range 0.47 to 0.91 percent. Acid soluble sulphates were in the range 0.49 to 1.50 percent, with corresponding water soluble sulphates of 0.49 to 1.20 g/l. These sulphate and sulphur values were fairly normal for blast furnace slag. Care should be taken when specifying concrete that may come into contact with the slag. Calculations show that between 39 and 66 percent of the available sulphur is present as sulphate.

### **3.3 Thermal Analysis**

Simultaneous differential thermal analysis (DTA) and thermo-gravimetric analysis (TGA) were performed on samples KW1E01-03. The results are recorded in table three.

Ettringite was seen in one of the samples at 0.6 percent. The presence of ettringite would indicate past expansion of the blast furnace slag. Gypsum was present in two of the samples, at 2.4 and 3.5 percent. On comparing the gypsum and acid soluble sulphate values, one of the gypsum values was significantly overstated. This is common in old weathered blast furnace slag, and usually indicates the presence of thaumasite. This mineral, like ettringite, is evidence of past expansion of the slag.

No calcium hydroxide or magnesium hydroxide was recorded in the samples.

Calcite was present in all samples at between 0.8 and 5.4 percent. This product is an indicator as to the weathered state of the slag.

### **3.4 Free CaO & Free MgO**

No samples were analysed for free CaO & free MgO analyses in this sample batch.

### **3.5 TRS Accelerated Expansion Test**

The TRS accelerated expansion test was performed on samples KW1F01-03. The results are recorded in table four. Note that the test measures potential for future expansion, and is not a measure of expansion that may have taken place in the past.

The samples recorded expansion results of between 0.03 and 0.24 percent.

## **4. CONCLUSIONS**

### **The following conclusions can be drawn:-**

- The samples comprised mainly of blast furnace slag. Minor amounts of basic steel slag and basic refractory material were present in one of the samples.
- Blast furnace slag was present in all of the samples in large amounts. The slag showed moderate levels of alteration due to weathering. Old weathered blast furnace slag may contain pockets of potentially expansive material.
- Further testing of the blast furnace slag indicated some evidence of past expansion (presence of ettringite and thaumasite). The sulphate values should be taken into consideration when specifying concrete that may come into contact with the slag.
- Expansion testing of the samples recorded expansion results of between 0.03 and 0.24 percent.
- Minor amounts of basic refractory material were seen in one of the samples. This material can have significant potential for expansion.
- Various other products were present in these samples in varying amounts.

### **Note**

**These conclusions apply only to the samples tested and may not represent the bulk of the material on the site from which they were taken.**

*Ian D. Thomas*

**Ian D Thomas BSc(Hons)**

**21 July 2021**

**TABLE 1** **SULPHUR SPECIES ANALYSES**

TRS Ref	Site Ref	Water Sol.	Acid Sol.	Total S
		SO <sub>3</sub> (g/l)	SO <sub>3</sub> (%)	(%)
KW1E01	SP031-S5	0.57	0.62	0.47
KW1E02	SP034-S5	1.20	1.50	0.91
KW1E03	SP035-S3	0.49	0.49	0.50

**TABLE 2** **ANALYSIS FOR FREE CaO AND FREE MgO**

TRS Ref	Site Ref	Free CaO	Free CaO	Free MgO	Free MgO
		Original (%)	Corrected (%)	Original (%)	Corrected (%)
KW1E01	SP031-S5	-	-	-	-
KW1E02	SP034-S5	-	-	-	-
KW1E03	SP035-S3	-	-	-	-

**TABLE 3** **RESULTS FROM THERMAL ANALYSIS**

TRS Ref	Site Ref	Mass % by Thermal Analysis						
		L.O.I.	Ettringite	Gypsum	Calcite	Ca(OH) <sub>2</sub>	Mg(OH) <sub>2</sub>	Others
KW1E01	SP031-S5	16.94	0.0	0.0	5.4	0.0	0.0	-
KW1E02	SP034-S5	9.20	0.6	2.4	3.2	0.0	0.0	-
KW1E03	SP035-S3	4.21	0.0	3.5	0.8	0.0	0.0	-

**TABLE 4** **TRS ACCELERATED EXPANSION TEST**

TRS Ref	Site Ref	7 day	14 day	21 day	28 day
		(%)	(%)	(%)	(%)
KW1E01	SP031-S5	0.21	0.24	-	-
KW1E02	SP034-S5	0.05	0.06	-	-
KW1E03	SP035-S3	0.03	0.03	-	-

## **APPENDIX A - PETROLOGY**

### TRS SAMPLES KW1E 01-03

	1	2	3
<b>BLAST FURNACE SLAG</b>			
<b>Amount</b>	<i>l</i>	<i>l</i>	<i>l</i>
<b>Phases present:-</b>			
Melilite	L	L	L
Matrix & other silicates	s	s	s
Ca, Mn, Fe sulphides	vs	vs	vs
Iron as metal	s	s	vs
Spinel	vs	s	s
Alteration products	s	s	s
Calcite	s	-	-
<b>BASIC STEEL SLAG</b>			
<b>Amount</b>	<b>s</b>	-	-
<b>Phases present:-</b>			
Dicalcium silicate	l	-	-
RO phase	s	-	-
R3O4 & R2O3 phases	s	-	-
Ca ferrite phases	vs	-	-
Metal & rust	vs	-	-
Lime phase	vs	-	-
Alteration products	m	-	-
<b>BASIC REFRACTORIES</b>			
<b>Amount</b>	<b>vs</b>	-	-
<b>OTHER CONSTITUENTS</b>			
Alumino-silicate brick	m	-	m
Quartz, etc.	l	l	l
Acid (silicic) slag	-	l	m
Metal, rust, scale, etc.	s	s	s
Limestone & dolomite	vs	-	-
		s	
Iron ore, ironstone & sinter	s	s	s
		ss	
Coke	s	s	s
Cementitious/clay material	m	m	m

