ENVIRONMENTAL IMPACT ASSESSMENT REPORT

VOLUME 3:

APPENDICES 3.1

MIXED USE DEVELOPMENT

AT

CLAREMONT, HOWTH, COUNTY DUBLIN

JSA John Spain Associates

Planning & Development Consultants
Chartered Town Planners & Chartered Surveyors

In Association with:

HJL Architects | BMCE | Enviroguide Consulting | Golder Associates | AWN Consulting | B-Fluid Ltd. | J.V.Tierney & Co. | Archaeological and Built Heritage Consultancy | Historic Building Consultants | The Paul Hogarth Company | Maurice Johnson Partners | ORS | Modelworks

November 2019

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- Interpretative Ground Investigation Report
- Human Health Risk Assessment
- Controlled Waters Risk Assessment

REPORT

Materials Management & Remedial Strategy Plan

Claremont Development Site, Howth

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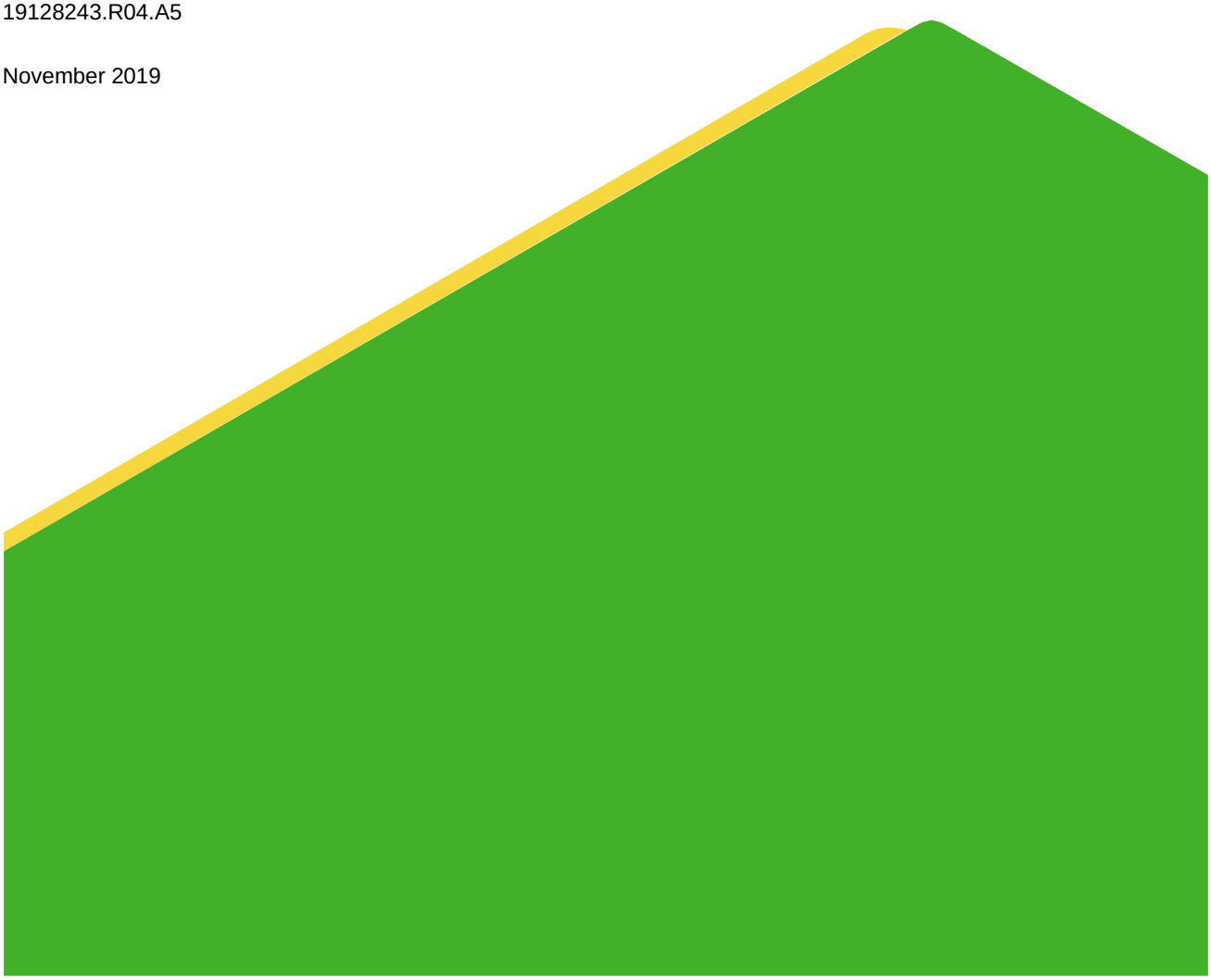
19128243.R04.A5

November 2019



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1.0 INTRODUCTION

Golder Associates Ireland Limited (Golder) has been retained by Atlas GP Limited (Atlas) to provide technical consultancy support in relation to assessing the environmental risks and appropriate mitigation measures and to prepare a Materials Management & Remedial Strategy Plan (MMRP) for the management of excavated soil and stone during the preliminary construction stage of a residential development at Claremont, Howth Road, Howth, Dublin (the Site). The site location is shown in Figure 1.

This document outlines the scope of the MMRP in order to provide the construction team with a management plan for the excavation of soil materials to ensure that the material is managed appropriately for specific end reuse onsite and/or disposal offsite as required. This MMRP is limited to the groundworks stage of the contract for preliminary development of the site to reduced formation levels. This MMRP does not include for demolition of existing structures at the site which will be addressed under the Construction Management Plan for the Site.

Figure 1: Site location - Claremont Development (Source: Google Earth)

A key facet of this MMRP is to support the client and contractor to navigate between the waste regulatory and the contaminated land good practice regimes when handling and managing excavated soils as part of a development scheme. The waste regulatory regime in Ireland is enshrined in the various legislation and guidance (such as Waste Management Act 1996 as amended,The Waste Framework Directive (Directive 2008/98/EC) and Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects (DoEHLG), June 2006 which at their core supports a regime that delivers a 'Waste Hierarchy' which requires waste producers to consider firstly Prevention, then Re-use, Recycling, Recovery and lastly Disposal off-site, with the over-arching aim to demonstrate waste minimisation.

However, as the site is to be redeveloped is a brownfield site there is a further complication due to potential and actual presence of contamination which can be unsuitable for the proposed redevelopment. Historically this would have meant large volumes of polluting material automatically becoming waste for disposal offsite without consideration at stages earlier in the Waste Hierarchy. Further to current legislation, Landfill Levy has driven a regime which seeks greater sustainability and cost-benefit to assist reduction of waste disposal and increase on-site re-use.

The regime that governs the assessment of potential and actual pollutants with the ability to cause harm in Ireland follows that of the UK contaminated land regulatory regime (which includes legislation such as the Environmental Protection Agency Act 1992, Environmental Risk Assessment for Unregulated Waste Disposal Sites, 2007and Groundwater Directive 2006) that provide a regime by which brownfield land can be risk assessed in a phased manner broadly described as Tier 1 (Preliminary Risk Assessment), Tier 2 (Generic Quantitative Risk Assessment) and Tier 3 (Detailed Quantitative Risk Assessment) levels, as described below:

- **Tier 1 Risk Assessment**

The Tier 1 stage is intended to be a qualitative screening process only. At this tier, the collation of information either through literature review or site investigation is preliminary, with the aim to identify whether there is a potentially complete pollutant linkage between the contaminant of concern and potential receptors (controlled waters, human health and ecology) and whether contaminant concentrations exceed published 'Tier 1' guideline values for relevant receptors.

If the pollutant linkages are assessed as incomplete, or if contaminant concentrations do not exceed published 'Tier 1' criteria for receptors, the risk assessment process may be suspended without proceeding further. If exceedances are encountered, then further assessment at Tier 2 and 3 stages is typically recommended. It is possible to undertake remediation works based on a Tier 1 risk assessment however this is likely to result in an unsustainable solution with design outputs lower down the waste hierarchy (e.g. disposal offsite). This stage is generally known as the most conservative with regards to the assumptions for pollutant linkages employed.

- **Tier 2 Risk Assessment**

Tier 2 assessments will involve more detailed site investigations if required and also commencement of quantitative modelling considerations (in 2D) to better understand the risk associated with pollutant linkage exceedances identified at Tier 1, this typically encompasses more detailed analytical and literature driven understanding of the pollutant linkage, including assumptions that can be used to demonstrate mitigation and prevention of the pollutant linkage occurring thus establishing modified assessment criteria that are less conservative than those applied at Tier 1 stage.

If the contaminant concentrations do not exceed the modified assessment criteria, the risk assessment process may be suspended without proceeding to Tier 3. Most sites reach this stage and then proceed to remediation works for the affected areas with the ability to demonstrate suitable for reuse on site and minimised disposal off site, thus aligning with the Waste Hierarchy regime.

- **Tier 3 Risk Assessment**

Few sites will be sufficiently large or chemically complex enough to justify the level and expense of detail and investigation required for a Tier 3. This stage of assessment can involve the development of simple to complex 3D models, simulations over significant periods of time, demonstrable evidence of attenuation and degradation trends and often supported by further intensive monitored natural attenuation work on the pollutant linkages. It can often be the case that Tier 3 assessment is undertaken because remediation works are not feasible due to cost and physical constraints.

Golder have produced a series of reports to steer the client and contractor through the above described stages, these reports typically deal with the following key stages:

Table 1: Golder Reports and Key Assessment Context

Report Reference	Key Assessment Context
19128243.R01.A0 Interpretative Ground Investigation Report, Claremont Development Site, Howth, Golder, October 2019	Contaminated Land – Tier 1 Risk Assessment
19128243.R02.A0 Claremont Development Site Howth, Human Health Risk Assessment, Golder, October 2019	Contaminated Land – Tier 2/3 Risk Assessment
19128243.R03.A0 Claremont Development Site Howth, Controlled Waters Risk Assessment, Golder, October 2019	
19128243.R04.A0 Claremont Material Management and Remedial Strategy, Golder, October 2019	Waste Characterisation (includes Remedial requirements identified from Tier 2/3 Risk Assessment)

The reports listed in Table 1 present relevant environmental information and assessments that inform this current report and they should be read in conjunction with this report.

2.0 THE STRATEGY

This document explains in detail what is to be undertaken to appropriately manage the materials that are expected to be encountered at the Site. The over-arching aim for the earthworks is to provide a sustainable low carbon approach towards redevelopment of the site and to mitigate against environmental risks identified in the reports listed in Table 1. To assist achieving this, the MMRP has at its core the Waste Hierarchy ethos to minimise waste and maximise employment of suitable for reuse materials derived from the Site (and thus minimising import of clean soils). As the Site requires a volume of soils to be removed to allow the excavation and subsequent construction of the under-croft carparking there is the opportunity to generate suitable for reuse soils to address hotspot areas that require contaminant remediation. It is recommended the hotspot areas are excavated and disposed off-site and backfilled with suitable for reuse soils recovered from the basement excavation. It is also anticipated there will be suitable for reuse soils available from the basement excavation to provide part of a cover layer (subsoils) in public open space and communal garden (assuming no homegrown produce) areas.

This MMRP explains the strategy in further detail.

3.0 DESCRIPTION OF DEVELOPMENT

The proposed development will occur at a site bounded to the south by the Howth Road, to the east by a private dwelling, to the north by the DART line, and to the west by Local Authority lands. The site incorporates the former Techrete manufacturing facility, the former Beshoff's Motors showroom, and the former Howth Garden Centre.

The proposed development will include the demolition of all structures on site (c.8,162sqm GFA) and excavation of a basement. The proposed development comprises of the provision of a mixed use development of

residential, retail/restaurant/cafe uses and a creche in 4 no. blocks (A to D), over part basement. Blocks A, B, C and D with a height up to a maximum of seven storeys of apartments over lower ground floor and basement car parking levels (a total of eight storeys over basement level). The residential component will consist of 512 no. residential units. The proposed development includes the provision of two vehicular entrances on to Howth Road, excavation of basement to provide for car parking, plant, waste storage and ancillary use. Additional car parking spaces shall be provided at lower ground floor level. A total of 439 no. car parking spaces and 1,335 no. bicycle parking spaces, including 49 no. bicycle spaces to cater for the retail units and creche shall be provided. One vehicular access is located at Block A, serving car parking spaces. The second is at Block C, providing access to the basement, residential and retail parking, and a service area for the retail units. A service route will be provided along part of the northern perimeter of the site with access from the western end of the site at a junction with Howth Road and at the main vehicular entrance at Block C;

A publicly accessible walkway/cycleway to the north of the site shall be provided at podium level. A civic plaza will be provided between Blocks D and C, and a landscaped park to the west of Block A. A channel to the sea for the Bloody Stream with associated riparian strip shall be incorporated as a feature within a designed open space between Blocks A and B. Communal gardens will be provided for Blocks A, B and C;

The residential component consists of 512 no. residential units, which includes 4 no. studio, 222 no. one bed, 276 no. two bed, 10 no. three bed apartments, and communal facilities of 708 sqm. Ground floor units onto the Howth Road will have own door access. The units will be served by balconies or terraces on all elevations;

Block A, with a maximum height of seven storeys of apartments over lower ground level car park (a total of eight storeys), will provide for 234 residential units, with residents' amenities to include a gym, residents' lounge, residents' support office, and 2 no. residents' multi-purpose rooms. Block B, with a maximum height of seven storeys of apartments over lower ground floor and basement car park (a total of eight storeys over basement), shall provide for 154 no. units, residents' lounge, residents' multi-purpose room, and creche of 236 sqm with outdoor play area. Own door access will be provided at ground floor. Block C, with a maximum height of seven storeys over basement car parking (a total of seven storeys) will provide for 83 no. residential units in two wings over a retail unit and Block D, with a maximum of 6 storeys over basement, shall provide for 41 no. residential units over retail units;

The commercial component in Blocks C and D consists of 4 no. units with 2,637 sqm gross floor area. In Block C, it consists of a 1,705 sqm anchor unit, accessed from the civic plaza. In Block D, it consists of a restaurant (243 sqm) and retail unit (603 sqm) and café (86 sqm). The restaurant and retail units are accessed from Howth Road, and the café is accessed from the upper level of the civic plaza.

The proposed development includes the provision of public and communal open space, green roofs, landscaping, boundary treatments, set down locations, substations, meter rooms, waste management and all ancillary site works, including upgrading of the public paths along Howth Road and relocation of bus stop in new setback with a bus shelter. Two set down areas are provided at either end of the site;

The gross floor area of the proposed development is 48,252 sqm (excluding enclosed car parking) on a site of 2.68 ha.

4.0 OBJECTIVE

This MMRP will form part of the overall Construction Management Plan (CMP) being prepared for the planning application for the Claremont Project. The objectives of the MMRP are as follows:

- To present the encountered soil and water quality at the site (outside of existing constraints and areas not investigated);

- Obtain information on the chemical characteristics of the soils from the Claremont site to verify the chemical nature of the soils prior to removal offsite;
- Identify areas that require remediation and management at the site in order to mitigate against risk to human health and the environment;
- Detail a quality assurance mechanism to ensure that the soil material generated during the site excavation works are appropriately categorised, segregated and managed to satisfy the criteria under which the suitable soils may be the used for specific end use or removed offsite for disposal; and
- Provide assurance to receiving sites that the materials being disposed of are verified to be in compliance with the acceptance criteria for each destination site.

5.0 SCOPE

This MMRP will detail the following:

- Describe the Site conditions and summarise the outcomes of the contaminated land risk assessments and Remediation Strategy;
- To set out the aims of the proposed remediation, having regard to the regulatory, technical, and business contexts, and set out the standard of remediation required;
- To describe how the proposed earthworks could be implemented;
- To outline the approach that will be adopted to verify that the standard of earthworks materials management has been achieved;
- Provide a Waste Classification of soils sampled at the Site;
- Identify soils for disposal/recovery at soil recovery and inert landfill;
- Identify soils for disposal at non-hazardous/hazardous facilities;
- Identify soils suitable for reuse as landscaping and engineering fill at the Site;
- Identify areas for further assessment/verification;
- Detail ex-situ (post excavation) methodologies to classify waste soil for appropriate disposal, in accordance with relevant Irish and EU legislation and guidance;
- Site management procedures, including waste minimisation, stockpile management, temporary storage procedures, waste disposal requirements; and
- Waste Management documentation, including waste generation record keeping, waste transfer notes and confirmation of appropriate disposal.

The MMRP is a live document and will be revised as required to address and record actual ground conditions encountered and will detail relevant procedures, including further environmental sampling (targeted where necessary), testing and assessment requirements, sampling protocols and sample density targets to allow appropriate management of soil materials onsite and offsite. The MMRP will be provided to the Main Contractor who will need to adopt and adapt the plan as required to ensure the measures are implemented and appropriate during the construction phase. The developer's environmental consultant will periodically review the development of the MMRP as the works progress to ensure appropriate works are completed.

6.0 LEGISLATIVE BACKGROUND

A material cut volume of approximately 75,034 m^3 is estimated for the site, approximately 7,000 m^3 (data source - CMP) of these soils are proposed to be reused as fill to build up ground level and for use landscaping berms at the western parkland area of the site resulting in a net balance of 68,034 m^3 to be managed on site. All other soils are to be removed offsite for potential re-use, recovery and disposal. It is not currently planned to use any of the surplus material generated on site under an Article 27 by-product declaration (Article 27 of the European Communities (Waste Directive) Regulations 2011) however, should potential and suitable reuse sites be identified prior to the project commencing, this option may be considered by the developer of the site. It is considered that a large volume of soils will be removed off site as a waste for recovery and disposal and the relevant waste legislation applies to this activity.

Construction and demolition (C&D) waste is defined as waste which arises from construction, renovation and demolition activities, together with all waste categories mentioned in Chapter 17 of the List of Waste (LoW). Also included within the definition are surplus and damaged products and materials arising during construction work or used temporarily during the course of onsite activities.

A Construction Waste Management Plan is required for any project that is likely to exceed the thresholds set out in the DoEHLG (2006) publication 'Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects', which are set out as follows:

1) New residential development of 10 houses or more;

2) New developments other than (1) above, including institutional, educational, health and other public facilities, with an aggregate floor area in excess of 1,250 m^2;

3) Demolition/renovation/refurbishment projects generating in excess of 100 m^3 in volume, of C&D waste; and

4) Civil Engineering projects producing in excess of 500 m^3 of waste, excluding waste materials used for development works on the site.

The overall project meets the DoEHLG thresholds under Item 3 and 4 above requiring a CWMP and an outline plan has been prepared for the site by the developer.

It is recommended that this MMRP be incorporated into CWMP at construction stage by the Principal Contractor. This MMRP has therefore been prepared with reference to, and taking account of, the following key legislation, plans and waste management guidance documents:

- The Waste Management Act 1996 – 2008, Amendments & Associated Regulations;
- Code of Practice - Environmental Risk Assessment for Unregulated Waste Disposal Sites, 2007;
- CIRIA document 133 Waste Minimisation in Construction;
- The Eastern Midlands Region Waste Management Plan 2015 – 2021; and
- Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects (DoEHLG), June 2006.

7.0 CONTAMINTED LAND RISK ASSESSMENTS – RESIDUAL RISK

Risk Assessment for land contamination matters considering an appropriately developed Conceptual Site Model has been undertaken through a tiered process (as described in Section 1.0) to identify potential pollutant linkages (source-pathway-receptor) for the site, and consequently allow identification of Contaminants of Concern (CoC's). The risk assessment has also incorporated the derivation of remediation criteria (Reuse Target Criteria) for the Contaminants of Concern identified to ensure that the site is suitable for the intended future use. For the benefit of this MMRP, the below key information is extracted from the contaminated land reports reference in Table 1 above.

7.1 SPR Linkage – Mitigation

Source -Pathway- receptor linkages at the Site have been identified in the reports listed in Table 1. These risks from the SPR linkages at the site are to be mitigated during the construction process to be protective of waters beneath and adjacent the site and also of human health. For ease of reference the SPR linkages and proposed mitigation measures are presented below in Table 2.

Table 2: SPR Linkage and Mitigation Measures

Risk	Source	Pathway	Receptor	Mitigation Measures
Risk to waters	Contaminants of Concern (CoC's)	• Downward vertical migration of dissolved contaminants through the unsaturated zone to limestone groundwater by rainfall and leaching. • Mixing of dissolved contaminants with groundwater and lateral migration through the saturated limestone/superficial deposits to the Irish Sea (Baldoyle Bay SAC	• Groundwater beneath the Site. • Surface water of the Baldoyle Bay SAC.	• Removal of source of contaminant loading through removal impacted soils (shallow made ground) from site. • Much of the site will be covered with impermeable construction materials such as buildings and pavement diverting rainwater to surface water discharge preventing direct contact with CoC's. • Management of shallow groundwater encountered during construction stage through robust dewatering methodologies that mitigates against the mixing of dissolved contaminants in groundwater. • There is no direct discharge of impacted groundwater or surface water from the site during construction. Groundwater encountered during construction works is to be managed through licensable discharge to public sewer prior to final discharge to surface waters following treatment.
Risk to humans	On site contaminant hotspots Historical operations and infrastructure	• Dispersion and ingestion/inhalation of dust from near surface soils through wind erosion/dispersion. • Dermal contact • Ingestion	• Onsite future residential users/structures • Offsite users	• Source removal through removal of contamination hotspots identified within the shallow made ground. • Removal and demolition of existing infrastructures implementing robust methodologies that are protective of human health and minimise impact to surface soils

Risk	Source	Pathway	Receptor	Mitigation Measures
		• Volatilisation of vapours/ground gas (indoor and outdoor) • Leaks spills from existing structures/UST's		• Appropriate construction practices to minimise dust release from impacted soils • Barrier protection such as buildings and hard paving surfaces and landscaping using materials that are protective of human health • Removal of UST's

7.2 Contaminants of Concern

Tier 1, 2 and 3 risk assessment of soils and controlled water data generated from the recent and historic site investigations has indicated the presence of elevated concentrations of several contaminants on the site primarily within shallow made ground deposits. These contaminants comprised metallic elements, along with asbestos and a number of organic contaminants; the contaminants of concern are presented below in Table 3:

Table 3: Contaminants of Concern

Contaminants of Concern – Human Health	Contaminants of Concern – Controlled Waters
Lead	Arsenic
Benzo(a)pyrene	Chromium
Benz(b)fluoranthene	Lead
Dibenzo(ah)anthracene	Mercury
Asbestos	Sulphate
Speciated and Total Petroleum Hydrocarbons (TPHs)	Total Polyaromatic Hydrocarbons (PAHs)
	Ammoniacal Nitrogen

These contaminants of concern have been identified following risk assessment at Tier 2 and 3 levels where they have failed to meet threshold criteria protective of the receptor, thus exceedances of these contaminants where encountered on site can be deemed to unsuitable and thus needing to be remediated (if to be left on-site) or disposed off-site hence the threshold criteria can be considered as an acceptable level to be employed within Reuse Target Criteria (RTCs) for the site, this is discussed further in Section 7.3 below.

7.3 Ground Gas

In addition to the identified contaminants of concern on the site, there have been several monitoring rounds undertaken at the Site, assessment of these is provided within the Interpretative Ground Investigation Report Claremont Development Site, Howth 19128243.R01.A4. In summary this identified a Characteristic Situation 1 in consideration of the proposed end use, this means that a very low hazard potential has been identified for the proposed development from ground gas (and thus no protective measures deemed necessary). There is one minor potential for a Characteristic Situation 2 to arise for BH01 (the monitoring well for this location is installed within made ground soils, which extend from ground level to 2.5 m bgl), this is only noted due to the presence of Carbon Dioxide above 5%v/v on each monitoring visit which however this is also located in the south west corner of the basement excavation and consequently following earthworks this potential issue is likely to be removed.

As standard practice on significant earthworks projects monitoring of existing boundary ‘sentinel’ wells will be undertaken for gas and groundwater analyses to monitor impacts from the works including demonstrating any discernible trends that may arise and appropriate measures to be undertaken if required.

7.4 Reuse Target Criteria

In order to ensure that earthworks (including remediation) are carried out to a standard that will be protective of Controlled Waters and Human Health in the context of the proposed development, Reuse Target Criteria (RTC) have been derived protective of these receptors; these RTCs are taken from two key sources:

- Contaminants of Concern identified as failing threshold levels derived at Tier 2/3 level (Table 2); and
- Published Tier 1 values where soils will be used in public open space, and residential without plant uptake.

The RTCs are presented in Appendix Band their appropriate application is explained within the Materials End Use Assessment Flow Chart presented in Appendix C.

8.0 WASTE CLASSIFICATION

It is understood that soil material to be excavated and removed from the Site would meet the definition of waste under the Waste Framework Directive (if a suitable reuse site cannot be identified in advance of the works), and that the material may be classified in the List of Waste with a “mirror” entry EWC code, either 17-05-03* (soil and stones containing hazardous substances, classified as hazardous) or 17 05 04 (soil and stones other than those mentioned in 17-05-03, not hazardous).

Where a waste is a ‘mirror entry’ in the List of Waste, it can be classified via a process of analysis against standard hazard criteria set out in the Waste Framework Directive. The results of chemical analysis of soil samples taken from the trial pits and boreholes have been used to determine whether, in our opinion, the sampled material is likely to be classified as hazardous or non-hazardous under current EU legislation and EPA guidance (EPA, 2015). For this purpose, we have used the commercially available tool ‘HazWasteOnline™, which is accepted by the EPA for classification (EPA, 2014). Where sufficient data not been available we have made assumptions based on the information supplied to us and our professional judgement.

8.1 Screening Process – Historic Sampling

Golder has assessed the analytical results for samples from IGSL’s 2017 site investigation programme (Appendix H). The analyses for trial pit and borehole samples excerpted from historic laboratory reports supplied to Golder included results for a significant number of parameters. A screening/pre-assessment process has therefore been completed prior to using the HazWasteOnline™ tool to reduce the data to an appropriate dataset for classification.

We have:

- Selected samples for which analytical results are sufficient for waste classification including total petroleum hydrocarbons, metals, and PAHs;
- Excluded all determinands for which results for every sample were less than the laboratory test detection limit; and
- Summarised all hydrocarbon analyses as the reported total TPH (C6-C40) concentration. The EPH interpretation from Element Materials suggests that the hydrocarbon concentrations arise from a number of sources and thus these concentrations cannot be assigned to one petroleum hydrocarbon group.

Following this, 39 parameters were remaining for assessment.

8.2 Screening Process – Golder sampling

The analyses for 18 composite samples collected from TP11-TP20 supplied to us by Element Materials Laboratory (Deeside, UK) included results for a significant number of parameters. A screening/pre-assessment process has therefore been completed prior to using the HazWasteOnline™ tool to reduce the data to an appropriate dataset for classification.

We have:

- Excluded all determinands for which results for every sample were less than the laboratory test detection limit; and
- Summarised all hydrocarbon analyses as the reported total TPH (C6-C40) concentration. The EPH interpretation from Element suggests that the hydrocarbon concentrations arise from a number of sources including petrol and diesel in the area of the former filling station/garden centre and thus these concentrations cannot be assigned to one petroleum hydrocarbon group.

Following this, 39 parameters were remaining for assessment.

8.3 Waste Classification

In Ireland the EPA has adopted the use of HazWasteOnline™, web-based commercial waste classification software marketed by OneTouch Data, to assist in the classification of potentially hazardous and non-hazardous materials. The software utilises the European List of Waste, the CLP Regulations and associated 'Adaptations to Technical Progress' (ATPs), and UK Guidance outlined in '*Technical Guidance WM3: Waste Classification – Guidance on the classification and assessment of waste'* (WM3, Environment Agency, 2015).

The 39 determinands remaining following the screening process have been used within the HazWasteOnline™ tool to determine whether each sample is likely to be classified as hazardous or non-hazardous waste. The results of the classification are presented in Appendix D.

The following points should be noted:

- The classification of waste as either hazardous or non-hazardous is based on the percentage of hazardous substances within the waste. Waste soils typically contain a small volume of water (expressed as moisture content). Element's laboratory soils concentrations are reported on a dry weight basis, so will tend to slightly overestimate the concentration of substances in the soil as a whole. The natural moisture content reported by the laboratory was used to correct the laboratory results in HazWasteOnline™;
- The hazardous properties 'Flammable' and 'Highly Flammable' require specific testing. Determinands with hazard statements related to these properties, such as petroleum hydrocarbons, will therefore be classified as 'potentially hazardous' in the HazWasteOnline™ tool. As part of this assessment we have taken the view that the waste itself will not exhibit the hazardous properties 'Flammable' or 'Highly Flammable' as a result of contamination with these substances where the concentration is less than 10,000 mg/kg (1%). It is noted that the hydrocarbon concentrations in TP16 exceed 10,000 mg/kg and thus the possibility of flammability cannot be ruled out;
- The hazardous properties 'Oxidising@ require specific testing. Determinands with hazard statements related to these properties, such as chromium VI, will therefore be classified as 'potentially hazardous' in the HazWasteOnline™ tool. As part of this assessment we have taken the view that the waste itself will not exhibit the hazardous properties 'Oxidising' as a result of contamination with these substances where the concentration is less than 10mg/kg; and
- The classification of waste as hazardous or non-hazardous is based on the concentration of specific substances within the waste. Laboratory analysis of metals returns the concentration (in mg/kg) of the metal ion, e.g. zinc, and does not indicate the metal speciation/compound, e.g. zinc oxide. In the absence of further information, we have made assumptions of worst-case compounds based on analytical results, the history of the site, and the nature of the compound (for example highly soluble species are not considered to be present).

8.4 Results

A total of 18 samples collected by Golder and 80 samples from IGSL's sampling programme in 2017 were assessed using HazWasteOnline™.

Full assessment results are presented in Appendix D, indicating that four hazardous hotspots exist within the excavation area on the Site.

Shallow samples from Golder samples TP12, TP15, and shallow and deep samples from TP16 are classified as hazardous based on a TPH concentration exceeding 1,000 mg/kg; TPH has a hazardous threshold of 1,000 mg/kg where the type of oil is unknown. In this case, the laboratory has identified several possible sources for TPH in these samples including diesel and petrol in the area of the former petrol station (TP15 and TP16) and PAHs, fuel oil, and tarmac/bitumen in the area of TP12. These samples are within the basement excavation footprint.

Historic IGSL samples TP107 and TP109 are classified as hazardous based on TPH concentrations exceeding 1,000 mg/kg (the hazardous threshold where the source of hydrocarbon contamination is unknown). In the same area, samples from BH04, 22, 23, and 24 are classified as hazardous based on high metal concentrations of zinc, copper, and lead. Borehole logs and trial pit logs from these samples describe the ground conditions as 'made ground' with timber, steel, rubber, paper, and red brick noted over the sampling intervals where results are classified as hazardous.

BH04, BH22 and BH24 are located outside of the footprint of excavation and are therefore not expected to be excavated.

8.5 Whole Waste Classification

This section describes the assessment of the likely classification of the waste as a whole, rather than as individual samples.

Determination of the number of samples required to be representative of a waste soil is complex, and depends, in part, on the variability of the soil and the volume of soil to be disposed of. The area surrounding the former garden centre/petrol station is considered a hot spot and the composite samples from TP15 and TP16 are classified as hazardous. This made ground area should be excavated separately. Further sampling on the excavated material could be carried out to confirm the findings of the initial assessment and further delineate this material for disposal if required. Furthermore, the upper sample from TP12 was classified as hazardous due to TPH concentrations exceeding 1,000 mg/kg, indicating shallow hydrocarbon contamination in the made ground.

The majority of the samples were classified as non-hazardous and excavated material outside of the hotspot area may be suitable for disposal at an inert/non-hazardous facility subject to operator acceptance.

8.6 Waste Classification Summary

In-situ soils were sampled to assess whether this material is likely to be classified as hazardous or non-hazardous waste. Based on analysis, the majority of samples are classified as non-hazardous.

In terms of managing the balance of materials on site Golder makes the following recommendations:

- There are several hazardous hotspots identified by TP12, TP15, and TP16, and these areas may require further delineation and sampling for disposal off-site as waste;
- Hazardous samples are identified in the historic sampling dataset from the 2017 IGSL site investigation. BH22 and BH24, TP109 are located in the made ground in the northwest area of the Site, which is not expected to be excavated as part of the proposed works;

- Due to elevated total organic carbon concentrations identified in made ground samples from TP11, TP12, TP19 and TP20, this material will require disposal at a non-hazardous facility; and
- The remainder of the material represented by Golder's sampling is considered suitable for disposal at inert landfill subject to verification testing.

9.0 WASTE ACCEPTANCE CRITERIA – ASSESSMENT

While hazardous hotspots have been identified, it is expected from the waste classification exercise that the bulk of the material to be excavated from the site outside of the building footprints is likely to be classified as non-hazardous waste (EWC Code 17-05-04). An assessment of the samples against Waste Acceptance Criteria (WAC) for facilities in Ireland has been carried out for the soil samples collected from the area of the Site which is to be excavated for the development.

9.1 Soil Recovery Sites

Licensed Soil Recovery facilities in Ireland are allowed to accept uncontaminated natural soil and stone, equivalent to virgin soil. It is a requirement for these facilities to have WAC. For this purpose, Golder has assessed the material on the Site against the soil trigger levels for organic compounds in the EPA Draft Guidance Document 'Waste Acceptance Criteria and Development of Soil Trigger Values for EPA-licensed Soil Recovery Facilities'. Based on this review, the following is noted:

- TPH and PAHs are detected in most samples; and
- Asbestos is detected in a number of samples surrounding the Techcrete Site.

Based on this, there are very few samples that meet the EPA's Guidance for Soil Recovery Sites, and these are generally located at depth. Given the industrial history of the Site and the extensive made ground observed in the trial pitting exercise, it is unlikely that any of the material to be excavated on the Site is considered suitable for disposal at soil recovery sites. Consultation should be undertaken with recovery facilities in advance of any development works.

9.2 Waste Acceptance at Landfill

WAC for inert, stable non-reactive hazardous waste, and hazardous waste have been agreed by the European Commission (Council Decision 2003/33/EC) and are only relevant if a waste is destined for disposal to landfill. The WAC and the associated laboratory analyses are not suitable for use in the determination of whether a waste is hazardous or non-hazardous. As the soil and stone sampled across the majority of the basement excavation is comprised of non-hazardous soil and stone, an assessment has been made against landfill criteria. It is noted that areas of the main excavations require further sampling and analysis to confirm the nature of the material for disposal.

The analytical results for Golder's sampling, including leaching at a liquid to solid ratio of 10 l/kg, are provided in Appendix F and a comparison has been made in Appendix E against inert waste acceptance criteria in 2003/33/EC as well as IMS Hollywood's waste acceptance criteria which allows higher acceptance limits for soils and stones for certain parameters under EPA licence (denoted as '3X WAC).

The analytical results and WAC comparison for the IGSL 2017 sampling is included in the Interpretative Ground Investigation Report Claremont Development Site, Howth 19128243.R01.A4.

9.2.1 Waste Acceptance at Landfill – Golder sampling

The samples classified as hazardous will likely require export, as there are no hazardous landfills in Ireland. Waste acceptance criteria for hazardous landfill can vary by facility and an assessment has not been undertaken.

Total Organic Carbon concentrations exceed inert waste acceptance criteria for a number of samples collected in the made ground around the Techcrete building, including TP11 (0.0-1.5 m), TP11 (1.5-2.7 m), TP12 (1.5-2.7 m), TP19 (0.0-0.7 m), and TP20 (0-0.75 m). Values of up to 32% TOC vs the inert limit of 3% and the IMS 3X WAC limit of 6% are observed in these samples. The material represented by these samples may be suitable for disposal at non-hazardous landfill, subject to operator acceptance.

The remainder of the samples outside of the hazardous hotspots and the elevated TOC zones meet inert and IMS 3X WAC. Acceptance at landfill may be subject to further sampling and analysis and to operator acceptance.

Golder WAC Assessment of for the 2018 sampling investigation is presented in Appendix E.

9.2.2 Waste Acceptance at Landfill – Historic Sampling

The 2017 IGSL waste acceptance categorisation by sample is summarised in Table 4, below. The categorisations show both lateral and vertical variability across the Site. Asbestos fibres are observed in a number of samples surrounding the former Techcrete facility. Drawing 08 contained in Appendix A presents the WAC categorisation for sampling carried out by Golder and IGSL where analysis was satisfactorily completed to complete the assessment.

Table 4: Sample Categorisation - 2017 Sampling

Sample Location	Depth	Categorisation
TP102	0.40	Category B1 – Inert
TP102	0.80	Category B1 – Inert
TP102	1.50	Category B1 – Inert
TP102	4.30	Category B1 – Inert
TP103	0.50	Category C - Non-Hazardous
TP103	2.50	Category C - Non-hazardous
TP103	3.50	Category C - Non-hazardous
TP104	0.5	Category C - Non-hazardous
TP104	1.5	Category B1 – Inert
TP104	2.20	Category C - Non-hazardous
TP105	0.70	Category B2 - IMS 3X WAC
TP105	1.30	Category B1 – Inert
TP105	2.2	Category B2 - IMS 3X WAC

Sample Location	Depth	Categorisation
TP106	0.9	Category C - Non-hazardous
TP106	2.1	Category C - Non-hazardous
TP107	0.6	Category B1 – Inert
TP107	1.5	Category B2 - IMS 3X WAC
TP108	1.2	Category B2 - IMS 3X WAC
TP108	2.5	Category B1 – Inert
TP108	3.7	Category B2 - IMS 3X WAC
TP109	0.6	Category D – Hazardous
TP109	1.7	Category C - Non-hazardous
TP109	2.9	Category C - Non-hazardous
TP115	0.8	Category B2 - IMS 3X WAC
TP115	2.8	Category B2 - IMS 3X WAC
BH2	1	Category B1 – Inert
BH3	1	Category B1 – Inert
BH3	3	Category B2 - IMS 3X WAC
BH3	4	Category B1 – Inert
BH4	1	Category B1 – Inert
BH4	3	Category B2 - IMS 3X WAC
BH5	1	Category B1 – Inert
BH6	1	Category B1 – Inert
BH7	3	Category B2 - IMS 3X WAC
BH9	1	Category B1 – Inert
BH9	2	Category B1 – Inert
BH10	1	Category C - Non-hazardous
BH10	2	Category B1 – Inert
BH11	1	Category C1 - Non-hazardous with asbestos fibre content

Sample Location	Depth	Categorisation
BH12	1	Category C - Non-Hazardous
BH13	1	Category C - Non-hazardous
BH13	3	Category B1 – Inert
BH14	1	Category B2 - IMS 3X WAC
BH14	3	Category B2 - IMS 3X WAC
BH15	1	Category C1 - Non-hazardous with asbestos fibre content
BH16	1	Category C - Non-Hazardous
BH16	2	Category C3 - Non-hazardous with asbestos fibre content
BH17	1	Category B2 - IMS 3X WAC
BH17	3	Category C2 - Non-hazardous with asbestos fibre content
BH18	1	Category C - Non-Hazardous
BH18	1	Category C1 - Non-hazardous with asbestos fibre content
BH18	2	Category C1 - Non-hazardous with asbestos fibre content
BH18	3	Category C1 - Non-hazardous with asbestos fibre content
BH18	3	Category C1 - Non-hazardous with asbestos fibre content
BH19	1	Category B2 - IMS 3X WAC
BH19	3	Category C1 - Non-hazardous with asbestos fibre content
BH20	1	Category B1 – Inert
BH20	3	Category B2 - IMS 3X WAC
BH21	1	Category C - Non-Hazardous
BH21	2	Category C - Non-Hazardous
BH21	3	Category B1 – Inert
BH22	1	Category C1 - Non-hazardous with asbestos fibre content
BH22	3	Category D – Hazardous
BH22	4	Category C1 - Non-hazardous with asbestos fibre content
BH23	1	Category D – Hazardous

Sample Location	Depth	Categorisation
BH24	1	Category C - Non-Hazardous
BH24	1	Category C1 - Non-hazardous with asbestos fibre content
BH24	2	Category C - Non-Hazardous
BH24	3	Category D – Hazardous
BH24	4	Category B2 - IMS 3X WAC
BH24	4	Category D – Hazardous
BH25	1	Category B2 - IMS 3X WAC
BH25	2	Category C - Non-Hazardous
BH25	3	Category C - Non-Hazardous
BH30	1	Category C1 - Non-hazardous with asbestos fibre content
BH30	2	Category C - Non-Hazardous
BH30	5	Category C1 - Non-hazardous with asbestos fibre content
BH31	1	Category C1 - Non-hazardous with asbestos fibre content
BH31	2	Category C - Non-Hazardous
BH31	2.8	Category B1 – Inert

10.0 MATERIAL MANAGEMENT

10.1 CUT/FILL BALANCE

The cut and fill balance at the Site is estimated to be 68,034 m^3 (see Table 5). These volumes are based on available plans and proposed formation levels for areas of the site to be excavated. Detailed quantities should be verified through accurate survey techniques by the groundworks contractor at construction stage. The cut and fill balance is given in Table 2 below.

There are three subcategories of soil materials that require management and/or offsite removal during the groundworks construction phase of the project. These categories are as follows:

- Insitu soils for assessment and verification for reuse/disposal;
- Pile Arisings; and
- Hazardous Soils (verification).

The site materials that require management consist of materials to be further assessed and verified and also insitu material at the site that requires excavation during the construction of the basement to formation levels.

The breakdown of volumes for each subcategory are presented in Table 5 below.

Table 5: Cut/Fill Balance for Excavation Area

Cut Balance	Area (M^2)	Volume (M^3)
Cut volume of basement (0m to 5.2 mbgl)	9,933	51,651
Block A lower ground level (0-2.5m bgl)	6,308	15,770
Block B (Road strip 2.0 m)	690	1,380
Riparian Strip (0 - 2.0 mbgl)	1,632	3,264
Total Insitu Soils Cut		72,065
Pile Arisings (Source - CMP)		
West Elevation – 970 x 600 mm dia pile 12 meters deep (plus 25%)		3,940
East Elevation – Piled Secant Wall – 450 mm secant pile wall, 4m meters deep. (source – CMP)		1,015
Total Pile Arisings		4,955
Total Cut/arisings Volume (estimate)		**77,020**
Fill Category Breakdown		
Landscaping Area, + 1.75 m above ogl (area as per CMP)	4,000	7,000
Total Fill Volume		**7000**
CUT/FILL BALANCE		**70,020**
Offsite Removal Category Breakdown		
Hazardous soils for verification (estimate for disposal offsite)		2,600
Pile Arisings (Non Hazardous for disposal)		5,200
Insitu Soils (inert/Non Haz waste less fill requirements volume)		62,220
Total Volume for Removal Offsite		**70,020**

A key aspect of confirming actual volumes for remediation requires a detailed review of the final cut/fill model for the site, in particular knowing the final ground levels; this could have benefit of significantly reducing the actual hotspot volumes especially in the west of the site where landscaped terrain is proposed as part of the

final development. This review and confirmation of final hotspot volumes for contaminant remediations should be undertaken by the developer's environmental consultant.

10.2 Insitu Soils

The Phase II Site Investigation Report (Golder report ref. 179128243.R01. B0) reports that the previous site uses are largely industrial with brownfield soils across the entirety of the site largely due to land reclamation of the site footprint prior to industrial development of the site. The brownfield soils range in depth across the site with the average depth of brownfield soils approximately 2.5 m underlain by natural deposits which are subsequently underlain by Waulsortian limestone rock. Large areas of the site require some form of excavation with the exception of the western parkland to the west of the site which requires build-up of site levels and landscaping berms to be constructed. Drawing 07 – Insitu Soils Waste Classification illustrates the areas of insitu soils that have been verified as hazardous (blue) and non-hazardous (orange). The green area demarcated on Drawing 07 outlines the extent of the western parkland area that requires build-up.

10.2.1 Waste Classification of Insitu Soils

Areas of insitu soils that were available for verification were sampled and tested in August 2019. The findings of environmental site investigation carried out by Golder in 2019 are summarised in section 7 of this report.

The insitu brownfield soils can be largely classified as non-hazardous (orange) with a small number of hazardous hotspots (blue). Other areas shaded in yellow are considered to non-hazardous but should be assessed and verified as non-hazardous in nature through a robust sampling and analysis plan on removal of site buildings.

The natural deposits (including the basement footprint) are considered to be largely classed as non-hazardous and inert in nature however, these soils require further assessment and verification to allow reuse of these soils as landscaping soils and/or for appropriate disposal offsite as waste.

Where appropriate, excavated soil and material intended for recovery or disposal off-site requires waste classification and subsequent Waste Assessment Criteria (WAC) testing in order to select an appropriate receiving facility for the waste. The WAC assessment of soils sampled at the site is presented on Drawing 08 contained in Appendix A.

Section 10.4 outlines the basic requirements for sampling and testing of these soils.

10.3 Hazardous Soils

The Golder Phase II Site Investigation report identified small parcels of soils to be excavated for offsite for disposal as hazardous material. A small parcel of hazardous soils were found on the former service station area of the Site (TP15 and TP16) and also hazardous hotspots were identified at TP12, TP 107, TP109, BH 12, BH 22, BH 23 and BH 24. TP109, BH22 and BH24 are outside the excavation zone in the western parkland area of the site. These hazardous hotspots outside of the excavation areas are expected to remain on site as the risk to human health will be negated on importation of >1m of fill above existing ground to act as a physical barrier subject to meeting the target criteria for reuse presented in Appendix B. Drawing 07 illustrates the approximate areas of hazardous materials shaded in blue.

Delineation of hazardous hot spots for excavation will need to be completed once buildings and site infrastructure are removed. Determination of the number of samples required to be representative of a waste soil is complex, and depends, in part, on the variability of the soil and the volume of soil to be disposed of. The eastern section of the site at the location of the former service station (TP15/16) is considered a hot spot due to TPH should delineated clearly and excavated separately to depth and stockpile for further assessment. Further sampling on the excavated material should be carried out to confirm the findings of the initial assessment and

further delineate this material for disposal if required. The procedures for stockpile management outlined in section 10.5 should be implemented for the management of excavated materials.

A volume of hazardous waste (2,600 m^3) is to be generated during the course of the construction stage which arising largely from the basement area of the site. The proposed area for delineation around the areas of TP15 and TP16 is 500 m^2 (20x25 m) with a dig depth of 4 m bgl equates to an approximate volume of 2000 m^3. A proposed delineation zone for BH12(50x5 = 250 m^3), BH12 (50x5 = 250 m^3), BH23 (25x2=50 m^3) and TP107 (225x2=50 m^3) using a conversion factor of 1.8 t/m^3 this equates to 4,680 tonnes to be excavated from these areas. The extent of the hazardous hotspots should be determined through additional testing to refine the volume of hazardous materials to be exported offsite for disposal.

10.4 Verification Testing

10.4.1 Disposal

Where appropriate, excavated basement soils and material intended for recovery or disposal off-site requires Waste Assessment Criteria (WAC) testing and subsequent waste classification in order to select an appropriate receiving facility for the waste.

There are areas beneath the existing buildings that are not currently accessible to sample and verify. It is proposed that soils underlying the buildings are sampled through a robust sampling and analysis plan and subjected to waste classification and WAC assessment once the buildings have been removed. The proposed delineation of this area is highlighted in yellow and is presented in Drawing 08 – WAC Assessment - Categorisation for Disposal.

Assessment of the excavated material shall be carried out with regard to the following guidance and legislation:

- EU Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive 1999/31/EC (2002);
- Regulation (EC) No. 1272/2008: the classification, labelling and packaging of substances and mixtures (CLP);
- Environmental Protection Agency document entitled Waste Classification; List of waste and determining if waste is Hazardous or Non-Hazardous; and
- UK Environment Agency Technical Guidance WM3: Waste Classification - Guidance on the classification and assessment of waste. Waste soil and material intended for off-site disposal, recycling or recovery shall not be removed from site prior to appropriate waste classification and receiving written confirmation of acceptance from the selected waste receiving facility.

10.4.2 Soil for Reuse on Site

There is a fill requirement of approximately 8,000 m^3 at the site for landscaping purposes at the Western Parkland area of the site. This material may be sourced from suitable material excavated from Site Soils for reuse on site at engineering fill on the Western Parklands area of the site should they satisfy target criteria detailed in section 7.3.

Where the Contractor proposes to reuse excavated soil within the works e.g. as backfill, and where reuse is permitted in accordance with the relevant legislation and provided that the reuse meets the engineering requirements for material used within the works, the Contractor shall set out their proposal for its management, documentation and reuse. This shall include:

- Identification and recording of the location from where the soil will be excavated and its proposed re-use location and function; and

- Engineering assessment to confirm its suitability for re-use.

10.5 Materials Handling

Segregation and storage of wastes generated during works will be segregated and temporarily stored on site (pending removal or for re-use on site) in accordance with a pre-determined segregation and storage strategy (to be developed by the Principal Contractor as part of their CMP).

While waste classification and acceptance at a waste facility is pending, excavated soil for recovery/disposal shall be stockpiled in an appropriate manner, as follows:

- A suitable temporary storage area shall be identified and designated;
- All stockpiles shall be assigned a stockpile number;
- Soil waste categories will be individually segregated; and all segregation, storage & stockpiling locations will be clearly delineated on site drawings;
- Erroneous pieces of concrete shall be screened from the stockpiled soils and segregated separately;
- Non-hazardous and hazardous soil (if required to be stockpiled) shall be stockpiled only on hard-standing or high grade polythene sheeting to prevent cross-contamination of the soil below;
- Soil stockpiles shall be covered with high-grade polythene sheeting to prevent run-off of rainwater and leaching of potential contaminants from the stockpiled material generation and/or the generation of dust;
- When a stockpile has been sampled for classification purposes, it shall be considered to be complete and no more soil shall be added to that stockpile prior to disposal. An excavation/stockpile register shall be maintained on site showing at least the following information:
  - Stockpile number;
  - Origin (i.e. location and depth of excavation);
  - Approximate volume of stockpile;
  - Date of creation;
  - Description and Classification of material;
  - Date sampled;
  - Date removed from site;
  - Disposal/recovery destination; and
  - Photograph.
- Waste storage, fuel storage and stockpiling and movement are to be undertaken with a view to protecting any essential services (electricity, water etc.) and with a view to protecting existing surface water drains and groundwater quality boreholes (if applicable); and
- Waste will be stored on site, including concrete, asphalt and soil stockpiles, in such a manner as to:
  - Prevent environmental pollution (bunded and/or covered storage, minimise noise generation and implement dust/odour control measures, as may be required);

- Maximise waste segregation to minimise potential cross contamination of waste streams and facilitate subsequent re-use, recycling and recovery; and
- Prevent hazards to site workers and the general public during construction phase (largely noise, vibration and dust).

Waste Permitting, Licences & Documentation under the Waste Management (Collection Permit) Regulations 2007, as amended, a collection permit to transport waste, which is issued by the National Waste Collection Permit Office (NWCPO), must be held by each waste collection contractor.

Any other relevant waste permits required for any proposed processing of materials shall be obtained prior to construction at the site if required.

Waste may only be treated or disposed of at facilities that are licensed or permitted to carry out that specific activity (e.g. chemical treatment, landfill, incineration, etc.) for a specific waste type.

Operators of such facilities cannot receive any waste, unless they are in possession of a Certificate of Registration (COR) or waste permit granted by the relevant Local Authority under the Waste Management (Facility Permit & Registration) Regulations 2007 and Amendments or a waste licence granted by the EPA. The COR/permit/licence held will specify the type and quantity of waste permitted to be received, stored, sorted, recycled, recovered and/or disposed of at the specified site.

Records of all waste movements and associated documentation should be held at the site. Records management and maintenance will be the responsibility of the Principal Contractor.

10.5.1 Hazardous Waste Management

Where other previously unidentified hazardous waste is generated, the Principal Contractor will undertake the following:

- Immediate notification of the nature of the hazardous waste to the design team in writing;
- Submission of a revised CMP detailing the nature and management of the hazardous waste prior to off-site waste disposal;
- Although not considered likely on the basis of site investigation results, should asbestos containing materials be encountered in fill and soil during excavation works, the Principal Contractor shall establish a specific procedure for the management of asbestos wastes that may arise during excavation works. The management of such wastes shall be coordinated with the client and design team in accordance with the Safety and Health Plan for the overall works, in order to ensure that personnel within the construction site and the local residents are protected against exposure to asbestos. Prior to commencement of any asbestos removal works, the Principal Contractor shall identify a suitable Waste Collection Contractor with a Waste Collection Permit for the transfer of asbestos wastes from the site;
- Completed Transfrontier Shipment Forms (TFS) for hazardous wastes transferred abroad;
- Written documentation of waste classifications, including any related analyses; and
- Certificates of Recycling, Recovery, Re-Use or Disposal for all wastes transferred from the site. All waste records will be maintained for at least a period of 3 years and must be subject to verification and validation.

All waste documentation will be maintained by the Principal Contractor in a safe place, preferably on site, during the project implementation phase. Electronic records will be placed on a secure server that is backed up regularly.

10.6 Waste Management Documentation

A Waste Documentation System will be prepared by the groundworks contractor and included in their CMP.

During the construction period, the groundworks contractor will have full time attendance on site to ensure that the work is completed as required and that all relevant records are collected. The following records of the works will be retained by the groundworks contractor in accordance with best practice: The documentation to be maintained, as a minimum, shall be the following:

- The names of the agent(s) and transporter(s) of the wastes;
- The name(s) of the person(s) responsible for the ultimate recycling, recovery or disposal of the wastes;
- The ultimate destination(s) of the wastes;
- Written confirmation of the acceptance and recovery, recycling or disposal of any waste consignments;
- Copies of verification sampling results;
- The tonnages and LoW code for all waste materials;
- Details of any rejected waste consignments;
- Waste Transfer Forms (WTF) for hazardous wastes transferred from site and associated appendices; and
- Photographic evidence of the removal of suspect material.

Upon project completion, the groundworks contractor will provide all documentation associated with the works to Golder to complete the verification and completion report.

11.0 QUALITY ASSURANCE

The following control measures will be implemented during construction phase to ensure that the material fulfils the criteria for the specific end use:

- Material will be assessed visually/olfactorily and any material showing evidence of hydrocarbon contamination by sight or smell will be segregated on and subjected to classification testing prior to disposal;
- All soils shall be managed in accordance with section 10.5. All soils for removal offsite shall be fully classified and assessed against the acceptance criteria for the destination site;
- The contractor shall ensure that soils being disposed of or recovered have undergone sufficient laboratory analysis to adequately inform waste classification and WAC assessment prior to removal offsite;
- Where areas within the site require initial and further assessment, a suitably experienced person will evaluate the site-specific conditions to ensure that all samples collected are representative. All sampling equipment will be cleaned prior to use and after each composite sample;
- Field duplicate samples for quality control will be collected for laboratory analysis. It is proposed that approximately 2 samples be taken for QA / QC sampling, dependent on the final number of samples collected;
- All works will be carried out in accordance with the requirements of ISO 18400-104:2018 - Soil Quality - Strategies to ensure a high degree of quality control and assurance is upheld; and

- The environmental consultant shall attend the site at a minimum of weekly visits over the course of the project to fulfil a watching brief to ensure that the MMRP is being carried out as designed.

12.0 CONTAMINATION REMEDIATION

12.1 Additional Ground Investigations and Re-Assessments

In advance of the earthworks and remediation works and following the demolition of the existing buildings and structures on the site, the Contractor will undertake further geo-environmental intrusive investigation in these previous constrained areas the Site and also in the area of TP09 and TP16 to further assess ground conditions relating to potential and actual Total Petroleum Hydrocarbon contamination. The objective is to identify any further spatial delineation of areas requiring remedial measures and to gather data to reassess the current conceptual site model (and associate Tiered risk assessments) remains robust and appropriate for the site (for example if significant volume and concentration of hydrocarbons was encountered beneath the existing building this could have a significant impact upon the current designed conceptual site model and ultimately RTCs). This review should be undertaken and confirmed by the developer's nominated environmental consultant.

The contractor shall therefore propose and undertake with the agreement of the developer a programme of intrusive investigation, sampling and testing of the land constrained areas of the site in accordance with the requirements of BS10175:2011 to allow the delineation of identified hotspots towards optimising remedial requirements, and the characterisation of previously inaccessible areas of the site. Chemical analytical testing to be employed as part of this investigation shall be undertaken at an agreed UKAS accredited laboratory, using UKAS accredited methods to appropriate laboratory limits of detection to allow comparison against the existing conceptual site model and existing RTCs. Investigation is expected to comprise predominantly of trial pits (by JCB 3CX or similar) and borehole drilling and installation of monitoring wells (up to 10m deep), exploratory holes are expected to be located on a 15 m grid and for the testing suite (soils, leachates and waters) specified in Section 13.

12.2 Excavation of Hotspots

The Contractor will undertake their works such that all potentially contaminated hotspots can be removed. Site design may facilitate that hotspots may remain on site through engineering barriers such as maintenance of a clean soil barrier >1 m below finished level or construction of an impermeable barrier such as paved finishes, this relates to human health related hotspots only.

Where appropriate, suitable batters or retained vertical walls will need to be maintained on excavation faces to ensure the stability of adjacent ground, structures and services. During excavation adjacent to existing/nearby structures, roadways, services etc., the construction of temporary support may be required, or ground may need to be excavated then backfilled in stages to ensure that contamination is removed without affecting the stability of structures etc. (i.e. panel excavation).

A large portion of the site requires some form of soil excavation works. Many of the hot spots that require remediation fall within the excavation areas and these are to be removed offsite for appropriate disposal at suitably licensed landfills. The main areas for hotspot removal relate to asbestos and TPH which will largely be removed to facilitate development of the site in any regard.

Asbestos hotspots are depicted on Drawing 06. These soils are largely classified as non - hazardous in nature and fall largely within the excavation areas that are to be removed offsite for disposal to landfill. Reference should be made to this drawing when preparing a soil excavation plan at construction stage for these soils. An area of asbestos impacted soils is identified in the western parkland area of the site, the hotspot equals 2150 m^2 with asbestos identification down to 1 m in depth. It is understood that this area is to undergo landscaping

development through importation of +2 m soil for the construction of landscaping berms and access services routes and for this scenario, no soils are required to be removed offsite. Asbestos hotspots can be remediated in-situ by appropriate construction of actual works capping layer.

The TPH hotspots are indicated on Drawing 08. The main hotspot is located in the area of TP15 and TP16. This area is to be excavated and removed offsite for appropriate disposal to an appropriate facility.

12.3 Hotspot Verification Sampling – Excavations

For the basis of this Contract, an anticipated minimum 10 m grid representative sampling and testing grid in the base and at least on each batters of all remedial excavations is required.

Acceptability or otherwise of excavation extents will be agreed between the Contractor and the developer's environmental consultant prior to any extension or backfilling of excavations. Up to 10 working days should be allowed between receipt of final chemical verification results and any proposed works, to allow for suitable assessment of the verification results.

12.4 Imported Materials

Fill is likely to be required in the form of topsoil and potentially piling mats and other construction bearing materials. Existing topsoil at site should be assessed for suitability for reuse. Crushed concrete from demolished buildings may be suitable for use as piling mats negating the use for the importation of granular material for construction of piling mats. Imported materials would need to comply with the appropriate site-specific suitability for use requirements for the re-use required (assessed against RTCs). Soils that may be imported to site as permanent backfill material, especially those used as topsoil cover in garden or landscaped areas, would be visually inspected and sampled, at source, by a competent person, to ensure they are free from physical and chemical contamination and fit-for-purpose prior to importing to site.

13.0 GENERAL WORKS

13.1 Analytical Testing

Samples collected will undergo soil, soil leachate and water analysis, using a UKAS accredited laboratory with reported and screened results provided to the developer for the determinands presented in Appendix B.

It should be noted that all verification chemical analysis during the works would be the responsibility of the Contractor, and that the positions and levels of all verification samples will require to be 3D topographic surveyed and the data presented to the developer.

Collection of verification samples will be performed in accordance with Investigation of potentially contaminated sites - Code of Practice (BS 10175:2011). Any problems that arise during collection of samples should be noted and a report provided to the developer.

13.2 Dewatering (including Free Product)

The site is underlain by groundwater, impacted as a result of extended periods in contact with contaminated soils. As part of their works the contractor will allow for working in the wet, as well as dewatering of all excavations to allow continual progression of works. This will encompass the construction of a secant pile wall around the basement excavation to allow dewatering and dry excavation. Hotspot excavations are not expected to encounter much groundwater, however the removal of former underground storage/fuel tanks and the excavating out of any extended contaminant areas may necessitate appropriate dewatering to allow dry excavation by the Contractor.

Extracted groundwater will be treated on site and disposed to sewer only under a temporary discharge consent. To achieve this disposal route, a temporary water treatment facility (including holding tanks) will require to be constructed on the site, and other apparatus as required to ensure the conditions of the temporary discharge consent are met (this may include activated carbon filtration, siltbusters etc.).

Water is anticipated to be treated and pumped to a holding area and sampled and tested by the Contractor prior to discharge. Upon receipt of analysis results and screening against required consent limits, the Contractor will arrange the appropriate disposal, with the groundwater treated and discharged to foul sewer in accordance with temporary discharge consent (to be arranged by the Contractor).

The Contractor is to ensure that no contaminated water/liquids leave the site (as surface water run-off or otherwise), enter the local storm drainage system or direct discharge to the Baldoyle Bay SAC. Excavations and potentially contaminated stockpiled soils will be constructed/located/sheeted in a manner that ensures leachate generation is limited and water is contained within the site boundary.

13.2.1 Fee Product

If free product is identified during works, this will be pumped, and removed off-site via tanker to a licensed waste disposal facility.

13.3 Gas and Groundwater/Surface Water Monitoring

Gas and groundwater and surface water monitoring and sampling/testing rounds will be undertaken, before, during and after the earthworks works; this will comprise:

- Pre-earthworks – 3 no. weekly visits over a two month period;
- During earthworks – 1 no. per month for duration of earthworks; and
- Post-earthworks – 3 no. visits monthly post completion of earthworks.

Results from the monitoring rounds will be provided in monthly reports to be completed and assessed against Tier 1 screening values and will comprise previous monitoring round (cumulative) datasets undertaken and allowing information to be graphically displayed for identification and review of trends.

13.4 Asbestos Management

13.4.1 Asbestos Management Plan

An appropriate asbestos management plan will be established by the Contractor to ensure that the risks associated with asbestos within the Made Ground are kept to a minimum both on Human Health and cost and programme risk. The plan will need the approval of the appropriate authorities and a copy provided to the developer. This plan will require consideration of areas identified within all remedial works, and also potentially areas outside these; this should include for intrusive investigation work as appropriate. The Contractor is required to provide the appropriate certifications, trained personal and plant to allow excavation, handling and disposal of bonded asbestos containing materials and loose asbestos fibres. The plan is required to be produced by the Contractor prior to the earthworks and remedial works commencing.

In all cases the Contractor will not permit work to be carried out that may be liable to expose workers to asbestos, unless a suitable and sufficient assessment has been prepared, identifying the risks from the exposure and the steps that need to be taken to meet the requirement of the Supporting Documents. The Contractor will provide a copy of the plan to the developer for comment, prior to it being finalised.

The Contractor will appoint a competent person(s) to supervise all works potentially involving asbestos products, who will be on site at all times during working hours. He/she will be fully conversant and compliant with all statutory regulations applicable to the excavation, handling, removal and disposal of bonded asbestos and loose

fibrous asbestos and will exercise a high standard of supervision and good housekeeping during the works. This should be in line with relevant HSA guidance documents, including managing and working with asbestos; The Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. No. 291 of 2013).

Any changes of staff will be notified in advance in writing to the developer. The Contractor will be responsible for notifying the HSA should higher risk category asbestos required to be excavated, handled, removed and disposed off-site.

13.4.2 Asbestos in Ground

Potential asbestos containing materials have been detected in a number of locations within the Made Ground. As a significant amount of earthworks (and demolition) is required on this Site, careful consideration to asbestos risk will be required, especially in areas of excavation. The potential further presence of asbestos within soils (beyond those identified in from previous ground investigation reports) at numerous locations across the site must be assumed. For the avoidance of risks to Human Health and to the project, the Contractor will need to allow for the pre-works sampling of earthworks and remediation areas and for the confirmatory testing of samples from these areas for asbestos fibres and asbestos containing materials.

Samples for identification will be taken by a competent person named by and appropriately supervised by the Contractor. The sample, depending on size, is to be placed in a double-wrapped plastic bag or a securely sealed plastic container, and clearly marked as “Asbestos Sample”. The number of samples taken will depend on the size of the area and type of material encountered within the ground.

The contractor needs to allow for asbestos management and assessment to be undertaken in accordance with of ‘*Asbestos in soil and made ground: a guide to understanding and managing risk, CIRIA, C733, 2014*’.

13.4.3 Asbestos in Air

Appropriate asbestos in air monitoring and testing will be undertaken in respect of any works where the presence of asbestos fibres may reasonably be anticipated or known. Monitoring where employed will be undertaken in advance of and at regular intervals during dry and wet weather periods for the duration of any works involving the potential for disturbing asbestos fibres.

Monitoring and testing will be undertaken at such locations as deemed appropriate by a suitably qualified, UKAS accredited laboratory, in accordance with ISO 17025 to the agreement of the local authority. Monitoring is typically undertaken by frisbee style stations and in locations both upwind and downwind of asbestos sensitive areas.

13.5 Topographic Survey

With the agreement of the developer, the Contractor will undertake a full topographic pre-survey of the site at 1:500 scale in accordance with the requirements of the Manual of Contract Documents for Highway Works, Volume 5, Section 1.

This survey is to be updated throughout and on completion of the works to provide a record of the earthworks and remediation activities undertaken. All stockpiles and excavation extents will be surveyed during the works. Ad hoc surveys will be undertaken by the Contractor when requested by the developer.

The Contractor is required to provide monthly (commencing at the start of contract) update of the existing site topographic survey, in 3D CAD format to detail all changes to the site topography, stockpiles, layout, ground level changes, vegetation extents etc since commencement.

In addition, the Contractor will provide the client with a weekly volumetric survey of all open excavations and stockpiles.

13.6 Stockpile Management

Each individual stockpile of material (whether for disposal or re-use scenarios) must be given a specific individual designation. Stockpiles will be surveyed in accordance with Section 13.4.

This is required to ensure an accurate understanding of stockpile volumes as the works progresses, and to avoid any potential confusion on the volumes of materials and their designated end use.

13.7 Works to Address In-Ground Structures

The existing site includes a number of large foundations associated with the historic use of the site, this also includes a potential large holding tank beneath the locality of Block A and anticipated former underground fuel storage tanks in the location of the former vehicle filling station. The sub-structures associated with the previously demolished above ground structures will likely still be present, these require to be excavated and disposed off-site (after connecting services have been safely disconnected by the Contractor).

Excavated hard materials are required to be crushed, screened, segregated, sorted and used for backfill or piling mats as appropriate and in accordance with the suitable for re-use criteria (refer RTCs).

14.0 VERIFICATION REPORT

The verification report will include, but not be limited to, the following information:

- Project description;
- Scope of MMRP;
- A summary of the source characterisation;
- A summary of the exportation process;
- Site plans and surveys including as built construction drawings;
- Hotspots records – excavation extents and validation sample results;
- Gas, surfacewater and goundwater monitoring records;
- Validation sampling results;
- CAD surveys - including existing, monthly and as built records;
- A record of any variations to the procedure set out in the MMRP (this document or subsequent approved revisions);
- An accurate record of the quantities and types of materials removed from the Site; and
- Conclusions and compliance sign-off.

The verification report will be issued to IMS within 6 weeks following completion of the works assuming timely availability of all supporting documentation in the correct format.

Signature Page

Golder Associates Ireland Limited

Ruth Treacy
Senior Environmental Consultant

Iain Hall
Geo-Environmental Director

RT/IH/cr

Date: 14 November 2019

Registered in Ireland Registration No. 297875
Town Centre House, Dublin Road, Naas, Co. Kildare, Ireland
Directors: S. Copping, A. Harris (British), DRV Jones
VAT No.: 8297875W

Study Limitations

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

a) This report has been prepared for and at the request of Atlas GP Ltd for the purpose of undertaking Environmental Assessment activities pursuant to its appointment of Golder Associates Ireland Limited (Golder) to act as Consultant.

b) Save for Atlas GP Ltd, no duty is undertaken, or warranty or representation made to any party in respect of the opinions, advice, recommendations or conclusions herein set out.

c) Regard should be given to the agreement between Golder and Atlas GP Ltd [07 August 2019], when considering this report and reliance to be placed on it.

d) All work carried out in preparing this report has used, and is based upon, Golder's professional knowledge and understanding of the relevant Irish, UK and European Community legislation at the time that the works were undertaken.

e) Changes in the legislation may cause the opinion, advice, recommendations or conclusions set out in this report to become inappropriate or incorrect. However, in giving its opinions, advice, recommendations and conclusions, Golder has considered pending changes to environmental legislation and regulations of which it is currently aware. Golder will have no obligation to advise Atlas GP Ltd of any such changes, or of their repercussions.

f) Golder acknowledges that it was retained, in part, because of its knowledge and experience with respect to environmental matters. Golder has considered and analysed all information provided to it in the context of Golder's knowledge and experience and all other relevant information known to Golder. To the extent that the information provided to Golder was not inconsistent or incompatible therewith, Golder shall be entitled to rely upon and assume, without independent verification, the accuracy and completeness of all such information and Golder shall have no obligation to verify the accuracy and completeness of such information.

g) Golder has prepared this document in a manner consistent with that level of care and skill ordinarily exercised by members of the engineering and science professions currently practising under similar conditions in the jurisdiction in which the services are provided, subject to the time limits and physical constraints applicable to this document. No warranty, express or implied, is made. Golder does not provide specialist legal advice and the advice of lawyers may be required.

h) In order to properly understand the factual data, interpretation, suggestions, recommendations and opinions expressed in this report, reference must be made to the entire document.

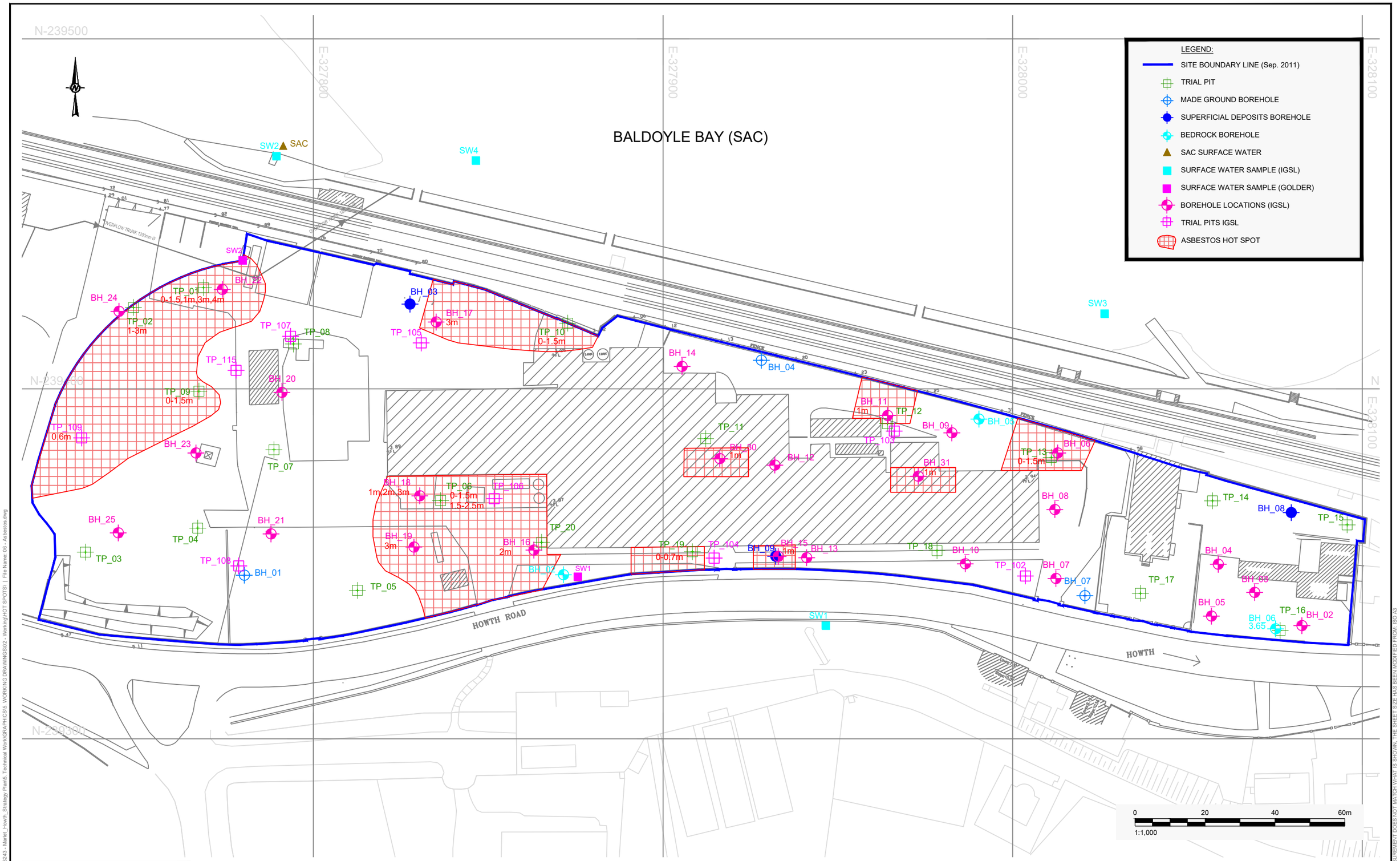
i) If the scope of the work included borings, test pits, inspections or engineering interpretation of such information, attention is drawn to the fact that special risks occur whenever engineering and related disciplines are applied to identify subsurface conditions. Even a comprehensive sampling and testing programme implemented in accordance with a professional Standard of Care may fail to detect certain conditions. The environmental, geological, geotechnical, geochemical and hydrogeological conditions that Golder interprets to exist between sampling points may differ from those that actually exist. Passage of time, natural occurrences, and activities near the Site may substantially alter discovered conditions.

j) In any Conclusions and/or Recommendations section of this report, Golder has set out its key findings and provided a summary and overview of its advice, opinions and recommendations.

However, other parts of this report will often indicate the limitations of the information obtained by Golder and therefore any advice, opinions or recommendations set out in any Conclusions and Recommendations sections ought not to be relied upon until considered in the context of the whole report.

APPENDIX A

Drawings



NOTES:

GRID REFERENCES ARE IN METRES & TO IRISH NATIONAL GRID.

LEVELS ARE IN METRES & TO OS DATUM MALIN HEAD.

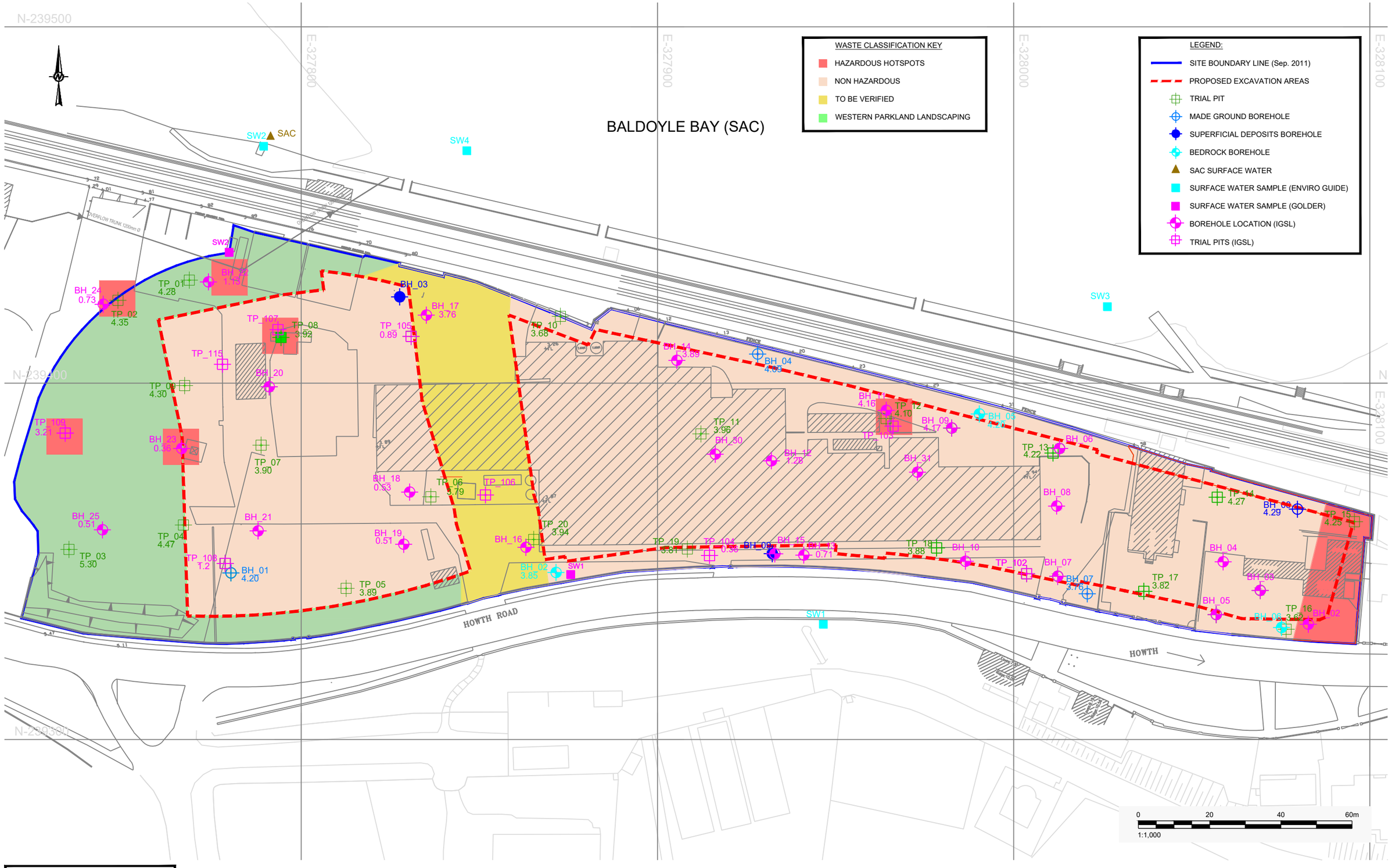
BACKGROUND SURVEY INFORMATION IS AS SUPPLIED FROM CLIENT AND IS CIRCA 2007/2008.

CLIENT	ATLAS GP Ltd.
CONSULTANT	GOLDER
YYYY-MM-DD	2019-Sep-30
PREPARED	JD
DESIGN	JD
REVIEW	RT
APPROVED	RT
PROJECT	CLAREMONT PROJECT / HHRA REPORT
TITLE	ESTIMATED HOT SPOTS FOR ASBESTOS IN THE MADE GROUND
PROJECT No.	19128243
DRAWING No.	06
Rev.	A
SCALE	1:1,000 A3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ISO A3

25 mm

Path: \\naa1-s-main01\Company\PROJECTS\2019\19128243 - Market_Howth_Strategy Plan\5. Technical Work\GRAPHICS\5. WORKING DRAWINGS\02 - Working\HOT SPOTS\ | File Name: 06 - Asbestos.dwg



NOTES:

GRID REFERENCES ARE IN METRES & TO IRISH NATIONAL GRID.

LEVELS ARE IN METRES & TO OS DATUM MALIN HEAD.

BACKGROUND SURVEY INFORMATION IS AS SUPPLIED FROM CLIENT AND IS CIRCA 2007/2008.

CLIENT

ATLAS GP Ltd.

CONSULTANT

GOLDER

YYYY-MM-DD	2019-Oct-07
PREPARED	JD
DESIGN	JD
REVIEW	RT
APPROVED	RT

PROJECT

CLAREMONT PROJECT

TITLE

WASTE CLASSIFICATION

PROJECT No.	DRAWING No.	Rev.	SCALE
19128243	07	A	1:1,000 A3

Path: \\NAA1-S-MAIN01\Company\PROJECTS\2019\19128243 - Market_Howth_Strategy Plan\5. Technical Work\GRAPHICS\5. WORKING DRAWINGS\02 - Working\ | File Name: 07 A - WAC Assessment.dwg
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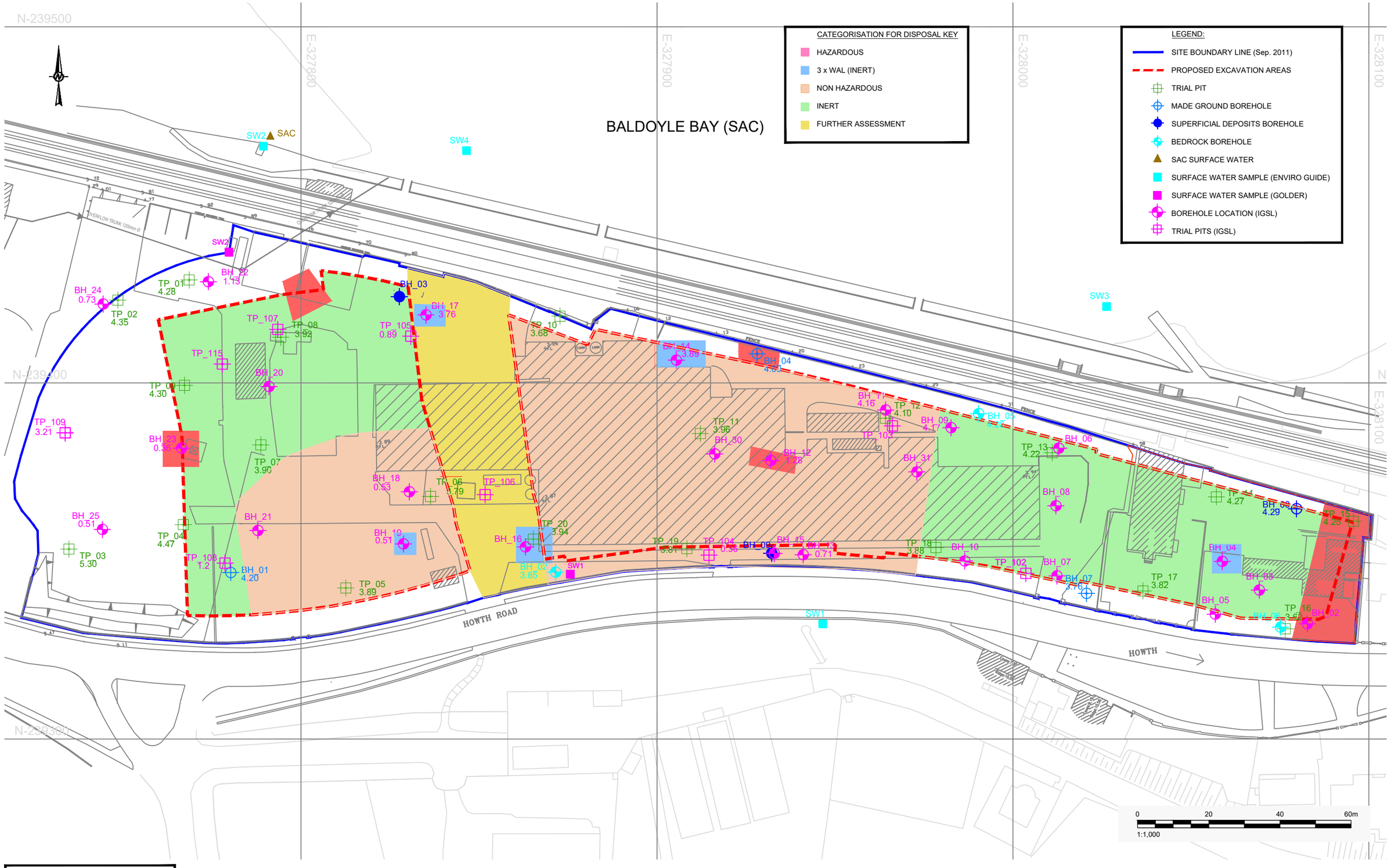

NOTES:

GRID REFERENCES ARE IN METRES & TO IRISH NATIONAL GRID.

LEVELS ARE IN METRES & TO OS DATUM MALIN HEAD.

BACKGROUND SURVEY INFORMATION IS AS SUPPLIED FROM CLIENT AND IS CIRCA 2007/2008.

CLIENT

ATLAS GP Ltd.

CONSULTANT

GOLDER

YYYY-MM-DD	2019-Oct-07
PREPARED	JD
DESIGN	JD
REVIEW	RT
APPROVED	RT

PROJECT

CLAREMONT PROJECT

TITLE

EXCAVATION AREAS - CATEGORISATION FOR DISPOSAL

PROJECT No.	DRAWING No.	Rev.	SCALE
19128243	08	A	1:1,000 A3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ISO A3

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APPENDIX B

Reuse Target Criteria

Claremont Development Site - Reuse Target Criteria				
Determinand	Units	Controlled Waters	Human Health	
		RTC1: Tier 2/3 Screening Value	RTC2: RWOHG GAC	RTC3: POS_{res} GAC
Metals				
Antimony	mg/kg	-	*550*	*550*
Arsenic	mg/kg	**153**	*40*	*79*
Barium	mg/kg	-	*1300*	*1300*
Cadmium	mg/kg	-	*85*	*120*
Chromium	mg/kg	**919**	-	-
Chromium III	mg/kg	-	*910*	*1500*
Hexavalent Chromium	mg/kg	-	*6*	*7.7*
Copper	mg/kg	-	*7100*	*12000*
Lead	mg/kg	**9780**	***130 / 330***	*270 / 760*
Mercury	mg/kg	**1.83**	*56*	*120*
Molybdenum	mg/kg	-	*670*	*670*
Nickel	mg/kg	-	*180*	*230*
Selenium	mg/kg	-	*430*	*1100*
Total Sulphate as SO4	mg/kg	**9620**	-	-
Water Soluble Boron	mg/kg	-	*11000*	*21000*
Zinc	mg/kg	-	*40000*	*81000*
Polycyclic Aromatic Hydrocarbons (PAHs)				
Naphthalene	mg/kg	-	*2.3*	*4900*
Acenaphthylene	mg/kg	-	*2900*	*15000*
Acenaphthene	mg/kg	-	*3000*	*15000*
Fluorene	mg/kg	-	*2800*	*9900*
Phenanthrene	mg/kg	-	*1300*	*3100*
Anthracene	mg/kg	-	*31000*	*74000*
Fluoranthene	mg/kg	-	*1500*	*3100*
Pyrene	mg/kg	-	*3700*	*7400*
Benzo(a)anthracene	mg/kg	-	*11*	*29*
Chrysene	mg/kg	-	*30*	*57*
Benzo(a)pyrene	mg/kg	-	***3.2***	*5.7*
Indeno(123cd)pyrene	mg/kg	-	*45*	*82*
Dibenzo(ah)anthracene	mg/kg	-	***0.31***	*0.57*
Benzo(ghi)perylene	mg/kg	-	*360*	*640*
Benzo(b)fluoranthene	mg/kg	-	**3.9**	*7.1*
Benzo(k)fluoranthene	mg/kg	-	*110*	*190*
Total PAH (sum of 6)*	mg/kg	**41.3 ****	-	-
TPH CWG				
Aliphatics				
>C5 C6	mg/kg	-	*42*	*570000*
>C6 C8	mg/kg	-	***100***	*600000*
>C8 C10	mg/kg	-	***27***	*13000*
>C10 C12	mg/kg	-	***130***	*13000*
>C12 C16	mg/kg	-	***1100***	*13000*
>C16 C35	mg/kg	-	*65000*	*250000*
>C35 C40	mg/kg	-	*65000*	*250000*
Aromatics				
>C5 EC7	mg/kg	-	*370*	*56000*
>EC7 EC8	mg/kg	-	*860*	*56000*
>EC8 EC10	mg/kg	-	***47***	*5000*
>EC10 EC12	mg/kg	-	***250***	*5000*
>EC12 EC16	mg/kg	-	*1800*	*5100*
>EC16 EC21	mg/kg	-	*1900*	*3800*
>EC21 EC35	mg/kg	-	*1900*	*3800*
>EC35 EC40	mg/kg	-	*1900*	*3800*
TPH	mg/kg	-	*1900*	*3800*
MTBE / BTEX				
MTBE	ug/kg	-	*73000*	*73000*
Benzene	ug/kg	-	*380*	*72000*
Toluene	ug/kg	-	*880000*	*56000000*
Ethylbenzene	ug/kg	-	*83000*	*24000000*
m/p Xylene	ug/kg	-	*79000*	*41000000*
o Xylene	ug/kg	-	*88000*	*41000000*
Other				
Total 7 PCBs	ug/kg	-	*8*	*8*
Ammoniacal Nitrogen as N	mg/kg	**58.1**	-	-
Phenol	mg/kg	-	*750*	*760*
Asbestos				
Asbestos Fibres	--	-	**Identified in Soil**	

Notes:

** Sum of fluoranthene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, benzo(ghi)perylene and indeno(123 cd)pyrene*

*** The Total PAH (sum of 6) screening value for controlled waters was developed using the Environment Agency's RTM worksheets and was based on using benzo(a)pyrene as a surrogate for total PAH*

*Those RTC values highlighted in **bold** indicates that these determinands are contaminants of potential concern in relation to Human Helath and/or Controlled Waters as they failed 95% statistical confidence test, in case of speciated TPHs identified as an actual contaminant concern or if asbestos deemed unacceptable.*

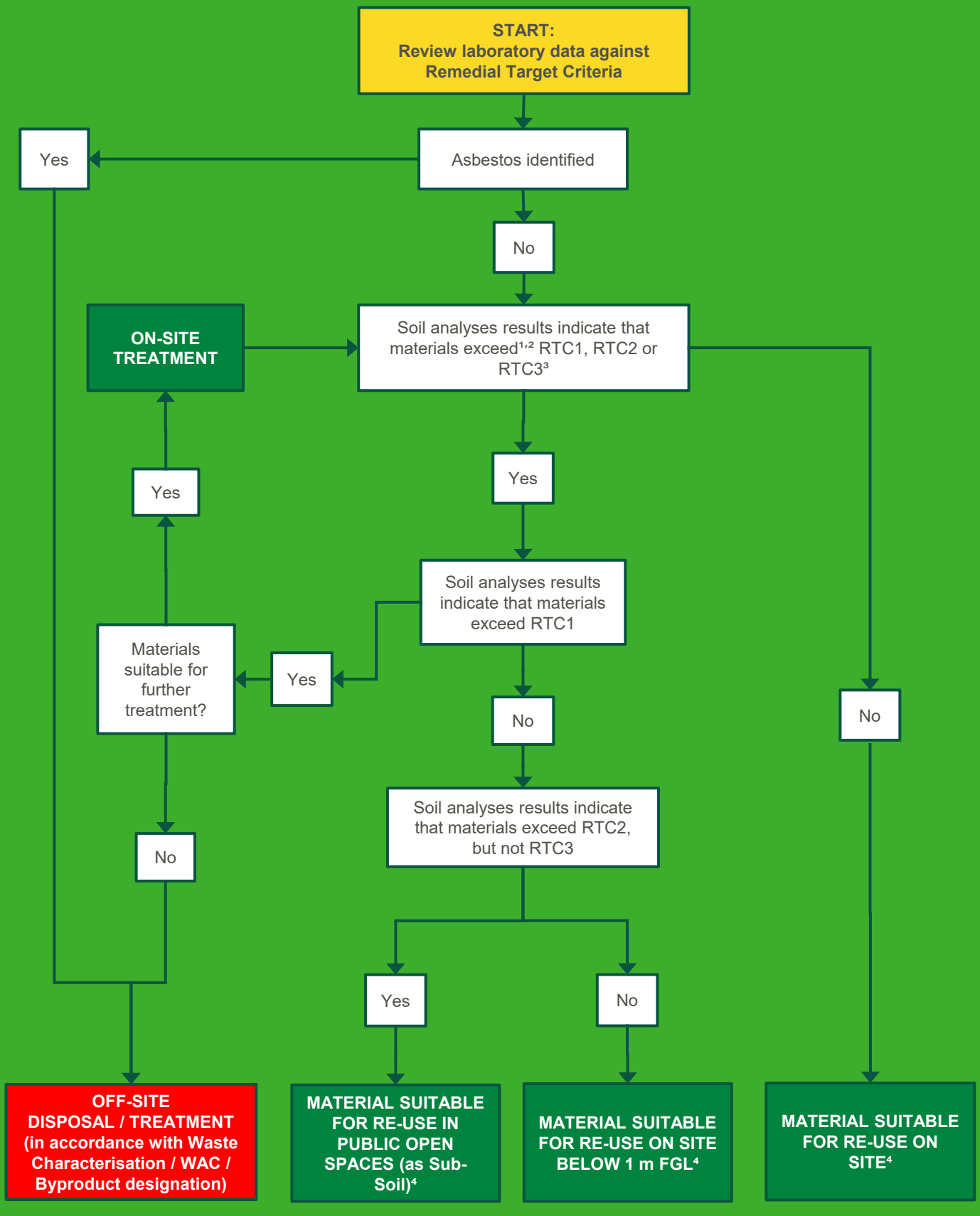
When contaminant concentrations exceed RTC values in italics these require 95% statistical significance testing prior to determing whether an excedance has occurred.

APPENDIX C

Material End Use Assessment Flow Chart

Claremont Development Site, Howth

Material End Use Assessment Flow-Chart



1. Assessment allows consideration for 95% statistical significance of the results as appropriate in the context of the dataset, soil volumes and re-use criteria.
2. Any detailed statistical significance testing employed to consider *Guidance on Comparing Soil Contamination Data with a Critical Concentration*, 2008, CL:AIRE and CIEH.
3. RTC – Remedial Target Criteria
4. Providing volumes comply within overall cut/fill volume balance for the Site.

APPENDIX D

Waste Classification

Waste Classification Report

TAT9T-YTGW8-CJ4ED

Job name

Claremont Howth Historic samples

Description/Comments

historic sampling results from 2017 ground investigation programme at Claremont Howth Site

Project

19128243

Site

Claremont Howth

Related Documents

#	Name	Description
None		

Waste Stream Template

Claremont Howth Historic

Classified by

Name:
Martha Buckwalter-Davis
Date:
03 Oct 2019 11:10 GMT
Telephone:
+353 45 87 4411

Company:
Golder Associates Ireland Ltd
Town Centre House
Dublin Road
Naas

Report

Created by: Martha Buckwalter-Davis
Created date: 03 Oct 2019 11:10 GMT

Job summary

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
1	TP102	0.40	Non Hazardous		4
2	TP102[2]	0.80	Non Hazardous		7
3	TP102[3]	1.50	Non Hazardous		10
4	TP102[4]	4.30	Non Hazardous		13
5	TP103	0.50	Non Hazardous		16
6	TP103[2]	2.50	Non Hazardous		19
7	TP103[3]	3.50	Non Hazardous		22
8	TP104	0.5	Non Hazardous		25
9	TP104[2]	1.5	Non Hazardous		28
10	TP104[3]	2.20	Non Hazardous		31
11	TP105	0.70	Non Hazardous		34
12	TP105[2]	1.30	Non Hazardous		37

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
13	TP105[3]	2.2	Non Hazardous		40
14	TP106	0.9	Non Hazardous		43
15	TP106[2]	2.1	Non Hazardous		46
16	TP107	0.6	Non Hazardous		49
17	TP107[2]	1.5	Hazardous	HP 7, HP 11	52
18	TP108	1.2	Non Hazardous		55
19	TP108[2]	2.5	Non Hazardous		58
20	TP108[3]	3.7	Non Hazardous		61
21	TP109	0.6	Hazardous	HP 7, HP 11	64
22	TP109[2]	1.7	Non Hazardous		67
23	TP109[3]	2.9	Non Hazardous		70
24	TP115	0.8	Non Hazardous		73
25	TP115[2]	2.8	Non Hazardous		76
26	BH2	1	Non Hazardous		79
27	BH3	1	Non Hazardous		82
28	BH3[2]	3	Non Hazardous		85
29	BH3[3]	4	Non Hazardous		88
30	BH4	1	Non Hazardous		91
31	BH4[2]	3	Non Hazardous		94
32	BH5	1	Non Hazardous		97
33	BH6	1	Non Hazardous		100
34	BH7	3	Non Hazardous		102
35	BH9	1	Non Hazardous		105
36	BH9[2]	2	Non Hazardous		108
37	BH10	1	Non Hazardous		111
38	BH10[2]	2	Non Hazardous		114
39	BH11	1	Non Hazardous		117
40	BH12	1	Non Hazardous		120
41	BH13	1	Non Hazardous		123
42	BH13[2]	3	Non Hazardous		126
43	BH14	1	Non Hazardous		129
44	BH14[2]	3	Non Hazardous		132
45	BH15	1	Non Hazardous		135
46	BH16	1	Non Hazardous		138
47	BH16[2]	2	Non Hazardous		141
48	BH17	1	Non Hazardous		144
49	BH17[2]	3	Non Hazardous		147
50	BH18	1	Non Hazardous		150
51	BH18[2]	1	Non Hazardous		153
52	BH18[3]	2	Non Hazardous		156
53	BH18[4]	3	Non Hazardous		159
54	BH18[5]	3	Non Hazardous		162
55	BH19	1	Non Hazardous		165
56	BH19[2]	3	Non Hazardous		168
57	BH20	1	Non Hazardous		171
58	BH20[2]	3	Non Hazardous		174
59	BH21	1	Non Hazardous		177
60	BH21[2]	2	Non Hazardous		180
61	BH21[3]	3	Non Hazardous		183
62	BH22	1	Non Hazardous		186
63	BH22[2]	3	Hazardous	HP 14	189
64	BH22[3]	4	Non Hazardous		192
65	BH23	1	Hazardous	HP 14	195
66	BH24	1	Non Hazardous		198
67	BH24[2]	1	Non Hazardous		201
68	BH24[3]	2	Non Hazardous		204
69	BH24[4]	3	Hazardous	HP 14	207
70	BH24[5]	4	Non Hazardous		210
71	BH24[6]	4	Hazardous	HP 14	213
72	BH25	1	Non Hazardous		216
73	BH25[2]	2	Non Hazardous		219
74	BH25[3]	3	Non Hazardous		222
75	BH30	1	Non Hazardous		225
76	BH30[2]	2	Non Hazardous		228
77	BH30[3]	5	Non Hazardous		231

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
78	BH31	1	Non Hazardous		234
79	BH31[2]	2	Non Hazardous		237
80	BH31[3]	2.8	Non Hazardous		240

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Appendix C: Version	245

Classification of sample: TP102

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

Sample details

Sample Name:
TP102
Sample Depth:
0.40 m
Moisture content:
13.2%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 13.2% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		4 mg/kg	1.197	4.23 mg/kg	0.000423 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		11.6 mg/kg	1.32	13.53 mg/kg	0.00135 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		132 mg/kg	1.117	130.193 mg/kg	0.013 %	✓	
	215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.3 mg/kg	1.142	0.303 mg/kg	0.0000303 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		150.7 mg/kg	1.462	194.573 mg/kg	0.0195 %	✓	
	215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		1.4 mg/kg	1.923	2.378 mg/kg	0.000238 %	✓	
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		80 mg/kg	1.126	79.568 mg/kg	0.00796 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
	006-007-00-5							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	247 mg/kg		218.198 mg/kg	0.0218 %	✓	
	082-001-00-6							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
	080-002-00-6							
11	molybdenum { molybdenum(VI) oxide }		4.6 mg/kg	1.5	6.096 mg/kg	0.00061 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		90.8 mg/kg	1.545	123.942 mg/kg	0.0124 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2	mg/kg	2.554	4.512	mg/kg	0.000451 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				0.5	mg/kg	3.22	1.422	mg/kg	0.000142 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				118	mg/kg	1.245	129.749	mg/kg	0.013 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.05	mg/kg		0.0442	mg/kg	0.00000442 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			201-695-5	86-73-7									
20		phenanthrene				0.13	mg/kg		0.115	mg/kg	0.0000115 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.07	mg/kg		0.0618	mg/kg	0.00000618 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				0.27	mg/kg		0.239	mg/kg	0.0000239 %	✓	
			205-912-4	206-44-0									
23		pyrene				0.25	mg/kg		0.221	mg/kg	0.0000221 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				0.18	mg/kg		0.159	mg/kg	0.0000159 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.19	mg/kg		0.168	mg/kg	0.0000168 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.16	mg/kg		0.141	mg/kg	0.0000141 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.12	mg/kg		0.106	mg/kg	0.0000106 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.15	mg/kg		0.133	mg/kg	0.0000133 %	✓	
			205-883-8	191-24-2									
30		coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				0.26	mg/kg		0.23	mg/kg	0.000023 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.1	mg/kg		0.0883	mg/kg	0.00000883 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				119	mg/kg		105.124	mg/kg	0.0105 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.102 %		

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

Supplementary Hazardous Property Information

HP 2: Oxidizing "waste which may, generally by providing oxygen, cause or contribute to the combustion of other materials"

Force this Hazardous property to non hazardous because soils not expected to be oxidising based on low levels of contamination with oxidising substances (<10 mg/kg)

Hazard Statements hit:

Ox. Sol. 1; H271 "May cause fire or explosion; strong oxidiser."

Because of determinand:

chromium(VI) oxide: (compound conc.: 0.00023%)

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0105%)

Classification of sample: TP102[2]

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

Sample details

Sample Name:
TP102[2]
Sample Depth:
0.80 m
Moisture content:
16.7%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 16.7% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		3 mg/kg	1.197	3.077 mg/kg	0.000308 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		19.7 mg/kg	1.32	22.288 mg/kg	0.00223 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		83 mg/kg	1.117	79.409 mg/kg	0.00794 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.4 mg/kg	1.142	0.392 mg/kg	0.0000392 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		68.7 mg/kg	1.462	86.04 mg/kg	0.0086 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		30 mg/kg	1.126	28.943 mg/kg	0.00289 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	63 mg/kg		53.985 mg/kg	0.0054 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		5.5 mg/kg	1.5	7.07 mg/kg	0.000707 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		41.6 mg/kg	1.545	55.081 mg/kg	0.00551 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		2 mg/kg	2.554	4.376 mg/kg	0.000438 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		0.8 mg/kg	3.22	2.207 mg/kg	0.000221 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		77 mg/kg	1.245	82.128 mg/kg	0.00821 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<**LOD**
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		0.04 mg/kg		0.0343 mg/kg	0.00000343 %	✓	
		205-917-1 / 208-96-8							
18		acenaphthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<**LOD**
		201-469-6 / 83-32-9							
19		fluorene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<**LOD**
		201-695-5 / 86-73-7							
20		phenanthrene		0.31 mg/kg		0.266 mg/kg	0.0000266 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		0.12 mg/kg		0.103 mg/kg	0.0000103 %	✓	
		204-371-1 / 120-12-7							
22		fluoranthene		0.61 mg/kg		0.523 mg/kg	0.0000523 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		0.66 mg/kg		0.566 mg/kg	0.0000566 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		0.87 mg/kg		0.746 mg/kg	0.0000746 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		0.91 mg/kg		0.78 mg/kg	0.000078 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		0.58 mg/kg		0.497 mg/kg	0.0000497 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		0.31 mg/kg		0.266 mg/kg	0.0000266 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		0.08 mg/kg		0.0686 mg/kg	0.00000686 %	✓	
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		0.39 mg/kg		0.334 mg/kg	0.0000334 %	✓	
		205-883-8 / 191-24-2							
30		coronene		0.08 mg/kg		0.0686 mg/kg	0.00000686 %	✓	
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		0.99 mg/kg		0.848 mg/kg	0.0000848 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		0.38 mg/kg		0.326 mg/kg	0.0000326 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<**LOD**
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		<52 mg/kg		<52 mg/kg	<0.0052 %		<**LOD**
		TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] / 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.35 mg/kg		<0.35 mg/kg	<0.000035 %		<**LOD**
		602-039-00-4 / 215-648-1 / 1336-36-3							
						Total:	0.0486 %		

Key

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

Classification of sample: TP102[3]

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

Sample details

Sample Name:
TP102[3]
Sample Depth:
1.50 m
Moisture content:
10.3%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 10.3% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		2 mg/kg	1.197	2.171 mg/kg	0.000217 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		10 mg/kg	1.32	11.97 mg/kg	0.0012 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		49 mg/kg	1.117	49.6 mg/kg	0.00496 %	✓	
	/ 215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.5 mg/kg	1.142	0.518 mg/kg	0.0000518 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		67.7 mg/kg	1.462	89.707 mg/kg	0.00897 %	✓	
	/ 215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		17 mg/kg	1.126	17.353 mg/kg	0.00174 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5 / /							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	13 mg/kg		11.786 mg/kg	0.00118 %	✓	
	082-001-00-6 / /							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	080-002-00-6 / /							
11	molybdenum { molybdenum(VI) oxide }		4.8 mg/kg	1.5	6.528 mg/kg	0.000653 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		28.3 mg/kg	1.545	39.645 mg/kg	0.00396 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	2.554	2.315	mg/kg	0.000232 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				0.4	mg/kg	3.22	1.168	mg/kg	0.000117 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				65	mg/kg	1.245	73.351	mg/kg	0.00734 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7									
20		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
21		anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			204-371-1	120-12-7									
22		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
23		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
24		benzo[a]anthracene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-883-8	191-24-2									
30		coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				<52	mg/kg		<52	mg/kg	<0.0052 %		<LOD
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0362 %		

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

Classification of sample: TP102[4]

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

Sample details

Sample Name:
TP102[4]
Sample Depth:
4.30 m
Moisture content:
11.8%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 11.8% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		1 mg/kg	1.197	1.071 mg/kg	0.000107 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		10.2 mg/kg	1.32	12.046 mg/kg	0.0012 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		55 mg/kg	1.117	54.926 mg/kg	0.00549 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.7 mg/kg	1.142	0.715 mg/kg	0.0000715 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		60.3 mg/kg	1.462	78.83 mg/kg	0.00788 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		19 mg/kg	1.126	19.134 mg/kg	0.00191 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	14 mg/kg		12.522 mg/kg	0.00125 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		4.6 mg/kg	1.5	6.173 mg/kg	0.000617 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		41.5 mg/kg	1.545	57.357 mg/kg	0.00574 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	2.554	2.284	mg/kg	0.000228 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				0.3	mg/kg	3.22	0.864	mg/kg	0.0000864 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				47	mg/kg	1.245	52.327	mg/kg	0.00523 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7									
20		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
21		anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			204-371-1	120-12-7									
22		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
23		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
24		benzo[a]anthracene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-883-8	191-24-2									
30		coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				<52	mg/kg		<52	mg/kg	<0.0052 %		<LOD
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0354 %		

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

Classification of sample: TP103

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

Sample details

Sample Name:
TP103
Sample Depth:
0.50 m
Moisture content:
15.1%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 15.1% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		3 mg/kg	1.197	3.12 mg/kg	0.000312 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		33.7 mg/kg	1.32	38.658 mg/kg	0.00387 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		201 mg/kg	1.117	194.976 mg/kg	0.0195 %	✓	
	/ 215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.3 mg/kg	1.142	0.298 mg/kg	0.0000298 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		71.5 mg/kg	1.462	90.792 mg/kg	0.00908 %	✓	
	/ 215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		105 mg/kg	1.126	102.709 mg/kg	0.0103 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
	006-007-00-5 / /							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	223 mg/kg		193.745 mg/kg	0.0194 %	✓	
	082-001-00-6 / /							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	0.5 mg/kg		0.434 mg/kg	0.0000434 %	✓	
	080-002-00-6 / /							
11	molybdenum { molybdenum(VI) oxide }		4.6 mg/kg	1.5	5.996 mg/kg	0.0006 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		27.1 mg/kg	1.545	36.381 mg/kg	0.00364 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				0.6	mg/kg	3.22	1.678	mg/kg	0.000168 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				118	mg/kg	1.245	127.608	mg/kg	0.0128 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.21	mg/kg		0.182	mg/kg	0.0000182 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.35	mg/kg		0.304	mg/kg	0.0000304 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-469-6	83-32-9									
19		fluorene				0.06	mg/kg		0.0521	mg/kg	0.00000521 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				0.62	mg/kg		0.539	mg/kg	0.0000539 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.46	mg/kg		0.4	mg/kg	0.00004 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				2.84	mg/kg		2.467	mg/kg	0.000247 %	✓	
			205-912-4	206-44-0									
23		pyrene				2.85	mg/kg		2.476	mg/kg	0.000248 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				2.44	mg/kg		2.12	mg/kg	0.000212 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				1.8	mg/kg		1.564	mg/kg	0.000156 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				1.86	mg/kg		1.616	mg/kg	0.000162 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.98	mg/kg		0.851	mg/kg	0.0000851 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.28	mg/kg		0.243	mg/kg	0.0000243 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				1.09	mg/kg		0.947	mg/kg	0.0000947 %	✓	
			205-883-8	191-24-2									
30		coronene				0.2	mg/kg		0.174	mg/kg	0.0000174 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				2.27	mg/kg		1.972	mg/kg	0.000197 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.88	mg/kg		0.765	mg/kg	0.0000765 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				<52	mg/kg		<52	mg/kg	<0.0052 %		<**LOD**
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0871 %		

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

Classification of sample: TP103[2]

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

Sample details

Sample Name:
TP103[2]
Sample Depth:
2.50 m
Moisture content:
37.3%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 37.3% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2 mg/kg	1.197	1.744 mg/kg	0.000174 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		17.4 mg/kg	1.32	16.732 mg/kg	0.00167 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		77 mg/kg	1.117	62.615 mg/kg	0.00626 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.3 mg/kg	1.142	0.25 mg/kg	0.000025 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		64.6 mg/kg	1.462	68.767 mg/kg	0.00688 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		43 mg/kg	1.126	35.261 mg/kg	0.00353 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	135 mg/kg		98.325 mg/kg	0.00983 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		5.7 mg/kg	1.5	6.228 mg/kg	0.000623 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		28.2 mg/kg	1.545	31.737 mg/kg	0.00317 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		1 mg/kg	2.554	1.86 mg/kg	0.000186 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		3.5 mg/kg	3.22	8.208 mg/kg	0.000821 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		155 mg/kg	1.245	140.518 mg/kg	0.0141 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		0.23 mg/kg		0.168 mg/kg	0.0000168 %	✓	
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		0.66 mg/kg		0.481 mg/kg	0.0000481 %	✓	
		205-917-1 / 208-96-8							
18		acenaphthene		0.11 mg/kg		0.0801 mg/kg	0.00000801 %	✓	
		201-469-6 / 83-32-9							
19		fluorene		0.43 mg/kg		0.313 mg/kg	0.0000313 %	✓	
		201-695-5 / 86-73-7							
20		phenanthrene		3.88 mg/kg		2.826 mg/kg	0.000283 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		1.43 mg/kg		1.042 mg/kg	0.000104 %	✓	
		204-371-1 / 120-12-7							
22		fluoranthene		6.33 mg/kg		4.61 mg/kg	0.000461 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		5.56 mg/kg		4.05 mg/kg	0.000405 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		3.64 mg/kg		2.651 mg/kg	0.000265 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		3.38 mg/kg		2.462 mg/kg	0.000246 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		3.35 mg/kg		2.44 mg/kg	0.000244 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		1.79 mg/kg		1.304 mg/kg	0.00013 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		0.54 mg/kg		0.393 mg/kg	0.0000393 %	✓	
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		1.82 mg/kg		1.326 mg/kg	0.000133 %	✓	
		205-883-8 / 191-24-2							
30		coronene		0.32 mg/kg		0.233 mg/kg	0.0000233 %	✓	
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		3.97 mg/kg		2.891 mg/kg	0.000289 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		1.54 mg/kg		1.122 mg/kg	0.000112 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		1 mg/kg		0.728 mg/kg	0.0000728 %	✓	
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		497 mg/kg		361.981 mg/kg	0.0362 %	✓	
		TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] / 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.35 mg/kg		<0.35 mg/kg	<0.000035 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
						Total:	0.0865 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0362%)

Classification of sample: TP103[3]

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

Sample details

Sample Name:
TP103[3]
Sample Depth:
3.50 m
Moisture content:
44.1%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 44.1% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		1 mg/kg	1.197	0.831 mg/kg	0.0000831 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		12.5 mg/kg	1.32	11.453 mg/kg	0.00115 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		72 mg/kg	1.117	55.787 mg/kg	0.00558 %	✓	
	215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.2 mg/kg	1.142	0.159 mg/kg	0.0000159 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		59.7 mg/kg	1.462	60.552 mg/kg	0.00606 %	✓	
	215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		29 mg/kg	1.126	22.658 mg/kg	0.00227 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	94 mg/kg		65.232 mg/kg	0.00652 %	✓	
	082-001-00-6							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	080-002-00-6							
11	molybdenum { molybdenum(VI) oxide }		4.3 mg/kg	1.5	4.477 mg/kg	0.000448 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		26.5 mg/kg	1.545	28.416 mg/kg	0.00284 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	2.554	1.772	mg/kg	0.000177 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				5.5	mg/kg	3.22	12.29	mg/kg	0.00123 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				102	mg/kg	1.245	88.106	mg/kg	0.00881 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.43	mg/kg		0.298	mg/kg	0.0000298 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				1.07	mg/kg		0.743	mg/kg	0.0000743 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				0.17	mg/kg		0.118	mg/kg	0.0000118 %	✓	
			201-469-6	83-32-9									
19		fluorene				0.44	mg/kg		0.305	mg/kg	0.0000305 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				4.75	mg/kg		3.296	mg/kg	0.00033 %	✓	
			201-581-5	85-01-8									
21		anthracene				2.74	mg/kg		1.901	mg/kg	0.00019 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				11.1	mg/kg		7.703	mg/kg	0.00077 %	✓	
			205-912-4	206-44-0									
23		pyrene				8.74	mg/kg		6.065	mg/kg	0.000607 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				8.23	mg/kg		5.711	mg/kg	0.000571 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				5.8	mg/kg		4.025	mg/kg	0.000402 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				5.54	mg/kg		3.845	mg/kg	0.000384 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				2.61	mg/kg		1.811	mg/kg	0.000181 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.95	mg/kg		0.659	mg/kg	0.0000659 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				2.35	mg/kg		1.631	mg/kg	0.000163 %	✓	
			205-883-8	191-24-2									
30		coronene				0.52	mg/kg		0.361	mg/kg	0.0000361 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				6.94	mg/kg		4.816	mg/kg	0.000482 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				2.7	mg/kg		1.874	mg/kg	0.000187 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				3	mg/kg		2.082	mg/kg	0.000208 %	✓	
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				440	mg/kg		305.344	mg/kg	0.0305 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0706 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0305%)

Classification of sample: TP104

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

Sample details

Sample Name:
TP104
Sample Depth:
0.5 m
Moisture content:
27.5%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 27.5% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		1 mg/kg	1.197	0.939 mg/kg	0.0000939 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		3.7 mg/kg	1.32	3.832 mg/kg	0.000383 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		60 mg/kg	1.117	52.541 mg/kg	0.00525 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		85.4 mg/kg	1.462	97.896 mg/kg	0.00979 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		27 mg/kg	1.126	23.842 mg/kg	0.00238 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	31 mg/kg		24.314 mg/kg	0.00243 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		8 mg/kg	1.5	9.413 mg/kg	0.000941 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		10.6 mg/kg	1.545	12.846 mg/kg	0.00128 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		0.8 mg/kg	3.22	2.02 mg/kg	0.000202 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		19 mg/kg	1.245	18.549 mg/kg	0.00185 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		0.16 mg/kg		0.125 mg/kg	0.0000125 %	✓	
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		0.2 mg/kg		0.157 mg/kg	0.0000157 %	✓	
		205-917-1 / 208-96-8							
18		acenaphthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6 / 83-32-9							
19		fluorene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5 / 86-73-7							
20		phenanthrene		0.45 mg/kg		0.353 mg/kg	0.0000353 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		0.23 mg/kg		0.18 mg/kg	0.000018 %	✓	
		204-371-1 / 120-12-7							
22		fluoranthene		1.13 mg/kg		0.886 mg/kg	0.0000886 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		1.11 mg/kg		0.871 mg/kg	0.0000871 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		1.09 mg/kg		0.855 mg/kg	0.0000855 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		0.93 mg/kg		0.729 mg/kg	0.0000729 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		1.11 mg/kg		0.871 mg/kg	0.0000871 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		0.77 mg/kg		0.604 mg/kg	0.0000604 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		0.18 mg/kg		0.141 mg/kg	0.0000141 %	✓	
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		0.76 mg/kg		0.596 mg/kg	0.0000596 %	✓	
		205-883-8 / 191-24-2							
30		coronene		0.26 mg/kg		0.204 mg/kg	0.0000204 %	✓	
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		1.29 mg/kg		1.012 mg/kg	0.000101 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		0.5 mg/kg		0.392 mg/kg	0.0000392 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		468 mg/kg		367.059 mg/kg	0.0367 %	✓	
		TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] / 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.35 mg/kg		<0.35 mg/kg	<0.000035 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
						Total:	0.0627 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0367%)

Classification of sample: TP104[2]

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

Sample details

Sample Name:
TP104[2]
Sample Depth:
1.5 m
Moisture content:
26%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 26% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		3 mg/kg	1.197	2.85 mg/kg	0.000285 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		24.5 mg/kg	1.32	25.673 mg/kg	0.00257 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		120 mg/kg	1.117	106.334 mg/kg	0.0106 %	✓	
	/ 215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.4 mg/kg	1.142	0.363 mg/kg	0.0000363 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		69.7 mg/kg	1.462	80.85 mg/kg	0.00808 %	✓	
	/ 215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		47 mg/kg	1.126	41.997 mg/kg	0.0042 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5 / /							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	120 mg/kg		95.238 mg/kg	0.00952 %	✓	
	082-001-00-6 / /							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	080-002-00-6 / /							
11	molybdenum { molybdenum(VI) oxide }		4.9 mg/kg	1.5	5.834 mg/kg	0.000583 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		27 mg/kg	1.545	33.111 mg/kg	0.00331 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				1.2	mg/kg	3.22	3.067	mg/kg	0.000307 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				218	mg/kg	1.245	215.355	mg/kg	0.0215 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.05	mg/kg		0.0397	mg/kg	0.00000397 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			201-695-5	86-73-7									
20		phenanthrene				0.41	mg/kg		0.325	mg/kg	0.0000325 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.22	mg/kg		0.175	mg/kg	0.0000175 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				1.4	mg/kg		1.111	mg/kg	0.000111 %	✓	
			205-912-4	206-44-0									
23		pyrene				1.1	mg/kg		0.873	mg/kg	0.0000873 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				0.75	mg/kg		0.595	mg/kg	0.0000595 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.59	mg/kg		0.468	mg/kg	0.0000468 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.58	mg/kg		0.46	mg/kg	0.000046 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.37	mg/kg		0.294	mg/kg	0.0000294 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.09	mg/kg		0.0714	mg/kg	0.00000714 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.33	mg/kg		0.262	mg/kg	0.0000262 %	✓	
			205-883-8	191-24-2									
30		coronene				0.07	mg/kg		0.0556	mg/kg	0.00000556 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				0.77	mg/kg		0.611	mg/kg	0.0000611 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.3	mg/kg		0.238	mg/kg	0.0000238 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				525	mg/kg		416.667	mg/kg	0.0417 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.104 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0417%)

Classification of sample: TP104[3]

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

Sample details

Sample Name:
TP104[3]
Sample Depth:
2.20 m
Moisture content:
126.5%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 126.5% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		3 mg/kg	1.197	1.586 mg/kg	0.000159 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		39 mg/kg	1.32	22.734 mg/kg	0.00227 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		70 mg/kg	1.117	34.506 mg/kg	0.00345 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.7 mg/kg	1.142	0.353 mg/kg	0.0000353 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		78 mg/kg	1.462	50.332 mg/kg	0.00503 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		**<LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		95 mg/kg	1.126	47.223 mg/kg	0.00472 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				1 mg/kg	1.884	0.832 mg/kg	0.0000832 %	✓	
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	369 mg/kg		162.914 mg/kg	0.0163 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	0.8 mg/kg		0.353 mg/kg	0.0000353 %	✓	
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		7.4 mg/kg	1.5	4.901 mg/kg	0.00049 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		30.3 mg/kg	1.545	20.671 mg/kg	0.00207 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				3	mg/kg	2.554	3.382	mg/kg	0.000338 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				5.3	mg/kg	3.22	7.534	mg/kg	0.000753 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				336	mg/kg	1.245	184.646	mg/kg	0.0185 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.4	mg/kg		0.177	mg/kg	0.0000177 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
18		acenaphthene				1.07	mg/kg		0.472	mg/kg	0.0000472 %	✓	
			201-469-6	83-32-9									
19		fluorene				1.34	mg/kg		0.592	mg/kg	0.0000592 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				2.13	mg/kg		0.94	mg/kg	0.000094 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.47	mg/kg		0.208	mg/kg	0.0000208 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				1.16	mg/kg		0.512	mg/kg	0.0000512 %	✓	
			205-912-4	206-44-0									
23		pyrene				1.07	mg/kg		0.472	mg/kg	0.0000472 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				0.63	mg/kg		0.278	mg/kg	0.0000278 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.69	mg/kg		0.305	mg/kg	0.0000305 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.76	mg/kg		0.336	mg/kg	0.0000336 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.47	mg/kg		0.208	mg/kg	0.0000208 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.17	mg/kg		0.0751	mg/kg	0.00000751 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.64	mg/kg		0.283	mg/kg	0.0000283 %	✓	
			205-883-8	191-24-2									
30		coronene				0.14	mg/kg		0.0618	mg/kg	0.00000618 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				0.91	mg/kg		0.402	mg/kg	0.0000402 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.35	mg/kg		0.155	mg/kg	0.0000155 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				328	mg/kg		144.812	mg/kg	0.0145 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0694 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0145%)

Classification of sample: TP105

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

Sample details

Sample Name:
TP105
Sample Depth:
0.70 m
Moisture content:
10.2%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 10.2% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		2 mg/kg	1.197	2.173 mg/kg	0.000217 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		13.9 mg/kg	1.32	16.654 mg/kg	0.00167 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		117 mg/kg	1.117	118.54 mg/kg	0.0119 %	✓	
	215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.5 mg/kg	1.142	0.518 mg/kg	0.0000518 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		80 mg/kg	1.462	106.102 mg/kg	0.0106 %	✓	
	215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		55 mg/kg	1.126	56.192 mg/kg	0.00562 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	96 mg/kg		87.114 mg/kg	0.00871 %	✓	
	082-001-00-6							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	080-002-00-6							
11	molybdenum { molybdenum(VI) oxide }		5.7 mg/kg	1.5	7.76 mg/kg	0.000776 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		24.3 mg/kg	1.545	34.073 mg/kg	0.00341 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	2.554	2.317	mg/kg	0.000232 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				0.5	mg/kg	3.22	1.461	mg/kg	0.000146 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				95	mg/kg	1.245	107.303	mg/kg	0.0107 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.07	mg/kg		0.0635	mg/kg	0.00000635 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.09	mg/kg		0.0817	mg/kg	0.00000817 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-469-6	83-32-9									
19		fluorene				0.07	mg/kg		0.0635	mg/kg	0.00000635 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				0.51	mg/kg		0.463	mg/kg	0.0000463 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.2	mg/kg		0.181	mg/kg	0.0000181 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				0.97	mg/kg		0.88	mg/kg	0.000088 %	✓	
			205-912-4	206-44-0									
23		pyrene				0.89	mg/kg		0.808	mg/kg	0.0000808 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				0.78	mg/kg		0.708	mg/kg	0.0000708 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.61	mg/kg		0.554	mg/kg	0.0000554 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.58	mg/kg		0.526	mg/kg	0.0000526 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.35	mg/kg		0.318	mg/kg	0.0000318 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.11	mg/kg		0.0998	mg/kg	0.00000998 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.4	mg/kg		0.363	mg/kg	0.0000363 %	✓	
			205-883-8	191-24-2									
30		coronene				0.1	mg/kg		0.0907	mg/kg	0.00000907 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				0.78	mg/kg		0.708	mg/kg	0.0000708 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.31	mg/kg		0.281	mg/kg	0.0000281 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				<52	mg/kg		<52	mg/kg	<0.0052 %		<**LOD**
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<5	mg/kg		<5	mg/kg	<0.0005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
37		xylene				0.04	mg/kg		0.0363	mg/kg	0.00000363 %	✓	
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0606 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

xylene: (conc.: 3.63e-06%)

Classification of sample: TP105[2]

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

Sample details

Sample Name:
TP105[2]
Sample Depth:
1.30 m
Moisture content:
8.5%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 8.5% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		4 mg/kg	1.197	4.413 mg/kg	0.000441 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		61.1 mg/kg	1.32	74.352 mg/kg	0.00744 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		65 mg/kg	1.117	66.887 mg/kg	0.00669 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.8 mg/kg	1.142	0.842 mg/kg	0.0000842 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		164.3 mg/kg	1.462	221.321 mg/kg	0.0221 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		24 mg/kg	1.126	24.904 mg/kg	0.00249 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	74 mg/kg		68.203 mg/kg	0.00682 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		1.3 mg/kg	1.5	1.797 mg/kg	0.00018 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		55.7 mg/kg	1.545	79.324 mg/kg	0.00793 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		2 mg/kg	2.554	4.707 mg/kg	0.000471 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		1 mg/kg	3.22	2.968 mg/kg	0.000297 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		146 mg/kg	1.245	167.491 mg/kg	0.0167 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		0.18 mg/kg		0.166 mg/kg	0.0000166 %	✓	
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		0.45 mg/kg		0.415 mg/kg	0.0000415 %	✓	
		205-917-1 / 208-96-8							
18		acenaphthene		0.54 mg/kg		0.498 mg/kg	0.0000498 %	✓	
		201-469-6 / 83-32-9							
19		fluorene		0.79 mg/kg		0.728 mg/kg	0.0000728 %	✓	
		201-695-5 / 86-73-7							
20		phenanthrene		6.97 mg/kg		6.424 mg/kg	0.000642 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		2.88 mg/kg		2.654 mg/kg	0.000265 %	✓	
		204-371-1 / 120-12-7							
22		fluoranthene		14.21 mg/kg		13.097 mg/kg	0.00131 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		11.59 mg/kg		10.682 mg/kg	0.00107 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		7.95 mg/kg		7.327 mg/kg	0.000733 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		6.81 mg/kg		6.276 mg/kg	0.000628 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		6.41 mg/kg		5.908 mg/kg	0.000591 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		3.83 mg/kg		3.53 mg/kg	0.000353 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		0.87 mg/kg		0.802 mg/kg	0.0000802 %	✓	
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		3.81 mg/kg		3.512 mg/kg	0.000351 %	✓	
		205-883-8 / 191-24-2							
30		coronene		0.79 mg/kg		0.728 mg/kg	0.0000728 %	✓	
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		8.25 mg/kg		7.604 mg/kg	0.00076 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		3.21 mg/kg		2.959 mg/kg	0.000296 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		3 mg/kg		2.765 mg/kg	0.000276 %	✓	
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		477 mg/kg		439.631 mg/kg	0.044 %	✓	
		TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		0.06 mg/kg		0.0553 mg/kg	0.00000553 %	✓	
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		0.23 mg/kg		0.212 mg/kg	0.0000212 %	✓	
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] / 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.35 mg/kg		<0.35 mg/kg	<0.000035 %		<**LOD**
		602-039-00-4 / 215-648-1 / 1336-36-3							
						Total:	0.124 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

ethylbenzene: (conc.: 5.53e-06%)

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.044%)
xylene: (conc.: 0.00002%)

Classification of sample: TP105[3]

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

Sample details

Sample Name:
TP105[3]
Sample Depth:
2.2 m
Moisture content:
18.7%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 18.7% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		3 mg/kg	1.197	3.026 mg/kg	0.000303 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		17.5 mg/kg	1.32	19.466 mg/kg	0.00195 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		140 mg/kg	1.117	131.686 mg/kg	0.0132 %	✓	
	/ 215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.4 mg/kg	1.142	0.385 mg/kg	0.0000385 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		57 mg/kg	1.462	70.184 mg/kg	0.00702 %	✓	
	/ 215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		45 mg/kg	1.126	42.683 mg/kg	0.00427 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5 / /							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	99 mg/kg		83.404 mg/kg	0.00834 %	✓	
	082-001-00-6 / /							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	080-002-00-6 / /							
11	molybdenum { molybdenum(VI) oxide }		2.4 mg/kg	1.5	3.033 mg/kg	0.000303 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		33.6 mg/kg	1.545	43.739 mg/kg	0.00437 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	2.554	2.151	mg/kg	0.000215 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				1	mg/kg	3.22	2.713	mg/kg	0.000271 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				98	mg/kg	1.245	102.765	mg/kg	0.0103 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			201-695-5	86-73-7									
20		phenanthrene				0.16	mg/kg		0.135	mg/kg	0.0000135 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.09	mg/kg		0.0758	mg/kg	0.00000758 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				0.32	mg/kg		0.27	mg/kg	0.000027 %	✓	
			205-912-4	206-44-0									
23		pyrene				0.28	mg/kg		0.236	mg/kg	0.0000236 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				0.27	mg/kg		0.227	mg/kg	0.0000227 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.18	mg/kg		0.152	mg/kg	0.0000152 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.2	mg/kg		0.168	mg/kg	0.0000168 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.13	mg/kg		0.11	mg/kg	0.000011 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.12	mg/kg		0.101	mg/kg	0.0000101 %	✓	
			205-883-8	191-24-2									
30		coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				0.24	mg/kg		0.202	mg/kg	0.0000202 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.1	mg/kg		0.0842	mg/kg	0.00000842 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				133	mg/kg		112.047	mg/kg	0.0112 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				0.01	mg/kg		0.0084	mg/kg	0.000000842 %	✓	
		601-023-00-4	202-849-4	100-41-4									
37		xylene				0.16	mg/kg		0.135	mg/kg	0.0000135 %	✓	
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0622 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

ethylbenzene: (conc.: 8.42e-07%)