**L = very large, l = large, m = medium, s = small, vs = very small amounts**

## **APPENDIX B**

### **MECHANISMS OF VOLUMETRIC INSTABILITY IN IRON AND STEEL INDUSTRY SLAGS**

Volumetric change with time can occur in some types of iron and steel industry slags. These mechanisms are briefly described in this section.

#### **Blast Furnace Slags**

Fresh-make air-cooled, i.e. crystalline, blast furnace slags are almost always volumetrically stable after cooling. The two mechanisms for volumetric instability listed in BS1047:1983 – “Air Cooled Blast furnace Slag for use in Construction” are:-

- a) Beta to gamma inversion of dicalcium silicate.**
- b) Iron unsoundness.**

**a)** Research by G H Thomas on this phase transformation has shown the transformation to be athermal rather than isothermal. In practical terms this means that inversion, and the expansion associated with it, can only occur during the cooling cycle. In fully cooled material there would appear to be no further risk of instability from this mechanism.

**b)** Iron unsoundness is a very rare form of instability frequently associated with operating problems in the blast furnace. TRS know of only one instance in over 40 years. The mechanism, which is a hydrolysis reaction, is immediately triggered off by the presence of water. Once water has initiated the reaction, the mechanism proceeds to completion. It is impossible to arrest the process once started; at least by methods operating in normal ambient conditions.

It follows that the risk of late expansion from either of these mechanisms in blast furnace slag is remote.

#### **c) Sulphoaluminate Type Activity**

Some years ago, G. H. Thomas discovered a third mechanism that may give rise to volumetric instability. The process is possible only in some old blast furnace slag altered by weathering. When the sulphide sulphur in the blast furnace slags is oxidised during

weathering to sulphate, under some circumstances reactions can take place within the slag to produce an 'ettringite' type product. The process is somewhat analogous to sulphatic attack on concrete and has a similar result - expansion of the mass and associated disruption.

For the mechanism to have any significance, the slag needs to have residual potential for this reaction. Evidence of past activity does not necessarily indicate further reaction is possible.

The TRS accelerated expansion test is, we believe, uniquely capable of identifying such slags, as well as instability attributable to free CaO and free MgO in steel slag & etc.

### **Basic Steel Slags**

Basic steel slags commonly contain significant quantities of free CaO and free MgO. These free oxides are well known for the massive expansion associated with their hydration. In practical terms, it is impossible to forecast when hydration will take place, but it can be up to decades after the material was cooled – or placed. The reasons are complex, but include the varying density of the oxides, due to the variation in temperatures at which the products have been held in the furnace. Other factors influencing rate of hydration include:-

- the protection of slags by a reaction product at the oxide interface with the slag.
- the presence of the oxides as lime or magnesia rich solid solutions instead of the pure oxide.

The result is potential future volumetric instability but at an unforeseeable date. Periclase, i.e. free MgO, is relatively much slower than free CaO to hydrate.

### **Scrap High Magnesia Refractories**

These are particularly undesirable components in fill as they commonly result in high concentrations of free MgO. The problems associated with these concentrations are similar to those where periclase is found in basic steel slag.





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## Phase I - Petrological Examination Summary

Client: Seymour Civil Engineering / Arcadis  
 Site: Redcar Steelworks  
 Date Received: 09/06/2021  
 Report Date: 05/07/2021

TRS Ref	Site Ref	Mass/kg	Blast Furnace Slag	Basic Steel Slag	Basic Refractory	Further Testing
KW1F20	PRA-BE-27-S2	15.5		-	-	blast furnace slag
KW1F21	PRA-BA-25-S2	13.7		-	-	blast furnace slag
KW1F22	PRA-AY-23-S3	14.0		-	-	blast furnace slag
KW1F23	PRA-AY-17-S3	10.8		-	-	blast furnace slag
KW1F24	PRA-AY-19-S3	14.0		-	-	blast furnace slag
KW1F25	PRA-AW-18-S2	14.9		-	-	blast furnace slag

L = very large, l = large, m = medium, s = small, v s = very small amounts.

### Further Testing

Blast furnace slag: Water soluble sulphate, acid soluble sulphate, total sulphur, thermal analysis, TRS accelerated expansion test (14 day duration).

Basic steel slag: Free CaO, free MgO, thermal analysis, TRS accelerated expansion test (14 day duration).

Mixed slag: Water soluble sulphate, acid soluble sulphate, total sulphur, free CaO, free MgO, thermal analysis, TRS accelerated expansion test (14 day duration).