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.0112%)
xylene: (conc.: 0.00001%)

Classification of sample: TP106

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

Sample details

Sample Name:
TP106
Sample Depth:
0.9 m
Moisture content:
19.5%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 19.5% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		5 mg/kg	1.197	5.009 mg/kg	0.000501 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		18.2 mg/kg	1.32	20.109 mg/kg	0.00201 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		416 mg/kg	1.117	388.675 mg/kg	0.0389 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.4 mg/kg	1.142	0.382 mg/kg	0.0000382 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		57.5 mg/kg	1.462	70.326 mg/kg	0.00703 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		**<LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		176 mg/kg	1.126	165.821 mg/kg	0.0166 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.7 mg/kg	1.884	1.104 mg/kg	0.00011 %	✓	
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	679 mg/kg		568.201 mg/kg	0.0568 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	1 mg/kg		0.837 mg/kg	0.0000837 %	✓	
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		6.8 mg/kg	1.5	8.537 mg/kg	0.000854 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		48.1 mg/kg	1.545	62.195 mg/kg	0.00622 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		1 mg/kg	2.554	2.137 mg/kg	0.000214 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		1.3 mg/kg	3.22	3.503 mg/kg	0.00035 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		211 mg/kg	1.245	219.778 mg/kg	0.022 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		0.38 mg/kg		0.318 mg/kg	0.0000318 %	✓	
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		0.9 mg/kg		0.753 mg/kg	0.0000753 %	✓	
		205-917-1 / 208-96-8							
18		acenaphthene		0.94 mg/kg		0.787 mg/kg	0.0000787 %	✓	
		201-469-6 / 83-32-9							
19		fluorene		2.03 mg/kg		1.699 mg/kg	0.00017 %	✓	
		201-695-5 / 86-73-7							
20		phenanthrene		17 mg/kg		14.226 mg/kg	0.00142 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		6.04 mg/kg		5.054 mg/kg	0.000505 %	✓	
		204-371-1 / 120-12-7							
22		fluoranthene		21.84 mg/kg		18.276 mg/kg	0.00183 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		17.12 mg/kg		14.326 mg/kg	0.00143 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		11.9 mg/kg		9.958 mg/kg	0.000996 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		10.29 mg/kg		8.611 mg/kg	0.000861 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		9.16 mg/kg		7.665 mg/kg	0.000767 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		4.96 mg/kg		4.151 mg/kg	0.000415 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		1.48 mg/kg		1.238 mg/kg	0.000124 %	✓	
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		4.77 mg/kg		3.992 mg/kg	0.000399 %	✓	
		205-883-8 / 191-24-2							
30		coronene		0.96 mg/kg		0.803 mg/kg	0.0000803 %	✓	
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		11.62 mg/kg		9.724 mg/kg	0.000972 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		4.52 mg/kg		3.782 mg/kg	0.000378 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		5 mg/kg		4.184 mg/kg	0.000418 %	✓	
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		233 mg/kg		194.979 mg/kg	0.0195 %	✓	
		/ / TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] / 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.35 mg/kg		<0.35 mg/kg	<0.000035 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
						Total:	0.182 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0195%)

Classification of sample: TP106[2]

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

Sample details

Sample Name:
TP106[2]
Sample Depth:
2.1 m
Moisture content:
26.8%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 26.8% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		9 mg/kg	1.197	8.497 mg/kg	0.00085 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		34.3 mg/kg	1.32	35.715 mg/kg	0.00357 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		458 mg/kg	1.117	403.281 mg/kg	0.0403 %	✓	
	/ 215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.3 mg/kg	1.142	0.27 mg/kg	0.000027 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		111.5 mg/kg	1.462	128.52 mg/kg	0.0129 %	✓	
	/ 215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		934 mg/kg	1.126	829.322 mg/kg	0.0829 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
	006-007-00-5 / /							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	737 mg/kg		581.23 mg/kg	0.0581 %	✓	
	082-001-00-6 / /							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	0.5 mg/kg		0.394 mg/kg	0.0000394 %	✓	
	080-002-00-6 / /							
11	molybdenum { molybdenum(VI) oxide }		8.4 mg/kg	1.5	9.938 mg/kg	0.000994 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		60.9 mg/kg	1.545	74.213 mg/kg	0.00742 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	2.554	2.014	mg/kg	0.000201 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				0.7	mg/kg	3.22	1.778	mg/kg	0.000178 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				236	mg/kg	1.245	231.666	mg/kg	0.0232 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.13	mg/kg		0.103	mg/kg	0.0000103 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.24	mg/kg		0.189	mg/kg	0.0000189 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				0.07	mg/kg		0.0552	mg/kg	0.00000552 %	✓	
			201-469-6	83-32-9									
19		fluorene				0.1	mg/kg		0.0789	mg/kg	0.00000789 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				0.86	mg/kg		0.678	mg/kg	0.0000678 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.45	mg/kg		0.355	mg/kg	0.0000355 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				2.11	mg/kg		1.664	mg/kg	0.000166 %	✓	
			205-912-4	206-44-0									
23		pyrene				1.98	mg/kg		1.562	mg/kg	0.000156 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				1.31	mg/kg		1.033	mg/kg	0.000103 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				1.35	mg/kg		1.065	mg/kg	0.000106 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				1.5	mg/kg		1.183	mg/kg	0.000118 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.99	mg/kg		0.781	mg/kg	0.0000781 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.32	mg/kg		0.252	mg/kg	0.0000252 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				1.12	mg/kg		0.883	mg/kg	0.0000883 %	✓	
			205-883-8	191-24-2									
30		coronene				0.26	mg/kg		0.205	mg/kg	0.0000205 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				1.85	mg/kg		1.459	mg/kg	0.000146 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.72	mg/kg		0.568	mg/kg	0.0000568 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				1131	mg/kg		891.956	mg/kg	0.0892 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.321 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0892%)

Classification of sample: TP107

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

Sample details

Sample Name:
TP107
Sample Depth:
0.6 m
Moisture content:
14.1%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 14.1% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2 mg/kg	1.197	2.098 mg/kg	0.00021 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		17.2 mg/kg	1.32	19.903 mg/kg	0.00199 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		126 mg/kg	1.117	123.295 mg/kg	0.0123 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2 mg/kg	1.142	0.2 mg/kg	0.00002 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		44.5 mg/kg	1.462	57.002 mg/kg	0.0057 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		14 mg/kg	1.126	13.815 mg/kg	0.00138 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	36 mg/kg		31.551 mg/kg	0.00316 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.6 mg/kg	1.5	4.733 mg/kg	0.000473 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		28.5 mg/kg	1.545	38.596 mg/kg	0.00386 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		0.6 mg/kg	3.22	1.693 mg/kg	0.000169 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		108 mg/kg	1.245	117.817 mg/kg	0.0118 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-917-1 / 208-96-8							
18		acenaphthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6 / 83-32-9							
19		fluorene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5 / 86-73-7							
20		phenanthrene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		201-581-5 / 85-01-8							
21		anthracene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		204-371-1 / 120-12-7							
22		fluoranthene		0.08 mg/kg		0.0701 mg/kg	0.00000701 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		0.08 mg/kg		0.0701 mg/kg	0.00000701 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		0.09 mg/kg		0.0789 mg/kg	0.00000789 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		0.06 mg/kg		0.0526 mg/kg	0.00000526 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		0.05 mg/kg		0.0438 mg/kg	0.00000438 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-883-8 / 191-24-2							
30		coronene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		0.06 mg/kg		0.0526 mg/kg	0.00000526 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		0.02 mg/kg		0.0175 mg/kg	0.00000175 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		112 mg/kg		98.16 mg/kg	0.00982 %	✓	
		TPH							
35		toluene		0.01 mg/kg		0.0087 mg/kg	0.000000876 %	✓	
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] / 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.35 mg/kg		<0.35 mg/kg	<0.000035 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
						Total:	0.0515 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

toluene: (conc.: 8.76e-07%)

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00982%)

Classification of sample: TP107[2]

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample Name:
TP107[2]
Sample Depth:
1.5 m
Moisture content:
15.9%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.125%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.125%)

Determinands

Moisture content: 15.9% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2 mg/kg	1.197	2.066 mg/kg	0.000207 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		26.5 mg/kg	1.32	30.189 mg/kg	0.00302 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		99 mg/kg	1.117	95.37 mg/kg	0.00954 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2 mg/kg	1.142	0.197 mg/kg	0.0000197 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		49.3 mg/kg	1.462	62.17 mg/kg	0.00622 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
7		copper { dicopper oxide; copper (I) oxide }				35	mg/kg	1.126	34	mg/kg	0.0034 %	✓	
		029-002-00-X	215-270-7	1317-39-1									
8		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<**LOD**
		006-007-00-5											
9		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	65	mg/kg		56.083	mg/kg	0.00561 %	✓	
		082-001-00-6											
10		mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		080-002-00-6											
11		molybdenum { molybdenum(VI) oxide }				3.8	mg/kg	1.5	4.919	mg/kg	0.000492 %	✓	
		042-001-00-9	215-204-7	1313-27-5									
12		nickel { nickel(IV) oxide (nickel dioxide) }				20.5	mg/kg	1.545	27.331	mg/kg	0.00273 %	✓	
		028-004-00-8	234-823-3	12035-36-8									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				0.9	mg/kg	3.22	2.5	mg/kg	0.00025 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				184	mg/kg	1.245	197.608	mg/kg	0.0198 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.05	mg/kg		0.0431	mg/kg	0.00000431 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.1	mg/kg		0.0863	mg/kg	0.00000863 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-469-6	83-32-9									
19		fluorene				0.05	mg/kg		0.0431	mg/kg	0.00000431 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				0.36	mg/kg		0.311	mg/kg	0.0000311 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.19	mg/kg		0.164	mg/kg	0.0000164 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				1.29	mg/kg		1.113	mg/kg	0.000111 %	✓	
			205-912-4	206-44-0									
23		pyrene				1.11	mg/kg		0.958	mg/kg	0.0000958 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				0.74	mg/kg		0.638	mg/kg	0.0000638 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.71	mg/kg		0.613	mg/kg	0.0000613 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.78	mg/kg		0.673	mg/kg	0.0000673 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.47	mg/kg		0.406	mg/kg	0.0000406 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.13	mg/kg		0.112	mg/kg	0.0000112 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.44	mg/kg		0.38	mg/kg	0.000038 %	✓	
			205-883-8	191-24-2									
30		coronene				0.08	mg/kg		0.069	mg/kg	0.0000069 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				0.97	mg/kg		0.837	mg/kg	0.0000837 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.38	mg/kg		0.328	mg/kg	0.0000328 %	✓	
		601-036-00-5	205-916-6	207-08-9									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
34	•	TPH (C6 to C40) petroleum group				1444	mg/kg		1245.902	mg/kg	0.125 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
36	•	ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38	•	polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.177 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.125%)

Classification of sample: TP108

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

Sample details

Sample Name:
TP108
Sample Depth:
1.2 m
Moisture content:
20.1%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 20.1% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		4 mg/kg	1.197	3.987 mg/kg	0.000399 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		52.2 mg/kg	1.32	57.386 mg/kg	0.00574 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		126 mg/kg	1.117	117.136 mg/kg	0.0117 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.6 mg/kg	1.142	0.571 mg/kg	0.0000571 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		76.8 mg/kg	1.462	93.462 mg/kg	0.00935 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		64 mg/kg	1.126	59.997 mg/kg	0.006 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	125 mg/kg		104.08 mg/kg	0.0104 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		7.3 mg/kg	1.5	9.119 mg/kg	0.000912 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		45.2 mg/kg	1.545	58.154 mg/kg	0.00582 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	2.554	2.126	mg/kg	0.000213 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				0.5	mg/kg	3.22	1.34	mg/kg	0.000134 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				200	mg/kg	1.245	207.28	mg/kg	0.0207 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.17	mg/kg		0.142	mg/kg	0.0000142 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				2.3	mg/kg		1.915	mg/kg	0.000192 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				0.12	mg/kg		0.0999	mg/kg	0.00000999 %	✓	
			201-469-6	83-32-9									
19		fluorene				0.17	mg/kg		0.142	mg/kg	0.0000142 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				1.02	mg/kg		0.849	mg/kg	0.0000849 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.91	mg/kg		0.758	mg/kg	0.0000758 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				3.17	mg/kg		2.639	mg/kg	0.000264 %	✓	
			205-912-4	206-44-0									
23		pyrene				3.08	mg/kg		2.565	mg/kg	0.000256 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				4.23	mg/kg		3.522	mg/kg	0.000352 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				3.05	mg/kg		2.54	mg/kg	0.000254 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				6.39	mg/kg		5.321	mg/kg	0.000532 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				4.6	mg/kg		3.83	mg/kg	0.000383 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				1.2	mg/kg		0.999	mg/kg	0.0000999 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				5.08	mg/kg		4.23	mg/kg	0.000423 %	✓	
			205-883-8	191-24-2									
30		coronene				1.2	mg/kg		0.999	mg/kg	0.0000999 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				7.57	mg/kg		6.303	mg/kg	0.00063 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				2.95	mg/kg		2.456	mg/kg	0.000246 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				2	mg/kg		1.665	mg/kg	0.000167 %	✓	
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				400	mg/kg		333.056	mg/kg	0.0333 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.109 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0333%)

Classification of sample: TP108[2]

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

Sample details

Sample Name:
TP108[2]
Sample Depth:
2.5 m
Moisture content:
14.8%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 14.8% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		3 mg/kg	1.197	3.128 mg/kg	0.000313 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		16.2 mg/kg	1.32	18.632 mg/kg	0.00186 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		74 mg/kg	1.117	71.97 mg/kg	0.0072 %	✓	
	/ 215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.6 mg/kg	1.142	0.597 mg/kg	0.0000597 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		70.9 mg/kg	1.462	90.265 mg/kg	0.00903 %	✓	
	/ 215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		28 mg/kg	1.126	27.461 mg/kg	0.00275 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5 / /							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	37 mg/kg		32.23 mg/kg	0.00322 %	✓	
	082-001-00-6 / /							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	080-002-00-6 / /							
11	molybdenum { molybdenum(VI) oxide }		3.9 mg/kg	1.5	5.096 mg/kg	0.00051 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		66.5 mg/kg	1.545	89.508 mg/kg	0.00895 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	2.554	2.224	mg/kg	0.000222 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				0.9	mg/kg	3.22	2.524	mg/kg	0.000252 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				140	mg/kg	1.245	151.794	mg/kg	0.0152 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7									
20		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
21		anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			204-371-1	120-12-7									
22		fluoranthene				0.04	mg/kg		0.0348	mg/kg	0.00000348 %	✓	
			205-912-4	206-44-0									
23		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
24		benzo[a]anthracene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.02	mg/kg		0.0174	mg/kg	0.00000174 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-883-8	191-24-2									
30		coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				<52	mg/kg		<52	mg/kg	<0.0052 %		<LOD
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0551 %		

Key

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

Classification of sample: TP108[3]

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

Sample details

Sample Name:
TP108[3]
Sample Depth:
3.7 m
Moisture content:
24.3%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 24.3% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2 mg/kg	1.197	1.926 mg/kg	0.000193 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		14.5 mg/kg	1.32	15.402 mg/kg	0.00154 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		60 mg/kg	1.117	53.894 mg/kg	0.00539 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.5 mg/kg	1.142	0.46 mg/kg	0.000046 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		64.5 mg/kg	1.462	75.841 mg/kg	0.00758 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		28 mg/kg	1.126	25.362 mg/kg	0.00254 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	43 mg/kg		34.594 mg/kg	0.00346 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.1 mg/kg	1.5	3.741 mg/kg	0.000374 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		32.7 mg/kg	1.545	40.65 mg/kg	0.00406 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		2 mg/kg	2.554	4.109 mg/kg	0.000411 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		1.3 mg/kg	3.22	3.368 mg/kg	0.000337 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		79 mg/kg	1.245	79.109 mg/kg	0.00791 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-917-1 / 208-96-8							
18		acenaphthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6 / 83-32-9							
19		fluorene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5 / 86-73-7							
20		phenanthrene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		201-581-5 / 85-01-8							
21		anthracene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		204-371-1 / 120-12-7							
22		fluoranthene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-912-4 / 206-44-0							
23		pyrene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-883-8 / 191-24-2							
30		coronene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		<52 mg/kg		<52 mg/kg	<0.0052 %		<LOD
		TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] / 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.35 mg/kg		<0.35 mg/kg	<0.000035 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
						Total:	0.0394 %		

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

Classification of sample: TP109

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample Name:
TP109
Sample Depth:
0.6 m
Moisture content:
30.4%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.326%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.326%)

Determinands

Moisture content: 30.4% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		4 mg/kg	1.197	3.672 mg/kg	0.000367 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		18.6 mg/kg	1.32	18.833 mg/kg	0.00188 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		142 mg/kg	1.117	121.583 mg/kg	0.0122 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1 mg/kg	1.142	0.876 mg/kg	0.0000876 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		20.3 mg/kg	1.462	22.753 mg/kg	0.00228 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
7		copper { dicopper oxide; copper (I) oxide }				95	mg/kg	1.126	82.024	mg/kg	0.0082 %	✓	
		029-002-00-X	215-270-7	1317-39-1									
8		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				4.4	mg/kg	1.884	6.357	mg/kg	0.000636 %	✓	
		006-007-00-5											
9		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	138	mg/kg		105.828	mg/kg	0.0106 %	✓	
		082-001-00-6											
10		mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		080-002-00-6											
11		molybdenum { molybdenum(VI) oxide }				2.2	mg/kg	1.5	2.531	mg/kg	0.000253 %	✓	
		042-001-00-9	215-204-7	1313-27-5									
12		nickel { nickel(IV) oxide (nickel dioxide) }				39.1	mg/kg	1.545	46.332	mg/kg	0.00463 %	✓	
		028-004-00-8	234-823-3	12035-36-8									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	2.554	1.958	mg/kg	0.000196 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				2.9	mg/kg	3.22	7.161	mg/kg	0.000716 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				275	mg/kg	1.245	262.497	mg/kg	0.0262 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				1.29	mg/kg		0.989	mg/kg	0.0000989 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				1.26	mg/kg		0.966	mg/kg	0.0000966 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				19.72	mg/kg		15.123	mg/kg	0.00151 %	✓	
			201-469-6	83-32-9									
19		fluorene				15.95	mg/kg		12.232	mg/kg	0.00122 %	✓	
			201-695-5	86-73-7									
20		anthracene				14.17	mg/kg		10.867	mg/kg	0.00109 %	✓	
			204-371-1	120-12-7									
21		benzo[a]anthracene				23.8	mg/kg		18.252	mg/kg	0.00183 %	✓	
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				20.24	mg/kg		15.521	mg/kg	0.00155 %	✓	
		601-048-00-0	205-923-4	218-01-9									
23		benzo[a]pyrene; benzo[def]chrysene				21.53	mg/kg		16.511	mg/kg	0.00165 %	✓	
		601-032-00-3	200-028-5	50-32-8									
24		indeno[123-cd]pyrene				12.87	mg/kg		9.87	mg/kg	0.000987 %	✓	
			205-893-2	193-39-5									
25		dibenz[a,h]anthracene				3.21	mg/kg		2.462	mg/kg	0.000246 %	✓	
		601-041-00-2	200-181-8	53-70-3									
26		benzo[ghi]perylene				11.54	mg/kg		8.85	mg/kg	0.000885 %	✓	
			205-883-8	191-24-2									
27		coronene				2.02	mg/kg		1.549	mg/kg	0.000155 %	✓	
			205-881-7	191-07-1									
28		benzo[b]fluoranthene				27.17	mg/kg		20.836	mg/kg	0.00208 %	✓	
		601-034-00-4	205-911-9	205-99-2									
29		benzo[k]fluoranthene				10.57	mg/kg		8.106	mg/kg	0.000811 %	✓	
		601-036-00-5	205-916-6	207-08-9									
30		benzo[j]fluoranthene				10	mg/kg		7.669	mg/kg	0.000767 %	✓	
		601-035-00-X	205-910-3	205-82-3									
31		TPH (C6 to C40) petroleum group				4256	mg/kg		3263.804	mg/kg	0.326 %	✓	
				TPH									
32		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
33		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
34		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
35		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
36		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
										Total:	0.41 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.326%)

Classification of sample: TP109[2]

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

Sample details

Sample Name:
TP109[2]
Sample Depth:
1.7 m
Moisture content:
14.7%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 14.7% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		5 mg/kg	1.197	5.218 mg/kg	0.000522 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		10.9 mg/kg	1.32	12.547 mg/kg	0.00125 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		195 mg/kg	1.117	189.816 mg/kg	0.019 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.5 mg/kg	1.142	0.498 mg/kg	0.0000498 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		126.8 mg/kg	1.462	161.574 mg/kg	0.0162 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		**<LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		49 mg/kg	1.126	48.098 mg/kg	0.00481 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.7 mg/kg	1.884	1.15 mg/kg	0.000115 %	✓	
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	250 mg/kg		217.96 mg/kg	0.0218 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		**<LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.3 mg/kg	1.5	4.316 mg/kg	0.000432 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		55 mg/kg	1.545	74.093 mg/kg	0.00741 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		2 mg/kg	2.554	4.453 mg/kg	0.000445 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		4.3 mg/kg	3.22	12.071 mg/kg	0.00121 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		216 mg/kg	1.245	234.401 mg/kg	0.0234 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		0.15 mg/kg		0.131 mg/kg	0.0000131 %	✓	
		205-917-1 / 208-96-8							
18		acenaphthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6 / 83-32-9							
19		fluorene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5 / 86-73-7							
20		phenanthrene		0.19 mg/kg		0.166 mg/kg	0.0000166 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		0.15 mg/kg		0.131 mg/kg	0.0000131 %	✓	
		204-371-1 / 120-12-7							
22		fluoranthene		0.65 mg/kg		0.567 mg/kg	0.0000567 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		0.7 mg/kg		0.61 mg/kg	0.000061 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		0.49 mg/kg		0.427 mg/kg	0.0000427 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		0.49 mg/kg		0.427 mg/kg	0.0000427 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		0.65 mg/kg		0.567 mg/kg	0.0000567 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		0.4 mg/kg		0.349 mg/kg	0.0000349 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		0.15 mg/kg		0.131 mg/kg	0.0000131 %	✓	
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		0.43 mg/kg		0.375 mg/kg	0.0000375 %	✓	
		205-883-8 / 191-24-2							
30		coronene		0.13 mg/kg		0.113 mg/kg	0.0000113 %	✓	
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		0.81 mg/kg		0.706 mg/kg	0.0000706 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		0.32 mg/kg		0.279 mg/kg	0.0000279 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		332 mg/kg		289.451 mg/kg	0.0289 %	✓	
		TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1], 203-396-5 [2], 203-576-3 [3], 215-535-7 [4] / 95-47-6 [1], 106-42-3 [2], 108-38-3 [3], 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.35 mg/kg		<0.35 mg/kg	<0.000035 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
						Total:	0.126 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0289%)

Classification of sample: TP109[3]

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

Sample details

Sample Name:
TP109[3]
Sample Depth:
2.9 m
Moisture content:
21.5%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 21.5% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		<1 mg/kg	1.197	<1.197 mg/kg	<0.00012 %		<LOD
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		17.8 mg/kg	1.32	19.343 mg/kg	0.00193 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		298 mg/kg	1.117	273.843 mg/kg	0.0274 %	✓	
	215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.3 mg/kg	1.142	0.282 mg/kg	0.0000282 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		51.9 mg/kg	1.462	62.432 mg/kg	0.00624 %	✓	
	215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		29 mg/kg	1.126	26.873 mg/kg	0.00269 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	207 mg/kg		170.37 mg/kg	0.017 %	✓	
	082-001-00-6							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	0.4 mg/kg		0.329 mg/kg	0.0000329 %	✓	
	080-002-00-6							
11	molybdenum { molybdenum(VI) oxide }		2.9 mg/kg	1.5	3.581 mg/kg	0.000358 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		26.9 mg/kg	1.545	34.21 mg/kg	0.00342 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	2.554	2.102	mg/kg	0.00021 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				4.3	mg/kg	3.22	11.395	mg/kg	0.00114 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				102	mg/kg	1.245	104.495	mg/kg	0.0104 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.07	mg/kg		0.0576	mg/kg	0.00000576 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			201-695-5	86-73-7									
20		phenanthrene				0.24	mg/kg		0.198	mg/kg	0.0000198 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.11	mg/kg		0.0905	mg/kg	0.00000905 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				0.65	mg/kg		0.535	mg/kg	0.0000535 %	✓	
			205-912-4	206-44-0									
23		pyrene				0.57	mg/kg		0.469	mg/kg	0.0000469 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				0.49	mg/kg		0.403	mg/kg	0.0000403 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.32	mg/kg		0.263	mg/kg	0.0000263 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.37	mg/kg		0.305	mg/kg	0.0000305 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.22	mg/kg		0.181	mg/kg	0.0000181 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.07	mg/kg		0.0576	mg/kg	0.00000576 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.2	mg/kg		0.165	mg/kg	0.0000165 %	✓	
			205-883-8	191-24-2									
30		coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				0.45	mg/kg		0.37	mg/kg	0.000037 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.18	mg/kg		0.148	mg/kg	0.0000148 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				166	mg/kg		136.626	mg/kg	0.0137 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0853 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0137%)

Classification of sample: TP115

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

Sample details

Sample Name:
TP115
Sample Depth:
0.8 m
Moisture content:
14.3%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 14.3% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2 mg/kg	1.197	2.095 mg/kg	0.000209 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		19.3 mg/kg	1.32	22.294 mg/kg	0.00223 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		106 mg/kg	1.117	103.543 mg/kg	0.0104 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.4 mg/kg	1.142	0.4 mg/kg	0.00004 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		56 mg/kg	1.462	71.607 mg/kg	0.00716 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		36 mg/kg	1.126	35.461 mg/kg	0.00355 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	77 mg/kg		67.367 mg/kg	0.00674 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.6 mg/kg	1.5	4.725 mg/kg	0.000473 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		22.5 mg/kg	1.545	30.417 mg/kg	0.00304 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		1 mg/kg	2.554	2.234 mg/kg	0.000223 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		1.8 mg/kg	3.22	5.071 mg/kg	0.000507 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		200 mg/kg	1.245	217.798 mg/kg	0.0218 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<**LOD**
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		0.08 mg/kg		0.07 mg/kg	0.000007 %	✓	
		205-917-1 / 208-96-8							
18		acenaphthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<**LOD**
		201-469-6 / 83-32-9							
19		fluorene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<**LOD**
		201-695-5 / 86-73-7							
20		phenanthrene		0.25 mg/kg		0.219 mg/kg	0.0000219 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		0.14 mg/kg		0.122 mg/kg	0.0000122 %	✓	
		204-371-1 / 120-12-7							
22		fluoranthene		0.76 mg/kg		0.665 mg/kg	0.0000665 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		0.72 mg/kg		0.63 mg/kg	0.000063 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		0.48 mg/kg		0.42 mg/kg	0.000042 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		0.4 mg/kg		0.35 mg/kg	0.000035 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		0.56 mg/kg		0.49 mg/kg	0.000049 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		0.38 mg/kg		0.332 mg/kg	0.0000332 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		0.07 mg/kg		0.0612 mg/kg	0.00000612 %	✓	
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		0.35 mg/kg		0.306 mg/kg	0.0000306 %	✓	
		205-883-8 / 191-24-2							
30		coronene		0.09 mg/kg		0.0787 mg/kg	0.00000787 %	✓	
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		0.74 mg/kg		0.647 mg/kg	0.0000647 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		0.29 mg/kg		0.254 mg/kg	0.0000254 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<**LOD**
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		693 mg/kg		606.299 mg/kg	0.0606 %	✓	
		TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
		601-022-00-9 / 202-422-2 [1] / 203-396-5 [2] / 203-576-3 [3] / 215-535-7 [4] / 95-47-6 [1] / 106-42-3 [2] / 108-38-3 [3] / 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.35 mg/kg		<0.35 mg/kg	<0.000035 %		<**LOD**
		602-039-00-4 / 215-648-1 / 1336-36-3							
						Total:	0.118 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0606%)

Classification of sample: TP115[2]

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

Sample details

Sample Name:
TP115[2]
Sample Depth:
2.8 m
Moisture content:
13.2%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 13.2% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		6 mg/kg	1.197	6.345 mg/kg	0.000635 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		23.8 mg/kg	1.32	27.759 mg/kg	0.00278 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		177 mg/kg	1.117	174.577 mg/kg	0.0175 %	✓	
	215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.4 mg/kg	1.142	0.404 mg/kg	0.0000404 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		56 mg/kg	1.462	72.303 mg/kg	0.00723 %	✓	
	215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		103 mg/kg	1.126	102.444 mg/kg	0.0102 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	163 mg/kg		143.993 mg/kg	0.0144 %	✓	
	082-001-00-6							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	080-002-00-6							
11	molybdenum { molybdenum(VI) oxide }		3.5 mg/kg	1.5	4.638 mg/kg	0.000464 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		22.1 mg/kg	1.545	30.167 mg/kg	0.00302 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	2.554	2.256	mg/kg	0.000226 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				1.3	mg/kg	3.22	3.698	mg/kg	0.00037 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				310	mg/kg	1.245	340.867	mg/kg	0.0341 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.12	mg/kg		0.106	mg/kg	0.0000106 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7									
20		phenanthrene				0.45	mg/kg		0.398	mg/kg	0.0000398 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.21	mg/kg		0.186	mg/kg	0.0000186 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				1.57	mg/kg		1.387	mg/kg	0.000139 %	✓	
			205-912-4	206-44-0									
23		pyrene				1.53	mg/kg		1.352	mg/kg	0.000135 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				1.01	mg/kg		0.892	mg/kg	0.0000892 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.97	mg/kg		0.857	mg/kg	0.0000857 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				1.09	mg/kg		0.963	mg/kg	0.0000963 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.67	mg/kg		0.592	mg/kg	0.0000592 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.12	mg/kg		0.106	mg/kg	0.0000106 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.61	mg/kg		0.539	mg/kg	0.0000539 %	✓	
			205-883-8	191-24-2									
30		coronene				0.15	mg/kg		0.133	mg/kg	0.0000133 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				1.38	mg/kg		1.219	mg/kg	0.000122 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.53	mg/kg		0.468	mg/kg	0.0000468 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				668	mg/kg		590.106	mg/kg	0.059 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.151 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.059%)

Classification of sample: BH2

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

Sample details

Sample Name:
BH2
Sample Depth:
1 m
Moisture content:
11.8%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 11.8% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		1 mg/kg	1.197	1.071 mg/kg	0.000107 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		9.9 mg/kg	1.32	11.692 mg/kg	0.00117 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		39 mg/kg	1.117	38.948 mg/kg	0.00389 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		40.6 mg/kg	1.462	53.076 mg/kg	0.00531 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		15 mg/kg	1.126	15.106 mg/kg	0.00151 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	65 mg/kg		58.14 mg/kg	0.00581 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		1.6 mg/kg	1.5	2.147 mg/kg	0.000215 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		23 mg/kg	1.545	31.788 mg/kg	0.00318 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				0.3	mg/kg	3.22	0.864	mg/kg	0.0000864 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				46	mg/kg	1.245	51.214	mg/kg	0.00512 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7									
20		phenanthrene				0.07	mg/kg		0.0626	mg/kg	0.00000626 %	✓	
			201-581-5	85-01-8									
21		anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			204-371-1	120-12-7									
22		fluoranthene				0.15	mg/kg		0.134	mg/kg	0.0000134 %	✓	
			205-912-4	206-44-0									
23		pyrene				0.13	mg/kg		0.116	mg/kg	0.0000116 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				0.13	mg/kg		0.116	mg/kg	0.0000116 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.12	mg/kg		0.107	mg/kg	0.0000107 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.09	mg/kg		0.0805	mg/kg	0.00000805 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.06	mg/kg		0.0537	mg/kg	0.00000537 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.05	mg/kg		0.0447	mg/kg	0.00000447 %	✓	
			205-883-8	191-24-2									
30		coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				0.11	mg/kg		0.0984	mg/kg	0.00000984 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.04	mg/kg		0.0358	mg/kg	0.00000358 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				<52	mg/kg		<52	mg/kg	<0.0052 %		<LOD
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0323 %		

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

Classification of sample: BH3

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

Sample details

Sample Name:
BH3
Sample Depth:
1 m
Moisture content:
9.6%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 9.6% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		3 mg/kg	1.197	3.277 mg/kg	0.000328 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		16 mg/kg	1.32	19.275 mg/kg	0.00193 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		52 mg/kg	1.117	52.973 mg/kg	0.0053 %	✓	
	/ 215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.7 mg/kg	1.142	0.73 mg/kg	0.000073 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		56.1 mg/kg	1.462	74.811 mg/kg	0.00748 %	✓	
	/ 215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		18 mg/kg	1.126	18.491 mg/kg	0.00185 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5 / /							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	39 mg/kg		35.584 mg/kg	0.00356 %	✓	
	082-001-00-6 / /							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	080-002-00-6 / /							
11	molybdenum { molybdenum(VI) oxide }		4.6 mg/kg	1.5	6.296 mg/kg	0.00063 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		23.8 mg/kg	1.545	33.554 mg/kg	0.00336 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	2.554	2.33	mg/kg	0.000233 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				0.7	mg/kg	3.22	2.056	mg/kg	0.000206 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				103	mg/kg	1.245	116.976	mg/kg	0.0117 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7									
20		phenanthrene				0.06	mg/kg		0.0547	mg/kg	0.00000547 %	✓	
			201-581-5	85-01-8									
21		anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			204-371-1	120-12-7									
22		fluoranthene				0.13	mg/kg		0.119	mg/kg	0.0000119 %	✓	
			205-912-4	206-44-0									
23		pyrene				0.11	mg/kg		0.1	mg/kg	0.00001 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				0.14	mg/kg		0.128	mg/kg	0.0000128 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.1	mg/kg		0.0912	mg/kg	0.00000912 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.08	mg/kg		0.073	mg/kg	0.0000073 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.04	mg/kg		0.0365	mg/kg	0.00000365 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-883-8	191-24-2									
30		coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				0.09	mg/kg		0.0821	mg/kg	0.00000821 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.03	mg/kg		0.0274	mg/kg	0.00000274 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				<52	mg/kg		<52	mg/kg	<0.0052 %		<LOD
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0422 %		

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

Classification of sample: BH3[2]

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

Sample details

Sample Name:
BH3[2]
Sample Depth:
3 m
Moisture content:
33.7%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 33.7% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2 mg/kg	1.197	1.791 mg/kg	0.000179 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12.1 mg/kg	1.32	11.949 mg/kg	0.00119 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		41 mg/kg	1.117	34.238 mg/kg	0.00342 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.3 mg/kg	1.142	0.256 mg/kg	0.0000256 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		55.4 mg/kg	1.462	60.561 mg/kg	0.00606 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		23 mg/kg	1.126	19.368 mg/kg	0.00194 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	59 mg/kg		44.129 mg/kg	0.00441 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.1 mg/kg	1.5	3.478 mg/kg	0.000348 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		25.6 mg/kg	1.545	29.586 mg/kg	0.00296 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		1 mg/kg	2.554	1.91 mg/kg	0.000191 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		7 mg/kg	3.22	16.858 mg/kg	0.00169 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		101 mg/kg	1.245	94.029 mg/kg	0.0094 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-917-1 / 208-96-8							
18		acenaphthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6 / 83-32-9							
19		fluorene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5 / 86-73-7							
20		phenanthrene		0.06 mg/kg		0.0449 mg/kg	0.00000449 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		204-371-1 / 120-12-7							
22		fluoranthene		0.14 mg/kg		0.105 mg/kg	0.0000105 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		0.12 mg/kg		0.0898 mg/kg	0.00000898 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		0.14 mg/kg		0.105 mg/kg	0.0000105 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		0.09 mg/kg		0.0673 mg/kg	0.00000673 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		0.09 mg/kg		0.0673 mg/kg	0.00000673 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-883-8 / 191-24-2							
30		coronene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		0.09 mg/kg		0.0673 mg/kg	0.00000673 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		0.04 mg/kg		0.0299 mg/kg	0.00000299 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		109 mg/kg		81.526 mg/kg	0.00815 %	✓	
		TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] / 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.35 mg/kg		<0.35 mg/kg	<0.000035 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
						Total:	0.0404 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00815%)

Classification of sample: BH3[3]

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

Sample details

Sample Name:
BH3[3]
Sample Depth:
4 m
Moisture content:
3.4%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 3.4% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		1 mg/kg	1.197	1.158 mg/kg	0.000116 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		10.7 mg/kg	1.32	13.663 mg/kg	0.00137 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		236 mg/kg	1.117	254.831 mg/kg	0.0255 %	✓	
	/ 215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		26.9 mg/kg	1.462	38.023 mg/kg	0.0038 %	✓	
	/ 215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		11 mg/kg	1.126	11.978 mg/kg	0.0012 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5 / /							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	30 mg/kg		29.014 mg/kg	0.0029 %	✓	
	082-001-00-6 / /							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	080-002-00-6 / /							
11	molybdenum { molybdenum(VI) oxide }		1 mg/kg	1.5	1.451 mg/kg	0.000145 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		10.3 mg/kg	1.545	15.392 mg/kg	0.00154 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				1.9	mg/kg	3.22	5.917	mg/kg	0.000592 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				20	mg/kg	1.245	24.076	mg/kg	0.00241 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			201-695-5	86-73-7									
20		phenanthrene				0.03	mg/kg		0.029	mg/kg	0.0000029 %	✓	
			201-581-5	85-01-8									
21		anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			204-371-1	120-12-7									
22		fluoranthene				0.04	mg/kg		0.0387	mg/kg	0.00000387 %	✓	
			205-912-4	206-44-0									
23		pyrene				0.04	mg/kg		0.0387	mg/kg	0.00000387 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.03	mg/kg		0.029	mg/kg	0.0000029 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			205-883-8	191-24-2									
30		coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				<52	mg/kg		<52	mg/kg	<0.0052 %		<**LOD**
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0454 %		

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

Classification of sample: BH4

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

Sample details

Sample Name:
BH4
Sample Depth:
1 m
Moisture content:
15.4%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 15.4% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		7 mg/kg	1.197	7.261 mg/kg	0.000726 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		50 mg/kg	1.32	57.206 mg/kg	0.00572 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		92 mg/kg	1.117	89.011 mg/kg	0.0089 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.3 mg/kg	1.142	0.297 mg/kg	0.0000297 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		45.4 mg/kg	1.462	57.5 mg/kg	0.00575 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		24 mg/kg	1.126	23.415 mg/kg	0.00234 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	80 mg/kg		69.324 mg/kg	0.00693 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		12.1 mg/kg	1.5	15.73 mg/kg	0.00157 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		14 mg/kg	1.545	18.746 mg/kg	0.00187 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		2 mg/kg	2.554	4.426 mg/kg	0.000443 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		0.4 mg/kg	3.22	1.116 mg/kg	0.000112 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		47 mg/kg	1.245	50.695 mg/kg	0.00507 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-917-1 / 208-96-8							
18		acenaphthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6 / 83-32-9							
19		fluorene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5 / 86-73-7							
20		phenanthrene		0.36 mg/kg		0.312 mg/kg	0.0000312 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		0.13 mg/kg		0.113 mg/kg	0.0000113 %	✓	
		204-371-1 / 120-12-7							
22		fluoranthene		0.5 mg/kg		0.433 mg/kg	0.0000433 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		0.38 mg/kg		0.329 mg/kg	0.0000329 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		0.26 mg/kg		0.225 mg/kg	0.0000225 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		0.22 mg/kg		0.191 mg/kg	0.0000191 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		0.19 mg/kg		0.165 mg/kg	0.0000165 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		0.1 mg/kg		0.0867 mg/kg	0.00000867 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		0.11 mg/kg		0.0953 mg/kg	0.00000953 %	✓	
		205-883-8 / 191-24-2							
30		coronene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		0.22 mg/kg		0.191 mg/kg	0.0000191 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		0.08 mg/kg		0.0693 mg/kg	0.00000693 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		<52 mg/kg		<52 mg/kg	<0.0052 %		<LOD
		TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] / 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.35 mg/kg		<0.35 mg/kg	<0.000035 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
						Total:	0.0452 %		

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

Classification of sample: BH4[2]

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

Sample details

Sample Name:
BH4[2]
Sample Depth:
3 m
Moisture content:
19.7%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 19.7% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		<1 mg/kg	1.197	<1.197 mg/kg	<0.00012 %		<LOD
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		6.6 mg/kg	1.32	7.28 mg/kg	0.000728 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		30 mg/kg	1.117	27.983 mg/kg	0.0028 %	✓	
	215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.7 mg/kg	1.142	0.668 mg/kg	0.0000668 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		38.8 mg/kg	1.462	47.375 mg/kg	0.00474 %	✓	
	215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		16 mg/kg	1.126	15.049 mg/kg	0.0015 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	34 mg/kg		28.404 mg/kg	0.00284 %	✓	
	082-001-00-6							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	080-002-00-6							
11	molybdenum { molybdenum(VI) oxide }		3.2 mg/kg	1.5	4.011 mg/kg	0.000401 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		11.4 mg/kg	1.545	14.716 mg/kg	0.00147 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				0.5	mg/kg	3.22	1.345	mg/kg	0.000134 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				37	mg/kg	1.245	38.475	mg/kg	0.00385 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.07	mg/kg		0.0585	mg/kg	0.00000585 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7									
20		phenanthrene				0.08	mg/kg		0.0668	mg/kg	0.00000668 %	✓	
			201-581-5	85-01-8									
21		anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			204-371-1	120-12-7									
22		fluoranthene				0.15	mg/kg		0.125	mg/kg	0.0000125 %	✓	
			205-912-4	206-44-0									
23		pyrene				0.15	mg/kg		0.125	mg/kg	0.0000125 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				0.15	mg/kg		0.125	mg/kg	0.0000125 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.13	mg/kg		0.109	mg/kg	0.0000109 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.12	mg/kg		0.1	mg/kg	0.00001 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.07	mg/kg		0.0585	mg/kg	0.00000585 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.07	mg/kg		0.0585	mg/kg	0.00000585 %	✓	
			205-883-8	191-24-2									
30		coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				0.12	mg/kg		0.1	mg/kg	0.00001 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.05	mg/kg		0.0418	mg/kg	0.00000418 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				<52	mg/kg		<52	mg/kg	<0.0052 %		<LOD
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				0.02	mg/kg		0.0167	mg/kg	0.00000167 %	✓	
		601-023-00-4	202-849-4	100-41-4									
37		xylene				0.04	mg/kg		0.0334	mg/kg	0.00000334 %	✓	
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0245 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

ethylbenzene: (conc.: 1.67e-06%)

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

Because of determinand:

xylene: (conc.: 3.34e-06%)

Classification of sample: BH5

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

Sample details

Sample Name:
BH5
Sample Depth:
1 m
Moisture content:
17.4%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 17.4% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		1 mg/kg	1.197	1.02 mg/kg	0.000102 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8.1 mg/kg	1.32	9.11 mg/kg	0.000911 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		24 mg/kg	1.117	22.825 mg/kg	0.00228 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		39.6 mg/kg	1.462	49.299 mg/kg	0.00493 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		11 mg/kg	1.126	10.549 mg/kg	0.00105 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	27 mg/kg		22.998 mg/kg	0.0023 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.5 mg/kg	1.5	3.195 mg/kg	0.000319 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		11.5 mg/kg	1.545	15.136 mg/kg	0.00151 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		0.6 mg/kg	3.22	1.646 mg/kg	0.000165 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		39 mg/kg	1.245	41.349 mg/kg	0.00413 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-917-1 / 208-96-8							
18		acenaphthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6 / 83-32-9							
19		fluorene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5 / 86-73-7							
20		phenanthrene		0.05 mg/kg		0.0426 mg/kg	0.00000426 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		204-371-1 / 120-12-7							
22		fluoranthene		0.09 mg/kg		0.0767 mg/kg	0.00000767 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		0.08 mg/kg		0.0681 mg/kg	0.00000681 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		0.11 mg/kg		0.0937 mg/kg	0.00000937 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		0.07 mg/kg		0.0596 mg/kg	0.00000596 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		0.07 mg/kg		0.0596 mg/kg	0.00000596 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		0.06 mg/kg		0.0511 mg/kg	0.00000511 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		0.05 mg/kg		0.0426 mg/kg	0.00000426 %	✓	
		205-883-8 / 191-24-2							
30		coronene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		0.09 mg/kg		0.0767 mg/kg	0.00000767 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		0.03 mg/kg		0.0256 mg/kg	0.00000256 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		<52 mg/kg		<52 mg/kg	<0.0052 %		<LOD
		TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] / 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.35 mg/kg		<0.35 mg/kg	<0.000035 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
						Total:	0.0236 %		

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

Classification of sample: BH6

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

Sample details

Sample Name:
BH6
Sample Depth:
1 m
Moisture content:
15.9%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 15.9% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2	mg/kg	1.197	2.066	mg/kg	0.000207 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12.4	mg/kg	1.32	14.126	mg/kg	0.00141 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		83	mg/kg	1.117	79.957	mg/kg	0.008 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.4	mg/kg	1.142	0.394	mg/kg	0.0000394 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		56.2	mg/kg	1.462	70.871	mg/kg	0.00709 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		22	mg/kg	1.126	21.371	mg/kg	0.00214 %	✓	
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	16	mg/kg		13.805	mg/kg	0.00138 %	✓	
8	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
9	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3	mg/kg	1.5	3.883	mg/kg	0.000388 %	✓	
10	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		41.4	mg/kg	1.545	55.195	mg/kg	0.00552 %	✓	
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				2	mg/kg	2.554	4.407	mg/kg	0.000441 %	✓	
12	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.5	mg/kg	3.22	1.389	mg/kg	0.000139 %	✓	
13	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		62	mg/kg	1.245	66.585	mg/kg	0.00666 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
15	●	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
16	●	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
17	●	fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7									
18	●	phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
19	●	anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			204-371-1	120-12-7									
20	●	fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
21	●	pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25	●	indeno[123-cd]pyrene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27	●	benzo[ghi]perylene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-883-8	191-24-2									
28	●	coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-881-7	191-07-1									
29		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
30		benzo[k]fluoranthene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
31		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
32	●	TPH (C6 to C40) petroleum group				<52	mg/kg		<52	mg/kg	<0.0052 %		<LOD
				TPH									
33		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
34	●	ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
35		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
36	●	polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0388 %		

Key

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

Classification of sample: BH7

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

Sample details

Sample Name:
BH7
Sample Depth:
3 m
Moisture content:
17.5%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 17.5% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		4 mg/kg	1.197	4.075 mg/kg	0.000408 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		38.5 mg/kg	1.32	43.262 mg/kg	0.00433 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		165 mg/kg	1.117	156.786 mg/kg	0.0157 %	✓	
	215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.3 mg/kg	1.142	0.292 mg/kg	0.0000292 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		79.4 mg/kg	1.462	98.764 mg/kg	0.00988 %	✓	
	215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		69 mg/kg	1.126	66.116 mg/kg	0.00661 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
	006-007-00-5							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	354 mg/kg		301.277 mg/kg	0.0301 %	✓	
	082-001-00-6							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	0.5 mg/kg		0.426 mg/kg	0.0000426 %	✓	
	080-002-00-6							
11	molybdenum { molybdenum(VI) oxide }		3.8 mg/kg	1.5	4.852 mg/kg	0.000485 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		35.9 mg/kg	1.545	47.21 mg/kg	0.00472 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2	mg/kg	2.554	4.347	mg/kg	0.000435 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				2.3	mg/kg	3.22	6.303	mg/kg	0.00063 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				143	mg/kg	1.245	151.484	mg/kg	0.0151 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.12	mg/kg		0.102	mg/kg	0.0000102 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.26	mg/kg		0.221	mg/kg	0.0000221 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				0.15	mg/kg		0.128	mg/kg	0.0000128 %	✓	
			201-469-6	83-32-9									
19		fluorene				0.16	mg/kg		0.136	mg/kg	0.0000136 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				1.45	mg/kg		1.234	mg/kg	0.000123 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.44	mg/kg		0.374	mg/kg	0.0000374 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				2.76	mg/kg		2.349	mg/kg	0.000235 %	✓	
			205-912-4	206-44-0									
23		pyrene				2.35	mg/kg		2	mg/kg	0.0002 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				1.6	mg/kg		1.362	mg/kg	0.000136 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				1.52	mg/kg		1.294	mg/kg	0.000129 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				1.59	mg/kg		1.353	mg/kg	0.000135 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.98	mg/kg		0.834	mg/kg	0.0000834 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.21	mg/kg		0.179	mg/kg	0.0000179 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.91	mg/kg		0.774	mg/kg	0.0000774 %	✓	
			205-883-8	191-24-2									
30		coronene				0.27	mg/kg		0.23	mg/kg	0.000023 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				1.82	mg/kg		1.549	mg/kg	0.000155 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.71	mg/kg		0.604	mg/kg	0.0000604 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		**<LOD**
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				198	mg/kg		168.511	mg/kg	0.0169 %	✓	
				TPH									
35		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		**<LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.107 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0169%)

Classification of sample: BH9

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

Sample details

Sample Name:
BH9
Sample Depth:
1 m
Moisture content:
7.5%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 7.5% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		1 mg/kg	1.197	1.114 mg/kg	0.000111 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6.2 mg/kg	1.32	7.615 mg/kg	0.000761 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		76 mg/kg	1.117	78.934 mg/kg	0.00789 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2 mg/kg	1.142	0.213 mg/kg	0.0000213 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		52.1 mg/kg	1.462	70.834 mg/kg	0.00708 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		16 mg/kg	1.126	16.757 mg/kg	0.00168 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	10 mg/kg		9.302 mg/kg	0.00093 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		4.4 mg/kg	1.5	6.14 mg/kg	0.000614 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		19.1 mg/kg	1.545	27.454 mg/kg	0.00275 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		1 mg/kg	2.554	2.375 mg/kg	0.000238 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		0.4 mg/kg	3.22	1.198 mg/kg	0.00012 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		26 mg/kg	1.245	30.105 mg/kg	0.00301 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-917-1 / 208-96-8							
18		acenaphthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6 / 83-32-9							
19		fluorene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5 / 86-73-7							
20		phenanthrene		0.06 mg/kg		0.0558 mg/kg	0.00000558 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		204-371-1 / 120-12-7							
22		fluoranthene		0.06 mg/kg		0.0558 mg/kg	0.00000558 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		0.05 mg/kg		0.0465 mg/kg	0.00000465 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		0.03 mg/kg		0.0279 mg/kg	0.00000279 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-883-8 / 191-24-2							
30		coronene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		<52 mg/kg		<52 mg/kg	<0.0052 %		<LOD
		TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] / 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.35 mg/kg		<0.35 mg/kg	<0.000035 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
						Total:	0.0308 %		

Key

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

Classification of sample: BH9[2]

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

Sample details

Sample Name:
BH9[2]
Sample Depth:
2 m
Moisture content:
42.9%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 42.9% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2	mg/kg	1.197	1.675	mg/kg	0.000168 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		14.2	mg/kg	1.32	13.12	mg/kg	0.00131 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		60	mg/kg	1.117	46.879	mg/kg	0.00469 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.1	mg/kg	1.142	0.0799	mg/kg	0.00000799 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		35.4	mg/kg	1.462	36.206	mg/kg	0.00362 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3	mg/kg	1.923	<0.577	mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		21	mg/kg	1.126	16.546	mg/kg	0.00165 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	143	mg/kg		100.07	mg/kg	0.01 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2	mg/kg	1.5	2.1	mg/kg	0.00021 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		24	mg/kg	1.545	25.951	mg/kg	0.0026 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	2.554	1.787	mg/kg	0.000179 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				6.9	mg/kg	3.22	15.547	mg/kg	0.00155 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				102	mg/kg	1.245	88.846	mg/kg	0.00888 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.18	mg/kg		0.126	mg/kg	0.0000126 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-469-6	83-32-9									
19		fluorene				0.08	mg/kg		0.056	mg/kg	0.0000056 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				0.68	mg/kg		0.476	mg/kg	0.0000476 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.27	mg/kg		0.189	mg/kg	0.0000189 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				1.23	mg/kg		0.861	mg/kg	0.0000861 %	✓	
			205-912-4	206-44-0									
23		pyrene				0.97	mg/kg		0.679	mg/kg	0.0000679 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				0.7	mg/kg		0.49	mg/kg	0.000049 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.62	mg/kg		0.434	mg/kg	0.0000434 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.56	mg/kg		0.392	mg/kg	0.0000392 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.31	mg/kg		0.217	mg/kg	0.0000217 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.08	mg/kg		0.056	mg/kg	0.0000056 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.23	mg/kg		0.161	mg/kg	0.0000161 %	✓	
			205-883-8	191-24-2									
30		coronene				0.08	mg/kg		0.056	mg/kg	0.0000056 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				0.65	mg/kg		0.455	mg/kg	0.0000455 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.25	mg/kg		0.175	mg/kg	0.0000175 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				84	mg/kg		58.782	mg/kg	0.00588 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0415 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00588%)

Classification of sample: BH10

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

Sample details

Sample Name:
BH10
Sample Depth:
1 m
Moisture content:
14.5%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 14.5% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		6 mg/kg	1.197	6.273 mg/kg	0.000627 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		43.9 mg/kg	1.32	50.622 mg/kg	0.00506 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		178 mg/kg	1.117	173.57 mg/kg	0.0174 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.1 mg/kg	1.142	0.0998 mg/kg	0.00000998 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		55.3 mg/kg	1.462	70.589 mg/kg	0.00706 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		**<LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		56 mg/kg	1.126	55.065 mg/kg	0.00551 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		**<LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	216 mg/kg		188.646 mg/kg	0.0189 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	0.4 mg/kg		0.349 mg/kg	0.0000349 %	✓	
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.5 mg/kg	1.5	4.586 mg/kg	0.000459 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		38.5 mg/kg	1.545	51.956 mg/kg	0.0052 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		2 mg/kg	2.554	4.46 mg/kg	0.000446 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		0.9 mg/kg	3.22	2.531 mg/kg	0.000253 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		147 mg/kg	1.245	159.802 mg/kg	0.016 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		0.16 mg/kg		0.14 mg/kg	0.000014 %	✓	
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		0.85 mg/kg		0.742 mg/kg	0.0000742 %	✓	
		205-917-1 / 208-96-8							
18		acenaphthene		0.13 mg/kg		0.114 mg/kg	0.0000114 %	✓	
		201-469-6 / 83-32-9							
19		fluorene		0.2 mg/kg		0.175 mg/kg	0.0000175 %	✓	
		201-695-5 / 86-73-7							
20		phenanthrene		1.33 mg/kg		1.162 mg/kg	0.000116 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		0.53 mg/kg		0.463 mg/kg	0.0000463 %	✓	
		204-371-1 / 120-12-7							
22		fluoranthene		2.28 mg/kg		1.991 mg/kg	0.000199 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		2.16 mg/kg		1.886 mg/kg	0.000189 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		1.47 mg/kg		1.284 mg/kg	0.000128 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		1.59 mg/kg		1.389 mg/kg	0.000139 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		1.92 mg/kg		1.677 mg/kg	0.000168 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		1.06 mg/kg		0.926 mg/kg	0.0000926 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		0.31 mg/kg		0.271 mg/kg	0.0000271 %	✓	
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		1.23 mg/kg		1.074 mg/kg	0.000107 %	✓	
		205-883-8 / 191-24-2							
30		coronene		0.35 mg/kg		0.306 mg/kg	0.0000306 %	✓	
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		1.98 mg/kg		1.729 mg/kg	0.000173 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		0.77 mg/kg		0.672 mg/kg	0.0000672 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		398 mg/kg		347.598 mg/kg	0.0348 %	✓	
		TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] / 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.35 mg/kg		<0.35 mg/kg	<0.000035 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
						Total:	0.114 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0348%)

Classification of sample: BH10[2]

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

Sample details

Sample Name:
BH10[2]
Sample Depth:
2 m
Moisture content:
12.9%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 12.9% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		2 mg/kg	1.197	2.121 mg/kg	0.000212 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		9.2 mg/kg	1.32	10.759 mg/kg	0.00108 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		70 mg/kg	1.117	69.225 mg/kg	0.00692 %	✓	
	215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.4 mg/kg	1.142	0.405 mg/kg	0.0000405 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		58.5 mg/kg	1.462	75.732 mg/kg	0.00757 %	✓	
	215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		17 mg/kg	1.126	16.953 mg/kg	0.0017 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	14 mg/kg		12.4 mg/kg	0.00124 %	✓	
	082-001-00-6							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	080-002-00-6							
11	molybdenum { molybdenum(VI) oxide }		3.1 mg/kg	1.5	4.119 mg/kg	0.000412 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		34.5 mg/kg	1.545	47.218 mg/kg	0.00472 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2	mg/kg	2.554	4.524	mg/kg	0.000452 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				0.4	mg/kg	3.22	1.141	mg/kg	0.000114 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				58	mg/kg	1.245	63.945	mg/kg	0.00639 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7									
20		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
21		anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			204-371-1	120-12-7									
22		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
23		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
24		benzo[a]anthracene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-883-8	191-24-2									
30		coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				<52	mg/kg		<52	mg/kg	<0.0052 %		<LOD
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0364 %		

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

Classification of sample: BH11

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

Sample details

Sample Name:
BH11
Sample Depth:
1 m
Moisture content:
24.7%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 24.7% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2 mg/kg	1.197	1.92 mg/kg	0.000192 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		21.3 mg/kg	1.32	22.552 mg/kg	0.00226 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		117 mg/kg	1.117	104.756 mg/kg	0.0105 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.1 mg/kg	1.142	0.0916 mg/kg	0.00000916 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		25.8 mg/kg	1.462	30.239 mg/kg	0.00302 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		**<LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		52 mg/kg	1.126	46.95 mg/kg	0.00469 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		**<LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	177 mg/kg		141.941 mg/kg	0.0142 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	0.7 mg/kg		0.561 mg/kg	0.0000561 %	✓	
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.6 mg/kg	1.5	3.128 mg/kg	0.000313 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		25.1 mg/kg	1.545	31.102 mg/kg	0.00311 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		1 mg/kg	2.554	2.048 mg/kg	0.000205 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		0.9 mg/kg	3.22	2.324 mg/kg	0.000232 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		151 mg/kg	1.245	150.723 mg/kg	0.0151 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		0.05 mg/kg		0.0401 mg/kg	0.00000401 %	✓	
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		0.1 mg/kg		0.0802 mg/kg	0.00000802 %	✓	
		205-917-1 / 208-96-8							
18		acenaphthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6 / 83-32-9							
19		fluorene		0.05 mg/kg		0.0401 mg/kg	0.00000401 %	✓	
		201-695-5 / 86-73-7							
20		phenanthrene		0.45 mg/kg		0.361 mg/kg	0.0000361 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		0.21 mg/kg		0.168 mg/kg	0.0000168 %	✓	
		204-371-1 / 120-12-7							
22		fluoranthene		0.85 mg/kg		0.682 mg/kg	0.0000682 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		0.71 mg/kg		0.569 mg/kg	0.0000569 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		0.55 mg/kg		0.441 mg/kg	0.0000441 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		0.46 mg/kg		0.369 mg/kg	0.0000369 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		0.44 mg/kg		0.353 mg/kg	0.0000353 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		0.26 mg/kg		0.209 mg/kg	0.0000209 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		0.07 mg/kg		0.0561 mg/kg	0.00000561 %	✓	
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		0.21 mg/kg		0.168 mg/kg	0.0000168 %	✓	
		205-883-8 / 191-24-2							
30		coronene		0.06 mg/kg		0.0481 mg/kg	0.00000481 %	✓	
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		0.54 mg/kg		0.433 mg/kg	0.0000433 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		0.21 mg/kg		0.168 mg/kg	0.0000168 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		87 mg/kg		69.767 mg/kg	0.00698 %	✓	
		/ / TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1], 203-396-5 [2], 203-576-3 [3], 215-535-7 [4] / 95-47-6 [1], 106-42-3 [2], 108-38-3 [3], 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.35 mg/kg		<0.35 mg/kg	<0.000035 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
39		asbestos		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		650-013-00-6 / - - - - - - - / 12001-28-4, 132207-32-0, 12172-73-5							

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
								Total:	0.0615 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00698%)

Classification of sample: BH12

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

Sample details

Sample Name:
BH12
Sample Depth:
1 m
Moisture content:
23.9%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 23.9% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		7 mg/kg	1.197	6.763 mg/kg	0.000676 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		21.6 mg/kg	1.32	23.018 mg/kg	0.0023 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		973 mg/kg	1.117	876.804 mg/kg	0.0877 %	✓	
	/ 215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		2.1 mg/kg	1.142	1.936 mg/kg	0.000194 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		75.7 mg/kg	1.462	89.298 mg/kg	0.00893 %	✓	
	/ 215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		248 mg/kg	1.126	225.359 mg/kg	0.0225 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		16.6 mg/kg	1.884	25.242 mg/kg	0.00252 %	✓	
	006-007-00-5 / /							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	1314 mg/kg		1060.533 mg/kg	0.106 %	✓	
	082-001-00-6 / /							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	2.7 mg/kg		2.179 mg/kg	0.000218 %	✓	
	080-002-00-6 / /							
11	molybdenum { molybdenum(VI) oxide }		5.1 mg/kg	1.5	6.175 mg/kg	0.000618 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		43.3 mg/kg	1.545	54 mg/kg	0.0054 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				3	mg/kg	2.554	6.183	mg/kg	0.000618 %	✓	
14		boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		2.1	mg/kg	3.22	5.457	mg/kg	0.000546 %	✓	
15		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		929	mg/kg	1.245	933.284	mg/kg	0.0933 %	✓	
16		naphthalene	601-052-00-2	202-049-5	91-20-3		0.51	mg/kg		0.412	mg/kg	0.0000412 %	✓	
17		acenaphthylene		205-917-1	208-96-8		2.92	mg/kg		2.357	mg/kg	0.000236 %	✓	
18		acenaphthene		201-469-6	83-32-9		<0.25	mg/kg		<0.25	mg/kg	<0.000025 %		<LOD
19		fluorene		201-695-5	86-73-7		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
20		phenanthrene		201-581-5	85-01-8		3.32	mg/kg		2.68	mg/kg	0.000268 %	✓	
21		anthracene		204-371-1	120-12-7		2.02	mg/kg		1.63	mg/kg	0.000163 %	✓	
22		fluoranthene		205-912-4	206-44-0		17.74	mg/kg		14.318	mg/kg	0.00143 %	✓	
23		pyrene		204-927-3	129-00-0		16.07	mg/kg		12.97	mg/kg	0.0013 %	✓	
24		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		12.39	mg/kg		10	mg/kg	0.001 %	✓	
25		chrysene	601-048-00-0	205-923-4	218-01-9		11.94	mg/kg		9.637	mg/kg	0.000964 %	✓	
26		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		15.39	mg/kg		12.421	mg/kg	0.00124 %	✓	
27		indeno[123-cd]pyrene		205-893-2	193-39-5		10.26	mg/kg		8.281	mg/kg	0.000828 %	✓	
28		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		1.28	mg/kg		1.033	mg/kg	0.000103 %	✓	
29		benzo[ghi]perylene		205-883-8	191-24-2		9.21	mg/kg		7.433	mg/kg	0.000743 %	✓	
30		coronene		205-881-7	191-07-1		2.22	mg/kg		1.792	mg/kg	0.000179 %	✓	
31		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		18.09	mg/kg		14.6	mg/kg	0.00146 %	✓	
32		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		7.03	mg/kg		5.674	mg/kg	0.000567 %	✓	
33		benzo[j]fluoranthene	601-035-00-X	205-910-3	205-82-3		6	mg/kg		4.843	mg/kg	0.000484 %	✓	
34		TPH (C6 to C40) petroleum group			TPH		1064	mg/kg		858.757	mg/kg	0.0859 %	✓	
35		polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3		<0.175	mg/kg		<0.175	mg/kg	<0.0000175 %		<LOD
											Total:	0.429 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0859%)

Classification of sample: BH13

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

Sample details

Sample Name:
BH13
Sample Depth:
1 m
Moisture content:
11.2%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 11.2% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		3	mg/kg	1.197	3.23	mg/kg	0.000323 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		5.9	mg/kg	1.32	7.005	mg/kg	0.000701 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		144	mg/kg	1.117	144.583	mg/kg	0.0145 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		76.7	mg/kg	1.462	100.811	mg/kg	0.0101 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3	mg/kg	1.923	<0.577	mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		102	mg/kg	1.126	103.274	mg/kg	0.0103 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	52	mg/kg		46.763	mg/kg	0.00468 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		7.4	mg/kg	1.5	9.983	mg/kg	0.000998 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		52.9	mg/kg	1.545	73.507	mg/kg	0.00735 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	2.554	2.296	mg/kg	0.00023 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				0.7	mg/kg	3.22	2.027	mg/kg	0.000203 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				39	mg/kg	1.245	43.655	mg/kg	0.00437 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.59	mg/kg		0.531	mg/kg	0.0000531 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.65	mg/kg		0.585	mg/kg	0.0000585 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				0.53	mg/kg		0.477	mg/kg	0.0000477 %	✓	
			201-469-6	83-32-9									
19		fluorene				0.59	mg/kg		0.531	mg/kg	0.0000531 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				5.4	mg/kg		4.856	mg/kg	0.000486 %	✓	
			201-581-5	85-01-8									
21		anthracene				1.88	mg/kg		1.691	mg/kg	0.000169 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				10.56	mg/kg		9.496	mg/kg	0.00095 %	✓	
			205-912-4	206-44-0									
23		pyrene				8.57	mg/kg		7.707	mg/kg	0.000771 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				6.08	mg/kg		5.468	mg/kg	0.000547 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				5.53	mg/kg		4.973	mg/kg	0.000497 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				7.14	mg/kg		6.421	mg/kg	0.000642 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				4.49	mg/kg		4.038	mg/kg	0.000404 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.71	mg/kg		0.638	mg/kg	0.0000638 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				3.96	mg/kg		3.561	mg/kg	0.000356 %	✓	
			205-883-8	191-24-2									
30		coronene				0.91	mg/kg		0.818	mg/kg	0.0000818 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				8.14	mg/kg		7.32	mg/kg	0.000732 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				3.17	mg/kg		2.851	mg/kg	0.000285 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				4	mg/kg		3.597	mg/kg	0.00036 %	✓	
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				690	mg/kg		620.504	mg/kg	0.0621 %	✓	
				TPH									
35		polychlorobiphenyls; PCB				<0.175	mg/kg		<0.175	mg/kg	<0.0000175 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.123 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0621%)

Classification of sample: BH13[2]

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

Sample details

Sample Name:
BH13[2]
Sample Depth:
3 m
Moisture content:
49.7%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 49.7% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		2 mg/kg	1.197	1.599 mg/kg	0.00016 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		18.7 mg/kg	1.32	16.493 mg/kg	0.00165 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		60 mg/kg	1.117	44.75 mg/kg	0.00447 %	✓	
	/ 215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.3 mg/kg	1.142	0.229 mg/kg	0.0000229 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		58.7 mg/kg	1.462	57.31 mg/kg	0.00573 %	✓	
	/ 215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		28 mg/kg	1.126	21.059 mg/kg	0.00211 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
	006-007-00-5 / /							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	80 mg/kg		53.44 mg/kg	0.00534 %	✓	
	082-001-00-6 / /							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	0.2 mg/kg		0.134 mg/kg	0.0000134 %	✓	
	080-002-00-6 / /							
11	molybdenum { molybdenum(VI) oxide }		2.8 mg/kg	1.5	2.806 mg/kg	0.000281 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		28.8 mg/kg	1.545	29.727 mg/kg	0.00297 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2	mg/kg	2.554	3.412	mg/kg	0.000341 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				9	mg/kg	3.22	19.358	mg/kg	0.00194 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				143	mg/kg	1.245	118.901	mg/kg	0.0119 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.16	mg/kg		0.107	mg/kg	0.0000107 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-469-6	83-32-9									
19		fluorene				0.09	mg/kg		0.0601	mg/kg	0.00000601 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				0.77	mg/kg		0.514	mg/kg	0.0000514 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.29	mg/kg		0.194	mg/kg	0.0000194 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				1.58	mg/kg		1.055	mg/kg	0.000106 %	✓	
			205-912-4	206-44-0									
23		pyrene				1.17	mg/kg		0.782	mg/kg	0.0000782 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				0.93	mg/kg		0.621	mg/kg	0.0000621 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.84	mg/kg		0.561	mg/kg	0.0000561 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.8	mg/kg		0.534	mg/kg	0.0000534 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.51	mg/kg		0.341	mg/kg	0.0000341 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.09	mg/kg		0.0601	mg/kg	0.00000601 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.41	mg/kg		0.274	mg/kg	0.0000274 %	✓	
			205-883-8	191-24-2									
30		coronene				0.1	mg/kg		0.0668	mg/kg	0.00000668 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				0.93	mg/kg		0.621	mg/kg	0.0000621 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.36	mg/kg		0.24	mg/kg	0.000024 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				181	mg/kg		120.908	mg/kg	0.0121 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0499 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0121%)

Classification of sample: BH14

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

Sample details

Sample Name:
BH14
Sample Depth:
1 m
Moisture content:
7.1%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 7.1% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		4 mg/kg	1.197	4.471 mg/kg	0.000447 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2.5 mg/kg	1.32	3.082 mg/kg	0.000308 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		2188 mg/kg	1.117	2280.966 mg/kg	0.228 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		92.2 mg/kg	1.462	125.822 mg/kg	0.0126 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		47 mg/kg	1.126	49.409 mg/kg	0.00494 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	<5 mg/kg		<5 mg/kg	<0.0005 %		<**LOD**
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		12.7 mg/kg	1.5	17.789 mg/kg	0.00178 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		78.8 mg/kg	1.545	113.689 mg/kg	0.0114 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		3 mg/kg	2.554	7.153 mg/kg	0.000715 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		0.7 mg/kg	3.22	2.104 mg/kg	0.00021 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		150 mg/kg	1.245	174.33 mg/kg	0.0174 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-917-1 / 208-96-8							
18		acenaphthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6 / 83-32-9							
19		fluorene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5 / 86-73-7							
20		phenanthrene		0.21 mg/kg		0.196 mg/kg	0.0000196 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		204-371-1 / 120-12-7							
22		fluoranthene		0.2 mg/kg		0.187 mg/kg	0.0000187 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		0.2 mg/kg		0.187 mg/kg	0.0000187 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		0.2 mg/kg		0.187 mg/kg	0.0000187 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		0.2 mg/kg		0.187 mg/kg	0.0000187 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		0.1 mg/kg		0.0934 mg/kg	0.00000934 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		0.09 mg/kg		0.084 mg/kg	0.0000084 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		0.1 mg/kg		0.0934 mg/kg	0.00000934 %	✓	
		205-883-8 / 191-24-2							
30		coronene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		0.16 mg/kg		0.149 mg/kg	0.0000149 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		0.06 mg/kg		0.056 mg/kg	0.0000056 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		57 mg/kg		53.221 mg/kg	0.00532 %	✓	
		TPH							
35		polychlorobiphenyls; PCB		<0.21 mg/kg		<0.21 mg/kg	<0.000021 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
						Total:	0.284 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00532%)

Classification of sample: BH14[2]

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

Sample details

Sample Name:
BH14[2]
Sample Depth:
3 m
Moisture content:
13.4%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 13.4% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		2 mg/kg	1.197	2.111 mg/kg	0.000211 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		9.8 mg/kg	1.32	11.41 mg/kg	0.00114 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		464 mg/kg	1.117	456.842 mg/kg	0.0457 %	✓	
	/ 215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		45.6 mg/kg	1.462	58.772 mg/kg	0.00588 %	✓	
	/ 215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		38 mg/kg	1.126	37.728 mg/kg	0.00377 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5 / /							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	49 mg/kg		43.21 mg/kg	0.00432 %	✓	
	082-001-00-6 / /							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	080-002-00-6 / /							
11	molybdenum { molybdenum(VI) oxide }		5.1 mg/kg	1.5	6.747 mg/kg	0.000675 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		48.8 mg/kg	1.545	66.495 mg/kg	0.00665 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2	mg/kg	2.554	4.504	mg/kg	0.00045 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				0.6	mg/kg	3.22	1.704	mg/kg	0.00017 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				31	mg/kg	1.245	34.027	mg/kg	0.0034 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7									
20		phenanthrene				0.04	mg/kg		0.0353	mg/kg	0.00000353 %	✓	
			201-581-5	85-01-8									
21		anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			204-371-1	120-12-7									
22		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
23		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
24		benzo[a]anthracene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.04	mg/kg		0.0353	mg/kg	0.00000353 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-883-8	191-24-2									
30		coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				<52	mg/kg		<52	mg/kg	<0.0052 %		<LOD
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0779 %		

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

Classification of sample: BH15

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

Sample details

Sample Name:
BH15
Sample Depth:
1 m
Moisture content:
23.5%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 23.5% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		7 mg/kg	1.197	6.785 mg/kg	0.000679 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		13.3 mg/kg	1.32	14.219 mg/kg	0.00142 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		242 mg/kg	1.117	218.781 mg/kg	0.0219 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.5 mg/kg	1.142	0.462 mg/kg	0.0000462 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		22 mg/kg	1.462	26.036 mg/kg	0.0026 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		**<LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		154 mg/kg	1.126	140.394 mg/kg	0.014 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		**<LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	690 mg/kg		558.704 mg/kg	0.0559 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	1.2 mg/kg		0.972 mg/kg	0.0000972 %	✓	
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		1.9 mg/kg	1.5	2.308 mg/kg	0.000231 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		32.5 mg/kg	1.545	40.663 mg/kg	0.00407 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	2.554	2.068	mg/kg	0.000207 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				0.6	mg/kg	3.22	1.564	mg/kg	0.000156 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				267	mg/kg	1.245	269.1	mg/kg	0.0269 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.74	mg/kg		0.599	mg/kg	0.0000599 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.43	mg/kg		0.348	mg/kg	0.0000348 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				0.31	mg/kg		0.251	mg/kg	0.0000251 %	✓	
			201-469-6	83-32-9									
19		fluorene				0.41	mg/kg		0.332	mg/kg	0.0000332 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				3.3	mg/kg		2.672	mg/kg	0.000267 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.94	mg/kg		0.761	mg/kg	0.0000761 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				4.1	mg/kg		3.32	mg/kg	0.000332 %	✓	
			205-912-4	206-44-0									
23		pyrene				3.36	mg/kg		2.721	mg/kg	0.000272 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				2.22	mg/kg		1.798	mg/kg	0.00018 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				2.1	mg/kg		1.7	mg/kg	0.00017 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				1.91	mg/kg		1.547	mg/kg	0.000155 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				1.14	mg/kg		0.923	mg/kg	0.0000923 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				1.14	mg/kg		0.923	mg/kg	0.0000923 %	✓	
			205-883-8	191-24-2									
30		coronene				0.26	mg/kg		0.211	mg/kg	0.0000211 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				2.46	mg/kg		1.992	mg/kg	0.000199 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.95	mg/kg		0.769	mg/kg	0.0000769 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<5	mg/kg		<5	mg/kg	<0.0005 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				546	mg/kg		442.105	mg/kg	0.0442 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.35	mg/kg		<0.35	mg/kg	<0.000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
39		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
								Total:	0.175 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0442%)

Classification of sample: BH16

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

Sample details

Sample Name:
BH16
Sample Depth:
1 m
Moisture content:
10.5%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 10.5% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		8 mg/kg	1.197	8.667 mg/kg	0.000867 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8.8 mg/kg	1.32	10.515 mg/kg	0.00105 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		201 mg/kg	1.117	203.093 mg/kg	0.0203 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.1 mg/kg	1.142	0.103 mg/kg	0.0000103 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		82.3 mg/kg	1.462	108.856 mg/kg	0.0109 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		111 mg/kg	1.126	113.098 mg/kg	0.0113 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	363 mg/kg		328.507 mg/kg	0.0329 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	0.4 mg/kg		0.362 mg/kg	0.0000362 %	✓	
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		6.1 mg/kg	1.5	8.282 mg/kg	0.000828 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		41.5 mg/kg	1.545	58.032 mg/kg	0.0058 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2	mg/kg	2.554	4.622	mg/kg	0.000462 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				0.6	mg/kg	3.22	1.748	mg/kg	0.000175 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				144	mg/kg	1.245	162.207	mg/kg	0.0162 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.22	mg/kg		0.199	mg/kg	0.0000199 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.34	mg/kg		0.308	mg/kg	0.0000308 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				0.07	mg/kg		0.0633	mg/kg	0.00000633 %	✓	
			201-469-6	83-32-9									
19		fluorene				0.16	mg/kg		0.145	mg/kg	0.0000145 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				1.64	mg/kg		1.484	mg/kg	0.000148 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.66	mg/kg		0.597	mg/kg	0.0000597 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				3.38	mg/kg		3.059	mg/kg	0.000306 %	✓	
			205-912-4	206-44-0									
23		pyrene				2.89	mg/kg		2.615	mg/kg	0.000262 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				1.79	mg/kg		1.62	mg/kg	0.000162 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				1.67	mg/kg		1.511	mg/kg	0.000151 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				1.72	mg/kg		1.557	mg/kg	0.000156 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				1.08	mg/kg		0.977	mg/kg	0.0000977 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.17	mg/kg		0.154	mg/kg	0.0000154 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.95	mg/kg		0.86	mg/kg	0.000086 %	✓	
			205-883-8	191-24-2									
30		coronene				0.24	mg/kg		0.217	mg/kg	0.0000217 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				2.09	mg/kg		1.891	mg/kg	0.000189 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.81	mg/kg		0.733	mg/kg	0.0000733 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				502	mg/kg		454.299	mg/kg	0.0454 %	✓	
				TPH									
35		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.148 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0454%)

Classification of sample: BH16[2]

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

Sample details

Sample Name:
BH16[2]
Sample Depth:
2 m
Moisture content:
24.6%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 24.6% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		9 mg/kg	1.197	8.647 mg/kg	0.000865 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		69.7 mg/kg	1.32	73.858 mg/kg	0.00739 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		263 mg/kg	1.117	235.667 mg/kg	0.0236 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2 mg/kg	1.142	0.183 mg/kg	0.0000183 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		21.7 mg/kg	1.462	25.454 mg/kg	0.00255 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		**<LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		181 mg/kg	1.126	163.552 mg/kg	0.0164 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		**<LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	890 mg/kg		714.286 mg/kg	0.0714 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	1 mg/kg		0.803 mg/kg	0.0000803 %	✓	
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.1 mg/kg	1.5	3.732 mg/kg	0.000373 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		36.5 mg/kg	1.545	45.264 mg/kg	0.00453 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				0.7	mg/kg	3.22	1.809	mg/kg	0.000181 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				258	mg/kg	1.245	257.734	mg/kg	0.0258 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.24	mg/kg		0.193	mg/kg	0.0000193 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.22	mg/kg		0.177	mg/kg	0.0000177 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				0.07	mg/kg		0.0562	mg/kg	0.00000562 %	✓	
			201-469-6	83-32-9									
19		fluorene				0.14	mg/kg		0.112	mg/kg	0.0000112 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				1.25	mg/kg		1.003	mg/kg	0.0001 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.39	mg/kg		0.313	mg/kg	0.0000313 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				1.89	mg/kg		1.517	mg/kg	0.000152 %	✓	
			205-912-4	206-44-0									
23		pyrene				1.59	mg/kg		1.276	mg/kg	0.000128 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				1.03	mg/kg		0.827	mg/kg	0.0000827 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				1.02	mg/kg		0.819	mg/kg	0.0000819 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				1.03	mg/kg		0.827	mg/kg	0.0000827 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.66	mg/kg		0.53	mg/kg	0.000053 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.11	mg/kg		0.0883	mg/kg	0.00000883 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.59	mg/kg		0.474	mg/kg	0.0000474 %	✓	
			205-883-8	191-24-2									
30		coronene				0.15	mg/kg		0.12	mg/kg	0.000012 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				1.27	mg/kg		1.019	mg/kg	0.000102 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.5	mg/kg		0.401	mg/kg	0.0000401 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				523	mg/kg		419.743	mg/kg	0.042 %	✓	
				TPH									
35		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.197 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.042%)

Classification of sample: BH17

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

Sample details

Sample Name:
BH17
Sample Depth:
1 m
Moisture content:
15.4%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 15.4% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		4 mg/kg	1.197	4.149 mg/kg	0.000415 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		44.5 mg/kg	1.32	50.914 mg/kg	0.00509 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		132 mg/kg	1.117	127.711 mg/kg	0.0128 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2 mg/kg	1.142	0.198 mg/kg	0.0000198 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		54.3 mg/kg	1.462	68.772 mg/kg	0.00688 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		46 mg/kg	1.126	44.879 mg/kg	0.00449 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	108 mg/kg		93.588 mg/kg	0.00936 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.3 mg/kg	1.5	4.29 mg/kg	0.000429 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		39.4 mg/kg	1.545	52.756 mg/kg	0.00528 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2	mg/kg	2.554	4.426	mg/kg	0.000443 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				1.4	mg/kg	3.22	3.906	mg/kg	0.000391 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				152	mg/kg	1.245	163.948	mg/kg	0.0164 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			201-695-5	86-73-7									
20		phenanthrene				0.24	mg/kg		0.208	mg/kg	0.0000208 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.07	mg/kg		0.0607	mg/kg	0.00000607 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				0.36	mg/kg		0.312	mg/kg	0.0000312 %	✓	
			205-912-4	206-44-0									
23		pyrene				0.29	mg/kg		0.251	mg/kg	0.0000251 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				0.23	mg/kg		0.199	mg/kg	0.0000199 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.21	mg/kg		0.182	mg/kg	0.0000182 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.19	mg/kg		0.165	mg/kg	0.0000165 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.14	mg/kg		0.121	mg/kg	0.0000121 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.12	mg/kg		0.104	mg/kg	0.0000104 %	✓	
			205-883-8	191-24-2									
30		coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				0.24	mg/kg		0.208	mg/kg	0.0000208 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.1	mg/kg		0.0867	mg/kg	0.00000867 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				159	mg/kg		137.782	mg/kg	0.0138 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				0.01	mg/kg		0.0086	mg/kg	0.000000867 %	✓	
		601-023-00-4	202-849-4	100-41-4									
37		xylene				0.03	mg/kg		0.026	mg/kg	0.0000026 %	✓	
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0762 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

ethylbenzene: (conc.: 8.67e-07%)

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.0138%)
xylene: (conc.: 2.6e-06%)

Classification of sample: BH17[2]

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

Sample details

Sample Name:
BH17[2]
Sample Depth:
3 m
Moisture content:
30.7%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 30.7% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<1 mg/kg	1.197	<1.197 mg/kg	<0.00012 %		<**LOD**
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6.5 mg/kg	1.32	6.566 mg/kg	0.000657 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		663 mg/kg	1.117	566.368 mg/kg	0.0566 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		10.5 mg/kg	1.462	11.742 mg/kg	0.00117 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		88 mg/kg	1.126	75.806 mg/kg	0.00758 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	34 mg/kg		26.014 mg/kg	0.0026 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.7 mg/kg	1.5	3.099 mg/kg	0.00031 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		26.7 mg/kg	1.545	31.566 mg/kg	0.00316 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		0.5 mg/kg	3.22	1.232 mg/kg	0.000123 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		37 mg/kg	1.245	35.237 mg/kg	0.00352 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-917-1 / 208-96-8							
18		acenaphthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6 / 83-32-9							
19		fluorene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5 / 86-73-7							
20		phenanthrene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		201-581-5 / 85-01-8							
21		anthracene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		204-371-1 / 120-12-7							
22		fluoranthene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-912-4 / 206-44-0							
23		pyrene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-883-8 / 191-24-2							
30		coronene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		<52 mg/kg		<52 mg/kg	<0.0052 %		<LOD
		/ / TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		0.04 mg/kg		0.0306 mg/kg	0.00000306 %	✓	
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] / 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
39		asbestos		0.003 mg/kg		0.0023 mg/kg	0.00000023 %	✓	
		650-013-00-6 / - - - - - - - / 12001-28-4 132207-32-0 12172-73-5							

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
								Total:	0.0817 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

xylene: (conc.: 3.06e-06%)

Classification of sample: BH18

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

Sample details

Sample Name:
BH18
Sample Depth:
1 m
Moisture content:
9.3%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 9.3% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		3 mg/kg	1.197	3.286 mg/kg	0.000329 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		26.9 mg/kg	1.32	32.495 mg/kg	0.00325 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		150 mg/kg	1.117	153.226 mg/kg	0.0153 %	✓	
	215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.4 mg/kg	1.142	0.418 mg/kg	0.0000418 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		102.2 mg/kg	1.462	136.661 mg/kg	0.0137 %	✓	
	215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		163 mg/kg	1.126	167.905 mg/kg	0.0168 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
	006-007-00-5							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	257 mg/kg		235.133 mg/kg	0.0235 %	✓	
	082-001-00-6							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	0.3 mg/kg		0.274 mg/kg	0.0000274 %	✓	
	080-002-00-6							
11	molybdenum { molybdenum(VI) oxide }		6.7 mg/kg	1.5	9.196 mg/kg	0.00092 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		70.1 mg/kg	1.545	99.101 mg/kg	0.00991 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2	mg/kg	2.554	4.673	mg/kg	0.000467 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				1.3	mg/kg	3.22	3.83	mg/kg	0.000383 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				743	mg/kg	1.245	846.132	mg/kg	0.0846 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.31	mg/kg		0.284	mg/kg	0.0000284 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.52	mg/kg		0.476	mg/kg	0.0000476 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				0.3	mg/kg		0.274	mg/kg	0.0000274 %	✓	
			201-469-6	83-32-9									
19		fluorene				0.56	mg/kg		0.512	mg/kg	0.0000512 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				3.19	mg/kg		2.919	mg/kg	0.000292 %	✓	
			201-581-5	85-01-8									
21		anthracene				1.44	mg/kg		1.317	mg/kg	0.000132 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				5.02	mg/kg		4.593	mg/kg	0.000459 %	✓	
			205-912-4	206-44-0									
23		pyrene				4.36	mg/kg		3.989	mg/kg	0.000399 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				2.71	mg/kg		2.479	mg/kg	0.000248 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				2.73	mg/kg		2.498	mg/kg	0.00025 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				2.61	mg/kg		2.388	mg/kg	0.000239 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				1.33	mg/kg		1.217	mg/kg	0.000122 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.41	mg/kg		0.375	mg/kg	0.0000375 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				1.44	mg/kg		1.317	mg/kg	0.000132 %	✓	
			205-883-8	191-24-2									
30		coronene				0.24	mg/kg		0.22	mg/kg	0.000022 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				3.15	mg/kg		2.882	mg/kg	0.000288 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				1.22	mg/kg		1.116	mg/kg	0.000112 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				1	mg/kg		0.915	mg/kg	0.0000915 %	✓	
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				85	mg/kg		77.768	mg/kg	0.00778 %	✓	
				TPH									
35		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		**<LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.18 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00778%)

Classification of sample: BH18[2]

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

Sample details

Sample Name:
BH18[2]
Sample Depth:
1 m
Moisture content:
13.9%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 13.9% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		6 mg/kg	1.197	6.306 mg/kg	0.000631 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		19.8 mg/kg	1.32	22.952 mg/kg	0.0023 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		229 mg/kg	1.117	224.477 mg/kg	0.0224 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.5 mg/kg	1.142	0.501 mg/kg	0.0000501 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		20.8 mg/kg	1.462	26.69 mg/kg	0.00267 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		137 mg/kg	1.126	135.423 mg/kg	0.0135 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	400 mg/kg		351.185 mg/kg	0.0351 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	0.9 mg/kg		0.79 mg/kg	0.000079 %	✓	
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.8 mg/kg	1.5	3.688 mg/kg	0.000369 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		43.7 mg/kg	1.545	59.284 mg/kg	0.00593 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		1 mg/kg	2.554	2.242 mg/kg	0.000224 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		1 mg/kg	3.22	2.827 mg/kg	0.000283 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		189 mg/kg	1.245	206.542 mg/kg	0.0207 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		0.46 mg/kg		0.404 mg/kg	0.0000404 %	✓	
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		0.54 mg/kg		0.474 mg/kg	0.0000474 %	✓	
		205-917-1 / 208-96-8							
18		acenaphthene		0.15 mg/kg		0.132 mg/kg	0.0000132 %	✓	
		201-469-6 / 83-32-9							
19		fluorene		0.25 mg/kg		0.219 mg/kg	0.0000219 %	✓	
		201-695-5 / 86-73-7							
20		phenanthrene		2.68 mg/kg		2.353 mg/kg	0.000235 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		1.07 mg/kg		0.939 mg/kg	0.0000939 %	✓	
		204-371-1 / 120-12-7							
22		fluoranthene		4.33 mg/kg		3.802 mg/kg	0.00038 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		3.79 mg/kg		3.327 mg/kg	0.000333 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		2.4 mg/kg		2.107 mg/kg	0.000211 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		2.43 mg/kg		2.133 mg/kg	0.000213 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		2.49 mg/kg		2.186 mg/kg	0.000219 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		1.57 mg/kg		1.378 mg/kg	0.000138 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		0.25 mg/kg		0.219 mg/kg	0.0000219 %	✓	
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		1.4 mg/kg		1.229 mg/kg	0.000123 %	✓	
		205-883-8 / 191-24-2							
30		coronene		0.28 mg/kg		0.246 mg/kg	0.0000246 %	✓	
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		3.03 mg/kg		2.66 mg/kg	0.000266 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		1.18 mg/kg		1.036 mg/kg	0.000104 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		1 mg/kg		0.878 mg/kg	0.0000878 %	✓	
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		204 mg/kg		179.104 mg/kg	0.0179 %	✓	
		TPH							
35		polychlorobiphenyls; PCB		<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
36		asbestos		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		650-013-00-6 / - - - - - - - / 12001-28-4, 132207-32-0, 12172-73-5, 77536-66-4, 77536-68-6, 77536-67-5, 12001-29-5							
						Total:	0.125 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0179%)

Classification of sample: BH18[3]

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

Sample details

Sample Name:
BH18[3]
Sample Depth:
2 m
Moisture content:
14.8%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 14.8% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		6 mg/kg	1.197	6.257 mg/kg	0.000626 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		53.7 mg/kg	1.32	61.761 mg/kg	0.00618 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		256 mg/kg	1.117	248.977 mg/kg	0.0249 %	✓	
	215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.7 mg/kg	1.142	0.697 mg/kg	0.0000697 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		25.1 mg/kg	1.462	31.956 mg/kg	0.0032 %	✓	
	215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		168 mg/kg	1.126	164.764 mg/kg	0.0165 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		1.5 mg/kg	1.884	2.462 mg/kg	0.000246 %	✓	
	006-007-00-5							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	631 mg/kg		549.652 mg/kg	0.055 %	✓	
	082-001-00-6							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	0.6 mg/kg		0.523 mg/kg	0.0000523 %	✓	
	080-002-00-6							
11	molybdenum { molybdenum(VI) oxide }		3 mg/kg	1.5	3.92 mg/kg	0.000392 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		46.7 mg/kg	1.545	62.857 mg/kg	0.00629 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2	mg/kg	2.554	4.449	mg/kg	0.000445 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				1.6	mg/kg	3.22	4.488	mg/kg	0.000449 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				519	mg/kg	1.245	562.723	mg/kg	0.0563 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.39	mg/kg		0.34	mg/kg	0.000034 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.57	mg/kg		0.497	mg/kg	0.0000497 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				0.32	mg/kg		0.279	mg/kg	0.0000279 %	✓	
			201-469-6	83-32-9									
19		fluorene				0.48	mg/kg		0.418	mg/kg	0.0000418 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				3.44	mg/kg		2.997	mg/kg	0.0003 %	✓	
			201-581-5	85-01-8									
21		anthracene				1.38	mg/kg		1.202	mg/kg	0.00012 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				5.57	mg/kg		4.852	mg/kg	0.000485 %	✓	
			205-912-4	206-44-0									
23		pyrene				4.89	mg/kg		4.26	mg/kg	0.000426 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				3.16	mg/kg		2.753	mg/kg	0.000275 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				3.19	mg/kg		2.779	mg/kg	0.000278 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				3.25	mg/kg		2.831	mg/kg	0.000283 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				1.69	mg/kg		1.472	mg/kg	0.000147 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.53	mg/kg		0.462	mg/kg	0.0000462 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				1.71	mg/kg		1.49	mg/kg	0.000149 %	✓	
			205-883-8	191-24-2									
30		coronene				0.34	mg/kg		0.296	mg/kg	0.0000296 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				3.92	mg/kg		3.415	mg/kg	0.000341 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				1.52	mg/kg		1.324	mg/kg	0.000132 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				1	mg/kg		0.871	mg/kg	0.0000871 %	✓	
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				334	mg/kg		290.941	mg/kg	0.0291 %	✓	
				TPH									
35		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		**<LOD**
		602-039-00-4	215-648-1	1336-36-3									
36		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
										Total:	0.203 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0291%)

Classification of sample: BH18[4]

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

Sample details

Sample Name:
BH18[4]
Sample Depth:
3 m
Moisture content:
134.1%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 134.1% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		7 mg/kg	1.197	3.58 mg/kg	0.000358 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		23.4 mg/kg	1.32	13.198 mg/kg	0.00132 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		218 mg/kg	1.117	103.972 mg/kg	0.0104 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.2 mg/kg	1.142	0.586 mg/kg	0.0000586 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		35.1 mg/kg	1.462	21.914 mg/kg	0.00219 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		178 mg/kg	1.126	85.608 mg/kg	0.00856 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	440 mg/kg		187.954 mg/kg	0.0188 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	0.9 mg/kg		0.384 mg/kg	0.0000384 %	✓	
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.8 mg/kg	1.5	1.794 mg/kg	0.000179 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		58.8 mg/kg	1.545	38.811 mg/kg	0.00388 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		5 mg/kg	2.554	5.454 mg/kg	0.000545 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		2.1 mg/kg	3.22	2.888 mg/kg	0.000289 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		276 mg/kg	1.245	146.75 mg/kg	0.0147 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		0.23 mg/kg		0.0982 mg/kg	0.00000982 %	✓	
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		0.37 mg/kg		0.158 mg/kg	0.0000158 %	✓	
		205-917-1 / 208-96-8							
18		acenaphthene		0.16 mg/kg		0.0683 mg/kg	0.00000683 %	✓	
		201-469-6 / 83-32-9							
19		fluorene		0.19 mg/kg		0.0812 mg/kg	0.00000812 %	✓	
		201-695-5 / 86-73-7							
20		phenanthrene		1.62 mg/kg		0.692 mg/kg	0.0000692 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		0.68 mg/kg		0.29 mg/kg	0.000029 %	✓	
		204-371-1 / 120-12-7							
22		fluoranthene		3.68 mg/kg		1.572 mg/kg	0.000157 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		3.37 mg/kg		1.44 mg/kg	0.000144 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		1.8 mg/kg		0.769 mg/kg	0.0000769 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		2.36 mg/kg		1.008 mg/kg	0.000101 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		2.22 mg/kg		0.948 mg/kg	0.0000948 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		1.43 mg/kg		0.611 mg/kg	0.0000611 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		0.42 mg/kg		0.179 mg/kg	0.0000179 %	✓	
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		1.59 mg/kg		0.679 mg/kg	0.0000679 %	✓	
		205-883-8 / 191-24-2							
30		coronene		0.33 mg/kg		0.141 mg/kg	0.0000141 %	✓	
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		3.12 mg/kg		1.333 mg/kg	0.000133 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		1.21 mg/kg		0.517 mg/kg	0.0000517 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		220 mg/kg		93.977 mg/kg	0.0094 %	✓	
		TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1], 203-396-5 [2], 203-576-3 [3], 215-535-7 [4] / 95-47-6 [1], 106-42-3 [2], 108-38-3 [3], 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
39		asbestos		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		650-013-00-6 / - - - - - - - / 12001-28-4, 132207-32-0, 12172-73-5							

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
								Total:	0.072 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0094%)

Classification of sample: BH18[5]

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

Sample details

Sample Name:
BH18[5]
Sample Depth:
3 m
Moisture content:
20.8%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 20.8% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		8 mg/kg	1.197	7.928 mg/kg	0.000793 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		16.1 mg/kg	1.32	17.597 mg/kg	0.00176 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		123 mg/kg	1.117	113.684 mg/kg	0.0114 %	✓	
	/ 215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.5 mg/kg	1.142	0.473 mg/kg	0.0000473 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		23.6 mg/kg	1.462	28.554 mg/kg	0.00286 %	✓	
	/ 215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		76 mg/kg	1.126	70.834 mg/kg	0.00708 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
	006-007-00-5 / /							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	198 mg/kg		163.907 mg/kg	0.0164 %	✓	
	082-001-00-6 / /							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	0.2 mg/kg		0.166 mg/kg	0.0000166 %	✓	
	080-002-00-6 / /							
11	molybdenum { molybdenum(VI) oxide }		2.1 mg/kg	1.5	2.608 mg/kg	0.000261 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		32.9 mg/kg	1.545	42.083 mg/kg	0.00421 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2	mg/kg	2.554	4.228	mg/kg	0.000423 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				1.3	mg/kg	3.22	3.465	mg/kg	0.000347 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				158	mg/kg	1.245	162.802	mg/kg	0.0163 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.07	mg/kg		0.0579	mg/kg	0.00000579 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			201-695-5	86-73-7									
20		phenanthrene				0.18	mg/kg		0.149	mg/kg	0.0000149 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.1	mg/kg		0.0828	mg/kg	0.00000828 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				0.72	mg/kg		0.596	mg/kg	0.0000596 %	✓	
			205-912-4	206-44-0									
23		pyrene				0.62	mg/kg		0.513	mg/kg	0.0000513 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				0.43	mg/kg		0.356	mg/kg	0.0000356 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.43	mg/kg		0.356	mg/kg	0.0000356 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.45	mg/kg		0.373	mg/kg	0.0000373 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.34	mg/kg		0.281	mg/kg	0.0000281 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.27	mg/kg		0.224	mg/kg	0.0000224 %	✓	
			205-883-8	191-24-2									
30		coronene				0.06	mg/kg		0.0497	mg/kg	0.00000497 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				0.62	mg/kg		0.513	mg/kg	0.0000513 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.24	mg/kg		0.199	mg/kg	0.0000199 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				584	mg/kg		483.444	mg/kg	0.0483 %	✓	
				TPH									
35		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
36		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
										Total:	0.111 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0483%)

Classification of sample: BH19

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

Sample details

Sample Name:
BH19
Sample Depth:
1 m
Moisture content:
7.6%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 7.6% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2 mg/kg	1.197	2.225 mg/kg	0.000223 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		35.2 mg/kg	1.32	43.193 mg/kg	0.00432 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		99 mg/kg	1.117	102.727 mg/kg	0.0103 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.3 mg/kg	1.142	0.318 mg/kg	0.0000318 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		30 mg/kg	1.462	40.75 mg/kg	0.00407 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		100 mg/kg	1.126	104.636 mg/kg	0.0105 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	116 mg/kg		107.807 mg/kg	0.0108 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.2 mg/kg	1.5	4.462 mg/kg	0.000446 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		26.5 mg/kg	1.545	38.055 mg/kg	0.00381 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2	mg/kg	2.554	4.746	mg/kg	0.000475 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				0.9	mg/kg	3.22	2.693	mg/kg	0.000269 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				483	mg/kg	1.245	558.733	mg/kg	0.0559 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.47	mg/kg		0.437	mg/kg	0.0000437 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.59	mg/kg		0.548	mg/kg	0.0000548 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				0.5	mg/kg		0.465	mg/kg	0.0000465 %	✓	
			201-469-6	83-32-9									
19		fluorene				0.7	mg/kg		0.651	mg/kg	0.0000651 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				4.08	mg/kg		3.792	mg/kg	0.000379 %	✓	
			201-581-5	85-01-8									
21		anthracene				1.82	mg/kg		1.691	mg/kg	0.000169 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				6.84	mg/kg		6.357	mg/kg	0.000636 %	✓	
			205-912-4	206-44-0									
23		pyrene				5.4	mg/kg		5.019	mg/kg	0.000502 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				3.59	mg/kg		3.336	mg/kg	0.000334 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				3.4	mg/kg		3.16	mg/kg	0.000316 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				3.29	mg/kg		3.058	mg/kg	0.000306 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				2.11	mg/kg		1.961	mg/kg	0.000196 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.51	mg/kg		0.474	mg/kg	0.0000474 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				1.76	mg/kg		1.636	mg/kg	0.000164 %	✓	
			205-883-8	191-24-2									
30		coronene				0.51	mg/kg		0.474	mg/kg	0.0000474 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				3.83	mg/kg		3.559	mg/kg	0.000356 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				1.49	mg/kg		1.385	mg/kg	0.000138 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				1	mg/kg		0.929	mg/kg	0.0000929 %	✓	
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				494	mg/kg		459.108	mg/kg	0.0459 %	✓	
				TPH									
35		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.151 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0459%)

Classification of sample: BH19[2]

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

Sample details

Sample Name:
BH19[2]
Sample Depth:
3 m
Moisture content:
22.6%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 22.6% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		2 mg/kg	1.197	1.953 mg/kg	0.000195 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		16.8 mg/kg	1.32	18.093 mg/kg	0.00181 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		113 mg/kg	1.117	102.908 mg/kg	0.0103 %	✓	
	215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.6 mg/kg	1.142	0.559 mg/kg	0.0000559 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		24.2 mg/kg	1.462	28.85 mg/kg	0.00288 %	✓	
	215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		42 mg/kg	1.126	38.57 mg/kg	0.00386 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	67 mg/kg		54.649 mg/kg	0.00546 %	✓	
	082-001-00-6							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	080-002-00-6							
11	molybdenum { molybdenum(VI) oxide }		1.6 mg/kg	1.5	1.958 mg/kg	0.000196 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		39.7 mg/kg	1.545	50.036 mg/kg	0.005 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2	mg/kg	2.554	4.166	mg/kg	0.000417 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				1	mg/kg	3.22	2.626	mg/kg	0.000263 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				96	mg/kg	1.245	97.465	mg/kg	0.00975 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			201-695-5	86-73-7									
20		phenanthrene				0.13	mg/kg		0.106	mg/kg	0.0000106 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.05	mg/kg		0.0408	mg/kg	0.00000408 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				0.28	mg/kg		0.228	mg/kg	0.0000228 %	✓	
			205-912-4	206-44-0									
23		pyrene				0.26	mg/kg		0.212	mg/kg	0.0000212 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				0.18	mg/kg		0.147	mg/kg	0.0000147 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.18	mg/kg		0.147	mg/kg	0.0000147 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.18	mg/kg		0.147	mg/kg	0.0000147 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.15	mg/kg		0.122	mg/kg	0.0000122 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.12	mg/kg		0.0979	mg/kg	0.00000979 %	✓	
			205-883-8	191-24-2									
30		coronene				0.05	mg/kg		0.0408	mg/kg	0.00000408 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				0.24	mg/kg		0.196	mg/kg	0.0000196 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.09	mg/kg		0.0734	mg/kg	0.00000734 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				178	mg/kg		145.188	mg/kg	0.0145 %	✓	
				TPH									
35		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
36		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
										Total:	0.0551 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0145%)

Classification of sample: BH20

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

Sample details

Sample Name:
BH20
Sample Depth:
1 m
Moisture content:
12.8%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 12.8% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		3 mg/kg	1.197	3.184 mg/kg	0.000318 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		26.4 mg/kg	1.32	30.901 mg/kg	0.00309 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		175 mg/kg	1.117	173.217 mg/kg	0.0173 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.4 mg/kg	1.142	0.405 mg/kg	0.0000405 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		41.8 mg/kg	1.462	54.16 mg/kg	0.00542 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		48 mg/kg	1.126	47.91 mg/kg	0.00479 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	194 mg/kg		171.986 mg/kg	0.0172 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		4.5 mg/kg	1.5	5.985 mg/kg	0.000598 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		23.3 mg/kg	1.545	31.917 mg/kg	0.00319 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		2 mg/kg	2.554	4.528 mg/kg	0.000453 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		1.4 mg/kg	3.22	3.996 mg/kg	0.0004 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		268 mg/kg	1.245	295.73 mg/kg	0.0296 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		0.1 mg/kg		0.0887 mg/kg	0.00000887 %	✓	
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		0.11 mg/kg		0.0975 mg/kg	0.00000975 %	✓	
		205-917-1 / 208-96-8							
18		acenaphthene		0.15 mg/kg		0.133 mg/kg	0.0000133 %	✓	
		201-469-6 / 83-32-9							
19		fluorene		0.17 mg/kg		0.151 mg/kg	0.0000151 %	✓	
		201-695-5 / 86-73-7							
20		phenanthrene		1.53 mg/kg		1.356 mg/kg	0.000136 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		0.42 mg/kg		0.372 mg/kg	0.0000372 %	✓	
		204-371-1 / 120-12-7							
22		fluoranthene		2.43 mg/kg		2.154 mg/kg	0.000215 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		1.99 mg/kg		1.764 mg/kg	0.000176 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		1.32 mg/kg		1.17 mg/kg	0.000117 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		1.35 mg/kg		1.197 mg/kg	0.00012 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		1.35 mg/kg		1.197 mg/kg	0.00012 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		0.95 mg/kg		0.842 mg/kg	0.0000842 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		0.21 mg/kg		0.186 mg/kg	0.0000186 %	✓	
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		0.81 mg/kg		0.718 mg/kg	0.0000718 %	✓	
		205-883-8 / 191-24-2							
30		coronene		0.31 mg/kg		0.275 mg/kg	0.0000275 %	✓	
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		1.63 mg/kg		1.445 mg/kg	0.000145 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		0.64 mg/kg		0.567 mg/kg	0.0000567 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		145 mg/kg		128.546 mg/kg	0.0129 %	✓	
		TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] / 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
						Total:	0.0969 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0129%)

Classification of sample: BH20[2]

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

Sample details

Sample Name:
BH20[2]
Sample Depth:
3 m
Moisture content:
19.8%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 19.8% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		4 mg/kg	1.197	3.997 mg/kg	0.0004 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		21.9 mg/kg	1.32	24.136 mg/kg	0.00241 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		202 mg/kg	1.117	188.259 mg/kg	0.0188 %	✓	
	215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.5 mg/kg	1.142	0.477 mg/kg	0.0000477 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		49.8 mg/kg	1.462	60.756 mg/kg	0.00608 %	✓	
	215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		55 mg/kg	1.126	51.689 mg/kg	0.00517 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
	006-007-00-5							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	156 mg/kg		130.217 mg/kg	0.013 %	✓	
	082-001-00-6							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	0.1 mg/kg		0.0835 mg/kg	0.00000835 %	✓	
	080-002-00-6							
11	molybdenum { molybdenum(VI) oxide }		6 mg/kg	1.5	7.513 mg/kg	0.000751 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		27.4 mg/kg	1.545	35.341 mg/kg	0.00353 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2	mg/kg	2.554	4.263	mg/kg	0.000426 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				1.7	mg/kg	3.22	4.569	mg/kg	0.000457 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				357	mg/kg	1.245	370.921	mg/kg	0.0371 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.06	mg/kg		0.0501	mg/kg	0.00000501 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.15	mg/kg		0.125	mg/kg	0.0000125 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
19		fluorene				0.07	mg/kg		0.0584	mg/kg	0.00000584 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				0.69	mg/kg		0.576	mg/kg	0.0000576 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.27	mg/kg		0.225	mg/kg	0.0000225 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				1.55	mg/kg		1.294	mg/kg	0.000129 %	✓	
			205-912-4	206-44-0									
23		pyrene				1.34	mg/kg		1.119	mg/kg	0.000112 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				0.93	mg/kg		0.776	mg/kg	0.0000776 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.94	mg/kg		0.785	mg/kg	0.0000785 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.95	mg/kg		0.793	mg/kg	0.0000793 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.73	mg/kg		0.609	mg/kg	0.0000609 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.18	mg/kg		0.15	mg/kg	0.000015 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.65	mg/kg		0.543	mg/kg	0.0000543 %	✓	
			205-883-8	191-24-2									
30		coronene				0.2	mg/kg		0.167	mg/kg	0.0000167 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				1.16	mg/kg		0.968	mg/kg	0.0000968 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.45	mg/kg		0.376	mg/kg	0.0000376 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				227	mg/kg		189.482	mg/kg	0.0189 %	✓	
				TPH									
35		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.108 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0189%)

Classification of sample: BH21

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

Sample details

Sample Name:
BH21
Sample Depth:
1 m
Moisture content:
17.8%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 17.8% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2 mg/kg	1.197	2.032 mg/kg	0.000203 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		10.3 mg/kg	1.32	11.544 mg/kg	0.00115 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		322 mg/kg	1.117	305.191 mg/kg	0.0305 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2 mg/kg	1.142	0.194 mg/kg	0.0000194 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		46.5 mg/kg	1.462	57.693 mg/kg	0.00577 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		30 mg/kg	1.126	28.673 mg/kg	0.00287 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				1.1 mg/kg	1.884	1.759 mg/kg	0.000176 %	✓	
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	107 mg/kg		90.832 mg/kg	0.00908 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		5 mg/kg	1.5	6.368 mg/kg	0.000637 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		20.1 mg/kg	1.545	26.365 mg/kg	0.00264 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		1 mg/kg	2.554	2.168 mg/kg	0.000217 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		1.4 mg/kg	3.22	3.827 mg/kg	0.000383 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		97 mg/kg	1.245	102.493 mg/kg	0.0102 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		0.08 mg/kg		0.0679 mg/kg	0.00000679 %	✓	
		601-052-00-2 / 202-049-5 / 91-20-3							
17	•	acenaphthylene		0.23 mg/kg		0.195 mg/kg	0.0000195 %	✓	
		205-917-1 / 208-96-8							
18	•	acenaphthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6 / 83-32-9							
19	•	fluorene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5 / 86-73-7							
20	•	phenanthrene		0.73 mg/kg		0.62 mg/kg	0.000062 %	✓	
		201-581-5 / 85-01-8							
21	•	anthracene		0.3 mg/kg		0.255 mg/kg	0.0000255 %	✓	
		204-371-1 / 120-12-7							
22	•	fluoranthene		2.56 mg/kg		2.173 mg/kg	0.000217 %	✓	
		205-912-4 / 206-44-0							
23	•	pyrene		2.09 mg/kg		1.774 mg/kg	0.000177 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		1.59 mg/kg		1.35 mg/kg	0.000135 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		1.56 mg/kg		1.324 mg/kg	0.000132 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		1.64 mg/kg		1.392 mg/kg	0.000139 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27	•	indeno[123-cd]pyrene		1.14 mg/kg		0.968 mg/kg	0.0000968 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		0.3 mg/kg		0.255 mg/kg	0.0000255 %	✓	
		601-041-00-2 / 200-181-8 / 53-70-3							
29	•	benzo[ghi]perylene		0.94 mg/kg		0.798 mg/kg	0.0000798 %	✓	
		205-883-8 / 191-24-2							
30	•	coronene		0.24 mg/kg		0.204 mg/kg	0.0000204 %	✓	
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		2.1 mg/kg		1.783 mg/kg	0.000178 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		0.82 mg/kg		0.696 mg/kg	0.0000696 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3							
34	•	TPH (C6 to C40) petroleum group		192 mg/kg		162.988 mg/kg	0.0163 %	✓	
		TPH							
35	•	polychlorobiphenyls; PCB		<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
						Total:	0.0818 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0163%)

Classification of sample: BH21[2]

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

Sample details

Sample Name:
BH21[2]
Sample Depth:
2 m
Moisture content:
47%
(dry weight correction)

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

Hazard properties

None identified

Determinands

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

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		12	mg/kg	1.197	9.772	mg/kg	0.000977 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		88	mg/kg	1.32	79.04	mg/kg	0.0079 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		585	mg/kg	1.117	444.324	mg/kg	0.0444 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.4	mg/kg	1.142	0.311	mg/kg	0.0000311 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		54.7	mg/kg	1.462	54.386	mg/kg	0.00544 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3	mg/kg	1.923	<0.577	mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		248	mg/kg	1.126	189.946	mg/kg	0.019 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.8	mg/kg	1.884	1.025	mg/kg	0.000103 %	✓	
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	621	mg/kg		422.449	mg/kg	0.0422 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	1.2	mg/kg		0.816	mg/kg	0.0000816 %	✓	
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		14.6	mg/kg	1.5	14.9	mg/kg	0.00149 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		94	mg/kg	1.545	98.808	mg/kg	0.00988 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				4	mg/kg	2.554	6.949	mg/kg	0.000695 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				1.8	mg/kg	3.22	3.943	mg/kg	0.000394 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				649	mg/kg	1.245	549.537	mg/kg	0.055 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.12	mg/kg		0.0816	mg/kg	0.00000816 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.27	mg/kg		0.184	mg/kg	0.0000184 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-469-6	83-32-9									
19		fluorene				0.09	mg/kg		0.0612	mg/kg	0.00000612 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				1.91	mg/kg		1.299	mg/kg	0.00013 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.36	mg/kg		0.245	mg/kg	0.0000245 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				2.37	mg/kg		1.612	mg/kg	0.000161 %	✓	
			205-912-4	206-44-0									
23		pyrene				1.91	mg/kg		1.299	mg/kg	0.00013 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				1.15	mg/kg		0.782	mg/kg	0.0000782 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				1.17	mg/kg		0.796	mg/kg	0.0000796 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				1	mg/kg		0.68	mg/kg	0.000068 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.67	mg/kg		0.456	mg/kg	0.0000456 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.17	mg/kg		0.116	mg/kg	0.0000116 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.53	mg/kg		0.361	mg/kg	0.0000361 %	✓	
			205-883-8	191-24-2									
30		coronene				0.15	mg/kg		0.102	mg/kg	0.0000102 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				1.25	mg/kg		0.85	mg/kg	0.000085 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.49	mg/kg		0.333	mg/kg	0.0000333 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				208	mg/kg		141.497	mg/kg	0.0141 %	✓	
				TPH									
35		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.203 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0141%)

Classification of sample: BH21[3]

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

Sample details

Sample Name:
BH21[3]
Sample Depth:
3 m
Moisture content:
8.9%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 8.9% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2 mg/kg	1.197	2.199 mg/kg	0.00022 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		13.6 mg/kg	1.32	16.489 mg/kg	0.00165 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		43 mg/kg	1.117	44.086 mg/kg	0.00441 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2 mg/kg	1.142	0.21 mg/kg	0.000021 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		59.7 mg/kg	1.462	80.124 mg/kg	0.00801 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		18 mg/kg	1.126	18.61 mg/kg	0.00186 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	36 mg/kg		33.058 mg/kg	0.00331 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.7 mg/kg	1.5	5.097 mg/kg	0.00051 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		28.3 mg/kg	1.545	40.155 mg/kg	0.00402 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		1 mg/kg	2.554	2.345 mg/kg	0.000234 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		0.5 mg/kg	3.22	1.478 mg/kg	0.000148 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		51 mg/kg	1.245	58.292 mg/kg	0.00583 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-917-1 / 208-96-8							
18		acenaphthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6 / 83-32-9							
19		fluorene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5 / 86-73-7							
20		phenanthrene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		201-581-5 / 85-01-8							
21		anthracene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		204-371-1 / 120-12-7							
22		fluoranthene		0.07 mg/kg		0.0643 mg/kg	0.00000643 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		0.06 mg/kg		0.0551 mg/kg	0.00000551 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		0.09 mg/kg		0.0826 mg/kg	0.00000826 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		0.06 mg/kg		0.0551 mg/kg	0.00000551 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		0.06 mg/kg		0.0551 mg/kg	0.00000551 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		0.06 mg/kg		0.0551 mg/kg	0.00000551 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		0.05 mg/kg		0.0459 mg/kg	0.00000459 %	✓	
		205-883-8 / 191-24-2							
30		coronene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		0.06 mg/kg		0.0551 mg/kg	0.00000551 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		0.03 mg/kg		0.0275 mg/kg	0.00000275 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		<52 mg/kg		<52 mg/kg	<0.0052 %		<LOD
		TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] / 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
						Total:	0.0358 %		

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

Classification of sample: BH22

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

Sample details

Sample Name:
BH22
Sample Depth:
1 m
Moisture content:
17.6%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 17.6% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2 mg/kg	1.197	2.036 mg/kg	0.000204 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		62.7 mg/kg	1.32	70.395 mg/kg	0.00704 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		189 mg/kg	1.117	179.438 mg/kg	0.0179 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.5 mg/kg	1.142	0.486 mg/kg	0.0000486 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		30.7 mg/kg	1.462	38.155 mg/kg	0.00382 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		69 mg/kg	1.126	66.06 mg/kg	0.00661 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	288 mg/kg		244.898 mg/kg	0.0245 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.1 mg/kg	1.5	3.955 mg/kg	0.000395 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		42.2 mg/kg	1.545	55.448 mg/kg	0.00554 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2	mg/kg	2.554	4.343	mg/kg	0.000434 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				2	mg/kg	3.22	5.476	mg/kg	0.000548 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				255	mg/kg	1.245	269.9	mg/kg	0.027 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.06	mg/kg		0.051	mg/kg	0.0000051 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.32	mg/kg		0.272	mg/kg	0.0000272 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				0.08	mg/kg		0.068	mg/kg	0.0000068 %	✓	
			201-469-6	83-32-9									
19		fluorene				0.11	mg/kg		0.0935	mg/kg	0.00000935 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				1.26	mg/kg		1.071	mg/kg	0.000107 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.59	mg/kg		0.502	mg/kg	0.0000502 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				4.49	mg/kg		3.818	mg/kg	0.000382 %	✓	
			205-912-4	206-44-0									
23		pyrene				3.62	mg/kg		3.078	mg/kg	0.000308 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				2.8	mg/kg		2.381	mg/kg	0.000238 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				2.46	mg/kg		2.092	mg/kg	0.000209 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				2.9	mg/kg		2.466	mg/kg	0.000247 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				1.85	mg/kg		1.573	mg/kg	0.000157 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.25	mg/kg		0.213	mg/kg	0.0000213 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				1.41	mg/kg		1.199	mg/kg	0.00012 %	✓	
			205-883-8	191-24-2									
30		coronene				0.29	mg/kg		0.247	mg/kg	0.0000247 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				3.41	mg/kg		2.9	mg/kg	0.00029 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				1.33	mg/kg		1.131	mg/kg	0.000113 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				1	mg/kg		0.85	mg/kg	0.000085 %	✓	
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				430	mg/kg		365.646	mg/kg	0.0366 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
39		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
								Total:	0.133 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0366%)

Classification of sample: BH22[2]

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample Name:
BH22[2]
Sample Depth:
3 m
Moisture content:
41.8%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex: (Note 1 conc.: 0.28%)

Determinands

Moisture content: 41.8% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		35 mg/kg	1.197	29.548 mg/kg	0.00295 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		47.5 mg/kg	1.32	44.228 mg/kg	0.00442 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		842 mg/kg	1.117	662.975 mg/kg	0.0663 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.3 mg/kg	1.142	1.047 mg/kg	0.000105 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		45.4 mg/kg	1.462	46.795 mg/kg	0.00468 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		208 mg/kg	1.126	165.151 mg/kg	0.0165 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				1.7 mg/kg	1.884	2.259 mg/kg	0.000226 %	✓	
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	3973 mg/kg		2801.834 mg/kg	0.28 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
10		mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	0.7 mg/kg		0.494 mg/kg	0.0000494 %	✓	
		080-002-00-6							
11		molybdenum { molybdenum(VI) oxide }		6.9 mg/kg	1.5	7.3 mg/kg	0.00073 %	✓	
		042-001-00-9 / 215-204-7 / 1313-27-5							
12		nickel { nickel(IV) oxide (nickel dioxide) }		64.8 mg/kg	1.545	70.612 mg/kg	0.00706 %	✓	
		028-004-00-8 / 234-823-3 / 12035-36-8							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		3 mg/kg	2.554	5.403 mg/kg	0.00054 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		7.2 mg/kg	3.22	16.349 mg/kg	0.00163 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		786 mg/kg	1.245	689.947 mg/kg	0.069 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		0.16 mg/kg		0.113 mg/kg	0.0000113 %	✓	
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		0.75 mg/kg		0.529 mg/kg	0.0000529 %	✓	
		205-917-1 / 208-96-8							
18		acenaphthene		0.24 mg/kg		0.169 mg/kg	0.0000169 %	✓	
		201-469-6 / 83-32-9							
19		fluorene		0.27 mg/kg		0.19 mg/kg	0.000019 %	✓	
		201-695-5 / 86-73-7							
20		phenanthrene		3.81 mg/kg		2.687 mg/kg	0.000269 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		1.84 mg/kg		1.298 mg/kg	0.00013 %	✓	
		204-371-1 / 120-12-7							
22		fluoranthene		13.53 mg/kg		9.542 mg/kg	0.000954 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		10.61 mg/kg		7.482 mg/kg	0.000748 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		8.14 mg/kg		5.74 mg/kg	0.000574 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		6.91 mg/kg		4.873 mg/kg	0.000487 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		7.9 mg/kg		5.571 mg/kg	0.000557 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		4.91 mg/kg		3.463 mg/kg	0.000346 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		1.13 mg/kg		0.797 mg/kg	0.0000797 %	✓	
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		3.76 mg/kg		2.652 mg/kg	0.000265 %	✓	
		205-883-8 / 191-24-2							
30		coronene		1.01 mg/kg		0.712 mg/kg	0.0000712 %	✓	
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		9.23 mg/kg		6.509 mg/kg	0.000651 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		3.59 mg/kg		2.532 mg/kg	0.000253 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		3 mg/kg		2.116 mg/kg	0.000212 %	✓	
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		353 mg/kg		248.942 mg/kg	0.0249 %	✓	
		TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] / 95-47-6 [1] 106-42-3 [2]							

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
			203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB				<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3							
39		asbestos				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5							
								Total:	0.485 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0249%)

Classification of sample: BH22[3]

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

Sample details

Sample Name:
BH22[3]
Sample Depth:
4 m
Moisture content:
40.2%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 40.2% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		4 mg/kg	1.197	3.415 mg/kg	0.000342 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		31.3 mg/kg	1.32	29.477 mg/kg	0.00295 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		297 mg/kg	1.117	236.521 mg/kg	0.0237 %	✓	
	215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.7 mg/kg	1.142	0.57 mg/kg	0.000057 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		23.8 mg/kg	1.462	24.811 mg/kg	0.00248 %	✓	
	215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		95 mg/kg	1.126	76.291 mg/kg	0.00763 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		0.8 mg/kg	1.884	1.075 mg/kg	0.000108 %	✓	
	006-007-00-5							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	327 mg/kg		233.238 mg/kg	0.0233 %	✓	
	082-001-00-6							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	0.3 mg/kg		0.214 mg/kg	0.0000214 %	✓	
	080-002-00-6							
11	molybdenum { molybdenum(VI) oxide }		4.8 mg/kg	1.5	5.136 mg/kg	0.000514 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		43.5 mg/kg	1.545	47.943 mg/kg	0.00479 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	2.554	1.821	mg/kg	0.000182 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				6.2	mg/kg	3.22	14.239	mg/kg	0.00142 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				400	mg/kg	1.245	355.125	mg/kg	0.0355 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.07	mg/kg		0.0499	mg/kg	0.00000499 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.13	mg/kg		0.0927	mg/kg	0.00000927 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
19		fluorene				0.07	mg/kg		0.0499	mg/kg	0.00000499 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				0.48	mg/kg		0.342	mg/kg	0.0000342 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.21	mg/kg		0.15	mg/kg	0.000015 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				1.51	mg/kg		1.077	mg/kg	0.000108 %	✓	
			205-912-4	206-44-0									
23		pyrene				1.25	mg/kg		0.892	mg/kg	0.0000892 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				0.97	mg/kg		0.692	mg/kg	0.0000692 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.88	mg/kg		0.628	mg/kg	0.0000628 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				1	mg/kg		0.713	mg/kg	0.0000713 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.73	mg/kg		0.521	mg/kg	0.0000521 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.15	mg/kg		0.107	mg/kg	0.0000107 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.56	mg/kg		0.399	mg/kg	0.0000399 %	✓	
			205-883-8	191-24-2									
30		coronene				0.15	mg/kg		0.107	mg/kg	0.0000107 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				1.23	mg/kg		0.877	mg/kg	0.0000877 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.48	mg/kg		0.342	mg/kg	0.0000342 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				203	mg/kg		144.793	mg/kg	0.0145 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
39		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
								Total:	0.118 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0145%)

Classification of sample: BH23

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample Name:
BH23
Sample Depth:
1 m
Moisture content:
31.8%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinand:

dicopper oxide; copper (I) oxide: (compound conc.: 0.3%)

Determinands

Moisture content: 31.8% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		10 mg/kg	1.197	9.083 mg/kg	0.000908 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		66.5 mg/kg	1.32	66.617 mg/kg	0.00666 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		821 mg/kg	1.117	695.487 mg/kg	0.0695 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.1 mg/kg	1.142	0.953 mg/kg	0.0000953 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		43.4 mg/kg	1.462	48.127 mg/kg	0.00481 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		3517 mg/kg	1.126	3004.362 mg/kg	0.3 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				11.9 mg/kg	1.884	17.01 mg/kg	0.0017 %	✓	
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	565 mg/kg		428.68 mg/kg	0.0429 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
10		mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	0.3 mg/kg		0.228 mg/kg	0.0000228 %	✓	
		080-002-00-6							
11		molybdenum { molybdenum(VI) oxide }		10.6 mg/kg	1.5	12.065 mg/kg	0.00121 %	✓	
		042-001-00-9 / 215-204-7 / 1313-27-5							
12		nickel { nickel(IV) oxide (nickel dioxide) }		49.1 mg/kg	1.545	57.563 mg/kg	0.00576 %	✓	
		028-004-00-8 / 234-823-3 / 12035-36-8							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		4 mg/kg	2.554	7.75 mg/kg	0.000775 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		1.5 mg/kg	3.22	3.665 mg/kg	0.000366 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		690 mg/kg	1.245	651.633 mg/kg	0.0652 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		0.14 mg/kg		0.106 mg/kg	0.0000106 %	✓	
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		0.53 mg/kg		0.402 mg/kg	0.0000402 %	✓	
		205-917-1 / 208-96-8							
18		acenaphthene		0.1 mg/kg		0.0759 mg/kg	0.00000759 %	✓	
		201-469-6 / 83-32-9							
19		fluorene		0.15 mg/kg		0.114 mg/kg	0.0000114 %	✓	
		201-695-5 / 86-73-7							
20		phenanthrene		2.27 mg/kg		1.722 mg/kg	0.000172 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		0.91 mg/kg		0.69 mg/kg	0.000069 %	✓	
		204-371-1 / 120-12-7							
22		fluoranthene		6.44 mg/kg		4.886 mg/kg	0.000489 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		5.06 mg/kg		3.839 mg/kg	0.000384 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		3.57 mg/kg		2.709 mg/kg	0.000271 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		3.53 mg/kg		2.678 mg/kg	0.000268 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		3.46 mg/kg		2.625 mg/kg	0.000263 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		2.07 mg/kg		1.571 mg/kg	0.000157 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		0.36 mg/kg		0.273 mg/kg	0.0000273 %	✓	
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		1.98 mg/kg		1.502 mg/kg	0.00015 %	✓	
		205-883-8 / 191-24-2							
30		coronene		0.48 mg/kg		0.364 mg/kg	0.0000364 %	✓	
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		4.08 mg/kg		3.096 mg/kg	0.00031 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		1.58 mg/kg		1.199 mg/kg	0.00012 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		188 mg/kg		142.64 mg/kg	0.0143 %	✓	
		TPH							
35		toluene		<50 mg/kg		<50 mg/kg	<0.005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<50 mg/kg		<50 mg/kg	<0.005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] / 95-47-6 [1] 106-42-3 [2]							

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
			203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB				<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3							
									Total:	0.528 %	

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0143%)

Classification of sample: BH24

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

Sample details

Sample Name:
BH24
Sample Depth:
1 m
Moisture content:
20.3%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 20.3% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		7 mg/kg	1.197	6.966 mg/kg	0.000697 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		23.9 mg/kg	1.32	26.231 mg/kg	0.00262 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		348 mg/kg	1.117	322.979 mg/kg	0.0323 %	✓	
	/ 215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		1.3 mg/kg	1.142	1.234 mg/kg	0.000123 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		71.1 mg/kg	1.462	86.381 mg/kg	0.00864 %	✓	
	/ 215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		176 mg/kg	1.126	164.718 mg/kg	0.0165 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		1 mg/kg	1.884	1.566 mg/kg	0.000157 %	✓	
	006-007-00-5 / /							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	317 mg/kg		263.508 mg/kg	0.0264 %	✓	
	082-001-00-6 / /							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	0.6 mg/kg		0.499 mg/kg	0.0000499 %	✓	
	080-002-00-6 / /							
11	molybdenum { molybdenum(VI) oxide }		4.7 mg/kg	1.5	5.861 mg/kg	0.000586 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		63.8 mg/kg	1.545	81.948 mg/kg	0.00819 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	2.554	2.123	mg/kg	0.000212 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				2.4	mg/kg	3.22	6.424	mg/kg	0.000642 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				617	mg/kg	1.245	638.394	mg/kg	0.0638 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.18	mg/kg		0.15	mg/kg	0.000015 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				1.1	mg/kg		0.914	mg/kg	0.0000914 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				0.15	mg/kg		0.125	mg/kg	0.0000125 %	✓	
			201-469-6	83-32-9									
19		fluorene				0.19	mg/kg		0.158	mg/kg	0.0000158 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				1.57	mg/kg		1.305	mg/kg	0.000131 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.95	mg/kg		0.79	mg/kg	0.000079 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				5.45	mg/kg		4.53	mg/kg	0.000453 %	✓	
			205-912-4	206-44-0									
23		pyrene				5.21	mg/kg		4.331	mg/kg	0.000433 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				3.74	mg/kg		3.109	mg/kg	0.000311 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				4.08	mg/kg		3.392	mg/kg	0.000339 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				4.55	mg/kg		3.782	mg/kg	0.000378 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				2.53	mg/kg		2.103	mg/kg	0.00021 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.73	mg/kg		0.607	mg/kg	0.0000607 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				2.97	mg/kg		2.469	mg/kg	0.000247 %	✓	
			205-883-8	191-24-2									
30		coronene				0.59	mg/kg		0.49	mg/kg	0.000049 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				5.51	mg/kg		4.58	mg/kg	0.000458 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				2.14	mg/kg		1.779	mg/kg	0.000178 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				3	mg/kg		2.494	mg/kg	0.000249 %	✓	
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				771	mg/kg		640.898	mg/kg	0.0641 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				0.102	mg/kg		0.0848	mg/kg	0.00000848 %	✓	
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.229 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0641%)

Classification of sample: BH24[2]

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

Sample details

Sample Name:
BH24[2]
Sample Depth:
1 m
Moisture content:
20.8%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 20.8% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		7 mg/kg	1.197	6.937 mg/kg	0.000694 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		27.9 mg/kg	1.32	30.494 mg/kg	0.00305 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		377 mg/kg	1.117	348.446 mg/kg	0.0348 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.7 mg/kg	1.142	1.608 mg/kg	0.000161 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		42 mg/kg	1.462	50.816 mg/kg	0.00508 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		**<LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		193 mg/kg	1.126	179.881 mg/kg	0.018 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.7 mg/kg	1.884	1.092 mg/kg	0.000109 %	✓	
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	367 mg/kg		303.808 mg/kg	0.0304 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	0.8 mg/kg		0.662 mg/kg	0.0000662 %	✓	
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.4 mg/kg	1.5	2.981 mg/kg	0.000298 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		74.8 mg/kg	1.545	95.679 mg/kg	0.00957 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		1.9 mg/kg	3.22	5.064 mg/kg	0.000506 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		712 mg/kg	1.245	733.639 mg/kg	0.0734 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		0.1 mg/kg		0.0828 mg/kg	0.00000828 %	✓	
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		0.42 mg/kg		0.348 mg/kg	0.0000348 %	✓	
		/ 205-917-1 / 208-96-8							
18		acenaphthene		0.14 mg/kg		0.116 mg/kg	0.0000116 %	✓	
		/ 201-469-6 / 83-32-9							
19		fluorene		0.14 mg/kg		0.116 mg/kg	0.0000116 %	✓	
		/ 201-695-5 / 86-73-7							
20		phenanthrene		2.2 mg/kg		1.821 mg/kg	0.000182 %	✓	
		/ 201-581-5 / 85-01-8							
21		anthracene		0.89 mg/kg		0.737 mg/kg	0.0000737 %	✓	
		/ 204-371-1 / 120-12-7							
22		fluoranthene		6.03 mg/kg		4.992 mg/kg	0.000499 %	✓	
		/ 205-912-4 / 206-44-0							
23		pyrene		4.96 mg/kg		4.106 mg/kg	0.000411 %	✓	
		/ 204-927-3 / 129-00-0							
24		benzo[a]anthracene		3.12 mg/kg		2.583 mg/kg	0.000258 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		2.73 mg/kg		2.26 mg/kg	0.000226 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		3.45 mg/kg		2.856 mg/kg	0.000286 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		2.42 mg/kg		2.003 mg/kg	0.0002 %	✓	
		/ 205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		0.43 mg/kg		0.356 mg/kg	0.0000356 %	✓	
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		1.97 mg/kg		1.631 mg/kg	0.000163 %	✓	
		/ 205-883-8 / 191-24-2							
30		coronene		0.54 mg/kg		0.447 mg/kg	0.0000447 %	✓	
		/ 205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		4.09 mg/kg		3.386 mg/kg	0.000339 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		1.59 mg/kg		1.316 mg/kg	0.000132 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		1 mg/kg		0.828 mg/kg	0.0000828 %	✓	
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		771 mg/kg		638.245 mg/kg	0.0638 %	✓	
		/ / TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] / 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
39		asbestos		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		650-013-00-6 / - - - - - - - / 12001-28-4 132207-32-0 12172-73-5							

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
								Total:	0.243 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0638%)

Classification of sample: BH24[3]

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

Sample details

Sample Name:
BH24[3]
Sample Depth:
2 m
Moisture content:
17.5%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 17.5% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		6 mg/kg	1.197	6.113 mg/kg	0.000611 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		87.3 mg/kg	1.32	98.097 mg/kg	0.00981 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		176 mg/kg	1.117	167.238 mg/kg	0.0167 %	✓	
	215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		68.2 mg/kg	1.462	84.832 mg/kg	0.00848 %	✓	
	215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		67 mg/kg	1.126	64.2 mg/kg	0.00642 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	144 mg/kg		122.553 mg/kg	0.0123 %	✓	
	082-001-00-6							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	080-002-00-6							
11	molybdenum { molybdenum(VI) oxide }		7.5 mg/kg	1.5	9.576 mg/kg	0.000958 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		31.8 mg/kg	1.545	41.819 mg/kg	0.00418 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2	mg/kg	2.554	4.347	mg/kg	0.000435 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				1	mg/kg	3.22	2.74	mg/kg	0.000274 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				162	mg/kg	1.245	171.612	mg/kg	0.0172 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7									
20		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
21		anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			204-371-1	120-12-7									
22		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
23		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
24		benzo[a]anthracene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-883-8	191-24-2									
30		coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				<52	mg/kg		<52	mg/kg	<0.0052 %		<LOD
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0829 %		

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

Classification of sample: BH24[4]

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample Name:
BH24[4]
Sample Depth:
3 m
Moisture content:
28.5%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinand:

zinc oxide: (compound conc.: 1.297%)

Determinands

Moisture content: 28.5% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		6 mg/kg	1.197	5.59 mg/kg	0.000559 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		47 mg/kg	1.32	48.292 mg/kg	0.00483 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		2672 mg/kg	1.117	2321.637 mg/kg	0.232 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		2.2 mg/kg	1.142	1.956 mg/kg	0.000196 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		23 mg/kg	1.462	26.16 mg/kg	0.00262 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		229 mg/kg	1.126	200.645 mg/kg	0.0201 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.8 mg/kg	1.884	1.173 mg/kg	0.000117 %	✓	
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	326 mg/kg		253.696 mg/kg	0.0254 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
10		mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		080-002-00-6							
11		molybdenum { molybdenum(VI) oxide }		13.2 mg/kg	1.5	15.411 mg/kg	0.00154 %	✓	
		042-001-00-9 / 215-204-7 / 1313-27-5							
12		nickel { nickel(IV) oxide (nickel dioxide) }		253.5 mg/kg	1.545	304.828 mg/kg	0.0305 %	✓	
		028-004-00-8 / 234-823-3 / 12035-36-8							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		82 mg/kg	2.554	162.954 mg/kg	0.0163 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		1.8 mg/kg	3.22	4.51 mg/kg	0.000451 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		13390 mg/kg	1.245	12970.21 mg/kg	1.297 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		0.05 mg/kg		0.0389 mg/kg	0.00000389 %	✓	
		205-917-1 / 208-96-8							
18		acenaphthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6 / 83-32-9							
19		fluorene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5 / 86-73-7							
20		phenanthrene		0.12 mg/kg		0.0934 mg/kg	0.00000934 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		0.06 mg/kg		0.0467 mg/kg	0.00000467 %	✓	
		204-371-1 / 120-12-7							
22		fluoranthene		0.32 mg/kg		0.249 mg/kg	0.0000249 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		0.28 mg/kg		0.218 mg/kg	0.0000218 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		0.26 mg/kg		0.202 mg/kg	0.0000202 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		0.24 mg/kg		0.187 mg/kg	0.0000187 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		0.27 mg/kg		0.21 mg/kg	0.000021 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		0.17 mg/kg		0.132 mg/kg	0.0000132 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		0.17 mg/kg		0.132 mg/kg	0.0000132 %	✓	
		205-883-8 / 191-24-2							
30		coronene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		0.35 mg/kg		0.272 mg/kg	0.0000272 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		0.13 mg/kg		0.101 mg/kg	0.0000101 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		74 mg/kg		57.588 mg/kg	0.00576 %	✓	
		TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] / 95-47-6 [1] 106-42-3 [2]							

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
			203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB				<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3							
39		asbestos				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5							
								Total:	1.638 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00576%)

Classification of sample: BH24[5]

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

Sample details

Sample Name:
BH24[5]
Sample Depth:
4 m
Moisture content:
21.6%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 21.6% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		2 mg/kg	1.197	1.969 mg/kg	0.000197 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		10.6 mg/kg	1.32	11.509 mg/kg	0.00115 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		143 mg/kg	1.117	131.3 mg/kg	0.0131 %	✓	
	215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.3 mg/kg	1.142	0.282 mg/kg	0.0000282 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		68 mg/kg	1.462	81.732 mg/kg	0.00817 %	✓	
	215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		46 mg/kg	1.126	42.591 mg/kg	0.00426 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	51 mg/kg		41.941 mg/kg	0.00419 %	✓	
	082-001-00-6							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	080-002-00-6							
11	molybdenum { molybdenum(VI) oxide }		6.6 mg/kg	1.5	8.142 mg/kg	0.000814 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		27.3 mg/kg	1.545	34.69 mg/kg	0.00347 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				3	mg/kg	2.554	6.3	mg/kg	0.00063 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				1.2	mg/kg	3.22	3.178	mg/kg	0.000318 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				436	mg/kg	1.245	446.295	mg/kg	0.0446 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7									
20		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
21		anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			204-371-1	120-12-7									
22		fluoranthene				0.09	mg/kg		0.074	mg/kg	0.0000074 %	✓	
			205-912-4	206-44-0									
23		pyrene				0.1	mg/kg		0.0822	mg/kg	0.00000822 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				0.17	mg/kg		0.14	mg/kg	0.000014 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.12	mg/kg		0.0987	mg/kg	0.00000987 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.14	mg/kg		0.115	mg/kg	0.0000115 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.1	mg/kg		0.0822	mg/kg	0.00000822 %	✓	
			205-883-8	191-24-2									
30		coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				0.14	mg/kg		0.115	mg/kg	0.0000115 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.05	mg/kg		0.0411	mg/kg	0.00000411 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				<52	mg/kg		<52	mg/kg	<0.0052 %		<LOD
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0866 %		

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

Classification of sample: BH24[6]

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample Name:
BH24[6]
Sample Depth:
4 m
Moisture content:
23.7%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinand:

zinc oxide: (compound conc.: 0.323%)

Determinands

Moisture content: 23.7% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		4 mg/kg	1.197	3.871 mg/kg	0.000387 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		26.8 mg/kg	1.32	28.605 mg/kg	0.00286 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		1296 mg/kg	1.117	1169.759 mg/kg	0.117 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.9 mg/kg	1.142	0.831 mg/kg	0.0000831 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		46.7 mg/kg	1.462	55.178 mg/kg	0.00552 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		73 mg/kg	1.126	66.443 mg/kg	0.00664 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	83 mg/kg		67.098 mg/kg	0.00671 %	✓	

#		Determinand	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number									
10		mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		080-002-00-6									
11		molybdenum { molybdenum(VI) oxide }		11.4	mg/kg	1.5	13.826	mg/kg	0.00138 %	✓	
		042-001-00-9 / 215-204-7 / 1313-27-5									
12		nickel { nickel(IV) oxide (nickel dioxide) }		177.7	mg/kg	1.545	221.972	mg/kg	0.0222 %	✓	
		028-004-00-8 / 234-823-3 / 12035-36-8									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		59	mg/kg	2.554	121.797	mg/kg	0.0122 %	✓	
		034-002-00-8									
14		boron { diboron trioxide; boric oxide }		1.7	mg/kg	3.22	4.425	mg/kg	0.000443 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2									
15		zinc { zinc oxide }		3212	mg/kg	1.245	3232.03	mg/kg	0.323 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2									
16		naphthalene		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-052-00-2 / 202-049-5 / 91-20-3									
17		acenaphthylene		0.07	mg/kg		0.0566	mg/kg	0.00000566 %	✓	
		205-917-1 / 208-96-8									
18		acenaphthene		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6 / 83-32-9									
19		fluorene		<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		201-695-5 / 86-73-7									
20		phenanthrene		0.27	mg/kg		0.218	mg/kg	0.0000218 %	✓	
		201-581-5 / 85-01-8									
21		anthracene		0.09	mg/kg		0.0728	mg/kg	0.00000728 %	✓	
		204-371-1 / 120-12-7									
22		fluoranthene		0.62	mg/kg		0.501	mg/kg	0.0000501 %	✓	
		205-912-4 / 206-44-0									
23		pyrene		0.51	mg/kg		0.412	mg/kg	0.0000412 %	✓	
		204-927-3 / 129-00-0									
24		benzo[a]anthracene		0.39	mg/kg		0.315	mg/kg	0.0000315 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3									
25		chrysene		0.39	mg/kg		0.315	mg/kg	0.0000315 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene		0.35	mg/kg		0.283	mg/kg	0.0000283 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8									
27		indeno[123-cd]pyrene		0.24	mg/kg		0.194	mg/kg	0.0000194 %	✓	
		205-893-2 / 193-39-5									
28		dibenz[a,h]anthracene		0.07	mg/kg		0.0566	mg/kg	0.00000566 %	✓	
		601-041-00-2 / 200-181-8 / 53-70-3									
29		benzo[ghi]perylene		0.23	mg/kg		0.186	mg/kg	0.0000186 %	✓	
		205-883-8 / 191-24-2									
30		coronene		0.07	mg/kg		0.0566	mg/kg	0.00000566 %	✓	
		205-881-7 / 191-07-1									
31		benzo[b]fluoranthene		0.47	mg/kg		0.38	mg/kg	0.000038 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2									
32		benzo[k]fluoranthene		0.18	mg/kg		0.146	mg/kg	0.0000146 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9									
33		benzo[j]fluoranthene		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3									
34		TPH (C6 to C40) petroleum group		265	mg/kg		214.228	mg/kg	0.0214 %	✓	
		TPH									
35		toluene		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3									
36		ethylbenzene		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4									
37		xylene		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] / 95-47-6 [1] 106-42-3 [2]									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
			203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB				<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3							
									Total:	0.521 %	

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0214%)

Classification of sample: BH25

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

Sample details

Sample Name:
BH25
Sample Depth:
1 m
Moisture content:
10.9%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 10.9% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		3 mg/kg	1.197	3.238 mg/kg	0.000324 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		18.8 mg/kg	1.32	22.382 mg/kg	0.00224 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		188 mg/kg	1.117	189.272 mg/kg	0.0189 %	✓	
	/ 215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.9 mg/kg	1.142	0.927 mg/kg	0.0000927 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		40 mg/kg	1.462	52.716 mg/kg	0.00527 %	✓	
	/ 215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		52 mg/kg	1.126	52.792 mg/kg	0.00528 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		6.6 mg/kg	1.884	11.212 mg/kg	0.00112 %	✓	
	006-007-00-5 / /							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	94 mg/kg		84.761 mg/kg	0.00848 %	✓	
	082-001-00-6 / /							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
	080-002-00-6 / /							
11	molybdenum { molybdenum(VI) oxide }		3.8 mg/kg	1.5	5.14 mg/kg	0.000514 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		30.3 mg/kg	1.545	42.217 mg/kg	0.00422 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2	mg/kg	2.554	4.605	mg/kg	0.000461 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				2.1	mg/kg	3.22	6.097	mg/kg	0.00061 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				203	mg/kg	1.245	227.842	mg/kg	0.0228 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.2	mg/kg		0.18	mg/kg	0.000018 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.26	mg/kg		0.234	mg/kg	0.0000234 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				0.35	mg/kg		0.316	mg/kg	0.0000316 %	✓	
			201-469-6	83-32-9									
19		fluorene				0.28	mg/kg		0.252	mg/kg	0.0000252 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				1.81	mg/kg		1.632	mg/kg	0.000163 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.91	mg/kg		0.821	mg/kg	0.0000821 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				5.47	mg/kg		4.932	mg/kg	0.000493 %	✓	
			205-912-4	206-44-0									
23		pyrene				4.65	mg/kg		4.193	mg/kg	0.000419 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				2.92	mg/kg		2.633	mg/kg	0.000263 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				2.59	mg/kg		2.335	mg/kg	0.000234 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				3.8	mg/kg		3.427	mg/kg	0.000343 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				2.55	mg/kg		2.299	mg/kg	0.00023 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.44	mg/kg		0.397	mg/kg	0.0000397 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				2.13	mg/kg		1.921	mg/kg	0.000192 %	✓	
			205-883-8	191-24-2									
30		coronene				0.5	mg/kg		0.451	mg/kg	0.0000451 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				4.28	mg/kg		3.859	mg/kg	0.000386 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				1.66	mg/kg		1.497	mg/kg	0.00015 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				1	mg/kg		0.902	mg/kg	0.0000902 %	✓	
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				596	mg/kg		537.421	mg/kg	0.0537 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.127 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0537%)

Classification of sample: BH25[2]

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

Sample details

Sample Name:
BH25[2]
Sample Depth:
2 m
Moisture content:
18.6%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 18.6% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		4 mg/kg	1.197	4.037 mg/kg	0.000404 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		23.2 mg/kg	1.32	25.828 mg/kg	0.00258 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		204 mg/kg	1.117	192.047 mg/kg	0.0192 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.1 mg/kg	1.142	1.059 mg/kg	0.000106 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		52.7 mg/kg	1.462	64.944 mg/kg	0.00649 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		76 mg/kg	1.126	72.148 mg/kg	0.00721 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				15.8 mg/kg	1.884	25.099 mg/kg	0.00251 %	✓	
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	168 mg/kg		141.653 mg/kg	0.0142 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		4.7 mg/kg	1.5	5.945 mg/kg	0.000595 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		45.5 mg/kg	1.545	59.28 mg/kg	0.00593 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		2 mg/kg	2.554	4.306 mg/kg	0.000431 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		3.2 mg/kg	3.22	8.688 mg/kg	0.000869 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		472 mg/kg	1.245	495.367 mg/kg	0.0495 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		0.13 mg/kg		0.11 mg/kg	0.000011 %	✓	
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		0.4 mg/kg		0.337 mg/kg	0.0000337 %	✓	
		205-917-1 / 208-96-8							
18		acenaphthene		0.25 mg/kg		0.211 mg/kg	0.0000211 %	✓	
		201-469-6 / 83-32-9							
19		fluorene		0.29 mg/kg		0.245 mg/kg	0.0000245 %	✓	
		201-695-5 / 86-73-7							
20		phenanthrene		2.01 mg/kg		1.695 mg/kg	0.000169 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		1.04 mg/kg		0.877 mg/kg	0.0000877 %	✓	
		204-371-1 / 120-12-7							
22		fluoranthene		5.27 mg/kg		4.444 mg/kg	0.000444 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		4.77 mg/kg		4.022 mg/kg	0.000402 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		2.77 mg/kg		2.336 mg/kg	0.000234 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		2.45 mg/kg		2.066 mg/kg	0.000207 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		3.48 mg/kg		2.934 mg/kg	0.000293 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		2.2 mg/kg		1.855 mg/kg	0.000185 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		0.38 mg/kg		0.32 mg/kg	0.000032 %	✓	
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		1.8 mg/kg		1.518 mg/kg	0.000152 %	✓	
		205-883-8 / 191-24-2							
30		coronene		0.55 mg/kg		0.464 mg/kg	0.0000464 %	✓	
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		3.86 mg/kg		3.255 mg/kg	0.000325 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		1.5 mg/kg		1.265 mg/kg	0.000126 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		1 mg/kg		0.843 mg/kg	0.0000843 %	✓	
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		1167 mg/kg		983.98 mg/kg	0.0984 %	✓	
		TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<**LOD**
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] / 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<**LOD**
		602-039-00-4 / 215-648-1 / 1336-36-3							
						Total:	0.211 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0984%)

Classification of sample: BH25[3]

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

Sample details

Sample Name:
BH25[3]
Sample Depth:
3 m
Moisture content:
30.6%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 30.6% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		5 mg/kg	1.197	4.583 mg/kg	0.000458 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		44.4 mg/kg	1.32	44.887 mg/kg	0.00449 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		454 mg/kg	1.117	388.127 mg/kg	0.0388 %	✓	
	215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.4 mg/kg	1.142	0.35 mg/kg	0.000035 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		34.3 mg/kg	1.462	38.385 mg/kg	0.00384 %	✓	
	215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		173 mg/kg	1.126	149.141 mg/kg	0.0149 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		0.8 mg/kg	1.884	1.154 mg/kg	0.000115 %	✓	
	006-007-00-5							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	430 mg/kg		329.25 mg/kg	0.0329 %	✓	
	082-001-00-6							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	0.2 mg/kg		0.153 mg/kg	0.0000153 %	✓	
	080-002-00-6							
11	molybdenum { molybdenum(VI) oxide }		12 mg/kg	1.5	13.784 mg/kg	0.00138 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		80.1 mg/kg	1.545	94.77 mg/kg	0.00948 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				3	mg/kg	2.554	5.866	mg/kg	0.000587 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				2	mg/kg	3.22	4.931	mg/kg	0.000493 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				591	mg/kg	1.245	563.266	mg/kg	0.0563 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.14	mg/kg		0.107	mg/kg	0.0000107 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.53	mg/kg		0.406	mg/kg	0.0000406 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				0.14	mg/kg		0.107	mg/kg	0.0000107 %	✓	
			201-469-6	83-32-9									
19		fluorene				0.19	mg/kg		0.145	mg/kg	0.0000145 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				2.45	mg/kg		1.876	mg/kg	0.000188 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.72	mg/kg		0.551	mg/kg	0.0000551 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				5.08	mg/kg		3.89	mg/kg	0.000389 %	✓	
			205-912-4	206-44-0									
23		pyrene				4.12	mg/kg		3.155	mg/kg	0.000315 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				2.66	mg/kg		2.037	mg/kg	0.000204 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				2.49	mg/kg		1.907	mg/kg	0.000191 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				2.88	mg/kg		2.205	mg/kg	0.000221 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				1.95	mg/kg		1.493	mg/kg	0.000149 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.51	mg/kg		0.391	mg/kg	0.0000391 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				1.62	mg/kg		1.24	mg/kg	0.000124 %	✓	
			205-883-8	191-24-2									
30		coronene				0.43	mg/kg		0.329	mg/kg	0.0000329 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				3.45	mg/kg		2.642	mg/kg	0.000264 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				1.34	mg/kg		1.026	mg/kg	0.000103 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				951	mg/kg		728.178	mg/kg	0.0728 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
37		xylene				0.007	mg/kg		0.0053	mg/kg	0.000000536 %	✓	
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.239 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.0728%)
xylene: (conc.: 5.36e-07%)

Classification of sample: BH30

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

Sample details

Sample Name:
BH30
Sample Depth:
1 m
Moisture content:
24.4%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 24.4% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		5 mg/kg	1.197	4.812 mg/kg	0.000481 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		24.3 mg/kg	1.32	25.791 mg/kg	0.00258 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		159 mg/kg	1.117	142.705 mg/kg	0.0143 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.6 mg/kg	1.142	0.551 mg/kg	0.0000551 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		24.9 mg/kg	1.462	29.255 mg/kg	0.00293 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		**<LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		178 mg/kg	1.126	161.1 mg/kg	0.0161 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		**<LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	424 mg/kg		340.836 mg/kg	0.0341 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	1.9 mg/kg		1.527 mg/kg	0.000153 %	✓	
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.2 mg/kg	1.5	3.859 mg/kg	0.000386 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		43.9 mg/kg	1.545	54.529 mg/kg	0.00545 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		1.6 mg/kg	3.22	4.141 mg/kg	0.000414 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		180 mg/kg	1.245	180.103 mg/kg	0.018 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-917-1 / 208-96-8							
18		acenaphthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6 / 83-32-9							
19		fluorene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5 / 86-73-7							
20		phenanthrene		0.19 mg/kg		0.153 mg/kg	0.0000153 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		0.06 mg/kg		0.0482 mg/kg	0.00000482 %	✓	
		204-371-1 / 120-12-7							
22		fluoranthene		0.3 mg/kg		0.241 mg/kg	0.0000241 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		0.27 mg/kg		0.217 mg/kg	0.0000217 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		0.24 mg/kg		0.193 mg/kg	0.0000193 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		0.16 mg/kg		0.129 mg/kg	0.0000129 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		0.17 mg/kg		0.137 mg/kg	0.0000137 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		0.09 mg/kg		0.0723 mg/kg	0.00000723 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		0.09 mg/kg		0.0723 mg/kg	0.00000723 %	✓	
		205-883-8 / 191-24-2							
30		coronene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		0.17 mg/kg		0.137 mg/kg	0.0000137 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		0.07 mg/kg		0.0563 mg/kg	0.00000563 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		<52 mg/kg		<52 mg/kg	<0.0052 %		<LOD
		/ / TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1], 203-396-5 [2], 203-576-3 [3], 215-535-7 [4] / 95-47-6 [1], 106-42-3 [2], 108-38-3 [3], 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
39		asbestos		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
		650-013-00-6 / - - - - - - - / 12001-28-4, 132207-32-0, 12172-73-5							

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
								Total:	0.101 %		

Key

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

Classification of sample: BH30[2]

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

Sample details

Sample Name:
BH30[2]
Sample Depth:
2 m
Moisture content:
20.7%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 20.7% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		3 mg/kg	1.197	2.975 mg/kg	0.000298 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		18.2 mg/kg	1.32	19.909 mg/kg	0.00199 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		97 mg/kg	1.117	89.727 mg/kg	0.00897 %	✓	
	/ 215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.6 mg/kg	1.142	0.568 mg/kg	0.0000568 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		58.4 mg/kg	1.462	70.717 mg/kg	0.00707 %	✓	
	/ 215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		68 mg/kg	1.126	63.43 mg/kg	0.00634 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
	006-007-00-5 / /							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	196 mg/kg		162.386 mg/kg	0.0162 %	✓	
	082-001-00-6 / /							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	0.6 mg/kg		0.497 mg/kg	0.0000497 %	✓	
	080-002-00-6 / /							
11	molybdenum { molybdenum(VI) oxide }		4.4 mg/kg	1.5	5.469 mg/kg	0.000547 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		29.1 mg/kg	1.545	37.253 mg/kg	0.00373 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2	mg/kg	2.554	4.231	mg/kg	0.000423 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				1.1	mg/kg	3.22	2.934	mg/kg	0.000293 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				138	mg/kg	1.245	142.312	mg/kg	0.0142 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.06	mg/kg		0.0497	mg/kg	0.00000497 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			201-695-5	86-73-7									
20		phenanthrene				0.28	mg/kg		0.232	mg/kg	0.0000232 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.09	mg/kg		0.0746	mg/kg	0.00000746 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				0.64	mg/kg		0.53	mg/kg	0.000053 %	✓	
			205-912-4	206-44-0									
23		pyrene				0.63	mg/kg		0.522	mg/kg	0.0000522 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				0.48	mg/kg		0.398	mg/kg	0.0000398 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.47	mg/kg		0.389	mg/kg	0.0000389 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.56	mg/kg		0.464	mg/kg	0.0000464 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.39	mg/kg		0.323	mg/kg	0.0000323 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.08	mg/kg		0.0663	mg/kg	0.00000663 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.53	mg/kg		0.439	mg/kg	0.0000439 %	✓	
			205-883-8	191-24-2									
30		coronene				0.14	mg/kg		0.116	mg/kg	0.0000116 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				0.66	mg/kg		0.547	mg/kg	0.0000547 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.26	mg/kg		0.215	mg/kg	0.0000215 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				361	mg/kg		299.089	mg/kg	0.0299 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0909 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0299%)

Classification of sample: BH30[3]

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

Sample details

Sample Name:
BH30[3]
Sample Depth:
5 m
Moisture content:
36.3%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 36.3% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		8 mg/kg	1.197	7.026 mg/kg	0.000703 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		177.1 mg/kg	1.32	171.555 mg/kg	0.0172 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		336 mg/kg	1.117	275.235 mg/kg	0.0275 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.6 mg/kg	1.142	1.341 mg/kg	0.000134 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		69.5 mg/kg	1.462	74.525 mg/kg	0.00745 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		**<LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		96 mg/kg	1.126	79.3 mg/kg	0.00793 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				1.1 mg/kg	1.884	1.52 mg/kg	0.000152 %	✓	
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	507 mg/kg		371.974 mg/kg	0.0372 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	0.6 mg/kg		0.44 mg/kg	0.000044 %	✓	
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		12.4 mg/kg	1.5	13.648 mg/kg	0.00136 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		63.3 mg/kg	1.545	71.761 mg/kg	0.00718 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				7	mg/kg	2.554	13.115	mg/kg	0.00131 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				3	mg/kg	3.22	7.087	mg/kg	0.000709 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				2175	mg/kg	1.245	1986.246	mg/kg	0.199 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			201-695-5	86-73-7									
20		phenanthrene				0.45	mg/kg		0.33	mg/kg	0.000033 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.14	mg/kg		0.103	mg/kg	0.0000103 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				0.65	mg/kg		0.477	mg/kg	0.0000477 %	✓	
			205-912-4	206-44-0									
23		pyrene				0.58	mg/kg		0.426	mg/kg	0.0000426 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				0.35	mg/kg		0.257	mg/kg	0.0000257 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.31	mg/kg		0.227	mg/kg	0.0000227 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.36	mg/kg		0.264	mg/kg	0.0000264 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.21	mg/kg		0.154	mg/kg	0.0000154 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.06	mg/kg		0.044	mg/kg	0.0000044 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.25	mg/kg		0.183	mg/kg	0.0000183 %	✓	
			205-883-8	191-24-2									
30		coronene				0.06	mg/kg		0.044	mg/kg	0.0000044 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				0.38	mg/kg		0.279	mg/kg	0.0000279 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.15	mg/kg		0.11	mg/kg	0.000011 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				88	mg/kg		64.563	mg/kg	0.00646 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.314 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00646%)

Classification of sample: BH31

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

Sample details

Sample Name:
BH31
Sample Depth:
1 m
Moisture content:
21.4%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 21.4% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		2 mg/kg	1.197	1.972 mg/kg	0.000197 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		33.3 mg/kg	1.32	36.217 mg/kg	0.00362 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		137 mg/kg	1.117	125.998 mg/kg	0.0126 %	✓	
	215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.6 mg/kg	1.142	0.565 mg/kg	0.0000565 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		20 mg/kg	1.462	24.078 mg/kg	0.00241 %	✓	
	215-160-9 / 1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
	024-001-00-0 / 215-607-8 / 1333-82-0							
7	copper { dicopper oxide; copper (I) oxide }		86 mg/kg	1.126	79.758 mg/kg	0.00798 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
	006-007-00-5							
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	266 mg/kg		219.11 mg/kg	0.0219 %	✓	
	082-001-00-6							
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	2.5 mg/kg		2.059 mg/kg	0.000206 %	✓	
	080-002-00-6							
11	molybdenum { molybdenum(VI) oxide }		2.8 mg/kg	1.5	3.46 mg/kg	0.000346 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
12	nickel { nickel(IV) oxide (nickel dioxide) }		28.2 mg/kg	1.545	35.893 mg/kg	0.00359 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				1.6	mg/kg	3.22	4.244	mg/kg	0.000424 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				203	mg/kg	1.245	208.136	mg/kg	0.0208 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				0.05	mg/kg		0.0412	mg/kg	0.00000412 %	✓	
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				0.11	mg/kg		0.0906	mg/kg	0.00000906 %	✓	
			205-917-1	208-96-8									
18		acenaphthene				0.17	mg/kg		0.14	mg/kg	0.000014 %	✓	
			201-469-6	83-32-9									
19		fluorene				0.18	mg/kg		0.148	mg/kg	0.0000148 %	✓	
			201-695-5	86-73-7									
20		phenanthrene				2.26	mg/kg		1.862	mg/kg	0.000186 %	✓	
			201-581-5	85-01-8									
21		anthracene				0.72	mg/kg		0.593	mg/kg	0.0000593 %	✓	
			204-371-1	120-12-7									
22		fluoranthene				2.84	mg/kg		2.339	mg/kg	0.000234 %	✓	
			205-912-4	206-44-0									
23		pyrene				2.19	mg/kg		1.804	mg/kg	0.00018 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				1.29	mg/kg		1.063	mg/kg	0.000106 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				1.18	mg/kg		0.972	mg/kg	0.0000972 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.96	mg/kg		0.791	mg/kg	0.0000791 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.47	mg/kg		0.387	mg/kg	0.0000387 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				0.12	mg/kg		0.0988	mg/kg	0.00000988 %	✓	
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.44	mg/kg		0.362	mg/kg	0.0000362 %	✓	
			205-883-8	191-24-2									
30		coronene				0.12	mg/kg		0.0988	mg/kg	0.00000988 %	✓	
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				1.14	mg/kg		0.939	mg/kg	0.0000939 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.44	mg/kg		0.362	mg/kg	0.0000362 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				97	mg/kg		79.901	mg/kg	0.00799 %	✓	
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<**LOD**
		602-039-00-4	215-648-1	1336-36-3									
39		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
				77536-66-4 77536-68-6 77536-67-5 12001-29-5							
								Total:	0.0839 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00799%)

Classification of sample: BH31[2]

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

Sample details

Sample Name:
BH31[2]
Sample Depth:
2 m
Moisture content:
17.8%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 17.8% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2 mg/kg	1.197	2.032 mg/kg	0.000203 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		19 mg/kg	1.32	21.296 mg/kg	0.00213 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		113 mg/kg	1.117	107.101 mg/kg	0.0107 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.7 mg/kg	1.142	0.679 mg/kg	0.0000679 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		49.3 mg/kg	1.462	61.167 mg/kg	0.00612 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		**<LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		62 mg/kg	1.126	59.257 mg/kg	0.00593 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		**<LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	190 mg/kg		161.29 mg/kg	0.0161 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	1.4 mg/kg		1.188 mg/kg	0.000119 %	✓	
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.3 mg/kg	1.5	4.203 mg/kg	0.00042 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		33 mg/kg	1.545	43.286 mg/kg	0.00433 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		2 mg/kg	2.554	4.335 mg/kg	0.000434 %	✓	
		034-002-00-8							
14		boron { diboron trioxide; boric oxide }		1 mg/kg	3.22	2.733 mg/kg	0.000273 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
15		zinc { zinc oxide }		178 mg/kg	1.245	188.081 mg/kg	0.0188 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
16		naphthalene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		601-052-00-2 / 202-049-5 / 91-20-3							
17		acenaphthylene		0.08 mg/kg		0.0679 mg/kg	0.00000679 %	✓	
		205-917-1 / 208-96-8							
18		acenaphthene		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6 / 83-32-9							
19		fluorene		<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5 / 86-73-7							
20		phenanthrene		0.65 mg/kg		0.552 mg/kg	0.0000552 %	✓	
		201-581-5 / 85-01-8							
21		anthracene		0.3 mg/kg		0.255 mg/kg	0.0000255 %	✓	
		204-371-1 / 120-12-7							
22		fluoranthene		0.81 mg/kg		0.688 mg/kg	0.0000688 %	✓	
		205-912-4 / 206-44-0							
23		pyrene		0.83 mg/kg		0.705 mg/kg	0.0000705 %	✓	
		204-927-3 / 129-00-0							
24		benzo[a]anthracene		0.95 mg/kg		0.806 mg/kg	0.0000806 %	✓	
		601-033-00-9 / 200-280-6 / 56-55-3							
25		chrysene		0.67 mg/kg		0.569 mg/kg	0.0000569 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
26		benzo[a]pyrene; benzo[def]chrysene		0.71 mg/kg		0.603 mg/kg	0.0000603 %	✓	
		601-032-00-3 / 200-028-5 / 50-32-8							
27		indeno[123-cd]pyrene		0.34 mg/kg		0.289 mg/kg	0.0000289 %	✓	
		205-893-2 / 193-39-5							
28		dibenz[a,h]anthracene		0.12 mg/kg		0.102 mg/kg	0.0000102 %	✓	
		601-041-00-2 / 200-181-8 / 53-70-3							
29		benzo[ghi]perylene		0.37 mg/kg		0.314 mg/kg	0.0000314 %	✓	
		205-883-8 / 191-24-2							
30		coronene		0.12 mg/kg		0.102 mg/kg	0.0000102 %	✓	
		205-881-7 / 191-07-1							
31		benzo[b]fluoranthene		0.78 mg/kg		0.662 mg/kg	0.0000662 %	✓	
		601-034-00-4 / 205-911-9 / 205-99-2							
32		benzo[k]fluoranthene		0.31 mg/kg		0.263 mg/kg	0.0000263 %	✓	
		601-036-00-5 / 205-916-6 / 207-08-9							
33		benzo[j]fluoranthene		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3							
34		TPH (C6 to C40) petroleum group		159 mg/kg		134.975 mg/kg	0.0135 %	✓	
		TPH							
35		toluene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3 / 203-625-9 / 108-88-3							
36		ethylbenzene		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4 / 202-849-4 / 100-41-4							
37		xylene		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9 / 202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4] / 95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
38		polychlorobiphenyls; PCB		<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<LOD
		602-039-00-4 / 215-648-1 / 1336-36-3							
						Total:	0.08 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0135%)

Classification of sample: BH31[3]

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

Sample details

Sample Name:
BH31[3]
Sample Depth:
2.8 m

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

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2	mg/kg	1.197	2.394	mg/kg	0.000239 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8.8	mg/kg	1.32	11.619	mg/kg	0.00116 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		76	mg/kg	1.117	84.854	mg/kg	0.00849 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.1	mg/kg	1.142	0.114	mg/kg	0.0000114 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		65	mg/kg	1.462	95.001	mg/kg	0.0095 %	✓	
6	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3	mg/kg	1.923	<0.577	mg/kg	<0.0000577 %		<**LOD**
7	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		5	mg/kg	1.126	5.629	mg/kg	0.000563 %	✓	
8	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<**LOD**
9	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	8	mg/kg		8	mg/kg	0.0008 %	✓	
10	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
11	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		3.4	mg/kg	1.5	5.101	mg/kg	0.00051 %	✓	
12	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		26.1	mg/kg	1.545	40.329	mg/kg	0.00403 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2	mg/kg	2.554	5.107	mg/kg	0.000511 %	✓	
		034-002-00-8											
14		boron { diboron trioxide; boric oxide }				0.4	mg/kg	3.22	1.288	mg/kg	0.000129 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
15		zinc { zinc oxide }				42	mg/kg	1.245	52.278	mg/kg	0.00523 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
17		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
18		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
19		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7									
20		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
21		anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			204-371-1	120-12-7									
22		fluoranthene				0.05	mg/kg		0.05	mg/kg	0.000005 %	✓	
			205-912-4	206-44-0									
23		pyrene				0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
			204-927-3	129-00-0									
24		benzo[a]anthracene				0.07	mg/kg		0.07	mg/kg	0.000007 %	✓	
		601-033-00-9	200-280-6	56-55-3									
25		chrysene				0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
		601-048-00-0	205-923-4	218-01-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-883-8	191-24-2									
30		coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-881-7	191-07-1									
31		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
33		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
34		TPH (C6 to C40) petroleum group				<52	mg/kg		<52	mg/kg	<0.0052 %		<LOD
				TPH									
35		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
36		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		polychlorobiphenyls; PCB				<0.035	mg/kg		<0.035	mg/kg	<0.0000035 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0367 %		

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

Appendix A: Classifier defined and non CLP determinands

barium oxide (EC Number: 215-127-9, CAS Number: 1304-28-5)

Conversion factor: 1.117
Description/Comments: Data from C&L Inventory Database; No entries in Registered Substances Database, IARC or Pesticide Properties Database
Data source:
http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=88825&HarmOnly=no?fc=true&lang=en
Data source date: 02 Jun 2014
Hazard Statements: Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Corr. 1A H314 , Acute Tox. 3 H301 , Acute Tox. 4 H302 , Acute Tox. 4 H332

chromium(III) oxide (EC Number: 215-160-9, CAS Number: 1308-38-9)

Conversion factor: 1.462
Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Repr. 1B H360FD , Skin Sens. 1 H317 , Resp. Sens. 1 H334 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302 , Acute Tox. 4 H332

salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex

CLP index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Data source: Commission Regulation (EC) No 790/2009 - 1st Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP1)
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s)/Risk Phrase(s):
14 Dec 2015 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

lead compounds with the exception of those specified elsewhere in this Annex

CLP index number: 082-001-00-6
Description/Comments: Least-worst case: Lead REACH Consortium considers some lead compounds Carcinogenic category 2B
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
Additional Hazard Statement(s): Carc. 2 H351
Reason for additional Hazards Statement(s)/Risk Phrase(s):
03 Jun 2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html. Review date 29/09/2015

acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 1 H310 , Acute Tox. 1 H330 , Acute Tox. 4 H302

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Aquatic Chronic 2 H411 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400

phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Skin Irrit. 2 H315 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Carc. 2 H351 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302

- **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

- **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Acute Tox. 4 H302

- **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315

- **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2 H351

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400

- **coronene** (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.
Data source:
http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en
Data source date: 16 Jun 2014
Hazard Statements: STOT SE 2 H371

- **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Aquatic Chronic 2 H411 , Repr. 2 H361d , Carc. 1B H350 , Muta. 1B H340 , STOT RE 2 H373 , Asp. Tox. 1 H304 , Flam. Liq. 3 H226

- **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

CLP index number: 601-023-00-4
Description/Comments:
Data source: Commission Regulation (EU) No 605/2014 – 6th Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP6)
Additional Hazard Statement(s): Carc. 2 H351
Reason for additional Hazards Statement(s)/Risk Phrase(s):
03 Jun 2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2B (77) 2000

- **polychlorobiphenyls; PCB** (EC Number: 215-648-1, CAS Number: 1336-36-3)

CLP index number: 602-039-00-4
Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans; POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
Additional Hazard Statement(s): Carc. 1A H350
Reason for additional Hazards Statement(s)/Risk Phrase(s):
29 Sep 2015 - Carc. 1A H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

Appendix B: Rationale for selection of metal species

antimony {antimony trioxide}

Worst case CLP species based on hazard statements/molecular weight and low solubility. Industrial sources include: flame retardants in electrical apparatus, textiles and coatings

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds

barium {barium oxide}

worst case CLP compound as no chromium VI expected)

cadmium {cadmium oxide}

Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and compound's industrial usage not related to site history.

chromium in chromium(III) compounds {chromium(III) oxide}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass.

chromium in chromium(VI) compounds {chromium(VI) oxide}

worst case species selected in the absence of further information

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and not enough soluble sulphate detected.

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

worst case species selected in the absence of further information

lead {lead compounds with the exception of those specified elsewhere in this Annex}

lead chromate is not expected based on analytical results. The worst case lead compounds have not been selected as this relates to risks from smelting of lead ores, lead smelting slags, or flue dust from lead smelting. This is not believed to have occurred on the Site.

mercury {inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex}

reasonable case species

molybdenum {molybdenum(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight

nickel {nickel(IV) oxide (nickel dioxide)}

worst case compounds nickel chromate and nickel sulphate not expected based on solubility and chemical analysis. Nickel oxide selected based on site history and solubility.

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

reasonable case species

boron {diboron trioxide; boric oxide}

reasonable case species for site history

zinc {zinc oxide}

worst case zinc sulphate not expected based on high solubility. Zinc oxide is chosen based on hazard statements and site history.

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.1, May 2018
HazWasteOnline Classification Engine Version: 2019.256.4006.8076 (13 Sep 2019)
HazWasteOnline Database: 2019.256.4006.8076 (13 Sep 2019)

This classification utilises the following guidance and legislation:
WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Wastes 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
POPs Regulation 2004 - Regulation 850/2004/EC of 29 April 2004
1st ATP to POPs Regulation - Regulation 756/2010/EU of 24 August 2010
2nd ATP to POPs Regulation - Regulation 757/2010/EU of 24 August 2010

Waste Classification Report

MXQHC-Z3GHR-CN8AR

Job name

Claremont Howth samples

Description/Comments

composite trial pit samples collected from Claremont Howth Site in 2019.

Project

19128243

Site

Claremont Howth

Related Documents

#	Name	Description
None		

Waste Stream Template

Claremont Howth

Classified by

Name:
Martha Buckwalter-Davis
Date:
23 Sep 2019 14:46 GMT
Telephone:
+353 45 87 4411

Company:
Golder Associates Ireland Ltd
Town Centre House
Dublin Road
Naas

Report

Created by: Martha Buckwalter-Davis
Created date: 23 Sep 2019 14:46 GMT

Job summary

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
1	TP12	0.00-1.50	Hazardous	HP 7, HP 11	3
2	TP12[2]	1.50-3.00	Non Hazardous		6
3	TP19	0.00-0.70	Non Hazardous		9
4	TP11	0.00-1.50	Non Hazardous		12
5	TP11[2]	1.50-2.70	Non Hazardous		15
6	TP13	0.00-1.50	Non Hazardous		18
7	TP13[2]	1.50-2.70	Non Hazardous		21
8	TP14	0.00-1.50	Non Hazardous		24
9	TP14[2]	1.50-3.00	Non Hazardous		27
10	TP15	0.00-1.50	Hazardous	HP 7, HP 11	30
11	TP15[2]	1.50-3.00	Non Hazardous		33
12	TP16	0.00-1.50	Hazardous	HP 7, HP 11	36

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
13	TP16[2]	1.50-1.90	Hazardous	HP 7, HP 11	39
14	TP17	0.00-1.50	Non Hazardous		42
15	TP17[2]	1.50-1.90	Non Hazardous		45
16	TP18	0.00-1.50	Non Hazardous		48
17	TP18[2]	1.50-2.70	Non Hazardous		51
18	TP20	0.00-0.75	Non Hazardous		54

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Appendix C: Version	59

Classification of sample: TP12

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample Name:
TP12
Sample Depth:
0.00-1.50 m
Moisture content:
23.9%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.113%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.113%)

Determinands

Moisture content: 23.9% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		3 mg/kg	1.197	2.899 mg/kg	0.00029 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		10 mg/kg	1.32	10.656 mg/kg	0.00107 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		350 mg/kg	1.117	315.397 mg/kg	0.0315 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.3 mg/kg	1.142	0.277 mg/kg	0.0000277 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		92.5 mg/kg	1.462	109.115 mg/kg	0.0109 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		71 mg/kg	1.126	64.518 mg/kg	0.00645 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
7		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	310	mg/kg		250.202	mg/kg	0.025 %	✓	
		082-001-00-6											
8		mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	0.4	mg/kg		0.323	mg/kg	0.0000323 %	✓	
		080-002-00-6											
9		molybdenum { molybdenum(VI) oxide }				6.1	mg/kg	1.5	7.386	mg/kg	0.000739 %	✓	
		042-001-00-9	215-204-7	1313-27-5									
10		nickel { nickel(IV) oxide (nickel dioxide) }				44.8	mg/kg	1.545	55.871	mg/kg	0.00559 %	✓	
		028-004-00-8	234-823-3	12035-36-8									
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
		034-002-00-8											
12		boron { diboron trioxide; boric oxide }				0.6	mg/kg	3.22	1.559	mg/kg	0.000156 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
13		zinc { zinc oxide }				126	mg/kg	1.245	126.581	mg/kg	0.0127 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
14		naphthalene				0.2	mg/kg		0.161	mg/kg	0.0000161 %	✓	
		601-052-00-2	202-049-5	91-20-3									
15		acenaphthylene				0.33	mg/kg		0.266	mg/kg	0.0000266 %	✓	
			205-917-1	208-96-8									
16		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-469-6	83-32-9									
17		fluorene				0.06	mg/kg		0.0484	mg/kg	0.00000484 %	✓	
			201-695-5	86-73-7									
18		phenanthrene				0.63	mg/kg		0.508	mg/kg	0.0000508 %	✓	
			201-581-5	85-01-8									
19		anthracene				0.38	mg/kg		0.307	mg/kg	0.0000307 %	✓	
			204-371-1	120-12-7									
20		fluoranthene				1.5	mg/kg		1.211	mg/kg	0.000121 %	✓	
			205-912-4	206-44-0									
21		pyrene				1.55	mg/kg		1.251	mg/kg	0.000125 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				1.12	mg/kg		0.904	mg/kg	0.0000904 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				1.19	mg/kg		0.96	mg/kg	0.000096 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[a]pyrene; benzo[def]chrysene				1.3	mg/kg		1.049	mg/kg	0.000105 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				0.93	mg/kg		0.751	mg/kg	0.0000751 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				0.21	mg/kg		0.169	mg/kg	0.0000169 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				1	mg/kg		0.807	mg/kg	0.0000807 %	✓	
			205-883-8	191-24-2									
28		coronene				0.19	mg/kg		0.153	mg/kg	0.0000153 %	✓	
			205-881-7	191-07-1									
29		benzo[b]fluoranthene				1.76	mg/kg		1.421	mg/kg	0.000142 %	✓	
		601-034-00-4	205-911-9	205-99-2									
30		benzo[k]fluoranthene				0.69	mg/kg		0.557	mg/kg	0.0000557 %	✓	
		601-036-00-5	205-916-6	207-08-9									
31		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
32		TPH (C6 to C40) petroleum group				1398	mg/kg		1128.329	mg/kg	0.113 %	✓	
				TPH									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
34		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
35		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
36		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		phenol				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.209 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.113%)

Classification of sample: TP12[2]

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

Sample details

Sample Name:
TP12[2]
Sample Depth:
1.50-3.00 m
Moisture content:
31.1%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 31.1% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		4	mg/kg	1.197	3.652	mg/kg	0.000365 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		25.2	mg/kg	1.32	25.379	mg/kg	0.00254 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		186	mg/kg	1.117	158.406	mg/kg	0.0158 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.4	mg/kg	1.142	0.349	mg/kg	0.0000349 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		122.3	mg/kg	1.462	136.345	mg/kg	0.0136 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		103	mg/kg	1.126	88.457	mg/kg	0.00885 %	✓	
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	371	mg/kg		282.99	mg/kg	0.0283 %	✓	
8	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	0.5	mg/kg		0.381	mg/kg	0.0000381 %	✓	
9	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		7.9	mg/kg	1.5	9.04	mg/kg	0.000904 %	✓	
10	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		35.8	mg/kg	1.545	42.195	mg/kg	0.00422 %	✓	
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				1	mg/kg	2.554	1.948	mg/kg	0.000195 %	✓	
12	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.9	mg/kg	3.22	2.21	mg/kg	0.000221 %	✓	
13	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		201	mg/kg	1.245	190.837	mg/kg	0.0191 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				0.25	mg/kg		0.191	mg/kg	0.0000191 %	✓	
		601-052-00-2	202-049-5	91-20-3									
15		acenaphthylene				0.16	mg/kg		0.122	mg/kg	0.0000122 %	✓	
			205-917-1	208-96-8									
16		acenaphthene				0.08	mg/kg		0.061	mg/kg	0.0000061 %	✓	
			201-469-6	83-32-9									
17		fluorene				0.1	mg/kg		0.0763	mg/kg	0.00000763 %	✓	
			201-695-5	86-73-7									
18		phenanthrene				0.72	mg/kg		0.549	mg/kg	0.0000549 %	✓	
			201-581-5	85-01-8									
19		anthracene				0.22	mg/kg		0.168	mg/kg	0.0000168 %	✓	
			204-371-1	120-12-7									
20		fluoranthene				1.19	mg/kg		0.908	mg/kg	0.0000908 %	✓	
			205-912-4	206-44-0									
21		pyrene				1.18	mg/kg		0.9	mg/kg	0.00009 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.76	mg/kg		0.58	mg/kg	0.000058 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.8	mg/kg		0.61	mg/kg	0.000061 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[a]pyrene; benzo[def]chrysene				0.81	mg/kg		0.618	mg/kg	0.0000618 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				0.59	mg/kg		0.45	mg/kg	0.000045 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				0.16	mg/kg		0.122	mg/kg	0.0000122 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				0.64	mg/kg		0.488	mg/kg	0.0000488 %	✓	
			205-883-8	191-24-2									
28		coronene				0.13	mg/kg		0.0992	mg/kg	0.00000992 %	✓	
			205-881-7	191-07-1									
29		benzo[b]fluoranthene				1.16	mg/kg		0.885	mg/kg	0.0000885 %	✓	
		601-034-00-4	205-911-9	205-99-2									
30		benzo[k]fluoranthene				0.45	mg/kg		0.343	mg/kg	0.0000343 %	✓	
		601-036-00-5	205-916-6	207-08-9									
31		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
32		TPH (C6 to C40) petroleum group				506	mg/kg		385.965	mg/kg	0.0386 %	✓	
				TPH									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
34		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
35		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
36		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		phenol				0.01	mg/kg		0.0076	mg/kg	0.000000763 %	✓	
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.134 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0386%)

Classification of sample: TP19

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

Sample details

Sample Name:
TP19
Sample Depth:
0.00-0.70 m
Moisture content:
15.7%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 15.7% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		9 mg/kg	1.197	9.312 mg/kg	0.000931 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		19 mg/kg	1.32	21.682 mg/kg	0.00217 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		249 mg/kg	1.117	240.285 mg/kg	0.024 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.6 mg/kg	1.142	0.592 mg/kg	0.0000592 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		37.9 mg/kg	1.462	47.876 mg/kg	0.00479 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		171 mg/kg	1.126	166.402 mg/kg	0.0166 %	✓	
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	331 mg/kg		286.085 mg/kg	0.0286 %	✓	
8	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		**<LOD**
9	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		2.5 mg/kg	1.5	3.242 mg/kg	0.000324 %	✓	
10	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		44.1 mg/kg	1.545	58.896 mg/kg	0.00589 %	✓	
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				2 mg/kg	2.554	4.414 mg/kg	0.000441 %	✓	
12	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.7 mg/kg	3.22	1.948 mg/kg	0.000195 %	✓	
13	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		641 mg/kg	1.245	689.595 mg/kg	0.069 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				0.46	mg/kg		0.398	mg/kg	0.0000398 %	✓	
		601-052-00-2	202-049-5	91-20-3									
15		acenaphthylene				0.4	mg/kg		0.346	mg/kg	0.0000346 %	✓	
			205-917-1	208-96-8									
16		acenaphthene				0.12	mg/kg		0.104	mg/kg	0.0000104 %	✓	
			201-469-6	83-32-9									
17		fluorene				0.16	mg/kg		0.138	mg/kg	0.0000138 %	✓	
			201-695-5	86-73-7									
18		phenanthrene				2.21	mg/kg		1.91	mg/kg	0.000191 %	✓	
			201-581-5	85-01-8									
19		anthracene				0.82	mg/kg		0.709	mg/kg	0.0000709 %	✓	
			204-371-1	120-12-7									
20		fluoranthene				3.64	mg/kg		3.146	mg/kg	0.000315 %	✓	
			205-912-4	206-44-0									
21		pyrene				3.09	mg/kg		2.671	mg/kg	0.000267 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				2.02	mg/kg		1.746	mg/kg	0.000175 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				1.9	mg/kg		1.642	mg/kg	0.000164 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[a]pyrene; benzo[def]chrysene				1.7	mg/kg		1.469	mg/kg	0.000147 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				1.68	mg/kg		1.452	mg/kg	0.000145 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				0.36	mg/kg		0.311	mg/kg	0.0000311 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				1.64	mg/kg		1.417	mg/kg	0.000142 %	✓	
			205-883-8	191-24-2									
28		coronene				0.32	mg/kg		0.277	mg/kg	0.0000277 %	✓	
			205-881-7	191-07-1									
29		benzo[b]fluoranthene				2.75	mg/kg		2.377	mg/kg	0.000238 %	✓	
		601-034-00-4	205-911-9	205-99-2									
30		benzo[k]fluoranthene				1.07	mg/kg		0.925	mg/kg	0.0000925 %	✓	
		601-036-00-5	205-916-6	207-08-9									
31		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
32		TPH (C6 to C40) petroleum group				567	mg/kg		490.061	mg/kg	0.049 %	✓	
				TPH									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
34		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
35		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		phenol				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
39		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
								Total:	0.204 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.049%)

Classification of sample: TP11

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

Sample details

Sample Name:
TP11
Sample Depth:
0.00-1.50 m
Moisture content:
11.2%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 11.2% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		1 mg/kg	1.197	1.077 mg/kg	0.000108 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		24.7 mg/kg	1.32	29.327 mg/kg	0.00293 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		519 mg/kg	1.117	521.103 mg/kg	0.0521 %	✓	
	215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<**LOD**
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		138 mg/kg	1.462	181.38 mg/kg	0.0181 %	✓	
	215-160-9 / 1308-38-9							
6	copper { dicopper oxide; copper (I) oxide }		122 mg/kg	1.126	123.524 mg/kg	0.0124 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	57 mg/kg		51.259 mg/kg	0.00513 %	✓	
	082-001-00-6							
8	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
	080-002-00-6							
9	molybdenum { molybdenum(VI) oxide }		11.3 mg/kg	1.5	15.245 mg/kg	0.00152 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
10	nickel { nickel(IV) oxide (nickel dioxide) }		49.3 mg/kg	1.545	68.505 mg/kg	0.00685 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
	034-002-00-8							
12	boron { diboron trioxide; boric oxide }		0.9 mg/kg	3.22	2.606 mg/kg	0.000261 %	✓	
	005-008-00-8 / 215-125-8 / 1303-86-2							
13	zinc { zinc oxide }		36 mg/kg	1.245	40.296 mg/kg	0.00403 %	✓	
	030-013-00-7 / 215-222-5 / 1314-13-2							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				0.11	mg/kg		0.0989	mg/kg	0.00000989 %	✓	
		601-052-00-2	202-049-5	91-20-3									
15	●	acenaphthylene				0.07	mg/kg		0.0629	mg/kg	0.00000629 %	✓	
			205-917-1	208-96-8									
16	●	acenaphthene				0.12	mg/kg		0.108	mg/kg	0.0000108 %	✓	
			201-469-6	83-32-9									
17	●	fluorene				0.16	mg/kg		0.144	mg/kg	0.0000144 %	✓	
			201-695-5	86-73-7									
18	●	phenanthrene				1.73	mg/kg		1.556	mg/kg	0.000156 %	✓	
			201-581-5	85-01-8									
19	●	anthracene				0.42	mg/kg		0.378	mg/kg	0.0000378 %	✓	
			204-371-1	120-12-7									
20	●	fluoranthene				1.47	mg/kg		1.322	mg/kg	0.000132 %	✓	
			205-912-4	206-44-0									
21	●	pyrene				1.2	mg/kg		1.079	mg/kg	0.000108 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.67	mg/kg		0.603	mg/kg	0.0000603 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.78	mg/kg		0.701	mg/kg	0.0000701 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[a]pyrene; benzo[def]chrysene				0.51	mg/kg		0.459	mg/kg	0.0000459 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25	●	indeno[123-cd]pyrene				0.31	mg/kg		0.279	mg/kg	0.0000279 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				0.09	mg/kg		0.0809	mg/kg	0.00000809 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27	●	benzo[ghi]perylene				0.28	mg/kg		0.252	mg/kg	0.0000252 %	✓	
			205-883-8	191-24-2									
28	●	coronene				0.06	mg/kg		0.054	mg/kg	0.0000054 %	✓	
			205-881-7	191-07-1									
29		benzo[b]fluoranthene				0.73	mg/kg		0.656	mg/kg	0.0000656 %	✓	
		601-034-00-4	205-911-9	205-99-2									
30		benzo[k]fluoranthene				0.28	mg/kg		0.252	mg/kg	0.0000252 %	✓	
		601-036-00-5	205-916-6	207-08-9									
31		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
32	●	TPH (C6 to C40) petroleum group				118	mg/kg		106.115	mg/kg	0.0106 %	✓	
				TPH									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
34		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
35	●	ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
36		toluene				0.012	mg/kg		0.0108	mg/kg	0.00000108 %	✓	
		601-021-00-3	203-625-9	108-88-3									
37		xylene				0.019	mg/kg		0.0171	mg/kg	0.00000171 %	✓	
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		phenol				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.115 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

toluene: (conc.: 1.08e-06%)

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.0106%)
xylene: (conc.: 1.71e-06%)

Classification of sample: TP11[2]

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

Sample details

Sample Name:
TP11[2]
Sample Depth:
1.50-2.70 m
Moisture content:
44.1%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 44.1% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<1 mg/kg	1.197	<1.197 mg/kg	<0.00012 %		<**LOD**
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		3.6 mg/kg	1.32	3.299 mg/kg	0.00033 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		821 mg/kg	1.117	636.122 mg/kg	0.0636 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		138.5 mg/kg	1.462	140.476 mg/kg	0.014 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		119 mg/kg	1.126	92.978 mg/kg	0.0093 %	✓	
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	14 mg/kg		9.715 mg/kg	0.000972 %	✓	
8	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
9	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		12 mg/kg	1.5	12.493 mg/kg	0.00125 %	✓	
10	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		66.9 mg/kg	1.545	71.737 mg/kg	0.00717 %	✓	
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
12	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.7 mg/kg	3.22	1.564 mg/kg	0.000156 %	✓	
13	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		21 mg/kg	1.245	18.139 mg/kg	0.00181 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
15		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
16		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
17		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7									
18		phenanthrene				0.12	mg/kg		0.0833	mg/kg	0.00000833 %	✓	
			201-581-5	85-01-8									
19		anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			204-371-1	120-12-7									
20		fluoranthene				0.07	mg/kg		0.0486	mg/kg	0.00000486 %	✓	
			205-912-4	206-44-0									
21		pyrene				0.07	mg/kg		0.0486	mg/kg	0.00000486 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.09	mg/kg		0.0625	mg/kg	0.00000625 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.07	mg/kg		0.0486	mg/kg	0.00000486 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-883-8	191-24-2									
28		coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-881-7	191-07-1									
29		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
30		benzo[k]fluoranthene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
31		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
32		TPH (C6 to C40) petroleum group				<52	mg/kg		<52	mg/kg	<0.0052 %		<LOD
				TPH									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
34		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
35		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		phenol				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.104 %		

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

Classification of sample: TP13

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

Sample details

Sample Name:
TP13
Sample Depth:
0.00-1.50 m
Moisture content:
11.8%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 11.8% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		<1 mg/kg	1.197	<1.197 mg/kg	<0.00012 %		<LOD
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		21.8 mg/kg	1.32	25.745 mg/kg	0.00257 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		64 mg/kg	1.117	63.914 mg/kg	0.00639 %	✓	
	215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.2 mg/kg	1.142	0.204 mg/kg	0.0000204 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		15.5 mg/kg	1.462	20.263 mg/kg	0.00203 %	✓	
	215-160-9 / 1308-38-9							
6	copper { dicopper oxide; copper (I) oxide }		21 mg/kg	1.126	21.148 mg/kg	0.00211 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	25 mg/kg		22.361 mg/kg	0.00224 %	✓	
	082-001-00-6							
8	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	080-002-00-6							
9	molybdenum { molybdenum(VI) oxide }		0.6 mg/kg	1.5	0.805 mg/kg	0.0000805 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
10	nickel { nickel(IV) oxide (nickel dioxide) }		20.1 mg/kg	1.545	27.78 mg/kg	0.00278 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
	034-002-00-8							
12	boron { diboron trioxide; boric oxide }		0.4 mg/kg	3.22	1.152 mg/kg	0.000115 %	✓	
	005-008-00-8 / 215-125-8 / 1303-86-2							
13	zinc { zinc oxide }		54 mg/kg	1.245	60.12 mg/kg	0.00601 %	✓	
	030-013-00-7 / 215-222-5 / 1314-13-2							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				0.06	mg/kg		0.0537	mg/kg	0.00000537 %	✓	
		601-052-00-2	202-049-5	91-20-3									
15	●	acenaphthylene				0.1	mg/kg		0.0894	mg/kg	0.00000894 %	✓	
			205-917-1	208-96-8									
16	●	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
17	●	fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7									
18	●	phenanthrene				0.2	mg/kg		0.179	mg/kg	0.0000179 %	✓	
			201-581-5	85-01-8									
19	●	anthracene				0.1	mg/kg		0.0894	mg/kg	0.00000894 %	✓	
			204-371-1	120-12-7									
20	●	fluoranthene				0.68	mg/kg		0.608	mg/kg	0.0000608 %	✓	
			205-912-4	206-44-0									
21	●	pyrene				0.64	mg/kg		0.572	mg/kg	0.0000572 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.51	mg/kg		0.456	mg/kg	0.0000456 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.53	mg/kg		0.474	mg/kg	0.0000474 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[a]pyrene; benzo[def]chrysene				0.45	mg/kg		0.403	mg/kg	0.0000403 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25	●	indeno[123-cd]pyrene				0.25	mg/kg		0.224	mg/kg	0.0000224 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				0.06	mg/kg		0.0537	mg/kg	0.00000537 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27	●	benzo[ghi]perylene				0.2	mg/kg		0.179	mg/kg	0.0000179 %	✓	
			205-883-8	191-24-2									
28	●	coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-881-7	191-07-1									
29		benzo[b]fluoranthene				0.52	mg/kg		0.465	mg/kg	0.0000465 %	✓	
		601-034-00-4	205-911-9	205-99-2									
30		benzo[k]fluoranthene				0.2	mg/kg		0.179	mg/kg	0.0000179 %	✓	
		601-036-00-5	205-916-6	207-08-9									
31		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
32	●	TPH (C6 to C40) petroleum group				157	mg/kg		140.429	mg/kg	0.014 %	✓	
				TPH									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
34		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
35	●	ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		phenol				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
39		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
								Total:	0.0393 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.014%)

Classification of sample: TP13[2]

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

Sample details

Sample Name:
TP13[2]
Sample Depth:
1.50-2.70 m
Moisture content:
28.4%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 28.4% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<1 mg/kg	1.197	<1.197 mg/kg	<0.00012 %		<**LOD**
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6 mg/kg	1.32	6.17 mg/kg	0.000617 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		24 mg/kg	1.117	20.869 mg/kg	0.00209 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		141.9 mg/kg	1.462	161.522 mg/kg	0.0162 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		7 mg/kg	1.126	6.138 mg/kg	0.000614 %	✓	
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	17 mg/kg		13.24 mg/kg	0.00132 %	✓	
8	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
9	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		8.8 mg/kg	1.5	10.282 mg/kg	0.00103 %	✓	
10	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		10.7 mg/kg	1.545	12.877 mg/kg	0.00129 %	✓	
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
12	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.9 mg/kg	3.22	2.257 mg/kg	0.000226 %	✓	
13	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		29 mg/kg	1.245	28.113 mg/kg	0.00281 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
15	●	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
16	●	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
17	●	fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7									
18	●	phenanthrene				0.17	mg/kg		0.132	mg/kg	0.0000132 %	✓	
			201-581-5	85-01-8									
19	●	anthracene				0.05	mg/kg		0.0389	mg/kg	0.00000389 %	✓	
			204-371-1	120-12-7									
20	●	fluoranthene				0.17	mg/kg		0.132	mg/kg	0.0000132 %	✓	
			205-912-4	206-44-0									
21	●	pyrene				0.15	mg/kg		0.117	mg/kg	0.0000117 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.1	mg/kg		0.0779	mg/kg	0.00000779 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.09	mg/kg		0.0701	mg/kg	0.00000701 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[a]pyrene; benzo[def]chrysene				0.08	mg/kg		0.0623	mg/kg	0.00000623 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25	●	indeno[123-cd]pyrene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27	●	benzo[ghi]perylene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-883-8	191-24-2									
28	●	coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-881-7	191-07-1									
29		benzo[b]fluoranthene				0.09	mg/kg		0.0701	mg/kg	0.00000701 %	✓	
		601-034-00-4	205-911-9	205-99-2									
30		benzo[k]fluoranthene				0.04	mg/kg		0.0312	mg/kg	0.00000312 %	✓	
		601-036-00-5	205-916-6	207-08-9									
31		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
32	●	TPH (C6 to C40) petroleum group				<52	mg/kg		<52	mg/kg	<0.0052 %		<LOD
				TPH									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
34		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
35	●	ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		phenol				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.032 %		

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

Classification of sample: TP14

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

Sample details

Sample Name:
TP14
Sample Depth:
0.00-1.50 m
Moisture content:
7.7%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 7.7% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		1 mg/kg	1.197	1.112 mg/kg	0.000111 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		11.3 mg/kg	1.32	13.853 mg/kg	0.00139 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		46 mg/kg	1.117	47.687 mg/kg	0.00477 %	✓	
	215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.2 mg/kg	1.142	0.212 mg/kg	0.0000212 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		56.4 mg/kg	1.462	76.538 mg/kg	0.00765 %	✓	
	215-160-9 / 1308-38-9							
6	copper { dicopper oxide; copper (I) oxide }		36 mg/kg	1.126	37.634 mg/kg	0.00376 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	26 mg/kg		24.141 mg/kg	0.00241 %	✓	
	082-001-00-6							
8	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	080-002-00-6							
9	molybdenum { molybdenum(VI) oxide }		1.3 mg/kg	1.5	1.811 mg/kg	0.000181 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
10	nickel { nickel(IV) oxide (nickel dioxide) }		19.5 mg/kg	1.545	27.977 mg/kg	0.0028 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		1 mg/kg	2.554	2.371 mg/kg	0.000237 %	✓	
	034-002-00-8							
12	boron { diboron trioxide; boric oxide }		0.4 mg/kg	3.22	1.196 mg/kg	0.00012 %	✓	
	005-008-00-8 / 215-125-8 / 1303-86-2							
13	zinc { zinc oxide }		127 mg/kg	1.245	146.777 mg/kg	0.0147 %	✓	
	030-013-00-7 / 215-222-5 / 1314-13-2							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
15	●	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
16	●	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-469-6	83-32-9									
17	●	fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			201-695-5	86-73-7									
18	●	phenanthrene				0.06	mg/kg		0.0557	mg/kg	0.00000557 %	✓	
			201-581-5	85-01-8									
19	●	anthracene				0.04	mg/kg		0.0371	mg/kg	0.00000371 %	✓	
			204-371-1	120-12-7									
20	●	fluoranthene				0.19	mg/kg		0.176	mg/kg	0.0000176 %	✓	
			205-912-4	206-44-0									
21	●	pyrene				0.23	mg/kg		0.214	mg/kg	0.0000214 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.15	mg/kg		0.139	mg/kg	0.0000139 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.13	mg/kg		0.121	mg/kg	0.0000121 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[a]pyrene; benzo[def]chrysene				0.11	mg/kg		0.102	mg/kg	0.0000102 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25	●	indeno[123-cd]pyrene				0.08	mg/kg		0.0743	mg/kg	0.00000743 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
27	●	benzo[ghi]perylene				0.09	mg/kg		0.0836	mg/kg	0.00000836 %	✓	
			205-883-8	191-24-2									
28	●	coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			205-881-7	191-07-1									
29		benzo[b]fluoranthene				0.16	mg/kg		0.149	mg/kg	0.0000149 %	✓	
		601-034-00-4	205-911-9	205-99-2									
30		benzo[k]fluoranthene				0.06	mg/kg		0.0557	mg/kg	0.00000557 %	✓	
		601-036-00-5	205-916-6	207-08-9									
31		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
32	●	TPH (C6 to C40) petroleum group				363	mg/kg		337.047	mg/kg	0.0337 %	✓	
				TPH									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
34		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
35	●	ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
36		toluene				0.009	mg/kg		0.0083	mg/kg	0.000000836 %	✓	
		601-021-00-3	203-625-9	108-88-3									
37		xylene				0.013	mg/kg		0.0121	mg/kg	0.00000121 %	✓	
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		phenol				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0721 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

toluene: (conc.: 8.36e-07%)

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.0337%)
xylene: (conc.: 1.21e-06%)

Classification of sample: TP14[2]

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

Sample details

Sample Name:
TP14[2]
Sample Depth:
1.50-3.00 m
Moisture content:
23.5%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 23.5% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide } 051-005-00-X / 215-175-0 / 1309-64-4		<1 mg/kg	1.197	<1.197 mg/kg	<0.00012 %		<LOD
2	arsenic { arsenic trioxide } 033-003-00-0 / 215-481-4 / 1327-53-3		6.1 mg/kg	1.32	6.521 mg/kg	0.000652 %	✓	
3	barium { barium oxide } / 215-127-9 / 1304-28-5		14 mg/kg	1.117	12.657 mg/kg	0.00127 %	✓	
4	cadmium { cadmium oxide } 048-002-00-0 / 215-146-2 / 1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
5	chromium in chromium(III) compounds { chromium(III) oxide } / 215-160-9 / 1308-38-9		44.7 mg/kg	1.462	52.9 mg/kg	0.00529 %	✓	
6	copper { dicopper oxide; copper (I) oxide } 029-002-00-X / 215-270-7 / 1317-39-1		7 mg/kg	1.126	6.382 mg/kg	0.000638 %	✓	
7	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6	1	15 mg/kg		12.146 mg/kg	0.00121 %	✓	
8	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex } 080-002-00-6	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
9	molybdenum { molybdenum(VI) oxide } 042-001-00-9 / 215-204-7 / 1313-27-5		0.6 mg/kg	1.5	0.729 mg/kg	0.0000729 %	✓	
10	nickel { nickel(IV) oxide (nickel dioxide) } 028-004-00-8 / 234-823-3 / 12035-36-8		10.3 mg/kg	1.545	12.887 mg/kg	0.00129 %	✓	
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex } 034-002-00-8		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
12	boron { diboron trioxide; boric oxide } 005-008-00-8 / 215-125-8 / 1303-86-2		0.9 mg/kg	3.22	2.346 mg/kg	0.000235 %	✓	
13	zinc { zinc oxide } 030-013-00-7 / 215-222-5 / 1314-13-2		33 mg/kg	1.245	33.26 mg/kg	0.00333 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
15		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
16		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
17		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7									
18		phenanthrene				0.11	mg/kg		0.0891	mg/kg	0.00000891 %	✓	
			201-581-5	85-01-8									
19		anthracene				0.05	mg/kg		0.0405	mg/kg	0.00000405 %	✓	
			204-371-1	120-12-7									
20		fluoranthene				0.23	mg/kg		0.186	mg/kg	0.0000186 %	✓	
			205-912-4	206-44-0									
21		pyrene				0.21	mg/kg		0.17	mg/kg	0.000017 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.2	mg/kg		0.162	mg/kg	0.0000162 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.14	mg/kg		0.113	mg/kg	0.0000113 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[a]pyrene; benzo[def]chrysene				0.14	mg/kg		0.113	mg/kg	0.0000113 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				0.07	mg/kg		0.0567	mg/kg	0.00000567 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				0.06	mg/kg		0.0486	mg/kg	0.00000486 %	✓	
			205-883-8	191-24-2									
28		coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-881-7	191-07-1									
29		benzo[b]fluoranthene				0.15	mg/kg		0.121	mg/kg	0.0000121 %	✓	
		601-034-00-4	205-911-9	205-99-2									
30		benzo[k]fluoranthene				0.06	mg/kg		0.0486	mg/kg	0.00000486 %	✓	
		601-036-00-5	205-916-6	207-08-9									
31		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
32		TPH (C6 to C40) petroleum group				<52	mg/kg		<52	mg/kg	<0.0052 %		<LOD
				TPH									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
34		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
35		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		toluene				0.011	mg/kg		0.0089	mg/kg	0.000000891 %	✓	
		601-021-00-3	203-625-9	108-88-3									
37		xylene				0.019	mg/kg		0.0154	mg/kg	0.00000154 %	✓	
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		phenol				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0198 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

toluene: (conc.: 8.91e-07%)

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

Because of determinand:

xylene: (conc.: 1.54e-06%)

Classification of sample: TP15

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample Name:
TP15
Sample Depth:
0.00-1.50 m
Moisture content:
10.3%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.153%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.153%)

Determinands

Moisture content: 10.3% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2	mg/kg	1.197	2.171	mg/kg	0.000217 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		14.3	mg/kg	1.32	17.118	mg/kg	0.00171 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		114	mg/kg	1.117	115.396	mg/kg	0.0115 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.6	mg/kg	1.142	0.621	mg/kg	0.0000621 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		48.1	mg/kg	1.462	63.736	mg/kg	0.00637 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		28	mg/kg	1.126	28.581	mg/kg	0.00286 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
7		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	53	mg/kg		48.051	mg/kg	0.00481 %	✓	
		082-001-00-6											
8		mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		080-002-00-6											
9		molybdenum { molybdenum(VI) oxide }				1.7	mg/kg	1.5	2.312	mg/kg	0.000231 %	✓	
		042-001-00-9	215-204-7	1313-27-5									
10		nickel { nickel(IV) oxide (nickel dioxide) }				21.5	mg/kg	1.545	30.119	mg/kg	0.00301 %	✓	
		028-004-00-8	234-823-3	12035-36-8									
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	2.554	2.315	mg/kg	0.000232 %	✓	
		034-002-00-8											
12		boron { diboron trioxide; boric oxide }				0.5	mg/kg	3.22	1.46	mg/kg	0.000146 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
13		zinc { zinc oxide }				149	mg/kg	1.245	168.144	mg/kg	0.0168 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
14		naphthalene				0.11	mg/kg		0.0997	mg/kg	0.00000997 %	✓	
		601-052-00-2	202-049-5	91-20-3									
15		acenaphthylene				0.04	mg/kg		0.0363	mg/kg	0.00000363 %	✓	
			205-917-1	208-96-8									
16		acenaphthene				0.11	mg/kg		0.0997	mg/kg	0.00000997 %	✓	
			201-469-6	83-32-9									
17		fluorene				0.11	mg/kg		0.0997	mg/kg	0.00000997 %	✓	
			201-695-5	86-73-7									
18		phenanthrene				0.81	mg/kg		0.734	mg/kg	0.0000734 %	✓	
			201-581-5	85-01-8									
19		anthracene				0.26	mg/kg		0.236	mg/kg	0.0000236 %	✓	
			204-371-1	120-12-7									
20		fluoranthene				0.79	mg/kg		0.716	mg/kg	0.0000716 %	✓	
			205-912-4	206-44-0									
21		pyrene				0.84	mg/kg		0.762	mg/kg	0.0000762 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.46	mg/kg		0.417	mg/kg	0.0000417 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.45	mg/kg		0.408	mg/kg	0.0000408 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[a]pyrene; benzo[def]chrysene				0.32	mg/kg		0.29	mg/kg	0.000029 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				0.25	mg/kg		0.227	mg/kg	0.0000227 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				0.06	mg/kg		0.0544	mg/kg	0.00000544 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				0.25	mg/kg		0.227	mg/kg	0.0000227 %	✓	
			205-883-8	191-24-2									
28		coronene				0.06	mg/kg		0.0544	mg/kg	0.00000544 %	✓	
			205-881-7	191-07-1									
29		benzo[b]fluoranthene				0.53	mg/kg		0.481	mg/kg	0.0000481 %	✓	
		601-034-00-4	205-911-9	205-99-2									
30		benzo[k]fluoranthene				0.21	mg/kg		0.19	mg/kg	0.000019 %	✓	
		601-036-00-5	205-916-6	207-08-9									
31		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
32		TPH (C6 to C40) petroleum group				1683	mg/kg		1525.839	mg/kg	0.153 %	✓	
				TPH									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
34		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
35		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		toluene				0.031	mg/kg		0.0281	mg/kg	0.00000281 %	✓	
		601-021-00-3	203-625-9	108-88-3									
37		xylene				0.091	mg/kg		0.0825	mg/kg	0.00000825 %	✓	
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		phenol				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.201 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

toluene: (conc.: 2.81e-06%)

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.153%)
xylene: (conc.: 8.25e-06%)

Classification of sample: TP15[2]

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

Sample details

Sample Name:
TP15[2]
Sample Depth:
1.50-3.00 m
Moisture content:
25.8%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 25.8% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		<1 mg/kg	1.197	<1.197 mg/kg	<0.00012 %		<**LOD**
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		15.1 mg/kg	1.32	15.848 mg/kg	0.00158 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		45 mg/kg	1.117	39.939 mg/kg	0.00399 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2 mg/kg	1.142	0.182 mg/kg	0.0000182 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		37.3 mg/kg	1.462	43.335 mg/kg	0.00433 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		14 mg/kg	1.126	12.53 mg/kg	0.00125 %	✓	
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	213 mg/kg		169.316 mg/kg	0.0169 %	✓	
8	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
9	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		1.3 mg/kg	1.5	1.55 mg/kg	0.000155 %	✓	
10	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		15.9 mg/kg	1.545	19.53 mg/kg	0.00195 %	✓	
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
12	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		4 mg/kg	3.22	10.238 mg/kg	0.00102 %	✓	
13	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		64 mg/kg	1.245	63.324 mg/kg	0.00633 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				0.05	mg/kg		0.0397	mg/kg	0.00000397 %	✓	
		601-052-00-2	202-049-5	91-20-3									
15		acenaphthylene				0.06	mg/kg		0.0477	mg/kg	0.00000477 %	✓	
			205-917-1	208-96-8									
16		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
17		fluorene				0.08	mg/kg		0.0636	mg/kg	0.00000636 %	✓	
			201-695-5	86-73-7									
18		phenanthrene				0.43	mg/kg		0.342	mg/kg	0.0000342 %	✓	
			201-581-5	85-01-8									
19		anthracene				0.23	mg/kg		0.183	mg/kg	0.0000183 %	✓	
			204-371-1	120-12-7									
20		fluoranthene				0.94	mg/kg		0.747	mg/kg	0.0000747 %	✓	
			205-912-4	206-44-0									
21		pyrene				0.77	mg/kg		0.612	mg/kg	0.0000612 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.57	mg/kg		0.453	mg/kg	0.0000453 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.63	mg/kg		0.501	mg/kg	0.0000501 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[a]pyrene; benzo[def]chrysene				0.59	mg/kg		0.469	mg/kg	0.0000469 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				0.36	mg/kg		0.286	mg/kg	0.0000286 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				0.09	mg/kg		0.0715	mg/kg	0.00000715 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				0.25	mg/kg		0.199	mg/kg	0.0000199 %	✓	
			205-883-8	191-24-2									
28		coronene				0.05	mg/kg		0.0397	mg/kg	0.00000397 %	✓	
			205-881-7	191-07-1									
29		benzo[b]fluoranthene				0.75	mg/kg		0.596	mg/kg	0.0000596 %	✓	
		601-034-00-4	205-911-9	205-99-2									
30		benzo[k]fluoranthene				0.29	mg/kg		0.231	mg/kg	0.0000231 %	✓	
		601-036-00-5	205-916-6	207-08-9									
31		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
32		TPH (C6 to C40) petroleum group				108	mg/kg		85.851	mg/kg	0.00859 %	✓	
				TPH									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
34		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
35		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		phenol				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0471 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00859%)

Classification of sample: TP16

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample Name:
TP16
Sample Depth:
0.00-1.50 m
Moisture content:
11.5%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.269%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.269%)

Determinands

Moisture content: 11.5% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		6 mg/kg	1.197	6.442 mg/kg	0.000644 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		22.2 mg/kg	1.32	26.288 mg/kg	0.00263 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		95 mg/kg	1.117	95.128 mg/kg	0.00951 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		4.4 mg/kg	1.142	4.508 mg/kg	0.000451 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		96.1 mg/kg	1.462	125.969 mg/kg	0.0126 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		417 mg/kg	1.126	421.072 mg/kg	0.0421 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
7		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	446	mg/kg		400	mg/kg	0.04 %	✓	
		082-001-00-6											
8		mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }			1	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		080-002-00-6											
9		molybdenum { molybdenum(VI) oxide }				8.7	mg/kg	1.5	11.706	mg/kg	0.00117 %	✓	
		042-001-00-9	215-204-7	1313-27-5									
10		nickel { nickel(IV) oxide (nickel dioxide) }				16.8	mg/kg	1.545	23.282	mg/kg	0.00233 %	✓	
		028-004-00-8	234-823-3	12035-36-8									
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		034-002-00-8											
12		boron { diboron trioxide; boric oxide }				1	mg/kg	3.22	2.888	mg/kg	0.000289 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
13		zinc { zinc oxide }				341	mg/kg	1.245	380.67	mg/kg	0.0381 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
14		naphthalene				7.04	mg/kg		6.314	mg/kg	0.000631 %	✓	
		601-052-00-2	202-049-5	91-20-3									
15		acenaphthylene				0.26	mg/kg		0.233	mg/kg	0.0000233 %	✓	
			205-917-1	208-96-8									
16		acenaphthene				0.19	mg/kg		0.17	mg/kg	0.000017 %	✓	
			201-469-6	83-32-9									
17		fluorene				0.74	mg/kg		0.664	mg/kg	0.0000664 %	✓	
			201-695-5	86-73-7									
18		phenanthrene				1.22	mg/kg		1.094	mg/kg	0.000109 %	✓	
			201-581-5	85-01-8									
19		anthracene				0.19	mg/kg		0.17	mg/kg	0.000017 %	✓	
			204-371-1	120-12-7									
20		fluoranthene				0.55	mg/kg		0.493	mg/kg	0.0000493 %	✓	
			205-912-4	206-44-0									
21		pyrene				0.72	mg/kg		0.646	mg/kg	0.0000646 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.23	mg/kg		0.206	mg/kg	0.0000206 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.27	mg/kg		0.242	mg/kg	0.0000242 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[a]pyrene; benzo[def]chrysene				0.21	mg/kg		0.188	mg/kg	0.0000188 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				0.18	mg/kg		0.161	mg/kg	0.0000161 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				0.18	mg/kg		0.161	mg/kg	0.0000161 %	✓	
			205-883-8	191-24-2									
28		coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-881-7	191-07-1									
29		benzo[b]fluoranthene				0.34	mg/kg		0.305	mg/kg	0.0000305 %	✓	
		601-034-00-4	205-911-9	205-99-2									
30		benzo[k]fluoranthene				0.13	mg/kg		0.117	mg/kg	0.0000117 %	✓	
		601-036-00-5	205-916-6	207-08-9									
31		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
32		TPH (C6 to C40) petroleum group				2998	mg/kg		2688.789	mg/kg	0.269 %	✓	
				TPH									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
34		benzene				0.019	mg/kg		0.017	mg/kg	0.0000017 %	✓	
		601-020-00-8	200-753-7	71-43-2									
35	●	ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		toluene				0.123	mg/kg		0.11	mg/kg	0.000011 %	✓	
		601-021-00-3	203-625-9	108-88-3									
37		xylene				3.134	mg/kg		2.811	mg/kg	0.000281 %	✓	
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		phenol				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.42 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinands:

benzene: (conc.: 1.7e-06%)
toluene: (conc.: 0.00001%)

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.269%)
xylene: (conc.: 0.00028%)

Classification of sample: TP16[2]

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample Name:
TP16[2]
Sample Depth:
1.50-1.90 m
Moisture content:
25.5%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.993%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.993%)

Determinands

Moisture content: 25.5% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2 mg/kg	1.197	1.908 mg/kg	0.000191 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		13.1 mg/kg	1.32	13.782 mg/kg	0.00138 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		91 mg/kg	1.117	80.958 mg/kg	0.0081 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2 mg/kg	1.142	0.182 mg/kg	0.0000182 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		148.1 mg/kg	1.462	172.475 mg/kg	0.0172 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		49 mg/kg	1.126	43.959 mg/kg	0.0044 %	✓	

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
7		lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	126 mg/kg		100.398 mg/kg	0.01 %	✓	
		082-001-00-6							
8		mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		080-002-00-6							
9		molybdenum { molybdenum(VI) oxide }		9.5 mg/kg	1.5	11.356 mg/kg	0.00114 %	✓	
		042-001-00-9 / 215-204-7 / 1313-27-5							
10		nickel { nickel(IV) oxide (nickel dioxide) }		42.2 mg/kg	1.545	51.958 mg/kg	0.0052 %	✓	
		028-004-00-8 / 234-823-3 / 12035-36-8							
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
		034-002-00-8							
12		boron { diboron trioxide; boric oxide }		1.2 mg/kg	3.22	3.079 mg/kg	0.000308 %	✓	
		005-008-00-8 / 215-125-8 / 1303-86-2							
13		zinc { zinc oxide }		126 mg/kg	1.245	124.967 mg/kg	0.0125 %	✓	
		030-013-00-7 / 215-222-5 / 1314-13-2							
14		naphthalene		25.65 mg/kg		20.438 mg/kg	0.00204 %	✓	
		601-052-00-2 / 202-049-5 / 91-20-3							
15		acenaphthylene		0.68 mg/kg		0.542 mg/kg	0.0000542 %	✓	
		205-917-1 / 208-96-8							
16		acenaphthene		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		201-469-6 / 83-32-9							
17		fluorene		2.25 mg/kg		1.793 mg/kg	0.000179 %	✓	
		201-695-5 / 86-73-7							
18		phenanthrene		3.33 mg/kg		2.653 mg/kg	0.000265 %	✓	
		201-581-5 / 85-01-8							
19		anthracene		<0.4 mg/kg		<0.4 mg/kg	<0.00004 %		<LOD
		204-371-1 / 120-12-7							
20		fluoranthene		0.48 mg/kg		0.382 mg/kg	0.0000382 %	✓	
		205-912-4 / 206-44-0							
21		pyrene		1 mg/kg		0.797 mg/kg	0.0000797 %	✓	
		204-927-3 / 129-00-0							
22		benzo[a]anthracene		<0.6 mg/kg		<0.6 mg/kg	<0.00006 %		<LOD
		601-033-00-9 / 200-280-6 / 56-55-3							
23		chrysene		0.26 mg/kg		0.207 mg/kg	0.0000207 %	✓	
		601-048-00-0 / 205-923-4 / 218-01-9							
24		benzo[a]pyrene; benzo[def]chrysene		<0.4 mg/kg		<0.4 mg/kg	<0.00004 %		<LOD
		601-032-00-3 / 200-028-5 / 50-32-8							
25		indeno[123-cd]pyrene		<0.4 mg/kg		<0.4 mg/kg	<0.00004 %		<LOD
		205-893-2 / 193-39-5							
26		dibenz[a,h]anthracene		<0.4 mg/kg		<0.4 mg/kg	<0.00004 %		<LOD
		601-041-00-2 / 200-181-8 / 53-70-3							
27		benzo[ghi]perylene		<0.4 mg/kg		<0.4 mg/kg	<0.00004 %		<LOD
		205-883-8 / 191-24-2							
28		coronene		<0.4 mg/kg		<0.4 mg/kg	<0.00004 %		<LOD
		205-881-7 / 191-07-1							
29		benzo[b]fluoranthene		<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
		601-034-00-4 / 205-911-9 / 205-99-2							
30		benzo[k]fluoranthene		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
		601-036-00-5 / 205-916-6 / 207-08-9							
31		benzo[j]fluoranthene		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
		601-035-00-X / 205-910-3 / 205-82-3							
32		TPH (C6 to C40) petroleum group		12464 mg/kg		9931.474 mg/kg	0.993 %	✓	
		TPH							
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane		5.1 mg/kg		4.064 mg/kg	0.000406 %	✓	
		603-181-00-X / 216-653-1 / 1634-04-4							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
34		benzene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
35		ethylbenzene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
36		toluene				47.207	mg/kg		37.615	mg/kg	0.00376 %	✓	
		601-021-00-3	203-625-9	108-88-3									
37		xylene				44.848	mg/kg		35.735	mg/kg	0.00357 %	✓	
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		phenol				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	1.066 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Soil flammability testing has not been completed for this sample but this hydrocarbon contamination should be stockpiled and managed separately for disposal

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinands:

tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane: (conc.: 0.0004%)
toluene: (conc.: 0.00376%)

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.993%)
xylene: (conc.: 0.00357%)

Classification of sample: TP17

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

Sample details

Sample Name:
TP17
Sample Depth:
0.00-1.50 m
Moisture content:
11.9%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 11.9% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		3	mg/kg	1.197	3.209	mg/kg	0.000321 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		21.5	mg/kg	1.32	25.368	mg/kg	0.00254 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		190	mg/kg	1.117	189.577	mg/kg	0.019 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.1	mg/kg	1.142	0.102	mg/kg	0.0000102 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		104	mg/kg	1.462	135.837	mg/kg	0.0136 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		59	mg/kg	1.126	59.363	mg/kg	0.00594 %	✓	
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	179	mg/kg		159.964	mg/kg	0.016 %	✓	
8	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
9	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		6.5	mg/kg	1.5	8.714	mg/kg	0.000871 %	✓	
10	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		36.5	mg/kg	1.545	50.401	mg/kg	0.00504 %	✓	
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<**LOD**
12	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.9	mg/kg	3.22	2.59	mg/kg	0.000259 %	✓	
13	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		231	mg/kg	1.245	256.952	mg/kg	0.0257 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				0.15	mg/kg		0.134	mg/kg	0.0000134 %	✓	
		601-052-00-2	202-049-5	91-20-3									
15	●	acenaphthylene				0.18	mg/kg		0.161	mg/kg	0.0000161 %	✓	
			205-917-1	208-96-8									
16	●	acenaphthene				0.37	mg/kg		0.331	mg/kg	0.0000331 %	✓	
			201-469-6	83-32-9									
17	●	fluorene				0.25	mg/kg		0.223	mg/kg	0.0000223 %	✓	
			201-695-5	86-73-7									
18	●	phenanthrene				3.26	mg/kg		2.913	mg/kg	0.000291 %	✓	
			201-581-5	85-01-8									
19	●	anthracene				0.69	mg/kg		0.617	mg/kg	0.0000617 %	✓	
			204-371-1	120-12-7									
20	●	fluoranthene				4.97	mg/kg		4.441	mg/kg	0.000444 %	✓	
			205-912-4	206-44-0									
21	●	pyrene				4.68	mg/kg		4.182	mg/kg	0.000418 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				2.51	mg/kg		2.243	mg/kg	0.000224 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				3.4	mg/kg		3.038	mg/kg	0.000304 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[a]pyrene; benzo[def]chrysene				3.2	mg/kg		2.86	mg/kg	0.000286 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25	●	indeno[123-cd]pyrene				2.32	mg/kg		2.073	mg/kg	0.000207 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				0.51	mg/kg		0.456	mg/kg	0.0000456 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27	●	benzo[ghi]perylene				2.44	mg/kg		2.181	mg/kg	0.000218 %	✓	
			205-883-8	191-24-2									
28	●	coronene				0.44	mg/kg		0.393	mg/kg	0.0000393 %	✓	
			205-881-7	191-07-1									
29		benzo[b]fluoranthene				3.94	mg/kg		3.521	mg/kg	0.000352 %	✓	
		601-034-00-4	205-911-9	205-99-2									
30		benzo[k]fluoranthene				1.53	mg/kg		1.367	mg/kg	0.000137 %	✓	
		601-036-00-5	205-916-6	207-08-9									
31		benzo[j]fluoranthene				1	mg/kg		0.894	mg/kg	0.0000894 %	✓	
		601-035-00-X	205-910-3	205-82-3									
32	●	TPH (C6 to C40) petroleum group				608	mg/kg		543.342	mg/kg	0.0543 %	✓	
				TPH									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
34		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
35	●	ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
36		toluene				0.022	mg/kg		0.0197	mg/kg	0.00000197 %	✓	
		601-021-00-3	203-625-9	108-88-3									
37		xylene				0.02	mg/kg		0.0179	mg/kg	0.00000179 %	✓	
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		phenol				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.147 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

toluene: (conc.: 1.97e-06%)

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.0543%)
xylene: (conc.: 1.79e-06%)

Classification of sample: TP17[2]

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

Sample details

Sample Name:
TP17[2]
Sample Depth:
1.50-1.90 m
Moisture content:
16.7%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 16.7% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	antimony { antimony trioxide }	051-005-00-X	215-175-0	1309-64-4		2 mg/kg	1.197	2.052 mg/kg	0.000205 %	✓	
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		16.5 mg/kg	1.32	18.668 mg/kg	0.00187 %	✓	
3	barium { barium oxide }		215-127-9	1304-28-5		63 mg/kg	1.117	60.274 mg/kg	0.00603 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		130.2 mg/kg	1.462	163.063 mg/kg	0.0163 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		23 mg/kg	1.126	22.19 mg/kg	0.00222 %	✓	
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	70 mg/kg		59.983 mg/kg	0.006 %	✓	
8	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	080-002-00-6			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
9	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		8.5 mg/kg	1.5	10.927 mg/kg	0.00109 %	✓	
10	nickel { nickel(IV) oxide (nickel dioxide) }	028-004-00-8	234-823-3	12035-36-8		17.8 mg/kg	1.545	23.568 mg/kg	0.00236 %	✓	
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
12	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.7 mg/kg	3.22	1.931 mg/kg	0.000193 %	✓	
13	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		64 mg/kg	1.245	68.262 mg/kg	0.00683 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				0.05	mg/kg		0.0428	mg/kg	0.00000428 %	✓	
		601-052-00-2	202-049-5	91-20-3									
15	●	acenaphthylene				0.04	mg/kg		0.0343	mg/kg	0.00000343 %	✓	
			205-917-1	208-96-8									
16	●	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
17	●	fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7									
18	●	phenanthrene				0.27	mg/kg		0.231	mg/kg	0.0000231 %	✓	
			201-581-5	85-01-8									
19	●	anthracene				0.06	mg/kg		0.0514	mg/kg	0.00000514 %	✓	
			204-371-1	120-12-7									
20	●	fluoranthene				0.57	mg/kg		0.488	mg/kg	0.0000488 %	✓	
			205-912-4	206-44-0									
21	●	pyrene				0.54	mg/kg		0.463	mg/kg	0.0000463 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.25	mg/kg		0.214	mg/kg	0.0000214 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.3	mg/kg		0.257	mg/kg	0.0000257 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[a]pyrene; benzo[def]chrysene				0.39	mg/kg		0.334	mg/kg	0.0000334 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25	●	indeno[123-cd]pyrene				0.27	mg/kg		0.231	mg/kg	0.0000231 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				0.08	mg/kg		0.0686	mg/kg	0.00000686 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27	●	benzo[ghi]perylene				0.3	mg/kg		0.257	mg/kg	0.0000257 %	✓	
			205-883-8	191-24-2									
28	●	coronene				0.07	mg/kg		0.06	mg/kg	0.000006 %	✓	
			205-881-7	191-07-1									
29		benzo[b]fluoranthene				0.52	mg/kg		0.446	mg/kg	0.0000446 %	✓	
		601-034-00-4	205-911-9	205-99-2									
30		benzo[k]fluoranthene				0.2	mg/kg		0.171	mg/kg	0.0000171 %	✓	
		601-036-00-5	205-916-6	207-08-9									
31		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
32	●	TPH (C6 to C40) petroleum group				83	mg/kg		71.123	mg/kg	0.00711 %	✓	
				TPH									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
34		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
35	●	ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		toluene				0.007	mg/kg		0.006	mg/kg	0.0000006 %	✓	
		601-021-00-3	203-625-9	108-88-3									
37		xylene				0.016	mg/kg		0.0137	mg/kg	0.00000137 %	✓	
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		phenol				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0509 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

toluene: (conc.: 6.0e-07%)

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.00711%)
xylene: (conc.: 1.37e-06%)

Classification of sample: TP18

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

Sample details

Sample Name:
TP18
Sample Depth:
0.00-1.50 m
Moisture content:
13.4%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 13.4% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		3 mg/kg	1.197	3.167 mg/kg	0.000317 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		49.1 mg/kg	1.32	57.168 mg/kg	0.00572 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		100 mg/kg	1.117	98.457 mg/kg	0.00985 %	✓	
	/ 215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<**LOD**
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		110.6 mg/kg	1.462	142.547 mg/kg	0.0143 %	✓	
	/ 215-160-9 / 1308-38-9							
6	copper { dicopper oxide; copper (I) oxide }		41 mg/kg	1.126	40.707 mg/kg	0.00407 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	120 mg/kg		105.82 mg/kg	0.0106 %	✓	
	082-001-00-6							
8	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
	080-002-00-6							
9	molybdenum { molybdenum(VI) oxide }		7 mg/kg	1.5	9.26 mg/kg	0.000926 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
10	nickel { nickel(IV) oxide (nickel dioxide) }		27.1 mg/kg	1.545	36.926 mg/kg	0.00369 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
	034-002-00-8							
12	boron { diboron trioxide; boric oxide }		0.7 mg/kg	3.22	1.988 mg/kg	0.000199 %	✓	
	005-008-00-8 / 215-125-8 / 1303-86-2							
13	zinc { zinc oxide }		122 mg/kg	1.245	133.911 mg/kg	0.0134 %	✓	
	030-013-00-7 / 215-222-5 / 1314-13-2							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				0.08	mg/kg		0.0705	mg/kg	0.00000705 %	✓	
		601-052-00-2	202-049-5	91-20-3									
15	●	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<**LOD**
			205-917-1	208-96-8									
16	●	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-469-6	83-32-9									
17	●	fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			201-695-5	86-73-7									
18	●	phenanthrene				0.22	mg/kg		0.194	mg/kg	0.0000194 %	✓	
			201-581-5	85-01-8									
19	●	anthracene				0.07	mg/kg		0.0617	mg/kg	0.00000617 %	✓	
			204-371-1	120-12-7									
20	●	fluoranthene				0.48	mg/kg		0.423	mg/kg	0.0000423 %	✓	
			205-912-4	206-44-0									
21	●	pyrene				0.42	mg/kg		0.37	mg/kg	0.000037 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.37	mg/kg		0.326	mg/kg	0.0000326 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.18	mg/kg		0.159	mg/kg	0.0000159 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[a]pyrene; benzo[def]chrysene				0.37	mg/kg		0.326	mg/kg	0.0000326 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25	●	indeno[123-cd]pyrene				0.26	mg/kg		0.229	mg/kg	0.0000229 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				0.08	mg/kg		0.0705	mg/kg	0.00000705 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27	●	benzo[ghi]perylene				0.25	mg/kg		0.22	mg/kg	0.000022 %	✓	
			205-883-8	191-24-2									
28	●	coronene				0.06	mg/kg		0.0529	mg/kg	0.00000529 %	✓	
			205-881-7	191-07-1									
29		benzo[b]fluoranthene				0.53	mg/kg		0.467	mg/kg	0.0000467 %	✓	
		601-034-00-4	205-911-9	205-99-2									
30		benzo[k]fluoranthene				0.2	mg/kg		0.176	mg/kg	0.0000176 %	✓	
		601-036-00-5	205-916-6	207-08-9									
31		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
32	●	TPH (C6 to C40) petroleum group				70	mg/kg		61.728	mg/kg	0.00617 %	✓	
				TPH									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
34		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
35	●	ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
36		toluene				0.009	mg/kg		0.0079	mg/kg	0.000000794 %	✓	
		601-021-00-3	203-625-9	108-88-3									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		phenol				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0699 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

toluene: (conc.: 7.94e-07%)

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00617%)

Classification of sample: TP18[2]

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

Sample details

Sample Name:
TP18[2]
Sample Depth:
1.50-2.70 m
Moisture content:
20.9%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 20.9% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		1 mg/kg	1.197	0.99 mg/kg	0.000099 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		11.1 mg/kg	1.32	12.122 mg/kg	0.00121 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		69 mg/kg	1.117	63.721 mg/kg	0.00637 %	✓	
	/ 215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.4 mg/kg	1.142	0.378 mg/kg	0.0000378 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		114 mg/kg	1.462	137.814 mg/kg	0.0138 %	✓	
	/ 215-160-9 / 1308-38-9							
6	copper { dicopper oxide; copper (I) oxide }		18 mg/kg	1.126	16.763 mg/kg	0.00168 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	18 mg/kg		14.888 mg/kg	0.00149 %	✓	
	082-001-00-6							
8	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		**<LOD**
	080-002-00-6							
9	molybdenum { molybdenum(VI) oxide }		5.6 mg/kg	1.5	6.949 mg/kg	0.000695 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
10	nickel { nickel(IV) oxide (nickel dioxide) }		48.8 mg/kg	1.545	62.37 mg/kg	0.00624 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		**<LOD**
	034-002-00-8							
12	boron { diboron trioxide; boric oxide }		1.6 mg/kg	3.22	4.261 mg/kg	0.000426 %	✓	
	005-008-00-8 / 215-125-8 / 1303-86-2							
13	zinc { zinc oxide }		70 mg/kg	1.245	72.068 mg/kg	0.00721 %	✓	
	030-013-00-7 / 215-222-5 / 1314-13-2							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
15		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
16		acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-469-6	83-32-9									
17		fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			201-695-5	86-73-7									
18		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-581-5	85-01-8									
19		anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			204-371-1	120-12-7									
20		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-912-4	206-44-0									
21		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-927-3	129-00-0									
22		benzo[a]anthracene				<0.06	mg/kg		<0.06	mg/kg	<0.000006 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-883-8	191-24-2									
28		coronene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<LOD
			205-881-7	191-07-1									
29		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
30		benzo[k]fluoranthene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
31		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-035-00-X	205-910-3	205-82-3									
32		TPH (C6 to C40) petroleum group				<52	mg/kg		<52	mg/kg	<0.0052 %		<LOD
				TPH									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
34		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
35		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
36		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
37		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		phenol				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0449 %		

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

Classification of sample: TP20

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

Sample details

Sample Name:
TP20
Sample Depth:
0.00-0.75 m
Moisture content:
16.8%
(dry weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 16.8% Dry Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	antimony { antimony trioxide }		3 mg/kg	1.197	3.075 mg/kg	0.000307 %	✓	
	051-005-00-X / 215-175-0 / 1309-64-4							
2	arsenic { arsenic trioxide }		7.9 mg/kg	1.32	8.93 mg/kg	0.000893 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
3	barium { barium oxide }		107 mg/kg	1.117	102.283 mg/kg	0.0102 %	✓	
	215-127-9 / 1304-28-5							
4	cadmium { cadmium oxide }		0.6 mg/kg	1.142	0.587 mg/kg	0.0000587 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide }		88.8 mg/kg	1.462	111.118 mg/kg	0.0111 %	✓	
	215-160-9 / 1308-38-9							
6	copper { dicopper oxide; copper (I) oxide }		45 mg/kg	1.126	43.378 mg/kg	0.00434 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	1	94 mg/kg		80.479 mg/kg	0.00805 %	✓	
	082-001-00-6							
8	mercury { inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex }	1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	080-002-00-6							
9	molybdenum { molybdenum(VI) oxide }		5.6 mg/kg	1.5	7.193 mg/kg	0.000719 %	✓	
	042-001-00-9 / 215-204-7 / 1313-27-5							
10	nickel { nickel(IV) oxide (nickel dioxide) }		23.7 mg/kg	1.545	31.354 mg/kg	0.00314 %	✓	
	028-004-00-8 / 234-823-3 / 12035-36-8							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
	034-002-00-8							
12	boron { diboron trioxide; boric oxide }		0.7 mg/kg	3.22	1.93 mg/kg	0.000193 %	✓	
	005-008-00-8 / 215-125-8 / 1303-86-2							
13	zinc { zinc oxide }		105 mg/kg	1.245	111.896 mg/kg	0.0112 %	✓	
	030-013-00-7 / 215-222-5 / 1314-13-2							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		naphthalene				0.08	mg/kg		0.0685	mg/kg	0.00000685 %	✓	
		601-052-00-2	202-049-5	91-20-3									
15	●	acenaphthylene				0.06	mg/kg		0.0514	mg/kg	0.00000514 %	✓	
			205-917-1	208-96-8									
16	●	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-469-6	83-32-9									
17	●	fluorene				<0.04	mg/kg		<0.04	mg/kg	<0.000004 %		<**LOD**
			201-695-5	86-73-7									
18	●	phenanthrene				0.35	mg/kg		0.3	mg/kg	0.00003 %	✓	
			201-581-5	85-01-8									
19	●	anthracene				0.11	mg/kg		0.0942	mg/kg	0.00000942 %	✓	
			204-371-1	120-12-7									
20	●	fluoranthene				0.78	mg/kg		0.668	mg/kg	0.0000668 %	✓	
			205-912-4	206-44-0									
21	●	pyrene				0.7	mg/kg		0.599	mg/kg	0.0000599 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.5	mg/kg		0.428	mg/kg	0.0000428 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.41	mg/kg		0.351	mg/kg	0.0000351 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[a]pyrene; benzo[def]chrysene				0.56	mg/kg		0.479	mg/kg	0.0000479 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25	●	indeno[123-cd]pyrene				0.39	mg/kg		0.334	mg/kg	0.0000334 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				0.11	mg/kg		0.0942	mg/kg	0.00000942 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27	●	benzo[ghi]perylene				0.37	mg/kg		0.317	mg/kg	0.0000317 %	✓	
			205-883-8	191-24-2									
28	●	coronene				0.08	mg/kg		0.0685	mg/kg	0.00000685 %	✓	
			205-881-7	191-07-1									
29		benzo[b]fluoranthene				0.78	mg/kg		0.668	mg/kg	0.0000668 %	✓	
		601-034-00-4	205-911-9	205-99-2									
30		benzo[k]fluoranthene				0.31	mg/kg		0.265	mg/kg	0.0000265 %	✓	
		601-036-00-5	205-916-6	207-08-9									
31		benzo[j]fluoranthene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-035-00-X	205-910-3	205-82-3									
32	●	TPH (C6 to C40) petroleum group				290	mg/kg		248.288	mg/kg	0.0248 %	✓	
				TPH									
33		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		603-181-00-X	216-653-1	1634-04-4									
34		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
35	●	ethylbenzene				0.008	mg/kg		0.0068	mg/kg	0.000000685 %	✓	
		601-023-00-4	202-849-4	100-41-4									
36		toluene				0.015	mg/kg		0.0128	mg/kg	0.00000128 %	✓	
		601-021-00-3	203-625-9	108-88-3									
37		xylene				0.026	mg/kg		0.0223	mg/kg	0.00000223 %	✓	
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
38		phenol				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0759 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Soils not expected to be flammable based on low levels of contamination with flammable substances (<1%/10,000 mg/kg)

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinands:

ethylbenzene: (conc.: 6.85e-07%)
toluene: (conc.: 1.28e-06%)

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.0248%)
xylene: (conc.: 2.23e-06%)

Appendix A: Classifier defined and non CLP determinands

barium oxide (EC Number: 215-127-9, CAS Number: 1304-28-5)

Conversion factor: 1.117
Description/Comments: Data from C&L Inventory Database; No entries in Registered Substances Database, IARC or Pesticide Properties Database
Data source:
http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=88825&HarmOnly=no?fc=true&lang=en
Data source date: 02 Jun 2014
Hazard Statements: Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Corr. 1A H314 , Acute Tox. 3 H301 , Acute Tox. 4 H302 , Acute Tox. 4 H332

chromium(III) oxide (EC Number: 215-160-9, CAS Number: 1308-38-9)

Conversion factor: 1.462
Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Repr. 1B H360FD , Skin Sens. 1 H317 , Resp. Sens. 1 H334 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302 , Acute Tox. 4 H332

lead compounds with the exception of those specified elsewhere in this Annex

CLP index number: 082-001-00-6
Description/Comments: Least-worst case: Lead REACH Consortium considers some lead compounds Carcinogenic category 2B
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
Additional Hazard Statement(s): Carc. 2 H351
Reason for additional Hazards Statement(s)/Risk Phrase(s):
03 Jun 2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html. Review date 29/09/2015

acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 1 H310 , Acute Tox. 1 H330 , Acute Tox. 4 H302

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Aquatic Chronic 2 H411 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400

phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Skin Irrit. 2 H315 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Carc. 2 H351 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302

anthracene (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

- **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Acute Tox. 4 H302

- **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315

- **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2 H351

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400

- **coronene** (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.
Data source:
http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en
Data source date: 16 Jun 2014
Hazard Statements: STOT SE 2 H371

- **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Aquatic Chronic 2 H411 , Repr. 2 H361d , Carc. 1B H350 , Muta. 1B H340 , STOT RE 2 H373 , Asp. Tox. 1 H304 , Flam. Liq. 3 H226

- **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

CLP index number: 601-023-00-4
Description/Comments:
Data source: Commission Regulation (EU) No 605/2014 – 6th Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP6)
Additional Hazard Statement(s): Carc. 2 H351
Reason for additional Hazards Statement(s)/Risk Phrase(s):
03 Jun 2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2B (77) 2000

Appendix B: Rationale for selection of metal species

antimony {antimony trioxide}

Worst case CLP species based on hazard statements/molecular weight and low solubility. Industrial sources include: flame retardants in electrical apparatus, textiles and coatings

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds

barium {barium oxide}

worst case CLP compound as no chromium VI expected)

cadmium {cadmium oxide}

Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and compound's industrial usage not related to site history.

chromium in chromium(III) compounds {chromium(III) oxide}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass.

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and not enough soluble sulphate detected.

lead {lead compounds with the exception of those specified elsewhere in this Annex}

lead chromate is not expected based on analytical results. The worst case lead compounds have not been selected as this relates to risks from smelting of lead ores, lead smelting slags, or flue dust from lead smelting. This is not believed to have occurred on the Site.

mercury {inorganic compounds of mercury with the exception of mercuric sulphide and those specified elsewhere in this Annex}

reasonable case species

molybdenum {molybdenum(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight

nickel {nickel(IV) oxide (nickel dioxide)}

worst case compounds nickel chromate and nickel sulphate not expected based on solubility and chemical analysis. Nickel oxide selected based on site history and solubility.

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

reasonable case species

boron {diboron trioxide; boric oxide}

reasonable case species for site history

zinc {zinc oxide}

worst case zinc sulphate not expected based on high solubility. Zinc oxide is chosen based on hazard statements and site history.

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.1, May 2018
HazWasteOnline Classification Engine Version: 2019.256.4006.8076 (13 Sep 2019)
HazWasteOnline Database: 2019.256.4006.8076 (13 Sep 2019)

This classification utilises the following guidance and legislation:
WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Wastes 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
POPs Regulation 2004 - Regulation 850/2004/EC of 29 April 2004
1st ATP to POPs Regulation - Regulation 756/2010/EU of 24 August 2010
2nd ATP to POPs Regulation - Regulation 757/2010/EU of 24 August 2010

APPENDIX E

WAC Assessment

Appendix F: WAC Assessmen

Values less than detect set at detection																					
Categories	**Sample ID**				TP11	TP11	TP12	TP12	TP13	TP13	TP14	TP14	TP15	TP15	TP16	TP16	TP17	TP17	TP18	TP18	TP19	TP20
	Depth				0.00-1.50	1.50-2.70	0.00-1.50	1.50-3.00	0.00-1.50	1.50-2.70	0.00-1.50	1.50-3.00	0.00-1.50	1.50-3.00	0.00-1.50	1.50-1.90	0.00-1.50	1.50-1.90	0.00-1.50	1.50-2.70	0.00-0.70	0.00-0.75
B1 - Inert	**Sample Type**				Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
B2 - IMS 3X	**Sampled Date**				16/08/2019	16/08/2019	14/08/2019	14/08/2019	16/08/2019	16/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	16/08/2019	16/08/2019	14/08/2019	16/08/2019
C - Non-Hazardous				**Waste Category**	C	C	D	B2	B1	B1	B1	B1	D	B1	D	D	B1	B1	B1	B1	C	B2
D - Hazardous		**Irish Landfill Acceptance Criteria**																				
Test	**Units**	**Inert**	**Inert Increased Limits**	**Non-Hazardous**																		
Total Organic Carbon	%	3	6		22.09	31.39	12.07	5.86	0.87	2.9	0.41	0.53	1.02	2.46	1.55	2.06	1.55	0.98	0.95	0.47	16.53	3.64
Mineral Oil (C10-C40)	mg/kg	500	500		67	30	237	97	37	30	281	30	1161	30	1726	7473	65	30	30	30	212	186
Total 7 PCBs #	mg/kg	1	1		0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.175	0.175	0.035	0.035	0.035	0.035	0.035	0.035
PAH 17 Total	mg/kg	100	100		8.99	0.64	13.04	9.4	4.5	0.94	1.3	1.42	5.66	6.14	12.45	33.65	34.84	3.91	3.57	0.64	24.34	5.59
BTEX (Totals)		6	6		0.046	0.025	0.025	0.025	0.025	0.025	0.037	0.045	0.132	0.025	3.281	92.155	0.057	0.038	0.029	0.025	0.025	0.059
Dissolved Antimony (A10) #	mg/kg	0.06			0.04	0.02	0.03	0.05	0.03	0.03	0.02	0.02	0.05	0.02	0.09	0.1	0.04	0.02	0.02	0.02	0.06	0.03
Dissolved Arsenic (A10) #	mg/kg	0.5	1.5	2	0.46	0.06	0.081	0.108	0.075	0.044	0.04	0.047	0.049	0.049	0.138	0.175	0.064	0.092	0.408	0.025	0.025	0.025
Dissolved Barium (A10) #	mg/kg	20	20	100	0.06	0.25	0.23	0.24	0.2	0.03	0.03	0.03	0.12	0.03	0.22	0.24	1.02	0.04	0.05	0.12	0.42	0.61
Dissolved Boron (A10) #	mg/kg				0.31	0.25	0.12	0.18	0.15	0.27	0.12	0.25	0.15	0.26	0.19	0.3	0.12	0.12	0.12	0.22	0.12	0.12
Dissolved Cadmium (A10) #	mg/kg	0.04	0.04	1	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Dissolved Chromium (A10) #	mg/kg	0.5	0.5	10	0.064	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.15	0.144
Dissolved Copper (A10) #	mg/kg	2	2	50	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.4
Dissolved Lead (A10) #	mg/kg	0.5	0.5	10	0.12	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.22	0.05	0.05	0.08	0.05	0.05	0.19
Dissolved Molybdenum (A10) #	mg/kg	0.5	1.5	10	0.06	0.03	0.05	0.17	0.08	0.07	0.17	0.16	0.1	0.17	0.19	0.36	0.06	0.02	0.11	0.08	0.07	0.06
Dissolved Nickel (A10) #	mg/kg	0.4	0.4	10	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Dissolved Selenium (A10) #	mg/kg	0.1	0.3	0.5	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Dissolved Zinc (A10) #	mg/kg	4	4	50	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.07	0.03	0.03	0.03	0.03	0.03	0.13	0.03
Mercury Dissolved by CVAF #	mg/kg	0.01	0.01	0.2	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Phenol	mg/kg	1	1		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Fluoride	mg/kg	10	10	150	3	3	3	3	3	3	5	3	3	3	3	3	3	3	3	3	3	3
Sulphate as SO4 #	mg/kg	1000	3000	20000	437	144	24	76	107	68	59	217	49	314	205	74	88	41	11	111	38	121
Chloride #	mg/kg	800	2400	15000	5	11	19	13	3	8	8	37	4	5	4	19	3	5	4	4	10	10
Dissolved Organic Carbon	mg/kg	500	500	800	30	30	40	40	40	40	30	40	60	40	90	100	40	30	40	40	30	50
Total Dissolved Solids #	mg/kg	4000	12000	60000	1290	900	880	1010	770	710	590	1030	1080	1160	1320	1191	750	740	600	1100	870	3942

APPENDIX F

Laboratory Reports

Element Materials Technology
Unit 3 Deeside Point
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Deeside Industrial Park
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CH5 2UA

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F: +44 (0) 1244 833781
W: www.element.com

Golder Associates Ltd
Town Centre House
Dublin Road
Naas
Co Kildare
Ireland

Attention :	Ruth Treacy
Date :	17th September, 2019
Your reference :	CMT
Our reference :	Test Report 19/13288 19/13464
Location :	
Date samples received :	
Status :	Final report
Issue :	1

Authorised By:

Paul Boden BSc
Senior Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	Please see attached notes for all abbreviations and acronyms		
EMT Sample No.	1-3	4-6	10-12	13-15	16-18	19-21	22-24	25-27	28-30	34-36			
Sample ID	TP1	TP1	TP2	TP2	TP3	TP3	TP3	TP4	TP4	TP5			
Depth	0.00-1.50	1.50-3.00		2.80-3.50	0.00-1.50	1.50-2.20	2.20-3.80	0.00-1.50	1.50-2.50	0.00-1.50			
COC No / misc			FINE STONEY SOIL										
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	14/08/2019	14/08/2019	13/08/2019	<>	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	LOD/LOR	Units	Method No.
Antimony	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM15
Arsenic #	NDP	25.4	20.6	47.0	19.1	11.8	12.7	28.4	16.1	9.3	<0.5	mg/kg	TM30/PM15
Barium #	NDP	470	225	564	283	179	80	183	111	168	<1	mg/kg	TM30/PM15
Beryllium	NDP	2.6	1.5	8.0	1.4	1.6	1.3	1.5	0.7	1.2	<0.5	mg/kg	TM30/PM15
Cadmium #	NDP	4.4	1.0	1.1	0.6	0.5	0.3	0.6	0.3	0.8	<0.1	mg/kg	TM30/PM15
Chromium #	NDP	55.6	72.5	68.4	56.5	40.9	80.5	54.1	34.4	47.9	<0.5	mg/kg	TM30/PM15
Copper #	NDP	1528_{AB}	82	299_{AA}	54	46	27	83	43	58	<1	mg/kg	TM30/PM15
Lead #	NDP	583	150	390	98	78	49	141	78	77	<5	mg/kg	TM30/PM15
Mercury #	NDP	<0.1	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Molybdenum #	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM15
Nickel #	NDP	46.1	36.3	109.7	38.0	35.9	33.6	31.4	17.2	27.9	<0.7	mg/kg	TM30/PM15
Selenium #	NDP	<1	<1	3	1	1	<1	<1	<1	<1	<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	-	-	-	-	-	-	-	-	-	-	<50	mg/kg	TM50/PM29
Vanadium	NDP	50	34	102	46	40	35	32	24	34	<1	mg/kg	TM30/PM15
Water Soluble Boron #	NDP	4.9	2.7	9.0	2.6	1.6	2.1	1.1	1.2	0.7	<0.1	mg/kg	TM74/PM32
Zinc #	NDP	936	260	782	184	207	79	431	178	872	<5	mg/kg	TM30/PM15
Antimony	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Arsenic	17.3	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	TM30/PM62
Barium	182	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Beryllium	0.9	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	TM30/PM62
Cadmium	0.8	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM62
Chromium	27.8	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	TM30/PM62
Copper	72	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Lead	122	-	-	-	-	-	-	-	-	-	<5	mg/kg	TM30/PM62
Mercury	<0.1	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM62
Molybdenum	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM62
Nickel	34.3	-	-	-	-	-	-	-	-	-	<0.7	mg/kg	TM30/PM62
Selenium	1	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Total Sulphate as SO4	-	-	-	-	-	-	-	-	-	-	<50	mg/kg	TM50/PM29
Vanadium	32	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Water Soluble Boron	2.5	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM74/PM61
Zinc	264	-	-	-	-	-	-	-	-	-	<5	mg/kg	TM30/PM62

Element Materials Technology

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	LOD/LOR	Units	Method No.
EMT Sample No.	1-3	4-6	10-12	13-15	16-18	19-21	22-24	25-27	28-30	34-36			
Sample ID	TP1	TP1	TP2	TP2	TP3	TP3	TP3	TP4	TP4	TP5			
Depth	0.00-1.50	1.50-3.00		2.80-3.50	0.00-1.50	1.50-2.20	2.20-3.80	0.00-1.50	1.50-2.50	0.00-1.50			
COC No / misc			FINE STONEY SOIL										
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	14/08/2019	14/08/2019	13/08/2019	<>	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019			
PAH MS													
Naphthalene #	-	-	-	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
Acenaphthylene	-	-	-	-	-	-	-	-	-	-	<0.03	mg/kg	TM4/PM8
Acenaphthene #	-	-	-	-	-	-	-	-	-	-	<0.05	mg/kg	TM4/PM8
Fluorene #	-	-	-	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
Phenanthrene #	-	-	-	-	-	-	-	-	-	-	<0.03	mg/kg	TM4/PM8
Anthracene #	-	-	-	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
Fluoranthene #	-	-	-	-	-	-	-	-	-	-	<0.03	mg/kg	TM4/PM8
Pyrene #	-	-	-	-	-	-	-	-	-	-	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	-	-	-	-	-	-	-	-	-	-	<0.06	mg/kg	TM4/PM8
Chrysene #	-	-	-	-	-	-	-	-	-	-	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	-	-	-	-	-	-	-	-	-	-	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	-	-	-	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene	-	-	-	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	-	-	-	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	-	-	-	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
Coronene	-	-	-	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
PAH 6 Total #	-	-	-	-	-	-	-	-	-	-	<0.22	mg/kg	TM4/PM8
PAH 17 Total	-	-	-	-	-	-	-	-	-	-	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-	-	-	-	-	-	-	-	-	-	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	-	-	-	-	-	-	-	-	-	-	<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	-	-	-	-	-	-	-	-	-	-	<0	%	TM4/PM8
Methyl Tertiary Butyl Ether #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10
Benzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Toluene #	<3	<3	<3	8	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Ethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
m/p-Xylene #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM15/PM10
o-Xylene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	96	89	92	104	82	85	112	96	101	96	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	84	68	75	61	70	68	89	79	90	85	<0	%	TM15/PM10
Mineral Oil (C10-C40)	-	-	-	-	-	-	-	-	-	-	<30	mg/kg	TM5/PM8/PM16

Please see attached notes for all abbreviations and acronyms

Please include all sections of this report if it is reproduced

All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288			
EMT Sample No.	1-3	4-6	10-12	13-15	16-18	19-21	22-24	25-27	28-30	34-36			
Sample ID	TP1	TP1	TP2	TP2	TP3	TP3	TP3	TP4	TP4	TP5			
Depth	0.00-1.50	1.50-3.00		2.80-3.50	0.00-1.50	1.50-2.20	2.20-3.80	0.00-1.50	1.50-2.50	0.00-1.50	Please see attached notes for all abbreviations and acronyms		
COC No / misc			FINE STONEY SOIL										
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	14/08/2019	14/08/2019	13/08/2019	<>	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	LOD/LOR	Units	Method No.
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 #	<4	<4	<4	10	9	12	<4	<4	7	<4	<4	mg/kg	TM5/PM8/PM16
>C16-C21 #	<7	<7	<7	31	23	43	<7	11	12	14	<7	mg/kg	TM5/PM8/PM16
>C21-C35 #	38	38	118	182	272	320	<7	90	49	105	<7	mg/kg	TM5/PM8/PM16
>C35-C40	-	-	-	-	-	-	-	-	-	-	<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-40	-	-	-	-	-	-	-	-	-	-	<26	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics C5-35	38	38	118	223	304	375	<19	101	68	119	<19	mg/kg	TM5/TM36/PM8/PM12/PM16
>C6-C10	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
>C10-C25	-	-	-	-	-	-	-	-	-	-	<10	mg/kg	TM5/PM8/PM16
>C25-C35	-	-	-	-	-	-	-	-	-	-	<10	mg/kg	TM5/PM8/PM16
Aromatics													
>C5-EC7 #	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2 SV	<0.2 SV	<0.2	<0.2 SV	<1.0 AA	<1.0 AA	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 #	<4 SV	6 SV	11	10 SV	<20 AA	<20 AA	<4	5	7	8	<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 #	19 SV	54 SV	107	64 SV	<35 AA	<35 AA	<7	39	44	85	<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 #	146 SV	336 SV	668	466 SV	558 AA	578 AA	<7	259	240	500	<7	mg/kg	TM5/PM8/PM16
>EC35-EC40	-	-	-	-	-	-	-	-	-	-	<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 #	165 SV	396 SV	786	540 SV	558 AA	578 AA	<19	303	291	593	<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aromatics C5-40	-	-	-	-	-	-	-	-	-	-	<26	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-35)	203 SV	434 SV	904	763 SV	862 AA	953 AA	<38	404	359	712	<38	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-40)	-	-	-	-	-	-	-	-	-	-	<52	mg/kg	TM5/TM36/PM8/PM12/PM16
>EC6-EC10 #	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
>EC10-EC25	-	-	-	-	-	-	-	-	-	-	<10	mg/kg	TM5/PM8/PM16
>EC25-EC35	-	-	-	-	-	-	-	-	-	-	<10	mg/kg	TM5/PM8/PM16
MTBE #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
Benzene #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
Toluene #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
Ethylbenzene #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
m/p-Xylene #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
o-Xylene #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
PCB 28 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 52 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 101 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 118 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 138 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8

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Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288			
EMT Sample No.	1-3	4-6	10-12	13-15	16-18	19-21	22-24	25-27	28-30	34-36			
Sample ID	TP1	TP1	TP2	TP2	TP3	TP3	TP3	TP4	TP4	TP5			
Depth	0.00-1.50	1.50-3.00		2.80-3.50	0.00-1.50	1.50-2.20	2.20-3.80	0.00-1.50	1.50-2.50	0.00-1.50	Please see attached notes for all abbreviations and acronyms		
COC No / misc			FINE STONEY SOIL										
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	14/08/2019	14/08/2019	13/08/2019	<>	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	LOD/LOR	Units	Method No.
PCB 153 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 180 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
Total 7 PCBs #	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	ug/kg	TM17/PM8
Phenol #	-	-	-	-	-	-	-	-	-	-	<0.01	mg/kg	TM26/PM21
Natural Moisture Content	18.3	27.7	22.5	64.2	16.1	12.8	17.5	14.3	16.7	9.2	<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	-	-	-	-	-	-	-	-	-	-	<0.1	%	PM4/PM0
Ammoniacal Nitrogen as N	18.3	28.3	3.9	23.8	6.8	9.0	12.9	<0.6	6.0	<0.6	<0.6	mg/kg	TM38/PM20
Chloride #	NDP	64	22	172	845	897	391	32	79	32	<2	mg/kg	TM38/PM20
Chloride	11	-	-	-	-	-	-	-	-	-	<2	mg/kg	TM38/PM60
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	NDP	0.4449	0.1401	0.3381	0.3786	0.4916	0.0568	0.0917	0.0977	0.0423	<0.0015	g/l	TM38/PM20
Sulphate as SO4 (2:1 Ext)	0.1413	-	-	-	-	-	-	-	-	-	<0.0015	g/l	TM38/PM60
Chromium III	NDP	55.6	72.5	68.4	56.5	40.9	80.5	54.1	34.4	47.9	<0.5	mg/kg	NONE/NONE
Chromium III	27.8	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	NONE/NONE
Total Cyanide #	-	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	NDP	-	-	-	-	-	-	-	-	-	<0.02	%	TM21/PM24
Total Organic Carbon	-	-	-	-	-	-	-	-	-	-	<0.02	%	TM21/PM89
Organic Matter	NDP	13.9	7.7	37.6	8.1	6.0	4.7	7.7	4.7	1.7	<0.2	%	TM21/PM24
Sulphide	<10	<10	<10	30	<10	11	<10	<10	<10	<10	<10	mg/kg	TM107/PM119
Elemental Sulphur	NDP	475	110	954	156	289	38	41	41	45	<1	mg/kg	TM108/PM114
Elemental Sulphur	37	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM108/PM8
Loss on Ignition #	-	-	-	-	-	-	-	-	-	-	<1.0	%	TM22/PM0
Loss on Ignition	-	-	-	-	-	-	-	-	-	-	<1.0	%	TM22/PM0
pH #	8.29	8.30	8.17	7.74	8.84	8.67	8.10	8.61	8.69	8.73	<0.01	pH units	TM73/PM11
Mass of raw test portion	-	-	-	-	-	-	-	-	-	-		kg	NONE/PM17
Mass of dried test portion	-	-	-	-	-	-	-	-	-	-		kg	NONE/PM17

Element Materials Technology

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	Please see attached notes for all abbreviations and acronyms		
EMT Sample No.	37-39	40-42	43-45	46-48	49-51	55-57	58-60	61-63	64-66	67-69			
Sample ID	TP5	TP6	TP6	TP7	TP7	TP8	TP8	TP9	TP9	TP10			
Depth	1.50-2.50	0.00-1.50	1.50-2.60	0.00-1.50	1.50-3.00	1.60-2.50	2.50-3.50	0.00-1.50	1.50-3.00	0.00-1.50			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	13/08/2019	13/08/2019	14/08/2019	14/08/2019	14/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	LOD/LOR	Units	Method No.
Antimony	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM15
Arsenic #	5.5	NDP	NDP	21.7	12.6	17.0	10.3	NDP	27.7	NDP	<0.5	mg/kg	TM30/PM15
Barium #	69	NDP	NDP	216	92	94	57	NDP	259	NDP	<1	mg/kg	TM30/PM15
Beryllium	0.7	NDP	NDP	1.2	0.8	0.8	0.6	NDP	2.6	NDP	<0.5	mg/kg	TM30/PM15
Cadmium #	1.2	NDP	NDP	0.5	0.3	0.3	0.2	NDP	0.5	NDP	<0.1	mg/kg	TM30/PM15
Chromium #	30.4	NDP	NDP	58.9	64.7	42.6	41.0	NDP	57.3	NDP	<0.5	mg/kg	TM30/PM15
Copper #	30	NDP	NDP	80	300_{AA}	42	14	NDP	133	NDP	<1	mg/kg	TM30/PM15
Lead #	15	NDP	NDP	156	167	43	20	NDP	141	NDP	<5	mg/kg	TM30/PM15
Mercury #	<0.1	NDP	NDP	0.5	<0.1	<0.1	<0.1	NDP	<0.1	NDP	<0.1	mg/kg	TM30/PM15
Molybdenum #	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM15
Nickel #	17.4	NDP	NDP	29.7	16.9	17.2	11.3	NDP	37.4	NDP	<0.7	mg/kg	TM30/PM15
Selenium #	<1	NDP	NDP	1	<1	<1	<1	NDP	<1	NDP	<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	-	-	-	-	-	-	-	-	-	-	<50	mg/kg	TM50/PM29
Vanadium	19	NDP	NDP	36	23	24	18	NDP	42	NDP	<1	mg/kg	TM30/PM15
Water Soluble Boron #	0.4	NDP	NDP	1.7	1.0	0.8	0.6	NDP	2.9	NDP	<0.1	mg/kg	TM74/PM32
Zinc #	113	NDP	NDP	416	216	99	53	NDP	303	NDP	<5	mg/kg	TM30/PM15
Antimony	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Arsenic	-	17.1	22.0	-	-	-	-	20.9	-	13.3	<0.5	mg/kg	TM30/PM62
Barium	-	192	269	-	-	-	-	130	-	1142	<1	mg/kg	TM30/PM62
Beryllium	-	1.5	1.5	-	-	-	-	0.9	-	6.5	<0.5	mg/kg	TM30/PM62
Cadmium	-	0.6	0.7	-	-	-	-	0.7	-	0.3	<0.1	mg/kg	TM30/PM62
Chromium	-	18.0	26.5	-	-	-	-	15.6	-	21.0	<0.5	mg/kg	TM30/PM62
Copper	-	141	182	-	-	-	-	46	-	219	<1	mg/kg	TM30/PM62
Lead	-	332	1882	-	-	-	-	139	-	55	<5	mg/kg	TM30/PM62
Mercury	-	<0.1	1.2	-	-	-	-	0.1	-	<0.1	<0.1	mg/kg	TM30/PM62
Molybdenum	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM62
Nickel	-	33.0	39.5	-	-	-	-	23.0	-	52.7	<0.7	mg/kg	TM30/PM62
Selenium	-	1	<1	-	-	-	-	<1	-	1	<1	mg/kg	TM30/PM62
Total Sulphate as SO4	-	-	-	-	-	-	-	-	-	-	<50	mg/kg	TM50/PM29
Vanadium	-	32	37	-	-	-	-	23	-	69	<1	mg/kg	TM30/PM62
Water Soluble Boron	-	1.5	1.5	-	-	-	-	1.4	-	1.2	<0.1	mg/kg	TM74/PM61
Zinc	-	740	519	-	-	-	-	223	-	191	<5	mg/kg	TM30/PM62

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All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	Please see attached notes for all abbreviations and acronyms		
EMT Sample No.	37-39	40-42	43-45	46-48	49-51	55-57	58-60	61-63	64-66	67-69			
Sample ID	TP5	TP6	TP6	TP7	TP7	TP8	TP8	TP9	TP9	TP10			
Depth	1.50-2.50	0.00-1.50	1.50-2.60	0.00-1.50	1.50-3.00	1.60-2.50	2.50-3.50	0.00-1.50	1.50-3.00	0.00-1.50			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	13/08/2019	13/08/2019	14/08/2019	14/08/2019	14/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	LOD/LOR	Units	Method No.
PAH MS													
Naphthalene #	-	-	-	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
Acenaphthylene	-	-	-	-	-	-	-	-	-	-	<0.03	mg/kg	TM4/PM8
Acenaphthene #	-	-	-	-	-	-	-	-	-	-	<0.05	mg/kg	TM4/PM8
Fluorene #	-	-	-	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
Phenanthrene #	-	-	-	-	-	-	-	-	-	-	<0.03	mg/kg	TM4/PM8
Anthracene #	-	-	-	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
Fluoranthene #	-	-	-	-	-	-	-	-	-	-	<0.03	mg/kg	TM4/PM8
Pyrene #	-	-	-	-	-	-	-	-	-	-	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	-	-	-	-	-	-	-	-	-	-	<0.06	mg/kg	TM4/PM8
Chrysene #	-	-	-	-	-	-	-	-	-	-	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	-	-	-	-	-	-	-	-	-	-	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	-	-	-	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene	-	-	-	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	-	-	-	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	-	-	-	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
Coronene	-	-	-	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
PAH 6 Total #	-	-	-	-	-	-	-	-	-	-	<0.22	mg/kg	TM4/PM8
PAH 17 Total	-	-	-	-	-	-	-	-	-	-	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-	-	-	-	-	-	-	-	-	-	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	-	-	-	-	-	-	-	-	-	-	<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	-	-	-	-	-	-	-	-	-	-	<0	%	TM4/PM8
Methyl Tertiary Butyl Ether #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<10 AA	<2	ug/kg	TM15/PM10
Benzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
Toluene #	<3	7	<3	5	<3	<3	<3	<3	8	<15 AA	<3	ug/kg	TM15/PM10
Ethylbenzene #	<3	<3	<3	3	<3	<3	<3	<3	<3	19 AA	<3	ug/kg	TM15/PM10
m/p-Xylene #	<5	7	<5	14	6	<5	<5	<5	<5	79 AA	<5	ug/kg	TM15/PM10
o-Xylene #	<3	<3	<3	6	<3	<3	<3	<3	<3	44 AA	<3	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	101	95	81	88	83	86	92	91	86	98 AA	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	95	64	56	70	81	75	78	73	56	78 AA	<0	%	TM15/PM10
Mineral Oil (C10-C40)	-	-	-	-	-	-	-	-	-	-	<30	mg/kg	TM5/PM8/PM16

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	LOD/LOR	Units	Method No.
EMT Sample No.	37-39	40-42	43-45	46-48	49-51	55-57	58-60	61-63	64-66	67-69			
Sample ID	TP5	TP6	TP6	TP7	TP7	TP8	TP8	TP9	TP9	TP10			
Depth	1.50-2.50	0.00-1.50	1.50-2.60	0.00-1.50	1.50-3.00	1.60-2.50	2.50-3.50	0.00-1.50	1.50-3.00	0.00-1.50			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	13/08/2019	13/08/2019	14/08/2019	14/08/2019	14/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019			
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2	<0.2	<0.2	<0.2	<0.2	3.0	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 #	<4	<4	<4	<4	<4	26	<4	<4	<4	<4	<4	mg/kg	TM5/PM8/PM16
>C16-C21 #	<7	29	29	<7	<7	33	<7	<7	21	<7	<7	mg/kg	TM5/PM8/PM16
>C21-C35 #	<7	183	183	54	72	99	28	28	106	<7	<7	mg/kg	TM5/PM8/PM16
>C35-C40	-	-	-	-	-	-	-	-	-	-	<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-40	-	-	-	-	-	-	-	-	-	-	<26	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics C5-35	<19	212	212	54	72	161	28	28	127	<19	<19	mg/kg	TM5/TM36/PM8/PM12/PM16
>C6-C10	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
>C10-C25	-	-	-	-	-	-	-	-	-	-	<10	mg/kg	TM5/PM8/PM16
>C25-C35	-	-	-	-	-	-	-	-	-	-	<10	mg/kg	TM5/PM8/PM16
Aromatics													
>C5-EC7 #	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	<0.2	<0.2	<0.2 SV	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 #	<4	<4	<4	<4	<4 SV	20	<4	<4	<4	<4	<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 #	13	25	37	25	25 SV	59	12	22	16	<7	<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 #	113	242	318	182	120 SV	321	103	181	145	<7	<7	mg/kg	TM5/PM8/PM16
>EC35-EC40	-	-	-	-	-	-	-	-	-	-	<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 #	126	267	355	207	145 SV	400	115	203	161	<19	<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aromatics C5-40	-	-	-	-	-	-	-	-	-	-	<26	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-35)	126	479	567	261	217 SV	561	143	231	288	<38	<38	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-40)	-	-	-	-	-	-	-	-	-	-	<52	mg/kg	TM5/TM36/PM8/PM12/PM16
>EC6-EC10 #	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
>EC10-EC25	-	-	-	-	-	-	-	-	-	-	<10	mg/kg	TM5/PM8/PM16
>EC25-EC35	-	-	-	-	-	-	-	-	-	-	<10	mg/kg	TM5/PM8/PM16
MTBE #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
Benzene #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
Toluene #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
Ethylbenzene #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
m/p-Xylene #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
o-Xylene #	-	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
PCB 28 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 52 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 101 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 118 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 138 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	Please see attached notes for all abbreviations and acronyms		
EMT Sample No.	37-39	40-42	43-45	46-48	49-51	55-57	58-60	61-63	64-66	67-69			
Sample ID	TP5	TP6	TP6	TP7	TP7	TP8	TP8	TP9	TP9	TP10			
Depth	1.50-2.50	0.00-1.50	1.50-2.60	0.00-1.50	1.50-3.00	1.60-2.50	2.50-3.50	0.00-1.50	1.50-3.00	0.00-1.50			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	13/08/2019	13/08/2019	14/08/2019	14/08/2019	14/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	LOD/LOR	Units	Method No.
PCB 153 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 180 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
Total 7 PCBs #	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	ug/kg	TM17/PM8
Phenol #	-	-	-	-	-	-	-	-	-	-	<0.01	mg/kg	TM26/PM21
Natural Moisture Content	12.1	13.0	35.9	15.0	18.0	11.0	13.3	11.5	21.0	28.2	<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	-	-	-	-	-	-	-	-	-	-	<0.1	%	PM4/PM0
Ammoniacal Nitrogen as N	<0.6	<0.6	<0.6	4.4	2.5	2.4	2.3	5.1	6.8	<0.6	<0.6	mg/kg	TM38/PM20
Chloride #	27	NDP	NDP	123	59	35	55	NDP	91	NDP	<2	mg/kg	TM38/PM20
Chloride	-	5	11	-	-	-	-	37	-	56	<2	mg/kg	TM38/PM60
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	0.0191	NDP	NDP	0.1973	0.1853	0.2251	0.1033	NDP	0.3174	NDP	<0.0015	g/l	TM38/PM20
Sulphate as SO4 (2:1 Ext)	-	0.0172	0.0391	-	-	-	-	0.1180	-	0.0223	<0.0015	g/l	TM38/PM60
Chromium III	30.4	NDP	NDP	58.9	64.7	42.6	41.0	NDP	57.3	NDP	<0.5	mg/kg	NONE/NONE
Chromium III	-	18.0	26.5	-	-	-	-	15.6	-	21.0	<0.5	mg/kg	NONE/NONE
Total Cyanide #	-	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	-	-	-	-	-	-	-	-	-	-	<0.02	%	TM21/PM24
Total Organic Carbon	-	-	-	-	-	-	-	-	-	-	<0.02	%	TM21/PM89
Organic Matter	0.7	NDP	NDP	8.2	2.4	2.4	0.7	NDP	19.8	NDP	<0.2	%	TM21/PM24
Sulphide	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	mg/kg	TM107/PM119
Elemental Sulphur	6	NDP	NDP	55	28	49	36	NDP	118	NDP	<1	mg/kg	TM108/PM114
Elemental Sulphur	-	3	<1	-	-	-	-	32	-	<1	<1	mg/kg	TM108/PM8
Loss on Ignition #	-	-	-	-	-	-	-	-	-	-	<1.0	%	TM22/PM0
Loss on Ignition	-	-	-	-	-	-	-	-	-	-	<1.0	%	TM22/PM0
pH #	8.84	8.86	8.05	8.49	8.79	8.14	8.32	8.39	8.11	8.96	<0.01	pH units	TM73/PM11
Mass of raw test portion	-	-	-	-	-	-	-	-	-	-		kg	NONE/PM17
Mass of dried test portion	-	-	-	-	-	-	-	-	-	-		kg	NONE/PM17

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Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464			
EMT Sample No.	70-72	73-75	76-78	82-84	1-3	4-6	7-9	10-13	14-16	17-19			
Sample ID	TP10	TP12	TP12	TP19	TP11	TP11	TP13	TP13	TP14	TP14			
Depth	1.50-2.80	0.00-1.50	1.50-3.00	0.00-0.70	0.00-1.50	1.50-2.70	0.00-1.50	1.50-2.70	0.00-1.50	1.50-3.00	Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J	V J T	V J T			
Sample Date	14/08/2019	14/08/2019	14/08/2019	14/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	15/08/2019	15/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	LOD/LOR	Units	Method No.
Antimony	-	3	4	NDP	1	<1	NDP	<1	1	<1	<1	mg/kg	TM30/PM15
Arsenic #	8.7	10.0	25.2	NDP	24.7	3.6	NDP	6.0	11.3	6.1	<0.5	mg/kg	TM30/PM15
Barium #	85	350	186	NDP	519	821	NDP	24	46	14	<1	mg/kg	TM30/PM15
Beryllium	1.2	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	TM30/PM15
Cadmium #	0.6	0.3	0.4	NDP	<0.1	<0.1	NDP	<0.1	0.2	<0.1	<0.1	mg/kg	TM30/PM15
Chromium #	56.0	92.5	122.3	NDP	138.0	138.5	NDP	141.9	56.4	44.7	<0.5	mg/kg	TM30/PM15
Copper #	26	71	103	NDP	122	119	NDP	7	36	7	<1	mg/kg	TM30/PM15
Lead #	15	310	371	NDP	57	14	NDP	17	26	15	<5	mg/kg	TM30/PM15
Mercury #	<0.1	0.4	0.5	NDP	<0.1	<0.1	NDP	<0.1	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Molybdenum #	-	6.1	7.9	NDP	11.3	12.0	NDP	8.8	1.3	0.6	<0.1	mg/kg	TM30/PM15
Nickel #	31.4	44.8	35.8	NDP	49.3	66.9	NDP	10.7	19.5	10.3	<0.7	mg/kg	TM30/PM15
Selenium #	<1	<1	1	NDP	<1	<1	NDP	<1	1	<1	<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	-	403	709	NDP	1137	247	NDP	622	355	1030	<50	mg/kg	TM50/PM29
Vanadium	34	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM15
Water Soluble Boron #	0.5	0.6	0.9	NDP	0.9	0.7	NDP	0.9	0.4	0.9	<0.1	mg/kg	TM74/PM32
Zinc #	60	126	201	NDP	36	21	NDP	29	127	33	<5	mg/kg	TM30/PM15
Antimony	-	-	-	9	-	-	<1	-	-	-	<1	mg/kg	TM30/PM62
Arsenic	-	-	-	19.0	-	-	21.8	-	-	-	<0.5	mg/kg	TM30/PM62
Barium	-	-	-	249	-	-	64	-	-	-	<1	mg/kg	TM30/PM62
Beryllium	-	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	TM30/PM62
Cadmium	-	-	-	0.6	-	-	0.2	-	-	-	<0.1	mg/kg	TM30/PM62
Chromium	-	-	-	37.9	-	-	15.5	-	-	-	<0.5	mg/kg	TM30/PM62
Copper	-	-	-	171	-	-	21	-	-	-	<1	mg/kg	TM30/PM62
Lead	-	-	-	331	-	-	25	-	-	-	<5	mg/kg	TM30/PM62
Mercury	-	-	-	<0.1	-	-	<0.1	-	-	-	<0.1	mg/kg	TM30/PM62
Molybdenum	-	-	-	2.5	-	-	0.6	-	-	-	<0.1	mg/kg	TM30/PM62
Nickel	-	-	-	44.1	-	-	20.1	-	-	-	<0.7	mg/kg	TM30/PM62
Selenium	-	-	-	2	-	-	<1	-	-	-	<1	mg/kg	TM30/PM62
Total Sulphate as SO4	-	-	-	547	-	-	591	-	-	-	<50	mg/kg	TM50/PM29
Vanadium	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Water Soluble Boron	-	-	-	0.7	-	-	0.4	-	-	-	<0.1	mg/kg	TM74/PM61
Zinc	-	-	-	641	-	-	54	-	-	-	<5	mg/kg	TM30/PM62

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Element Materials Technology

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464			
EMT Sample No.	70-72	73-75	76-78	82-84	1-3	4-6	7-9	10-13	14-16	17-19			
Sample ID	TP10	TP12	TP12	TP19	TP11	TP11	TP13	TP13	TP14	TP14			
Depth	1.50-2.80	0.00-1.50	1.50-3.00	0.00-0.70	0.00-1.50	1.50-2.70	0.00-1.50	1.50-2.70	0.00-1.50	1.50-3.00	Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J	V J T	V J T			
Sample Date	14/08/2019	14/08/2019	14/08/2019	14/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	15/08/2019	15/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	LOD/LOR	Units	Method No.
PAH MS													
Naphthalene #	-	0.20	0.25	0.46	0.11	<0.04	0.06	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	-	0.33	0.16	0.40	0.07	<0.03	0.10	<0.03	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Acenaphthene #	-	<0.05	0.08	0.12	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #	-	0.06	0.10	0.16	0.16	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #	-	0.63	0.72	2.21	1.73	0.12	0.20	0.17	0.06	0.11	<0.03	mg/kg	TM4/PM8
Anthracene #	-	0.38	0.22	0.82	0.42	<0.04	0.10	0.05	0.04	0.05	<0.04	mg/kg	TM4/PM8
Fluoranthene #	-	1.50	1.19	3.64	1.47	0.07	0.68	0.17	0.19	0.23	<0.03	mg/kg	TM4/PM8
Pyrene #	-	1.55	1.18	3.09	1.20	0.07	0.64	0.15	0.23	0.21	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	-	1.12	0.76	2.02	0.67	0.09	0.51	0.10	0.15	0.20	<0.06	mg/kg	TM4/PM8
Chrysene #	-	1.19	0.80	1.90	0.78	0.07	0.53	0.09	0.13	0.14	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	-	2.45	1.61	3.82	1.01	<0.07	0.72	0.13	0.22	0.21	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	-	1.30	0.81	1.70	0.51	<0.04	0.45	0.08	0.11	0.14	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene	-	0.93	0.59	1.68	0.31	<0.04	0.25	<0.04	0.08	0.07	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	-	0.21	0.16	0.36	0.09	<0.04	0.06	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	-	1.00	0.64	1.64	0.28	<0.04	0.20	<0.04	0.09	0.06	<0.04	mg/kg	TM4/PM8
Coronene	-	0.19	0.13	0.32	0.06	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
PAH 6 Total #	-	7.18	4.84	12.48	3.58	<0.22	2.30	0.38	0.69	0.71	<0.22	mg/kg	TM4/PM8
PAH 17 Total	-	13.04	9.40	24.34	8.99	<0.64	4.50	0.94	1.30	1.42	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-	1.76	1.16	2.75	0.73	<0.05	0.52	0.09	0.16	0.15	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	-	0.69	0.45	1.07	0.28	<0.02	0.20	0.04	0.06	0.06	<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	-	97	97	101	96	94	95	98	97	95	<0	%	TM4/PM8
Methyl Tertiary Butyl Ether #	<2	-	-	-	-	-	-	-	-	-	<2	ug/kg	TM15/PM10
Benzene #	<3	-	-	-	-	-	-	-	-	-	<3	ug/kg	TM15/PM10
Toluene #	<3	-	-	-	-	-	-	-	-	-	<3	ug/kg	TM15/PM10
Ethylbenzene #	7	-	-	-	-	-	-	-	-	-	<3	ug/kg	TM15/PM10
m/p-Xylene #	54	-	-	-	-	-	-	-	-	-	<5	ug/kg	TM15/PM10
o-Xylene #	3	-	-	-	-	-	-	-	-	-	<3	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	88	-	-	-	-	-	-	-	-	-	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	76	-	-	-	-	-	-	-	-	-	<0	%	TM15/PM10
Mineral Oil (C10-C40)	-	237	97	212	67	<30	37	<30	281	<30	<30	mg/kg	TM5/PM8/PM16

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464			
EMT Sample No.	70-72	73-75	76-78	82-84	1-3	4-6	7-9	10-13	14-16	17-19			
Sample ID	TP10	TP12	TP12	TP19	TP11	TP11	TP13	TP13	TP14	TP14			
Depth	1.50-2.80	0.00-1.50	1.50-3.00	0.00-0.70	0.00-1.50	1.50-2.70	0.00-1.50	1.50-2.70	0.00-1.50	1.50-3.00	Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J	V J T	V J T			
Sample Date	14/08/2019	14/08/2019	14/08/2019	14/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	15/08/2019	15/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	LOD/LOR	Units	Method No.
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 #	<4	<4	<4	<4	<4	<4	<4	<4	29	<4	<4	mg/kg	TM5/PM8/PM16
>C16-C21 #	<7	26	35	15	<7	<7	<7	<7	17	<7	<7	mg/kg	TM5/PM8/PM16
>C21-C35 #	<7	211	62	172	67	24	37	<7	235	<7	<7	mg/kg	TM5/PM8/PM16
>C35-C40	-	<7	<7	25	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-40	-	237	97	212	67	<26	37	<26	281	<26	<26	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics C5-35	<19	-	-	-	-	-	-	-	-	-	<19	mg/kg	TM5/TM36/PM8/PM12/PM16
>C6-C10	-	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C25	-	79	81	57	<10	<10	<10	<10	97	<10	<10	mg/kg	TM5/PM8/PM16
>C25-C35	-	150	30	125	62	22	27	<10	176	<10	<10	mg/kg	TM5/PM8/PM16
Aromatics													
>C5-EC7 #	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 #	<4	7	14	<4	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 #	<7	136	69	27	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 #	<7	930	296	270	51	<7	93	<7	82	<7	<7	mg/kg	TM5/PM8/PM16
>EC35-EC40	-	88	30	58	<7	<7	27	<7	<7	<7	<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 #	<19	-	-	-	-	-	-	-	-	-	<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aromatics C5-40	-	1161	409	355	51	<26	120	<26	82	<26	<26	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-35)	<38	-	-	-	-	-	-	-	-	-	<38	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-40)	-	1398	506	567	118	<52	157	<52	363	<52	<52	mg/kg	TM5/TM36/PM8/PM12/PM16
>EC6-EC10 #	-	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC25	-	398	144	72	<10	<10	<10	<10	<10	<10	<10	mg/kg	TM5/PM8/PM16
>EC25-EC35	-	596	206	206	41	<10	83	<10	72	<10	<10	mg/kg	TM5/PM8/PM16
MTBE #	-	<5 SV	<5	<5 SV	<5 SV	<5 SV	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
Benzene #	-	<5 SV	<5	<5 SV	<5 SV	<5 SV	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
Toluene #	-	<5 SV	<5	<5 SV	<5 SV	<5 SV	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
Ethylbenzene #	-	<5 SV	<5	<5 SV	12 SV	<5 SV	<5	<5	9	11	<5	ug/kg	TM31/PM12
m/p-Xylene #	-	<5 SV	<5	<5 SV	19 SV	<5 SV	<5	<5	13	19	<5	ug/kg	TM31/PM12
o-Xylene #	-	<5 SV	<5	<5 SV	<5 SV	<5 SV	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
PCB 28 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 52 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 101 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 118 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 138 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	Please see attached notes for all abbreviations and acronyms		
EMT Sample No.	70-72	73-75	76-78	82-84	1-3	4-6	7-9	10-13	14-16	17-19			
Sample ID	TP10	TP12	TP12	TP19	TP11	TP11	TP13	TP13	TP14	TP14			
Depth	1.50-2.80	0.00-1.50	1.50-3.00	0.00-0.70	0.00-1.50	1.50-2.70	0.00-1.50	1.50-2.70	0.00-1.50	1.50-3.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J	V J T	V J T			
Sample Date	14/08/2019	14/08/2019	14/08/2019	14/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	15/08/2019	15/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	LOD/LOR	Units	Method No.
PCB 153 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 180 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
Total 7 PCBs #	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	ug/kg	TM17/PM8
Phenol #	-	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	TM26/PM21
Natural Moisture Content	16.4	23.9	31.1	15.7	11.2	44.1	11.8	28.4	7.7	23.5	<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	-	19.3	23.7	13.6	10.1	30.6	10.5	22.1	7.1	19.1	<0.1	%	PM4/PM0
Ammoniacal Nitrogen as N	<0.6	-	-	-	-	-	-	-	-	-	<0.6	mg/kg	TM38/PM20
Chloride #	34	-	-	-	-	-	-	-	-	-	<2	mg/kg	TM38/PM20
Chloride	-	-	-	-	-	-	-	-	-	-	<2	mg/kg	TM38/PM60
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	0.0562	-	-	-	-	-	-	-	-	-	<0.0015	g/l	TM38/PM20
Sulphate as SO4 (2:1 Ext)	-	-	-	-	-	-	-	-	-	-	<0.0015	g/l	TM38/PM60
Chromium III	56.0	92.5	122.3	NDP	138.0	138.5	NDP	141.9	56.4	44.7	<0.5	mg/kg	NONE/NONE
Chromium III	-	-	-	37.9	-	-	15.5	-	-	-	<0.5	mg/kg	NONE/NONE
Total Cyanide #	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	-	12.07	5.86	NDP	22.09	31.39	NDP	2.90	0.41	0.53	<0.02	%	TM21/PM24
Total Organic Carbon	-	-	-		-	-		-	-	-	<0.02	%	TM21/PM89
Organic Matter	2.7	-	-	-	-	-	-	-	-	-	<0.2	%	TM21/PM24
Sulphide	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	mg/kg	TM107/PM119
Elemental Sulphur	106	38	37	NDP	6	8	NDP	29	10	24	<1	mg/kg	TM108/PM114
Elemental Sulphur	-	-	-	10	-	-	3	-	-	-	<1	mg/kg	TM108/PM8
Loss on Ignition #	-			-			-	-	-	-	<1.0	%	TM22/PM0
Loss on Ignition	-	-	-		-	-		-	-	-	<1.0	%	TM22/PM0
pH #	8.27	8.48	8.34	8.59	9.24	8.38	8.72	8.62	8.74	8.56	<0.01	pH units	TM73/PM11
Mass of raw test portion	-	0.1109	0.1134	0.1059	0.1057	0.1415	0.1023	0.117	0.099	0.1093		kg	NONE/PM17
Mass of dried test portion	-	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09		kg	NONE/PM17

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Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464				
EMT Sample No.	20-22	23-25	26-28	29-31	32-34	35-37	38-40	41-43	44-46				
Sample ID	TP15	TP15	TP16	TP16	TP17	TP17	TP18	TP18	TP20				
Depth	0.00-1.50	1.50-3.00	0.00-1.50	1.50-1.90	0.00-1.50	1.50-1.90	0.00-1.50	1.50-2.70	0.00-0.75		Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T				
Sample Date	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	16/08/2019	16/08/2019	16/08/2019				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	1	1	1	1	1	1	1	1	1		LOD/LOR	Units	Method No.
Date of Receipt	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019				
Antimony	2	<1	6	2	3	2	3	1	3		<1	mg/kg	TM30/PM15
Arsenic #	14.3	15.1	22.2	13.1	21.5	16.5	49.1	11.1	7.9		<0.5	mg/kg	TM30/PM15
Barium #	114	45	95	91	190	63	100	69	107		<1	mg/kg	TM30/PM15
Beryllium	-	-	-	-	-	-	-	-	-		<0.5	mg/kg	TM30/PM15
Cadmium #	0.6	0.2	4.4	0.2	0.1	<0.1	<0.1	0.4	0.6		<0.1	mg/kg	TM30/PM15
Chromium #	48.1	37.3	96.1	148.1	104.0	130.2	110.6	114.0	88.8		<0.5	mg/kg	TM30/PM15
Copper #	28	14	417_{AA}	49	59	23	41	18	45		<1	mg/kg	TM30/PM15
Lead #	53	213	446	126	179	70	120	18	94		<5	mg/kg	TM30/PM15
Mercury #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	mg/kg	TM30/PM15
Molybdenum #	1.7	1.3	8.7	9.5	6.5	8.5	7.0	5.6	5.6		<0.1	mg/kg	TM30/PM15
Nickel #	21.5	15.9	16.8	42.2	36.5	17.8	27.1	48.8	23.7		<0.7	mg/kg	TM30/PM15
Selenium #	1	<1	<1	<1	<1	<1	<1	<1	<1		<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	397	1946	923	801	523	570	417	362	2175		<50	mg/kg	TM50/PM29
Vanadium	-	-	-	-	-	-	-	-	-		<1	mg/kg	TM30/PM15
Water Soluble Boron #	0.5	4.0	1.0	1.2	0.9	0.7	0.7	1.6	0.7		<0.1	mg/kg	TM74/PM32
Zinc #	149	64	341	126	231	64	122	70	105		<5	mg/kg	TM30/PM15
Antimony	-	-	-	-	-	-	-	-	-		<1	mg/kg	TM30/PM62
Arsenic	-	-	-	-	-	-	-	-	-		<0.5	mg/kg	TM30/PM62
Barium	-	-	-	-	-	-	-	-	-		<1	mg/kg	TM30/PM62
Beryllium	-	-	-	-	-	-	-	-	-		<0.5	mg/kg	TM30/PM62
Cadmium	-	-	-	-	-	-	-	-	-		<0.1	mg/kg	TM30/PM62
Chromium	-	-	-	-	-	-	-	-	-		<0.5	mg/kg	TM30/PM62
Copper	-	-	-	-	-	-	-	-	-		<1	mg/kg	TM30/PM62
Lead	-	-	-	-	-	-	-	-	-		<5	mg/kg	TM30/PM62
Mercury	-	-	-	-	-	-	-	-	-		<0.1	mg/kg	TM30/PM62
Molybdenum	-	-	-	-	-	-	-	-	-		<0.1	mg/kg	TM30/PM62
Nickel	-	-	-	-	-	-	-	-	-		<0.7	mg/kg	TM30/PM62
Selenium	-	-	-	-	-	-	-	-	-		<1	mg/kg	TM30/PM62
Total Sulphate as SO4	-	-	-	-	-	-	-	-	-		<50	mg/kg	TM50/PM29
Vanadium	-	-	-	-	-	-	-	-	-		<1	mg/kg	TM30/PM62
Water Soluble Boron	-	-	-	-	-	-	-	-	-		<0.1	mg/kg	TM74/PM61
Zinc	-	-	-	-	-	-	-	-	-		<5	mg/kg	TM30/PM62

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464				
EMT Sample No.	20-22	23-25	26-28	29-31	32-34	35-37	38-40	41-43	44-46				
Sample ID	TP15	TP15	TP16	TP16	TP17	TP17	TP18	TP18	TP20				
Depth	0.00-1.50	1.50-3.00	0.00-1.50	1.50-1.90	0.00-1.50	1.50-1.90	0.00-1.50	1.50-2.70	0.00-0.75		Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T				
Sample Date	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	16/08/2019	16/08/2019	16/08/2019				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019				
PAH MS													
Naphthalene #	0.11	0.05	7.04	25.65 AB	0.15	0.05	0.08	<0.04	0.08		<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.04	0.06	0.26	0.68 AB	0.18	0.04	<0.03	<0.03	0.06		<0.03	mg/kg	TM4/PM8
Acenaphthene #	0.11	<0.05	0.19	<0.50 AB	0.37	<0.05	<0.05	<0.05	<0.05		<0.05	mg/kg	TM4/PM8
Fluorene #	0.11	0.08	0.74	2.25 AB	0.25	<0.04	<0.04	<0.04	<0.04		<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.81	0.43	1.22	3.33 AB	3.26	0.27	0.22	<0.03	0.35		<0.03	mg/kg	TM4/PM8
Anthracene #	0.26	0.23	0.19	<0.40 AB	0.69	0.06	0.07	<0.04	0.11		<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.79	0.94	0.55	0.48 AB	4.97	0.57	0.48	<0.03	0.78		<0.03	mg/kg	TM4/PM8
Pyrene #	0.84	0.77	0.72	1.00 AB	4.68	0.54	0.42	<0.03	0.70		<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.46	0.57	0.23	<0.60 AB	2.51	0.25	0.37	<0.06	0.50		<0.06	mg/kg	TM4/PM8
Chrysene #	0.45	0.63	0.27	0.26 AB	3.40	0.30	0.18	<0.02	0.41		<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	0.74	1.04	0.47	<0.70 AB	5.47	0.72	0.73	<0.07	1.09		<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.32	0.59	0.21	<0.40 AB	3.20	0.39	0.37	<0.04	0.56		<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene	0.25	0.36	0.18	<0.40 AB	2.32	0.27	0.26	<0.04	0.39		<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.06	0.09	<0.04	<0.40 AB	0.51	0.08	0.08	<0.04	0.11		<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.25	0.25	0.18	<0.40 AB	2.44	0.30	0.25	<0.04	0.37		<0.04	mg/kg	TM4/PM8
Coronene	0.06	0.05	<0.04	<0.40 AB	0.44	0.07	0.06	<0.04	0.08		<0.04	mg/kg	TM4/PM8
PAH 6 Total #	2.35	3.18	1.59	<2.20 AB	18.40	2.25	2.09	<0.22	3.19		<0.22	mg/kg	TM4/PM8
PAH 17 Total	5.66	6.14	12.45	33.65 AB	34.84	3.91	3.57	<0.64	5.59		<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.53	0.75	0.34	<0.50 AB	3.94	0.52	0.53	<0.05	0.78		<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.21	0.29	0.13	<0.20 AB	1.53	0.20	0.20	<0.02	0.31		<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	<1	<1	<1	<10 AB	1	<1	<1	<1	<1		<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	92	97	98	76 AB	95	93	87	80	87		<0	%	TM4/PM8
Methyl Tertiary Butyl Ether #	-	-	-	-	-	-	-	-	-		<2	ug/kg	TM15/PM10
Benzene #	-	-	-	-	-	-	-	-	-		<3	ug/kg	TM15/PM10
Toluene #	-	-	-	-	-	-	-	-	-		<3	ug/kg	TM15/PM10
Ethylbenzene #	-	-	-	-	-	-	-	-	-		<3	ug/kg	TM15/PM10
m/p-Xylene #	-	-	-	-	-	-	-	-	-		<5	ug/kg	TM15/PM10
o-Xylene #	-	-	-	-	-	-	-	-	-		<3	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	-	-	-	-	-	-	-	-	-		<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	-	-	-	-	-	-	-	-	-		<0	%	TM15/PM10
Mineral Oil (C10-C40)	1161	<30	1726	7473	65	<30	<30	<30	186		<30	mg/kg	TM5/PM8/PM16

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464				
EMT Sample No.	20-22	23-25	26-28	29-31	32-34	35-37	38-40	41-43	44-46				
Sample ID	TP15	TP15	TP16	TP16	TP17	TP17	TP18	TP18	TP20				
Depth	0.00-1.50	1.50-3.00	0.00-1.50	1.50-1.90	0.00-1.50	1.50-1.90	0.00-1.50	1.50-2.70	0.00-0.75		Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T				
Sample Date	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	16/08/2019	16/08/2019	16/08/2019				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019				
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1	<0.1	<0.1 SV	11.2 AB	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1	<0.1	0.9 SV	178.1 AB	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	mg/kg	TM36/PM12
>C8-C10	0.4	<0.1	12.9 SV	>>320.2 AB	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	mg/kg	TM36/PM12
>C10-C12 #	8.1	<0.2	299.5	1519.9	<0.2	<0.2	<0.2	<0.2	<0.2		<0.2	mg/kg	TM5/PM8/PM16
>C12-C16 #	12	<4	603	2683	<4	<4	<4	<4	6		<4	mg/kg	TM5/PM8/PM16
>C16-C21 #	23	<7	630	2565	<7	<7	<7	<7	14		<7	mg/kg	TM5/PM8/PM16
>C21-C35 #	1043	<7	193	705	65	<7	<7	<7	166		<7	mg/kg	TM5/PM8/PM16
>C35-C40	75	<7	<7	<7	<7	<7	<7	<7	<7		<7	mg/kg	TM5/PM8/PM16
Total aliphatics C5-40	1162	<26	1739	7982	65	<26	<26	<26	186		<26	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics C5-35	-	-	-	-	-	-	-	-	-		<19	mg/kg	TM5/TM36/PM8/PM12/PM16
>C6-C10	0.4	<0.1	13.8 SV	498.3 AB	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	mg/kg	TM36/PM12
>C10-C25	233	<10	1706	7456	<10	<10	<10	<10	49		<10	mg/kg	TM5/PM8/PM16
>C25-C35	848	<10	52	129	55	<10	<10	<10	120		<10	mg/kg	TM5/PM8/PM16
Aromatics													
>C5-EC7 #	<0.1	<0.1	<0.1 SV	<1.0 AB	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	<0.1	<0.1 SV	<1.0 AB	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	0.1	<0.1	3.2 SV	>>92.1 AB	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	6.5	<0.2	335.8	1324.8	<0.2	<0.2	<0.2	<0.2	<0.2		<0.2	mg/kg	TM5/PM8/PM16
>EC12-EC16 #	13	<4	345	1491	4	<4	<4	<4	<4		<4	mg/kg	TM5/PM8/PM16
>EC16-EC21 #	28	24	345	1249	45	9	11	<7	12		<7	mg/kg	TM5/PM8/PM16
>EC21-EC35 #	435	84	202	325	450	74	59	<7	92		<7	mg/kg	TM5/PM8/PM16
>EC35-EC40	38	<7	28	<7	44	<7	<7	<7	<7		<7	mg/kg	TM5/PM8/PM16
Total aromatics C5-35 #	-	-	-	-	-	-	-	-	-		<19	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aromatics C5-40	521	108	1259	4482	543	83	70	<26	104		<26	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-35)	-	-	-	-	-	-	-	-	-		<38	mg/kg	TM5/TM36/PM8/PM12/PM16
Total aliphatics and aromatics(C5-40)	1683	108	2998	12464	608	83	70	<52	290		<52	mg/kg	TM5/TM36/PM8/PM12/PM16
>EC6-EC10 #	0.1	<0.1	3.2 SV	92.1 AB	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	mg/kg	TM36/PM12
>EC10-EC25	149	53	969	4421	177	25	35	<10	30		<10	mg/kg	TM5/PM8/PM16
>EC25-EC35	352	62	65	90	339	58	41	<10	74		<10	mg/kg	TM5/PM8/PM16
MTBE #	<5	<5	<5 SV	5100 AB	<5	<5	<5	<5	<5		<5	ug/kg	TM31/PM12
Benzene #	<5	<5	19 SV	<50 AB	<5	<5	<5	<5	<5		<5	ug/kg	TM31/PM12
Toluene #	<5	<5	<5 SV	<50 AB	<5	<5	<5	<5	8		<5	ug/kg	TM31/PM12
Ethylbenzene #	31	<5	123 SV	47207 AB	22	7	9	<5	15		<5	ug/kg	TM31/PM12
m/p-Xylene #	45	<5	3019 SV	40552 AB	20	16	<5	<5	26		<5	ug/kg	TM31/PM12
o-Xylene #	46	<5	115 SV	4296 AB	<5	<5	<5	<5	<5		<5	ug/kg	TM31/PM12
PCB 28 #	<5	<5	<25 AA	<25 AA	<5	<5	<5	<5	<5		<5	ug/kg	TM17/PM8
PCB 52 #	<5	<5	<25 AA	<25 AA	<5	<5	<5	<5	<5		<5	ug/kg	TM17/PM8
PCB 101 #	<5	<5	<25 AA	<25 AA	<5	<5	<5	<5	<5		<5	ug/kg	TM17/PM8
PCB 118 #	<5	<5	<25 AA	<25 AA	<5	<5	<5	<5	<5		<5	ug/kg	TM17/PM8
PCB 138 #	<5	<5	<25 AA	<25 AA	<5	<5	<5	<5	<5		<5	ug/kg	TM17/PM8

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464			
EMT Sample No.	20-22	23-25	26-28	29-31	32-34	35-37	38-40	41-43	44-46			
Sample ID	TP15	TP15	TP16	TP16	TP17	TP17	TP18	TP18	TP20			
Depth	0.00-1.50	1.50-3.00	0.00-1.50	1.50-1.90	0.00-1.50	1.50-1.90	0.00-1.50	1.50-2.70	0.00-0.75	Please see attached notes for all abbreviations and acronyms		
COC No / misc												
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	16/08/2019	16/08/2019	16/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1			
Date of Receipt	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019			
										LOD/LOR	Units	Method No.
PCB 153 #	<5	<5	<25 AA	<25 AA	<5	<5	<5	<5	<5		<5	ug/kg	TM17/PM8
PCB 180 #	<5	<5	<25 AA	<25 AA	<5	<5	<5	<5	<5		<5	ug/kg	TM17/PM8
Total 7 PCBs #	<35	<35	<175 AA	<175 AA	<35	<35	<35	<35	<35		<35	ug/kg	TM17/PM8
Phenol #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	mg/kg	TM26/PM21
Natural Moisture Content	10.3	25.8	11.5	25.5	11.9	16.7	13.4	20.9	16.8		<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	9.3	20.5	10.3	20.3	10.7	14.3	11.8	17.3	14.4		<0.1	%	PM4/PM0
Ammoniacal Nitrogen as N	-	-	-	-	-	-	-	-	-		<0.6	mg/kg	TM38/PM20
Chloride #	-	-	-	-	-	-	-	-	-		<2	mg/kg	TM38/PM20
Chloride	-	-	-	-	-	-	-	-	-		<2	mg/kg	TM38/PM60
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3		<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	-	-	-	-	-	-	-	-	-		<0.0015	g/l	TM38/PM20
Sulphate as SO4 (2:1 Ext)	-	-	-	-	-	-	-	-	-		<0.0015	g/l	TM38/PM60
Chromium III	48.1	37.3	96.1	148.1	104.0	130.2	110.6	114.0	88.8		<0.5	mg/kg	NONE/NONE
Chromium III	-	-	-	-	-	-	-	-	-		<0.5	mg/kg	NONE/NONE
Total Cyanide #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	1.02	2.46	1.55	2.06	1.55	0.98	0.95	0.47	3.64		<0.02	%	TM21/PM24
Total Organic Carbon	-	-	-	-	-	-	-	-	-		<0.02	%	TM21/PM89
Organic Matter	-	-	-	-	-	-	-	-	-		<0.2	%	TM21/PM24
Sulphide	<10	42	<10	<10	<10	<10	<10	<10	<10		<10	mg/kg	TM107/PM119
Elemental Sulphur	13	1243	148	331	26	36	21	98	6		<1	mg/kg	TM108/PM114
Elemental Sulphur	-	-	-	-	-	-	-	-	-		<1	mg/kg	TM108/PM8
Loss on Ignition #	-	-	-	-	-	-	-	-			<1.0	%	TM22/PM0
Loss on Ignition	-	-	-	-	-	-	-	-	-		<1.0	%	TM22/PM0
pH #	8.69	8.52	8.24	8.52	8.66	8.83	8.75	8.29	12.08		<0.01	pH units	TM73/PM11
Mass of raw test portion	0.0977	0.1126	0.1052	0.1117	0.1019	0.1057	0.1041	0.1083	0.1042			kg	NONE/PM17
Mass of dried test portion	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09			kg	NONE/PM17

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288			
EMT Sample No.	1-3	13-15	16-18	19-21	25-27	28-30	37-39	43-45	46-48	58-60			
Sample ID	TP1	TP2	TP3	TP3	TP4	TP4	TP5	TP6	TP7	TP8			
Depth	0.00-1.50	2.80-3.50	0.00-1.50	1.50-2.20	0.00-1.50	1.50-2.50	1.50-2.50	1.50-2.60	0.00-1.50	2.50-3.50	Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	14/08/2019	<>	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	13/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019			
Dissolved Antimony #	-	-	-	-	-	-	-	-	-	-	<0.002	mg/l	TM30/PM17
Dissolved Antimony (A10) #	-	-	-	-	-	-	-	-	-	-	<0.02	mg/kg	TM30/PM17
Dissolved Arsenic #	5.1	27.7	6.4	11.1	6.2	19.7	<2.5	3.1	6.8	5.1	<2.5	ug/l	TM30/PM14
Dissolved Arsenic #	-	-	-	-	-	-	-	-	-	-	<0.0025	mg/l	TM30/PM17
Dissolved Arsenic (A10) #	-	-	-	-	-	-	-	-	-	-	<0.025	mg/kg	TM30/PM17
Dissolved Barium #	57	60	73	84	32	19	8	51	38	25	<3	ug/l	TM30/PM14
Dissolved Barium #	-	-	-	-	-	-	-	-	-	-	<0.003	mg/l	TM30/PM17
Dissolved Barium (A10) #	-	-	-	-	-	-	-	-	-	-	<0.03	mg/kg	TM30/PM17
Dissolved Beryllium #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM30/PM14
Dissolved Boron #	79	272	114	243	35	74	<12	57	73	23	<12	ug/l	TM30/PM14
Dissolved Boron #	-	-	-	-	-	-	-	-	-	-	<0.012	mg/l	TM30/PM17
Dissolved Boron (A10) #	-	-	-	-	-	-	-	-	-	-	<0.12	mg/kg	TM30/PM17
Dissolved Cadmium #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM30/PM14
Dissolved Cadmium #	-	-	-	-	-	-	-	-	-	-	<0.0005	mg/l	TM30/PM17
Dissolved Cadmium (A10) #	-	-	-	-	-	-	-	-	-	-	<0.005	mg/kg	TM30/PM17
Dissolved Chromium #	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	ug/l	TM30/PM14
Dissolved Chromium #	-	-	-	-	-	-	-	-	-	-	<0.0015	mg/l	TM30/PM17
Dissolved Chromium (A10) #	-	-	-	-	-	-	-	-	-	-	<0.015	mg/kg	TM30/PM17
Dissolved Copper #	<7	<7	7	14	<7	11	<7	<7	8	<7	<7	ug/l	TM30/PM14
Dissolved Copper #	-	-	-	-	-	-	-	-	-	-	<0.007	mg/l	TM30/PM17
Dissolved Copper (A10) #	-	-	-	-	-	-	-	-	-	-	<0.07	mg/kg	TM30/PM17
Dissolved Lead #	<5	5	7	6	6	11	<5	6	6	<5	<5	ug/l	TM30/PM14
Dissolved Lead #	-	-	-	-	-	-	-	-	-	-	<0.005	mg/l	TM30/PM17
Dissolved Lead (A10) #	-	-	-	-	-	-	-	-	-	-	<0.05	mg/kg	TM30/PM17
Dissolved Mercury #	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM30/PM14
Dissolved Molybdenum #	-	-	-	-	-	-	-	-	-	-	<0.002	mg/l	TM30/PM17
Dissolved Molybdenum (A10) #	-	-	-	-	-	-	-	-	-	-	<0.02	mg/kg	TM30/PM17
Dissolved Nickel #	2	<2	7	11	<2	4	<2	<2	<2	<2	<2	ug/l	TM30/PM14
Dissolved Nickel #	-	-	-	-	-	-	-	-	-	-	<0.002	mg/l	TM30/PM17
Dissolved Nickel (A10) #	-	-	-	-	-	-	-	-	-	-	<0.02	mg/kg	TM30/PM17
Dissolved Selenium #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM30/PM14
Dissolved Selenium #	-	-	-	-	-	-	-	-	-	-	<0.003	mg/l	TM30/PM17
Dissolved Selenium (A10) #	-	-	-	-	-	-	-	-	-	-	<0.03	mg/kg	TM30/PM17
Dissolved Vanadium #	<1.5	<1.5	<1.5	<1.5	3.4	14.1	<1.5	2.6	5.1	2.5	<1.5	ug/l	TM30/PM14
Dissolved Zinc #	4	5	12	19	7	8	<3	8	8	3	<3	ug/l	TM30/PM14
Dissolved Zinc #	-	-	-	-	-	-	-	-	-	-	<0.003	mg/l	TM30/PM17
Dissolved Zinc (A10) #	-	-	-	-	-	-	-	-	-	-	<0.03	mg/kg	TM30/PM17
Total Hardness Dissolved	94	119	119	106	76	67	40	126	81	88	<1	mg/l	TM30/PM14
Mercury Dissolved by CVAF #	-	-	-	-	-	-	-	-	-	-	<0.00001	mg/l	TM61/PM0
Mercury Dissolved by CVAF #	-	-	-	-	-	-	-	-	-	-	<0.0001	mg/kg	TM61/PM0
Methyl Tertiary Butyl Ether	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM69
Benzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM69
Toluene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM15/PM69

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	Please see attached notes for all abbreviations and acronyms		
EMT Sample No.	1-3	13-15	16-18	19-21	25-27	28-30	37-39	43-45	46-48	58-60			
Sample ID	TP1	TP2	TP3	TP3	TP4	TP4	TP5	TP6	TP7	TP8			
Depth	0.00-1.50	2.80-3.50	0.00-1.50	1.50-2.20	0.00-1.50	1.50-2.50	1.50-2.50	1.50-2.60	0.00-1.50	2.50-3.50			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	14/08/2019	<>	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	13/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	LOD/LOR	Units	Method No.
Ethylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM69
m/p-Xylene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
o-Xylene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM69
Surrogate Recovery Toluene D8	99	99	106	105	112	100	100	98	96	96	<0	%	TM15/PM69
Surrogate Recovery 4-Bromofluorobenzene	96	99	91	90	91	97	91	95	100	87	<0	%	TM15/PM69
TPH CWG													
Aliphatics													
>C5-C6	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM36/PM69
>C6-C8	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM36/PM69
>C8-C10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM36/PM69
>C10-C12	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM5/PM16/PM30
>C12-C16	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM5/PM16/PM30
>C16-C21	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM5/PM16/PM30
>C21-C35	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM5/PM16/PM30
Total aliphatics C5-35	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM5/TM36/PM16/PM30/PM69
Aromatics													
>C5-EC7	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM36/PM69
>EC7-EC8	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM36/PM69
>EC8-EC10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM36/PM69
>EC10-EC12	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM5/PM16/PM30
>EC12-EC16	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM5/PM16/PM30
>EC16-EC21	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM5/PM16/PM30
>EC21-EC35	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM5/PM16/PM30
Total aromatics C5-35	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM5/TM36/PM16/PM30/PM69
Total aliphatics and aromatics(C5-35)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM5/TM36/PM16/PM30/PM69
PCB 28	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM17/PM30
PCB 52	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM17/PM30
PCB 101	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM17/PM30
PCB 118	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM17/PM30
PCB 138	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM17/PM30
PCB 153	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM17/PM30
PCB 180	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM17/PM30
Total 7 PCBs	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	ug/l	TM17/PM30
Phenol	-	-	-	-	-	-	-	-	-	-	<0.01	mg/l	TM26/PM0
Phenol	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM26/PM0
Fluoride	-	-	-	-	-	-	-	-	-	-	<0.3	mg/l	TM173/PM0
Fluoride	-	-	-	-	-	-	-	-	-	-	<3	mg/kg	TM173/PM0
Sulphate as SO4 #	17.9	21.1	97.1	122.1	21.7	26.3	3.4	13.9	22.0	39.7	<0.5	mg/l	TM38/PM0
Sulphate as SO4 #	-	-	-	-	-	-	-	-	-	-	<5	mg/kg	TM38/PM0

Element Materials Technology

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	Please see attached notes for all abbreviations and acronyms		
EMT Sample No.	1-3	13-15	16-18	19-21	25-27	28-30	37-39	43-45	46-48	58-60			
Sample ID	TP1	TP2	TP3	TP3	TP4	TP4	TP5	TP6	TP7	TP8			
Depth	0.00-1.50	2.80-3.50	0.00-1.50	1.50-2.20	0.00-1.50	1.50-2.50	1.50-2.50	1.50-2.60	0.00-1.50	2.50-3.50			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	14/08/2019	<>	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	13/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	LOD/LOR	Units	Method No.
Chloride #	-	-	-	-	-	-	-	-	-	-	<0.3	mg/l	TM38/PM0
Chloride #	-	-	-	-	-	-	-	-	-	-	<3	mg/kg	TM38/PM0
Ammoniacal Nitrogen as N #	3.91	4.99	0.92	3.01	<0.03	1.06	<0.03	0.12	0.74	0.27	<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	-	-	-	-	-	-	-	-	-	-	<0.3	mg/kg	TM38/PM0
Dissolved Chromium III	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	ug/l	NONE/NONE
Dissolved Organic Carbon	6	7	17	20	5	8	3	3	6	4	<2	mg/l	TM60/PM0
Dissolved Organic Carbon	-	-	-	-	-	-	-	-	-	-	<20	mg/kg	TM60/PM0
Hexavalent Chromium	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	mg/l	TM38/PM0
pH	7.29	7.63	7.39	7.53	7.27	7.39	7.40	7.84	7.62	7.43	<0.01	pH units	TM73/PM0
Total Dissolved Solids #	-	-	-	-	-	-	-	-	-	-	<35	mg/l	TM20/PM0
Total Dissolved Solids #	-	-	-	-	-	-	-	-	-	-	<350	mg/kg	TM20/PM0

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13464	19/13464	19/13464	19/13464	19/13464	Please see attached notes for all abbreviations and acronyms		
EMT Sample No.	61-63	70-72	73-75	76-78	82-84	1-3	4-6	7-9	10-13	14-16			
Sample ID	TP9	TP10	TP12	TP12	TP19	TP11	TP11	TP13	TP13	TP14			
Depth	0.00-1.50	1.50-2.80	0.00-1.50	1.50-3.00	0.00-0.70	0.00-1.50	1.50-2.70	0.00-1.50	1.50-2.70	0.00-1.50			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J	V J T			
Sample Date	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	15/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	LOD/LOR	Units	Method No.
Dissolved Antimony #	-	-	0.003	0.005	0.006	0.004	0.002	0.003	0.003	0.002	<0.002	mg/l	TM30/PM17
Dissolved Antimony (A10) #	-	-	0.03	0.05	0.06	0.04	<0.02	0.03	0.03	0.02	<0.02	mg/kg	TM30/PM17
Dissolved Arsenic #	5.5	<2.5	-	-	-	-	-	-	-	-	<2.5	ug/l	TM30/PM14
Dissolved Arsenic #	-	-	0.0081	0.0108	<0.0025	0.0460	0.0060	0.0075	0.0044	0.0040	<0.0025	mg/l	TM30/PM17
Dissolved Arsenic (A10) #	-	-	0.081	0.108	<0.025	0.460	0.060	0.075	0.044	0.040	<0.025	mg/kg	TM30/PM17
Dissolved Barium #	33	16	-	-	-	-	-	-	-	-	<3	ug/l	TM30/PM14
Dissolved Barium #	-	-	0.023	0.024	0.042	0.006	0.025	0.020	<0.003	0.003	<0.003	mg/l	TM30/PM17
Dissolved Barium (A10) #	-	-	0.23	0.24	0.42	0.06	0.25	0.20	<0.03	0.03	<0.03	mg/kg	TM30/PM17
Dissolved Beryllium #	<0.5	<0.5	-	-	-	-	-	-	-	-	<0.5	ug/l	TM30/PM14
Dissolved Boron #	52	20	-	-	-	-	-	-	-	-	<12	ug/l	TM30/PM14
Dissolved Boron #	-	-	<0.012	0.018	<0.012	0.031	0.025	0.015	0.027	<0.012	<0.012	mg/l	TM30/PM17
Dissolved Boron (A10) #	-	-	<0.12	0.18	<0.12	0.31	0.25	0.15	0.27	<0.12	<0.12	mg/kg	TM30/PM17
Dissolved Cadmium #	<0.5	<0.5	-	-	-	-	-	-	-	-	<0.5	ug/l	TM30/PM14
Dissolved Cadmium #	-	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	mg/l	TM30/PM17
Dissolved Cadmium (A10) #	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	mg/kg	TM30/PM17
Dissolved Chromium #	<1.5	<1.5	-	-	-	-	-	-	-	-	<1.5	ug/l	TM30/PM14
Dissolved Chromium #	-	-	<0.0015	<0.0015	0.0150	0.0064	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	mg/l	TM30/PM17
Dissolved Chromium (A10) #	-	-	<0.015	<0.015	0.150	0.064	<0.015	<0.015	<0.015	<0.015	<0.015	mg/kg	TM30/PM17
Dissolved Copper #	<7	<7	-	-	-	-	-	-	-	-	<7	ug/l	TM30/PM14
Dissolved Copper #	-	-	<0.007	<0.007	<0.007	0.007	<0.007	<0.007	<0.007	<0.007	<0.007	mg/l	TM30/PM17
Dissolved Copper (A10) #	-	-	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	TM30/PM17
Dissolved Lead #	<5	<5	-	-	-	-	-	-	-	-	<5	ug/l	TM30/PM14
Dissolved Lead #	-	-	<0.005	<0.005	<0.005	0.012	<0.005	<0.005	<0.005	<0.005	<0.005	mg/l	TM30/PM17
Dissolved Lead (A10) #	-	-	<0.05	<0.05	<0.05	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM30/PM17
Dissolved Mercury #	<1	<1	-	-	-	-	-	-	-	-	<1	ug/l	TM30/PM14
Dissolved Molybdenum #	-	-	0.005	0.017	0.007	0.006	0.003	0.008	0.007	0.017	<0.002	mg/l	TM30/PM17
Dissolved Molybdenum (A10) #	-	-	0.05	0.17	0.07	0.06	0.03	0.08	0.07	0.17	<0.02	mg/kg	TM30/PM17
Dissolved Nickel #	2	<2	-	-	-	-	-	-	-	-	<2	ug/l	TM30/PM14
Dissolved Nickel #	-	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM30/PM17
Dissolved Nickel (A10) #	-	-	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	TM30/PM17
Dissolved Selenium #	<3	<3	-	-	-	-	-	-	-	-	<3	ug/l	TM30/PM14
Dissolved Selenium #	-	-	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM30/PM17
Dissolved Selenium (A10) #	-	-	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM30/PM17
Dissolved Vanadium #	2.2	<1.5	-	-	-	-	-	-	-	-	<1.5	ug/l	TM30/PM14
Dissolved Zinc #	27	<3	-	-	-	-	-	-	-	-	<3	ug/l	TM30/PM14
Dissolved Zinc #	-	-	<0.003	<0.003	0.013	<0.003	<0.003	<0.003	<0.003	0.003	<0.003	mg/l	TM30/PM17
Dissolved Zinc (A10) #	-	-	<0.03	<0.03	0.13	<0.03	<0.03	<0.03	<0.03	0.03	<0.03	mg/kg	TM30/PM17
Total Hardness Dissolved	92	72	-	-	-	-	-	-	-	-	<1	mg/l	TM30/PM14
Mercury Dissolved by CVAF #	-	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	mg/l	TM61/PM0
Mercury Dissolved by CVAF #	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	mg/kg	TM61/PM0
Methyl Tertiary Butyl Ether	<0.1	<0.1	-	-	-	-	-	-	-	-	<0.1	ug/l	TM15/PM69
Benzene	<0.5	<0.5	-	-	-	-	-	-	-	-	<0.5	ug/l	TM15/PM69
Toluene	<5	<5	-	-	-	-	-	-	-	-	<5	ug/l	TM15/PM69

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13464	19/13464	19/13464	19/13464	19/13464	Please see attached notes for all abbreviations and acronyms		
EMT Sample No.	61-63	70-72	73-75	76-78	82-84	1-3	4-6	7-9	10-13	14-16			
Sample ID	TP9	TP10	TP12	TP12	TP19	TP11	TP11	TP13	TP13	TP14			
Depth	0.00-1.50	1.50-2.80	0.00-1.50	1.50-3.00	0.00-0.70	0.00-1.50	1.50-2.70	0.00-1.50	1.50-2.70	0.00-1.50			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J	V J T			
Sample Date	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	15/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	LOD/LOR	Units	Method No.
Ethylbenzene	<1	<1	-	-	-	-	-	-	-	-	<1	ug/l	TM15/PM69
m/p-Xylene	<2	<2	-	-	-	-	-	-	-	-	<2	ug/l	TM15/PM69
o-Xylene	<1	<1	-	-	-	-	-	-	-	-	<1	ug/l	TM15/PM69
Surrogate Recovery Toluene D8	95	111	-	-	-	-	-	-	-	-	<0	%	TM15/PM69
Surrogate Recovery 4-Bromofluorobenzene	93	87	-	-	-	-	-	-	-	-	<0	%	TM15/PM69
TPH CWG													
Aliphatics													
>C5-C6	<10	<10	-	-	-	-	-	-	-	-	<10	ug/l	TM36/PM69
>C6-C8	<10	<10	-	-	-	-	-	-	-	-	<10	ug/l	TM36/PM69
>C8-C10	<10	<10	-	-	-	-	-	-	-	-	<10	ug/l	TM36/PM69
>C10-C12	<5	<5	-	-	-	-	-	-	-	-	<5	ug/l	TM5/PM16/PM30
>C12-C16	<10	<10	-	-	-	-	-	-	-	-	<10	ug/l	TM5/PM16/PM30
>C16-C21	<10	<10	-	-	-	-	-	-	-	-	<10	ug/l	TM5/PM16/PM30
>C21-C35	<10	<10	-	-	-	-	-	-	-	-	<10	ug/l	TM5/PM16/PM30
Total aliphatics C5-35	<10	<10	-	-	-	-	-	-	-	-	<10	ug/l	TM5/TM36/PM16/PM30/PM69
Aromatics													
>C5-EC7	<10	<10	-	-	-	-	-	-	-	-	<10	ug/l	TM36/PM69
>EC7-EC8	<10	<10	-	-	-	-	-	-	-	-	<10	ug/l	TM36/PM69
>EC8-EC10	<10	<10	-	-	-	-	-	-	-	-	<10	ug/l	TM36/PM69
>EC10-EC12	<5	<5	-	-	-	-	-	-	-	-	<5	ug/l	TM5/PM16/PM30
>EC12-EC16	<10	<10	-	-	-	-	-	-	-	-	<10	ug/l	TM5/PM16/PM30
>EC16-EC21	<10	<10	-	-	-	-	-	-	-	-	<10	ug/l	TM5/PM16/PM30
>EC21-EC35	<10	<10	-	-	-	-	-	-	-	-	<10	ug/l	TM5/PM16/PM30
Total aromatics C5-35	<10	<10	-	-	-	-	-	-	-	-	<10	ug/l	TM5/TM36/PM16/PM30/PM69
Total aliphatics and aromatics(C5-35)	<10	<10	-	-	-	-	-	-	-	-	<10	ug/l	TM5/TM36/PM16/PM30/PM69
PCB 28	<0.1	<0.1	-	-	-	-	-	-	-	-	<0.1	ug/l	TM17/PM30
PCB 52	<0.1	<0.1	-	-	-	-	-	-	-	-	<0.1	ug/l	TM17/PM30
PCB 101	<0.1	<0.1	-	-	-	-	-	-	-	-	<0.1	ug/l	TM17/PM30
PCB 118	<0.1	<0.1	-	-	-	-	-	-	-	-	<0.1	ug/l	TM17/PM30
PCB 138	<0.1	<0.1	-	-	-	-	-	-	-	-	<0.1	ug/l	TM17/PM30
PCB 153	<0.1	<0.1	-	-	-	-	-	-	-	-	<0.1	ug/l	TM17/PM30
PCB 180	<0.1	<0.1	-	-	-	-	-	-	-	-	<0.1	ug/l	TM17/PM30
Total 7 PCBs	<0.7	<0.7	-	-	-	-	-	-	-	-	<0.7	ug/l	TM17/PM30
Phenol	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/l	TM26/PM0
Phenol	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM26/PM0
Fluoride	-	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.5	<0.3	mg/l	TM173/PM0
Fluoride	-	-	<3	<3	<3	<3	<3	<3	<3	5	<3	mg/kg	TM173/PM0
Sulphate as SO4 #	23.4	14.9	2.4	7.6	3.8	43.7	14.4	10.7	6.8	5.9	<0.5	mg/l	TM38/PM0
Sulphate as SO4 #	-	-	24	76	38	437	144	107	68	59	<5	mg/kg	TM38/PM0

Element Materials Technology

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13464	19/13464	19/13464	19/13464	19/13464	Please see attached notes for all abbreviations and acronyms		
EMT Sample No.	61-63	70-72	73-75	76-78	82-84	1-3	4-6	7-9	10-13	14-16			
Sample ID	TP9	TP10	TP12	TP12	TP19	TP11	TP11	TP13	TP13	TP14			
Depth	0.00-1.50	1.50-2.80	0.00-1.50	1.50-3.00	0.00-0.70	0.00-1.50	1.50-2.70	0.00-1.50	1.50-2.70	0.00-1.50			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J	V J T			
Sample Date	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	15/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	LOD/LOR	Units	Method No.
Chloride #	-	-	1.9	1.3	1.0	0.5	1.1	0.3	0.8	0.8	<0.3	mg/l	TM38/PM0
Chloride #	-	-	19	13	10	5	11	3	8	8	<3	mg/kg	TM38/PM0
Ammoniacal Nitrogen as N #	1.07	0.06	<0.03	0.09	0.12	<0.03	0.03	0.33	0.73	0.08	<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	-	-	<0.3	0.9	1.2	<0.3	<0.3	3.3	7.3	0.8	<0.3	mg/kg	TM38/PM0
Dissolved Chromium III	<6	<6	-	-	-	-	-	-	-	-	<6	ug/l	NONE/NONE
Dissolved Organic Carbon	6	4	4	4	3	3	3	4	4	3	<2	mg/l	TM60/PM0
Dissolved Organic Carbon	-	-	40	40	30	30	30	40	40	30	<20	mg/kg	TM60/PM0
Hexavalent Chromium	<0.006	<0.006	-	-	-	-	-	-	-	-	<0.006	mg/l	TM38/PM0
pH	7.56	7.50	-	-	-	-	-	-	-	-	<0.01	pH units	TM73/PM0
Total Dissolved Solids #	-	-	88	101	87	129	90	77	71	59	<35	mg/l	TM20/PM0
Total Dissolved Solids #	-	-	880	1010	870	1290	900	770	710	590	<350	mg/kg	TM20/PM0

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	Please see attached notes for all abbreviations and acronyms		
EMT Sample No.	17-19	20-22	23-25	26-28	29-31	32-34	35-37	38-40	41-43	44-46			
Sample ID	TP14	TP15	TP15	TP16	TP16	TP17	TP17	TP18	TP18	TP20			
Depth	1.50-3.00	0.00-1.50	1.50-3.00	0.00-1.50	1.50-1.90	0.00-1.50	1.50-1.90	0.00-1.50	1.50-2.70	0.00-0.75			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	16/08/2019	16/08/2019	16/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	LOD/LOR	Units	Method No.
Dissolved Antimony #	<0.002	0.005	<0.002	0.009	0.010	0.004	<0.002	<0.002	<0.002	0.003	<0.002	mg/l	TM30/PM17
Dissolved Antimony (A10) #	<0.02	0.05	<0.02	0.09	0.10	0.04	<0.02	<0.02	<0.02	0.03	<0.02	mg/kg	TM30/PM17
Dissolved Arsenic #	-	-	-	-	-	-	-	-	-	-	<2.5	ug/l	TM30/PM14
Dissolved Arsenic #	0.0047	0.0049	0.0049	0.0138	0.0175	0.0064	0.0092	0.0408	<0.0025	<0.0025	<0.0025	mg/l	TM30/PM17
Dissolved Arsenic (A10) #	0.047	0.049	0.049	0.138	0.175	0.064	0.092	0.408	<0.025	<0.025	<0.025	mg/kg	TM30/PM17
Dissolved Barium #	-	-	-	-	-	-	-	-	-	-	<3	ug/l	TM30/PM14
Dissolved Barium #	<0.003	0.012	<0.003	0.022	0.024	0.102	0.004	0.005	0.012	0.061	<0.003	mg/l	TM30/PM17
Dissolved Barium (A10) #	<0.03	0.12	<0.03	0.22	0.24	1.02	0.04	0.05	0.12	0.61	<0.03	mg/kg	TM30/PM17
Dissolved Beryllium #	-	-	-	-	-	-	-	-	-	-	<0.5	ug/l	TM30/PM14
Dissolved Boron #	-	-	-	-	-	-	-	-	-	-	<12	ug/l	TM30/PM14
Dissolved Boron #	0.025	0.015	0.026	0.019	0.030	<0.012	<0.012	<0.012	0.022	<0.012	<0.012	mg/l	TM30/PM17
Dissolved Boron (A10) #	0.25	0.15	0.26	0.19	0.30	<0.12	<0.12	<0.12	0.22	<0.12	<0.12	mg/kg	TM30/PM17
Dissolved Cadmium #	-	-	-	-	-	-	-	-	-	-	<0.5	ug/l	TM30/PM14
Dissolved Cadmium #	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	mg/l	TM30/PM17
Dissolved Cadmium (A10) #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	mg/kg	TM30/PM17
Dissolved Chromium #	-	-	-	-	-	-	-	-	-	-	<1.5	ug/l	TM30/PM14
Dissolved Chromium #	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	0.0144	<0.0015	mg/l	TM30/PM17
Dissolved Chromium (A10) #	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.144	<0.015	mg/kg	TM30/PM17
Dissolved Copper #	-	-	-	-	-	-	-	-	-	-	<7	ug/l	TM30/PM14
Dissolved Copper #	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	0.040	<0.007	mg/l	TM30/PM17
Dissolved Copper (A10) #	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	0.40	<0.07	mg/kg	TM30/PM17
Dissolved Lead #	-	-	-	-	-	-	-	-	-	-	<5	ug/l	TM30/PM14
Dissolved Lead #	<0.005	<0.005	<0.005	<0.005	0.022	<0.005	<0.005	0.008	<0.005	0.019	<0.005	mg/l	TM30/PM17
Dissolved Lead (A10) #	<0.05	<0.05	<0.05	<0.05	0.22	<0.05	<0.05	0.08	<0.05	0.19	<0.05	mg/kg	TM30/PM17
Dissolved Mercury #	-	-	-	-	-	-	-	-	-	-	<1	ug/l	TM30/PM14
Dissolved Molybdenum #	0.016	0.010	0.017	0.019	0.036	0.006	0.002	0.011	0.008	0.006	<0.002	mg/l	TM30/PM17
Dissolved Molybdenum (A10) #	0.16	0.10	0.17	0.19	0.36	0.06	0.02	0.11	0.08	0.06	<0.02	mg/kg	TM30/PM17
Dissolved Nickel #	-	-	-	-	-	-	-	-	-	-	<2	ug/l	TM30/PM14
Dissolved Nickel #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM30/PM17
Dissolved Nickel (A10) #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	TM30/PM17
Dissolved Selenium #	-	-	-	-	-	-	-	-	-	-	<3	ug/l	TM30/PM14
Dissolved Selenium #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM30/PM17
Dissolved Selenium (A10) #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM30/PM17
Dissolved Vanadium #	-	-	-	-	-	-	-	-	-	-	<1.5	ug/l	TM30/PM14
Dissolved Zinc #	-	-	-	-	-	-	-	-	-	-	<3	ug/l	TM30/PM14
Dissolved Zinc #	<0.003	<0.003	<0.003	0.007	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM30/PM17
Dissolved Zinc (A10) #	<0.03	<0.03	<0.03	0.07	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM30/PM17
Total Hardness Dissolved	-	-	-	-	-	-	-	-	-	-	<1	mg/l	TM30/PM14
Mercury Dissolved by CVAF #	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	mg/l	TM61/PM0
Mercury Dissolved by CVAF #	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	mg/kg	TM61/PM0
Methyl Tertiary Butyl Ether	-	-	-	-	-	-	-	-	-	-	<0.1	ug/l	TM15/PM69
Benzene	-	-	-	-	-	-	-	-	-	-	<0.5	ug/l	TM15/PM69
Toluene	-	-	-	-	-	-	-	-	-	-	<5	ug/l	TM15/PM69

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464			
EMT Sample No.	17-19	20-22	23-25	26-28	29-31	32-34	35-37	38-40	41-43	44-46			
Sample ID	TP14	TP15	TP15	TP16	TP16	TP17	TP17	TP18	TP18	TP20			
Depth	1.50-3.00	0.00-1.50	1.50-3.00	0.00-1.50	1.50-1.90	0.00-1.50	1.50-1.90	0.00-1.50	1.50-2.70	0.00-0.75	Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	16/08/2019	16/08/2019	16/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	LOD/LOR	Units	Method No.
Ethylbenzene	-	-	-	-	-	-	-	-	-	-	<1	ug/l	TM15/PM69
m/p-Xylene	-	-	-	-	-	-	-	-	-	-	<2	ug/l	TM15/PM69
o-Xylene	-	-	-	-	-	-	-	-	-	-	<1	ug/l	TM15/PM69
Surrogate Recovery Toluene D8	-	-	-	-	-	-	-	-	-	-	<0	%	TM15/PM69
Surrogate Recovery 4-Bromofluorobenzene	-	-	-	-	-	-	-	-	-	-	<0	%	TM15/PM69
TPH CWG													
Aliphatics													
>C5-C6	-	-	-	-	-	-	-	-	-	-	<10	ug/l	TM36/PM69
>C6-C8	-	-	-	-	-	-	-	-	-	-	<10	ug/l	TM36/PM69
>C8-C10	-	-	-	-	-	-	-	-	-	-	<10	ug/l	TM36/PM69
>C10-C12	-	-	-	-	-	-	-	-	-	-	<5	ug/l	TM5/PM16/PM30
>C12-C16	-	-	-	-	-	-	-	-	-	-	<10	ug/l	TM5/PM16/PM30
>C16-C21	-	-	-	-	-	-	-	-	-	-	<10	ug/l	TM5/PM16/PM30
>C21-C35	-	-	-	-	-	-	-	-	-	-	<10	ug/l	TM5/PM16/PM30
Total aliphatics C5-35	-	-	-	-	-	-	-	-	-	-	<10	ug/l	TM5/TM36/PM16/PM30/PM69
Aromatics													
>C5-EC7	-	-	-	-	-	-	-	-	-	-	<10	ug/l	TM36/PM69
>EC7-EC8	-	-	-	-	-	-	-	-	-	-	<10	ug/l	TM36/PM69
>EC8-EC10	-	-	-	-	-	-	-	-	-	-	<10	ug/l	TM36/PM69
>EC10-EC12	-	-	-	-	-	-	-	-	-	-	<5	ug/l	TM5/PM16/PM30
>EC12-EC16	-	-	-	-	-	-	-	-	-	-	<10	ug/l	TM5/PM16/PM30
>EC16-EC21	-	-	-	-	-	-	-	-	-	-	<10	ug/l	TM5/PM16/PM30
>EC21-EC35	-	-	-	-	-	-	-	-	-	-	<10	ug/l	TM5/PM16/PM30
Total aromatics C5-35	-	-	-	-	-	-	-	-	-	-	<10	ug/l	TM5/TM36/PM16/PM30/PM69
Total aliphatics and aromatics(C5-35)	-	-	-	-	-	-	-	-	-	-	<10	ug/l	TM5/TM36/PM16/PM30/PM69
PCB 28	-	-	-	-	-	-	-	-	-	-	<0.1	ug/l	TM17/PM30
PCB 52	-	-	-	-	-	-	-	-	-	-	<0.1	ug/l	TM17/PM30
PCB 101	-	-	-	-	-	-	-	-	-	-	<0.1	ug/l	TM17/PM30
PCB 118	-	-	-	-	-	-	-	-	-	-	<0.1	ug/l	TM17/PM30
PCB 138	-	-	-	-	-	-	-	-	-	-	<0.1	ug/l	TM17/PM30
PCB 153	-	-	-	-	-	-	-	-	-	-	<0.1	ug/l	TM17/PM30
PCB 180	-	-	-	-	-	-	-	-	-	-	<0.1	ug/l	TM17/PM30
Total 7 PCBs	-	-	-	-	-	-	-	-	-	-	<0.7	ug/l	TM17/PM30
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/l	TM26/PM0
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM26/PM0
Fluoride	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/l	TM173/PM0
Fluoride	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	mg/kg	TM173/PM0
Sulphate as SO4 #	21.7	4.9	31.4	20.5	7.4	8.8	4.1	1.1	11.1	12.1	<0.5	mg/l	TM38/PM0
Sulphate as SO4 #	217	49	314	205	74	88	41	11	111	121	<5	mg/kg	TM38/PM0

Element Materials Technology

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Job No.	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	LOD/LOR	Units	Method No.
EMT Sample No.	17-19	20-22	23-25	26-28	29-31	32-34	35-37	38-40	41-43	44-46			
Sample ID	TP14	TP15	TP15	TP16	TP16	TP17	TP17	TP18	TP18	TP20			
Depth	1.50-3.00	0.00-1.50	1.50-3.00	0.00-1.50	1.50-1.90	0.00-1.50	1.50-1.90	0.00-1.50	1.50-2.70	0.00-0.75			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	16/08/2019	16/08/2019	16/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019	21/08/2019			
Chloride #	3.7	0.4	0.5	0.4	1.9	<0.3	0.5	0.4	0.4	1.0	<0.3	mg/l	TM38/PM0
Chloride #	37	4	5	4	19	<3	5	4	4	10	<3	mg/kg	TM38/PM0
Ammoniacal Nitrogen as N #	0.12	0.03	0.04	<0.03	<0.03	0.06	0.05	0.05	0.14	0.26	<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	1.2	0.3	0.4	<0.3	<0.3	0.6	0.5	0.5	1.4	2.6	<0.3	mg/kg	TM38/PM0
Dissolved Chromium III	-	-	-	-	-	-	-	-	-	-	<6	ug/l	NONE/NONE
Dissolved Organic Carbon	4	6	4	9	10	4	3	4	4	5	<2	mg/l	TM60/PM0
Dissolved Organic Carbon	40	60	40	90	100	40	30	40	40	50	<20	mg/kg	TM60/PM0
Hexavalent Chromium	-	-	-	-	-	-	-	-	-	-	<0.006	mg/l	TM38/PM0
pH	-	-	-	-	-	-	-	-	-	-	<0.01	pH units	TM73/PM0
Total Dissolved Solids #	103	108	116	132	119	75	74	60	110	394	<35	mg/l	TM20/PM0
Total Dissolved Solids #	1030	1080	1160	1320	1191	750	740	600	1100	3942	<350	mg/kg	TM20/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

SVOC Report : **Solid**

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	LOD/LOR	Units	Method No.
EMT Sample No.	1-3	4-6	10-12	13-15	16-18	19-21	22-24	25-27	28-30	34-36			
Sample ID	TP1	TP1	TP2	TP2	TP3	TP3	TP3	TP4	TP4	TP5			
Depth	0.00-1.50	1.50-3.00		2.80-3.50	0.00-1.50	1.50-2.20	2.20-3.80	0.00-1.50	1.50-2.50	0.00-1.50			
COC No / misc			FINE STONEY SOIL										
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	14/08/2019	14/08/2019	13/08/2019	<>	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019			
SVOC MS													
Phenols													
2-Chlorophenol #	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2-Methylphenol	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2-Nitrophenol	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2,4-Dichlorophenol #	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2,4-Dimethylphenol	47	33	<10	<10	156 AB	<100 AB	<10	<10	<10	36	<10	ug/kg	TM16/PM8
2,4,5-Trichlorophenol	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2,4,6-Trichlorophenol	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
4-Chloro-3-methylphenol	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
4-Methylphenol	79	42	69	<10	<100 AB	<100 AB	<10	<10	<10	48	<10	ug/kg	TM16/PM8
4-Nitrophenol	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Pentachlorophenol	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Phenol #	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
PAHs													
2-Chloronaphthalene #	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2-Methylnaphthalene #	172	54	70	54	145 AB	124 AB	<10	80	145	104	<10	ug/kg	TM16/PM8
Naphthalene	264	78	113	72	241 AB	199 AB	<10	117	156	182	<10	ug/kg	TM16/PM8
Acenaphthylene	258	167	260	148	738 AB	215 AB	<10	215	254	314	<10	ug/kg	TM16/PM8
Acenaphthene	375	171	115	72	688 AB	380 AB	<10	144	278	331	<10	ug/kg	TM16/PM8
Fluorene	561	223	196	76	596 AB	407 AB	<10	176	401	383	<10	ug/kg	TM16/PM8
Phenanthrene #	3349	2202	1667	575	9627 AB	1901 AB	39	1647	2311	2357	<10	ug/kg	TM16/PM8
Anthracene	1010	665	621	250	3488 AB	567 AB	16	788	1085	1269	<10	ug/kg	TM16/PM8
Fluoranthene #	5521	5678	4645	2167	17966 AB	3084 AB	106	3202	9676	10320	<10	ug/kg	TM16/PM8
Pyrene #	4516	4367	3722	1836	15454 AB	2548 AB	93	2782	7731	8317	<10	ug/kg	TM16/PM8
Benzo(a)anthracene	2750	3242	3018	1379	8113 AB	1711 AB	95	2059	5236	5860	<10	ug/kg	TM16/PM8
Chrysene	2626	3024	2787	1448	7573 AB	1580 AB	102	2204	4033	5067	<10	ug/kg	TM16/PM8
Benzo(bk)fluoranthene	5017	5051	5837	2901	13203 AB	2592 AB	159	3935	7617	9919	<10	ug/kg	TM16/PM8
Benzo(a)pyrene	2955	3350	3462	1885	7648 AB	1641 AB	85	2272	4332	6824	<10	ug/kg	TM16/PM8
Indeno(123cd)pyrene	1625	1600	1969	982	4285 AB	905 AB	51	1322	2196	3605	<10	ug/kg	TM16/PM8
Dibenzo(ah)anthracene	658	590	785	374	1413 AB	390 AB	21	541	922	1455	<10	ug/kg	TM16/PM8
Benzo(ghi)perylene	2047	2002	2380	1369	5543 AB	1367 AB	63	1723	2350	4253	<10	ug/kg	TM16/PM8
Benzo(b)fluoranthene	3612	3637	4203	2089	9506 AB	1866 AB	114	2833	5484	7142	<10	ug/kg	TM16/PM8
Benzo(k)fluoranthene	1405	1414	1634	812	3697 AB	726 AB	45	1102	2133	2777	<10	ug/kg	TM16/PM8
Phthalates													
Bis(2-ethylhexyl) phthalate	<100	<100	<100	<100	<1000 AB	<1000 AB	<100	<100	236	<100	<100	ug/kg	TM16/PM8
Butylbenzyl phthalate	<100	<100	<100	<100	<1000 AB	<1000 AB	<100	<100	<100	<100	<100	ug/kg	TM16/PM8
Di-n-butyl phthalate	<100	<100	<100	<100	<1000 AB	<1000 AB	<100	<100	<100	<100	<100	ug/kg	TM16/PM8
Di-n-Octyl phthalate	<100	<100	<100	<100	<1000 AB	<1000 AB	<100	<100	<100	<100	<100	ug/kg	TM16/PM8
Diethyl phthalate	<100	<100	<100	<100	<1000 AB	<1000 AB	<100	<100	<100	<100	<100	ug/kg	TM16/PM8
Dimethyl phthalate #	<100	<100	<100	<100	<1000 AB	<1000 AB	<100	<100	<100	<100	<100	ug/kg	TM16/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

SVOC Report : **Solid**

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	LOD/LOR	Units	Method No.
EMT Sample No.	1-3	4-6	10-12	13-15	16-18	19-21	22-24	25-27	28-30	34-36			
Sample ID	TP1	TP1	TP2	TP2	TP3	TP3	TP3	TP4	TP4	TP5			
Depth	0.00-1.50	1.50-3.00		2.80-3.50	0.00-1.50	1.50-2.20	2.20-3.80	0.00-1.50	1.50-2.50	0.00-1.50			
COC No / misc			FINE STONEY SOIL										
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	14/08/2019	14/08/2019	13/08/2019	<>	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019			
SVOC MS													
Other SVOCs													
1,2-Dichlorobenzene	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
1,2,4-Trichlorobenzene #	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
1,3-Dichlorobenzene	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
1,4-Dichlorobenzene	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2-Nitroaniline	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2,4-Dinitrotoluene	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
2,6-Dinitrotoluene	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
3-Nitroaniline	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
4-Bromophenylphenylether #	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
4-Chloroaniline	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
4-Chlorophenylphenylether	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
4-Nitroaniline	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Azobenzene	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Bis(2-chloroethoxy)methane	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Bis(2-chloroethyl)ether	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Carbazole	239	202	147	54	885 AB	142 AB	<10	127	153	197	<10	ug/kg	TM16/PM8
Dibenzofuran #	291	100	102	33	296 AB	221 AB	<10	110	163	260	<10	ug/kg	TM16/PM8
Hexachlorobenzene	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Hexachlorobutadiene #	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Hexachlorocyclopentadiene	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Hexachloroethane	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Isophorone #	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
N-nitrosodi-n-propylamine #	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Nitrobenzene #	<10	<10	<10	<10	<100 AB	<100 AB	<10	<10	<10	<10	<10	ug/kg	TM16/PM8
Surrogate Recovery 2-Fluorobiphenyl	121	121	120	127	109 AB	122 AB	123	115	119	121	<0	%	TM16/PM8
Surrogate Recovery p-Terphenyl-d14	120	116	124	114	119 AB	117 AB	114	110	128	130	<0	%	TM16/PM8

Please see attached notes for all abbreviations and acronyms

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

SVOC Report : **Solid**

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	LOD/LOR	Units	Method No.
EMT Sample No.	37-39	40-42	43-45	46-48	49-51	55-57	58-60	61-63	64-66	67-69			
Sample ID	TP5	TP6	TP6	TP7	TP7	TP8	TP8	TP9	TP9	TP10			
Depth	1.50-2.50	0.00-1.50	1.50-2.60	0.00-1.50	1.50-3.00	1.60-2.50	2.50-3.50	0.00-1.50	1.50-3.00	0.00-1.50			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	13/08/2019	13/08/2019	14/08/2019	14/08/2019	14/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019			
SVOC MS													
Phenols													
2-Chlorophenol #	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
2-Methylphenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
2-Nitrophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
2,4-Dichlorophenol #	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
2,4-Dimethylphenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
2,4,5-Trichlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
2,4,6-Trichlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
4-Chloro-3-methylphenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
4-Methylphenol	<10	31	64	25	<10	32	19	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
4-Nitrophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
Pentachlorophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
Phenol #	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
PAHs													
2-Chloronaphthalene #	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
2-Methylnaphthalene #	17	112	130	245	21	92	94	100	52	<100 AB	<10	ug/kg	TM16/PM8
Naphthalene	40	107	190	237	48	200	138	139	53	<100 AB	<10	ug/kg	TM16/PM8
Acenaphthylene	61	122	300	147	113	192	208	129	58	<100 AB	<10	ug/kg	TM16/PM8
Acenaphthene	121	82	95	87	38	221	530	49	<10	<100 AB	<10	ug/kg	TM16/PM8
Fluorene	112	110	159	124	60	309	570	51	28	<100 AB	<10	ug/kg	TM16/PM8
Phenanthrene #	889	864	1379	1110	398	1262	4479	355	159	323 AB	<10	ug/kg	TM16/PM8
Anthracene	317	238	507	403	158	572	1863	168	76	<100 AB	<10	ug/kg	TM16/PM8
Fluoranthene #	2040	1643	3474	2965	1123	3469	8765	1113	422	176 AB	<10	ug/kg	TM16/PM8
Pyrene #	1545	1367	2834	2317	912	2664	6327	975	356	185 AB	<10	ug/kg	TM16/PM8
Benzo(a)anthracene	1034	985	2078	1764	690	1904	4140	709	305	376 AB	<10	ug/kg	TM16/PM8
Chrysene	980	1006	2044	1791	650	1499	3651	735	299	279 AB	<10	ug/kg	TM16/PM8
Benzo(bk)fluoranthene	1909	1747	3983	3565	1167	2772	6296	1756	663	274 AB	<10	ug/kg	TM16/PM8
Benzo(a)pyrene	1174	1104	2381	1948	713	1626	3346	960	359	<100 AB	<10	ug/kg	TM16/PM8
Indeno(123cd)pyrene	664	608	1424	1164	385	884	1747	581	215	<100 AB	<10	ug/kg	TM16/PM8
Dibenzo(ah)anthracene	280	238	569	476	168	334	761	234	82	<100 AB	<10	ug/kg	TM16/PM8
Benzo(ghi)perylene	806	919	1942	1421	519	1082	2180	714	300	<100 AB	<10	ug/kg	TM16/PM8
Benzo(b)fluoranthene	1374	1258	2868	2567	840	1996	4533	1264	477	197 AB	<10	ug/kg	TM16/PM8
Benzo(k)fluoranthene	535	489	1115	998	327	776	1763	492	186	<100 AB	<10	ug/kg	TM16/PM8
Phthalates													
Bis(2-ethylhexyl) phthalate	<100	<100	<100	238	<100	212	<100	130	<100	<1000 AB	<100	ug/kg	TM16/PM8
Butylbenzyl phthalate	<100	<100	<100	<100	<100	<100	<100	<100	<100	<1000 AB	<100	ug/kg	TM16/PM8
Di-n-butyl phthalate	<100	<100	<100	<100	<100	<100	<100	<100	<100	<1000 AB	<100	ug/kg	TM16/PM8
Di-n-Octyl phthalate	<100	<100	<100	<100	<100	<100	<100	<100	<100	<1000 AB	<100	ug/kg	TM16/PM8
Diethyl phthalate	<100	<100	<100	<100	<100	<100	<100	<100	<100	<1000 AB	<100	ug/kg	TM16/PM8
Dimethyl phthalate #	<100	<100	<100	<100	<100	<100	<100	<100	<100	<1000 AB	<100	ug/kg	TM16/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

SVOC Report : **Solid**

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	LOD/LOR	Units	Method No.
EMT Sample No.	37-39	40-42	43-45	46-48	49-51	55-57	58-60	61-63	64-66	67-69			
Sample ID	TP5	TP6	TP6	TP7	TP7	TP8	TP8	TP9	TP9	TP10			
Depth	1.50-2.50	0.00-1.50	1.50-2.60	0.00-1.50	1.50-3.00	1.60-2.50	2.50-3.50	0.00-1.50	1.50-3.00	0.00-1.50			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	13/08/2019	13/08/2019	14/08/2019	14/08/2019	14/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019			
SVOC MS													
Other SVOCs													
1,2-Dichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
1,2,4-Trichlorobenzene #	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
1,3-Dichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
1,4-Dichlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
2-Nitroaniline	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
2,4-Dinitrotoluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
2,6-Dinitrotoluene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
3-Nitroaniline	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
4-Bromophenylphenylether #	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
4-Chloroaniline	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
4-Chlorophenylphenylether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
4-Nitroaniline	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
Azobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
Bis(2-chloroethoxy)methane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
Bis(2-chloroethyl)ether	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
Carbazole	48	59	99	71	32	94	207	40	13	<100 AB	<10	ug/kg	TM16/PM8
Dibenzofuran #	65	77	121	127	47	158	269	50	22	<100 AB	<10	ug/kg	TM16/PM8
Hexachlorobenzene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
Hexachlorobutadiene #	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
Hexachlorocyclopentadiene	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
Hexachloroethane	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
Isophorone #	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
N-nitrosodi-n-propylamine #	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
Nitrobenzene #	<10	<10	<10	<10	<10	<10	<10	<10	<10	<100 AB	<10	ug/kg	TM16/PM8
Surrogate Recovery 2-Fluorobiphenyl	128	129	130	114	121	118	121	110	115	116 AB	<0	%	TM16/PM8
Surrogate Recovery p-Terphenyl-d14	126	127	129	113	125	118	115	117	113	111 AB	<0	%	TM16/PM8

Please see attached notes for all abbreviations and acronyms

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

SVOC Report : **Solid**

EMT Job No.	19/13288												
EMT Sample No.	70-72												
Sample ID	TP10												
Depth	1.50-2.80										Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V J T												
Sample Date	14/08/2019												
Sample Type	Soil												
Batch Number	1												
Date of Receipt	16/08/2019										LOD/LOR	Units	Method No.
SVOC MS													
Phenols													
2-Chlorophenol #	<10										<10	ug/kg	TM16/PM8
2-Methylphenol	<10										<10	ug/kg	TM16/PM8
2-Nitrophenol	<10										<10	ug/kg	TM16/PM8
2,4-Dichlorophenol #	<10										<10	ug/kg	TM16/PM8
2,4-Dimethylphenol	<10										<10	ug/kg	TM16/PM8
2,4,5-Trichlorophenol	<10										<10	ug/kg	TM16/PM8
2,4,6-Trichlorophenol	<10										<10	ug/kg	TM16/PM8
4-Chloro-3-methylphenol	<10										<10	ug/kg	TM16/PM8
4-Methylphenol	<10										<10	ug/kg	TM16/PM8
4-Nitrophenol	<10										<10	ug/kg	TM16/PM8
Pentachlorophenol	<10										<10	ug/kg	TM16/PM8
Phenol #	<10										<10	ug/kg	TM16/PM8
PAHs													
2-Chloronaphthalene #	<10										<10	ug/kg	TM16/PM8
2-Methylnaphthalene #	61										<10	ug/kg	TM16/PM8
Naphthalene	13										<10	ug/kg	TM16/PM8
Acenaphthylene	<10										<10	ug/kg	TM16/PM8
Acenaphthene	<10										<10	ug/kg	TM16/PM8
Fluorene	<10										<10	ug/kg	TM16/PM8
Phenanthrene #	24										<10	ug/kg	TM16/PM8
Anthracene	16										<10	ug/kg	TM16/PM8
Fluoranthene #	31										<10	ug/kg	TM16/PM8
Pyrene #	30										<10	ug/kg	TM16/PM8
Benzo(a)anthracene	<10										<10	ug/kg	TM16/PM8
Chrysene	28										<10	ug/kg	TM16/PM8
Benzo(bk)fluoranthene	31										<10	ug/kg	TM16/PM8
Benzo(a)pyrene	19										<10	ug/kg	TM16/PM8
Indeno(123cd)pyrene	<10										<10	ug/kg	TM16/PM8
Dibenzo(ah)anthracene	<10										<10	ug/kg	TM16/PM8
Benzo(ghi)perylene	13										<10	ug/kg	TM16/PM8
Benzo(b)fluoranthene	22										<10	ug/kg	TM16/PM8
Benzo(k)fluoranthene	<10										<10	ug/kg	TM16/PM8
Phthalates													
Bis(2-ethylhexyl) phthalate	<100										<100	ug/kg	TM16/PM8
Butylbenzyl phthalate	<100										<100	ug/kg	TM16/PM8
Di-n-butyl phthalate	<100										<100	ug/kg	TM16/PM8
Di-n-Octyl phthalate	<100										<100	ug/kg	TM16/PM8
Diethyl phthalate	<100										<100	ug/kg	TM16/PM8
Dimethyl phthalate #	<100										<100	ug/kg	TM16/PM8

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All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

SVOC Report : **Solid**

EMT Job No.	19/13288												
EMT Sample No.	70-72												
Sample ID	TP10												
Depth	1.50-2.80										Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V J T												
Sample Date	14/08/2019												
Sample Type	Soil												
Batch Number	1												
Date of Receipt	16/08/2019										LOD/LOR	Units	Method No.
SVOC MS													
Other SVOCs													
1,2-Dichlorobenzene	<10										<10	ug/kg	TM16/PM8
1,2,4-Trichlorobenzene #	<10										<10	ug/kg	TM16/PM8
1,3-Dichlorobenzene	<10										<10	ug/kg	TM16/PM8
1,4-Dichlorobenzene	<10										<10	ug/kg	TM16/PM8
2-Nitroaniline	<10										<10	ug/kg	TM16/PM8
2,4-Dinitrotoluene	<10										<10	ug/kg	TM16/PM8
2,6-Dinitrotoluene	<10										<10	ug/kg	TM16/PM8
3-Nitroaniline	<10										<10	ug/kg	TM16/PM8
4-Bromophenylphenylether #	<10										<10	ug/kg	TM16/PM8
4-Chloroaniline	<10										<10	ug/kg	TM16/PM8
4-Chlorophenylphenylether	<10										<10	ug/kg	TM16/PM8
4-Nitroaniline	<10										<10	ug/kg	TM16/PM8
Azobenzene	<10										<10	ug/kg	TM16/PM8
Bis(2-chloroethoxy)methane	<10										<10	ug/kg	TM16/PM8
Bis(2-chloroethyl)ether	<10										<10	ug/kg	TM16/PM8
Carbazole	<10										<10	ug/kg	TM16/PM8
Dibenzofuran #	<10										<10	ug/kg	TM16/PM8
Hexachlorobenzene	<10										<10	ug/kg	TM16/PM8
Hexachlorobutadiene #	<10										<10	ug/kg	TM16/PM8
Hexachlorocyclopentadiene	<10										<10	ug/kg	TM16/PM8
Hexachloroethane	<10										<10	ug/kg	TM16/PM8
Isophorone #	<10										<10	ug/kg	TM16/PM8
N-nitrosodi-n-propylamine #	<10										<10	ug/kg	TM16/PM8
Nitrobenzene #	<10										<10	ug/kg	TM16/PM8
Surrogate Recovery 2-Fluorobiphenyl	119										<0	%	TM16/PM8
Surrogate Recovery p-Terphenyl-d14	120										<0	%	TM16/PM8

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

SVOC Report : **CEN 10:1 1 Batch**

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288			
EMT Sample No.	1-3	13-15	16-18	19-21	25-27	28-30	37-39	43-45	46-48	58-60			
Sample ID	TP1	TP2	TP3	TP3	TP4	TP4	TP5	TP6	TP7	TP8			
Depth	0.00-1.50	2.80-3.50	0.00-1.50	1.50-2.20	0.00-1.50	1.50-2.50	1.50-2.50	1.50-2.60	0.00-1.50	2.50-3.50	Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	14/08/2019	<>	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	13/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	LOD/LOR	Units	Method No.
SVOC MS													
Phenols													
2-Chlorophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
2-Methylphenol	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
2-Nitrophenol	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
2,4-Dichlorophenol	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
2,4-Dimethylphenol	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
2,4,5-Trichlorophenol	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
2,4,6-Trichlorophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
4-Chloro-3-methylphenol	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
4-Methylphenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
4-Nitrophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	ug/l	TM16/PM30
Pentachlorophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Phenol	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
PAHs													
2-Chloronaphthalene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
2-Methylnaphthalene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Naphthalene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Acenaphthylene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Acenaphthene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Fluorene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Phenanthrene	<0.5	<0.5	<0.5	1.4	<0.5	0.7	0.6	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Anthracene	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Fluoranthene	0.7	<0.5	1.4	4.4	5.8	2.7	1.0	<0.5	0.8	1.7	<0.5	ug/l	TM16/PM30
Pyrene	0.6	<0.5	1.3	3.6	4.4	2.2	0.7	<0.5	0.7	1.2	<0.5	ug/l	TM16/PM30
Benzo(a)anthracene	0.7	<0.5	1.1	1.7	2.2	1.5	0.5	<0.5	0.7	0.9	<0.5	ug/l	TM16/PM30
Chrysene	<0.5	<0.5	0.8	1.3	1.8	1.2	<0.5	<0.5	0.6	0.7	<0.5	ug/l	TM16/PM30
Benzo(bk)fluoranthene	<1	<1	1	1	3	2	<1	<1	1	1	<1	ug/l	TM16/PM30
Benzo(a)pyrene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Indeno(123cd)pyrene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Dibenzo(ah)anthracene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Benzo(ghi)perylene	<0.5	<0.5	0.5	<0.5	1.0	1.0	<0.5	<0.5	0.7	<0.5	<0.5	ug/l	TM16/PM30
Phthalates													
Bis(2-ethylhexyl) phthalate	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM16/PM30
Butylbenzyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Di-n-butyl phthalate	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	ug/l	TM16/PM30
Di-n-Octyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Diethyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Dimethyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

SVOC Report : **CEN 10:1 1 Batch**

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288			
EMT Sample No.	1-3	13-15	16-18	19-21	25-27	28-30	37-39	43-45	46-48	58-60			
Sample ID	TP1	TP2	TP3	TP3	TP4	TP4	TP5	TP6	TP7	TP8			
Depth	0.00-1.50	2.80-3.50	0.00-1.50	1.50-2.20	0.00-1.50	1.50-2.50	1.50-2.50	1.50-2.60	0.00-1.50	2.50-3.50	Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	14/08/2019	<>	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	13/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	LOD/LOR	Units	Method No.
SVOC MS													
Other SVOCs													
1,2-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
1,2,4-Trichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
1,3-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
1,4-Dichlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
2-Nitroaniline	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
2,4-Dinitrotoluene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
2,6-Dinitrotoluene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
3-Nitroaniline	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
4-Bromophenylphenylether	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
4-Chloroaniline	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
4-Chlorophenylphenylether	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
4-Nitroaniline	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Azobenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Bis(2-chloroethoxy)methane	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Bis(2-chloroethyl)ether	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Carbazole	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Dibenzofuran	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Hexachlorobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Hexachlorobutadiene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Hexachlorocyclopentadiene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Hexachloroethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Isophorone	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
N-nitrosodi-n-propylamine	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Nitrobenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM16/PM30
Surrogate Recovery 2-Fluorobiphenyl	103	100	94	87	97	96	92	89	98	81	<0	%	TM16/PM30
Surrogate Recovery p-Terphenyl-d14	99	97	93	86	99	100	86	90	93	78	<0	%	TM16/PM30

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

SVOC Report : **CEN 10:1 1 Batch**

EMT Job No.	19/13288	19/13288											
EMT Sample No.	61-63	70-72											
Sample ID	TP9	TP10											
Depth	0.00-1.50	1.50-2.80											
COC No / misc													
Containers	V J T	V J T											
Sample Date	14/08/2019	14/08/2019											
Sample Type	Soil	Soil											
Batch Number	1	1											
Date of Receipt	16/08/2019	16/08/2019											

Please see attached notes for all abbreviations and acronyms

			LOD/LOR	Units	Method No.
SVOC MS					
Phenols					
2-Chlorophenol	<1	<1	<1	ug/l	TM16/PM30
2-Methylphenol	<0.5	<0.5	<0.5	ug/l	TM16/PM30
2-Nitrophenol	<0.5	<0.5	<0.5	ug/l	TM16/PM30
2,4-Dichlorophenol	<0.5	<0.5	<0.5	ug/l	TM16/PM30
2,4-Dimethylphenol	<1	<1	<1	ug/l	TM16/PM30
2,4,5-Trichlorophenol	<0.5	<0.5	<0.5	ug/l	TM16/PM30
2,4,6-Trichlorophenol	<1	<1	<1	ug/l	TM16/PM30
4-Chloro-3-methylphenol	<0.5	<0.5	<0.5	ug/l	TM16/PM30
4-Methylphenol	<1	<1	<1	ug/l	TM16/PM30
4-Nitrophenol	<10	<10	<10	ug/l	TM16/PM30
Pentachlorophenol	<1	<1	<1	ug/l	TM16/PM30
Phenol	<1	<1	<1	ug/l	TM16/PM30
PAHs					
2-Chloronaphthalene	<1	<1	<1	ug/l	TM16/PM30
2-Methylnaphthalene	<1	<1	<1	ug/l	TM16/PM30
Naphthalene	<1	<1	<1	ug/l	TM16/PM30
Acenaphthylene	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Acenaphthene	<1	<1	<1	ug/l	TM16/PM30
Fluorene	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Phenanthrene	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Anthracene	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Fluoranthene	0.8	<0.5	<0.5	ug/l	TM16/PM30
Pyrene	0.7	<0.5	<0.5	ug/l	TM16/PM30
Benzo(a)anthracene	0.7	<0.5	<0.5	ug/l	TM16/PM30
Chrysene	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Benzo(bk)fluoranthene	<1	<1	<1	ug/l	TM16/PM30
Benzo(a)pyrene	<1	<1	<1	ug/l	TM16/PM30
Indeno(123cd)pyrene	<1	<1	<1	ug/l	TM16/PM30
Dibenzo(ah)anthracene	<0.5	<0.5	<0.5	ug/l	TM16/PM30
Benzo(ghi)perylene	0.5	<0.5	<0.5	ug/l	TM16/PM30
Phthalates					
Bis(2-ethylhexyl) phthalate	<5	<5	<5	ug/l	TM16/PM30
Butylbenzyl phthalate	<1	<1	<1	ug/l	TM16/PM30
Di-n-butyl phthalate	<1.5	<1.5	<1.5	ug/l	TM16/PM30
Di-n-Octyl phthalate	<1	<1	<1	ug/l	TM16/PM30
Diethyl phthalate	<1	<1	<1	ug/l	TM16/PM30
Dimethyl phthalate	<1	<1	<1	ug/l	TM16/PM30

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

SVOC Report : **CEN 10:1 1 Batch**

EMT Job No.	19/13288	19/13288											
EMT Sample No.	61-63	70-72											
Sample ID	TP9	TP10											
Depth	0.00-1.50	1.50-2.80									Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V J T	V J T											
Sample Date	14/08/2019	14/08/2019											
Sample Type	Soil	Soil											
Batch Number	1	1											
Date of Receipt	16/08/2019	16/08/2019									LOD/LOR	Units	Method No.
SVOC MS													
Other SVOCs													
1,2-Dichlorobenzene	<1	<1									<1	ug/l	TM16/PM30
1,2,4-Trichlorobenzene	<1	<1									<1	ug/l	TM16/PM30
1,3-Dichlorobenzene	<1	<1									<1	ug/l	TM16/PM30
1,4-Dichlorobenzene	<1	<1									<1	ug/l	TM16/PM30
2-Nitroaniline	<1	<1									<1	ug/l	TM16/PM30
2,4-Dinitrotoluene	<0.5	<0.5									<0.5	ug/l	TM16/PM30
2,6-Dinitrotoluene	<1	<1									<1	ug/l	TM16/PM30
3-Nitroaniline	<1	<1									<1	ug/l	TM16/PM30
4-Bromophenylphenylether	<1	<1									<1	ug/l	TM16/PM30
4-Chloroaniline	<1	<1									<1	ug/l	TM16/PM30
4-Chlorophenylphenylether	<1	<1									<1	ug/l	TM16/PM30
4-Nitroaniline	<0.5	<0.5									<0.5	ug/l	TM16/PM30
Azobenzene	<0.5	<0.5									<0.5	ug/l	TM16/PM30
Bis(2-chloroethoxy)methane	<0.5	<0.5									<0.5	ug/l	TM16/PM30
Bis(2-chloroethyl)ether	<1	<1									<1	ug/l	TM16/PM30
Carbazole	<0.5	<0.5									<0.5	ug/l	TM16/PM30
Dibenzofuran	<0.5	<0.5									<0.5	ug/l	TM16/PM30
Hexachlorobenzene	<1	<1									<1	ug/l	TM16/PM30
Hexachlorobutadiene	<1	<1									<1	ug/l	TM16/PM30
Hexachlorocyclopentadiene	<1	<1									<1	ug/l	TM16/PM30
Hexachloroethane	<1	<1									<1	ug/l	TM16/PM30
Isophorone	<0.5	<0.5									<0.5	ug/l	TM16/PM30
N-nitrosodi-n-propylamine	<0.5	<0.5									<0.5	ug/l	TM16/PM30
Nitrobenzene	<1	<1									<1	ug/l	TM16/PM30
Surrogate Recovery 2-Fluorobiphenyl	93	82									<0	%	TM16/PM30
Surrogate Recovery p-Terphenyl-d14	95	74									<0	%	TM16/PM30

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

VOC Report : **Solid**

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	LOD/LOR	Units	Method No.
EMT Sample No.	1-3	4-6	10-12	13-15	16-18	19-21	22-24	25-27	28-30	34-36			
Sample ID	TP1	TP1	TP2	TP2	TP3	TP3	TP3	TP4	TP4	TP5			
Depth	0.00-1.50	1.50-3.00		2.80-3.50	0.00-1.50	1.50-2.20	2.20-3.80	0.00-1.50	1.50-2.50	0.00-1.50			
COC No / misc			FINE STONEY SOIL										
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	14/08/2019	14/08/2019	13/08/2019	<>	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019			
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10
Methyl Tertiary Butyl Ether #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Vinyl Chloride	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15_A/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/kg	TM15/PM10
Chloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10
Trichlorofluoromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	ug/kg	TM15/PM10
Dichloromethane (DCM) #	47	<30	49	<30	50	44	43	57	85	70	<30	ug/kg	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	8	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	<3	<3	3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
2,2-Dichloropropane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
Bromochloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Chloroform #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,1,1-Trichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Carbon tetrachloride #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
1,2-Dichloroethane #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
Benzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Trichloroethene (TCE) #	<3	<3	<3	<3	17	18	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,2-Dichloropropane #	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	ug/kg	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Bromodichloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
cis-1-3-Dichloropropene	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
Toluene #	<3	<3	<3	8	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
trans-1-3-Dichloropropene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,1,2-Trichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	58	80	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,3-Dichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Dibromochloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,2-Dibromoethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Chlorobenzene #	6	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,1,1,2-Tetrachloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Ethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
m/p-Xylene #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM15/PM10
o-Xylene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Styrene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15_A/PM10
Bromoform	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,1,2,2-Tetrachloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
Bromobenzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/kg	TM15/PM10
1,2,3-Trichloropropane #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
Propylbenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
2-Chlorotoluene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
4-Chlorotoluene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/kg	TM15/PM10
tert-Butylbenzene #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM15/PM10
1,2,4-Trimethylbenzene #	<6	<6	<6	<6	8	16	<6	<6	<6	<6	<6	ug/kg	TM15/PM10
sec-Butylbenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
4-Isopropyltoluene #	<4	<4	<4	<4	<4	7	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
1,3-Dichlorobenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
1,4-Dichlorobenzene #	9	<4	15	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
n-Butylbenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
1,2-Dichlorobenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
1,2-Dibromo-3-chloropropane #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
1,2,4-Trichlorobenzene #	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	ug/kg	TM15/PM10
Hexachlorobutadiene	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/kg	TM15/PM10
Naphthalene	<27	<27	<27	<27	<27	45	<27	<27	<27	<27	<27	ug/kg	TM15/PM10
1,2,3-Trichlorobenzene #	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	96	89	92	104	82	85	112	96	101	96	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	84	68	75	61	70	68	89	79	90	85	<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

VOC Report : **Solid**

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288			
EMT Sample No.	37-39	40-42	43-45	46-48	49-51	55-57	58-60	61-63	64-66	67-69			
Sample ID	TP5	TP6	TP6	TP7	TP7	TP8	TP8	TP9	TP9	TP10			
Depth	1.50-2.50	0.00-1.50	1.50-2.60	0.00-1.50	1.50-3.00	1.60-2.50	2.50-3.50	0.00-1.50	1.50-3.00	0.00-1.50	Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	13/08/2019	13/08/2019	14/08/2019	14/08/2019	14/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	LOD/LOR	Units	Method No.
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<10 AA	<2	ug/kg	TM15/PM10
Methyl Tertiary Butyl Ether #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<10 AA	<2	ug/kg	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
Vinyl Chloride	<2	<2	<2	<2	<2	<2	<2	<2	<2	<10 AA	<2	ug/kg	TM15_A/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5 AA	<1	ug/kg	TM15/PM10
Chloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<10 AA	<2	ug/kg	TM15/PM10
Trichlorofluoromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2	<10 AA	<2	ug/kg	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<6	<6	<6	<6	<6	<6	<6	<6	<6	<30 AA	<6	ug/kg	TM15/PM10
Dichloromethane (DCM) #	<30	123	<30	67	74	69	<30	40	132	<150 AA	<30	ug/kg	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
2,2-Dichloropropane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<20 AA	<4	ug/kg	TM15/PM10
Bromochloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
Chloroform #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
1,1,1-Trichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
Carbon tetrachloride #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<20 AA	<4	ug/kg	TM15/PM10
1,2-Dichloroethane #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<20 AA	<4	ug/kg	TM15/PM10
Benzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
Trichloroethene (TCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
1,2-Dichloropropane #	<6	<6	<6	<6	<6	<6	<6	<6	<6	<30 AA	<6	ug/kg	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
Bromodichloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
cis-1-3-Dichloropropene	<4	<4	<4	<4	<4	<4	<4	<4	<4	<20 AA	<4	ug/kg	TM15/PM10
Toluene #	<3	7	<3	5	<3	<3	<3	<3	8	<15 AA	<3	ug/kg	TM15/PM10
trans-1-3-Dichloropropene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
1,1,2-Trichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
1,3-Dichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
Dibromochloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
1,2-Dibromoethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
Chlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
1,1,1,2-Tetrachloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
Ethylbenzene #	<3	<3	<3	3	<3	<3	<3	<3	<3	19 AA	<3	ug/kg	TM15/PM10
m/p-Xylene #	<5	7	<5	14	6	<5	<5	<5	<5	79 AA	<5	ug/kg	TM15/PM10
o-Xylene #	<3	<3	<3	6	<3	<3	<3	<3	<3	44 AA	<3	ug/kg	TM15/PM10
Styrene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15_A/PM10
Bromoform	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
1,1,2,2-Tetrachloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
Bromobenzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<10 AA	<2	ug/kg	TM15/PM10
1,2,3-Trichloropropane #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<20 AA	<4	ug/kg	TM15/PM10
Propylbenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<20 AA	<4	ug/kg	TM15/PM10
2-Chlorotoluene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
4-Chlorotoluene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<15 AA	<3	ug/kg	TM15/PM10
tert-Butylbenzene #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<25 AA	<5	ug/kg	TM15/PM10
1,2,4-Trimethylbenzene #	<6	<6	<6	<6	<6	<6	<6	<6	<6	<30 AA	<6	ug/kg	TM15/PM10
sec-Butylbenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<20 AA	<4	ug/kg	TM15/PM10
4-Isopropyltoluene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<20 AA	<4	ug/kg	TM15/PM10
1,3-Dichlorobenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<20 AA	<4	ug/kg	TM15/PM10
1,4-Dichlorobenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<20 AA	<4	ug/kg	TM15/PM10
n-Butylbenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<20 AA	<4	ug/kg	TM15/PM10
1,2-Dichlorobenzene #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<20 AA	<4	ug/kg	TM15/PM10
1,2-Dibromo-3-chloropropane #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<20 AA	<4	ug/kg	TM15/PM10
1,2,4-Trichlorobenzene #	<7	<7	<7	<7	<7	<7	<7	<7	<7	<35 AA	<7	ug/kg	TM15/PM10
Hexachlorobutadiene	<4	<4	<4	<4	<4	<4	<4	<4	<4	<20 AA	<4	ug/kg	TM15/PM10
Naphthalene	<27	<27	<27	<27	<27	<27	<27	<27	<27	<135 AA	<27	ug/kg	TM15/PM10
1,2,3-Trichlorobenzene #	<7	<7	<7	<7	<7	<7	<7	<7	<7	<35 AA	<7	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	101	95	81	88	83	86	92	91	86	98 AA	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	95	64	56	70	81	75	78	73	56	78 AA	<0	%	TM15/PM10

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

VOC Report : **Solid**

EMT Job No.	19/13288												
EMT Sample No.	70-72												
Sample ID	TP10												
Depth	1.50-2.80										Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V J T												
Sample Date	14/08/2019												
Sample Type	Soil												
Batch Number	1												
Date of Receipt	16/08/2019										LOD/LOR	Units	Method No.
VOC MS													
Dichlorodifluoromethane	<2										<2	ug/kg	TM15/PM10
Methyl Tertiary Butyl Ether #	<2										<2	ug/kg	TM15/PM10
Chloromethane #	<3										<3	ug/kg	TM15/PM10
Vinyl Chloride	<2										<2	ug/kg	TM15_A/PM10
Bromomethane	<1										<1	ug/kg	TM15/PM10
Chloroethane #	<2										<2	ug/kg	TM15/PM10
Trichlorofluoromethane #	<2										<2	ug/kg	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<6										<6	ug/kg	TM15/PM10
Dichloromethane (DCM) #	63										<30	ug/kg	TM15/PM10
trans-1-2-Dichloroethene #	<3										<3	ug/kg	TM15/PM10
1,1-Dichloroethane #	<3										<3	ug/kg	TM15/PM10
cis-1-2-Dichloroethene #	<3										<3	ug/kg	TM15/PM10
2,2-Dichloropropane	<4										<4	ug/kg	TM15/PM10
Bromochloromethane #	<3										<3	ug/kg	TM15/PM10
Chloroform #	<3										<3	ug/kg	TM15/PM10
1,1,1-Trichloroethane #	<3										<3	ug/kg	TM15/PM10
1,1-Dichloropropene #	<3										<3	ug/kg	TM15/PM10
Carbon tetrachloride #	<4										<4	ug/kg	TM15/PM10
1,2-Dichloroethane #	<4										<4	ug/kg	TM15/PM10
Benzene #	<3										<3	ug/kg	TM15/PM10
Trichloroethene (TCE) #	<3										<3	ug/kg	TM15/PM10
1,2-Dichloropropane #	<6										<6	ug/kg	TM15/PM10
Dibromomethane #	<3										<3	ug/kg	TM15/PM10
Bromodichloromethane #	<3										<3	ug/kg	TM15/PM10
cis-1-3-Dichloropropene	<4										<4	ug/kg	TM15/PM10
Toluene #	<3										<3	ug/kg	TM15/PM10
trans-1-3-Dichloropropene	<3										<3	ug/kg	TM15/PM10
1,1,2-Trichloroethane #	<3										<3	ug/kg	TM15/PM10
Tetrachloroethene (PCE) #	<3										<3	ug/kg	TM15/PM10
1,3-Dichloropropane #	<3										<3	ug/kg	TM15/PM10
Dibromochloromethane #	<3										<3	ug/kg	TM15/PM10
1,2-Dibromoethane #	<3										<3	ug/kg	TM15/PM10
Chlorobenzene #	<3										<3	ug/kg	TM15/PM10
1,1,1,2-Tetrachloroethane #	<3										<3	ug/kg	TM15/PM10
Ethylbenzene #	7										<3	ug/kg	TM15/PM10
m/p-Xylene #	54										<5	ug/kg	TM15/PM10
o-Xylene #	3										<3	ug/kg	TM15/PM10
Styrene	<3										<3	ug/kg	TM15_A/PM10
Bromoform	<3										<3	ug/kg	TM15/PM10
Isopropylbenzene #	<3										<3	ug/kg	TM15/PM10
1,1,2,2-Tetrachloroethane #	<3										<3	ug/kg	TM15/PM10
Bromobenzene	<2										<2	ug/kg	TM15/PM10
1,2,3-Trichloropropane #	<4										<4	ug/kg	TM15/PM10
Propylbenzene #	7										<4	ug/kg	TM15/PM10
2-Chlorotoluene	<3										<3	ug/kg	TM15/PM10
1,3,5-Trimethylbenzene #	5										<3	ug/kg	TM15/PM10
4-Chlorotoluene	<3										<3	ug/kg	TM15/PM10
tert-Butylbenzene #	<5										<5	ug/kg	TM15/PM10
1,2,4-Trimethylbenzene #	80										<6	ug/kg	TM15/PM10
sec-Butylbenzene #	<4										<4	ug/kg	TM15/PM10
4-Isopropyltoluene #	<4										<4	ug/kg	TM15/PM10
1,3-Dichlorobenzene #	<4										<4	ug/kg	TM15/PM10
1,4-Dichlorobenzene #	<4										<4	ug/kg	TM15/PM10
n-Butylbenzene #	<4										<4	ug/kg	TM15/PM10
1,2-Dichlorobenzene #	<4										<4	ug/kg	TM15/PM10
1,2-Dibromo-3-chloropropane #	<4										<4	ug/kg	TM15/PM10
1,2,4-Trichlorobenzene #	<7										<7	ug/kg	TM15/PM10
Hexachlorobutadiene	<4										<4	ug/kg	TM15/PM10
Naphthalene	<27										<27	ug/kg	TM15/PM10
1,2,3-Trichlorobenzene #	<7										<7	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	88										<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	76										<0	%	TM15/PM10

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

VOC Report : **CEN 10:1 1 Batch**

EMT Job No.	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288			
EMT Sample No.	1-3	13-15	16-18	19-21	25-27	28-30	37-39	43-45	46-48	58-60			
Sample ID	TP1	TP2	TP3	TP3	TP4	TP4	TP5	TP6	TP7	TP8			
Depth	0.00-1.50	2.80-3.50	0.00-1.50	1.50-2.20	0.00-1.50	1.50-2.50	1.50-2.50	1.50-2.60	0.00-1.50	2.50-3.50	Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	14/08/2019	<>	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	13/08/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	LOD/LOR	Units	Method No.
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
Methyl Tertiary Butyl Ether	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM69
Chloromethane	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
Vinyl Chloride	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	ug/l	TM15/PM69
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM69
Chloroethane	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
Trichlorofluoromethane	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
1,1-Dichloroethene (1,1 DCE)	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
Dichloromethane (DCM)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM15/PM69
trans-1-2-Dichloroethene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
1,1-Dichloroethane	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
cis-1-2-Dichloroethene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM69
Bromochloromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
Chloroform	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
1,1,1-Trichloroethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
1,1-Dichloropropene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
Carbon tetrachloride	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
1,2-Dichloroethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
Benzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ug/l	TM15/PM69
Trichloroethene (TCE)	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
1,2-Dichloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
Dibromomethane	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
Bromodichloromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
Toluene	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/l	TM15/PM69
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
1,1,2-Trichloroethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
Tetrachloroethene (PCE)	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
1,3-Dichloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
Dibromochloromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
1,2-Dibromoethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
Chlorobenzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
1,1,1,2-Tetrachloroethane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
Ethylbenzene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM69
m/p-Xylene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
o-Xylene	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	ug/l	TM15/PM69
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
Bromoform	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
Isopropylbenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	ug/l	TM15/PM69
Bromobenzene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
1,2,3-Trichloropropane	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
Propylbenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
2-Chlorotoluene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
1,3,5-Trimethylbenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
4-Chlorotoluene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
tert-Butylbenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
1,2,4-Trimethylbenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
sec-Butylbenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
4-Isopropyltoluene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
1,3-Dichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
1,4-Dichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
n-Butylbenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
1,2-Dichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	ug/l	TM15/PM69
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	ug/l	TM15/PM69
Surrogate Recovery Toluene D8	99	99	106	105	112	100	100	98	96	96	<0	%	TM15/PM69
Surrogate Recovery 4-Bromofluorobenzene	96	99	91	90	91	97	91	95	100	87	<0	%	TM15/PM69

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

VOC Report : **CEN 10:1 1 Batch**

EMT Job No.	19/13288	19/13288											
EMT Sample No.	61-63	70-72											
Sample ID	TP9	TP10											
Depth	0.00-1.50	1.50-2.80											
COC No / misc													
Containers	V J T	V J T											
Sample Date	14/08/2019	14/08/2019											
Sample Type	Soil	Soil											
Batch Number	1	1											
Date of Receipt	16/08/2019	16/08/2019											

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
VOC MS													
Dichlorodifluoromethane	<2	<2									<2	ug/l	TM15/PM69
Methyl Tertiary Butyl Ether	<1	<1									<1	ug/l	TM15/PM69
Chloromethane	<3	<3									<3	ug/l	TM15/PM69
Vinyl Chloride	<0.1	<0.1									<0.1	ug/l	TM15/PM69
Bromomethane	<1	<1									<1	ug/l	TM15/PM69
Chloroethane	<3	<3									<3	ug/l	TM15/PM69
Trichlorofluoromethane	<3	<3									<3	ug/l	TM15/PM69
1,1-Dichloroethene (1,1 DCE)	<3	<3									<3	ug/l	TM15/PM69
Dichloromethane (DCM)	<5	<5									<5	ug/l	TM15/PM69
trans-1-2-Dichloroethene	<3	<3									<3	ug/l	TM15/PM69
1,1-Dichloroethane	<3	<3									<3	ug/l	TM15/PM69
cis-1-2-Dichloroethene	<3	<3									<3	ug/l	TM15/PM69
2,2-Dichloropropane	<1	<1									<1	ug/l	TM15/PM69
Bromochloromethane	<2	<2									<2	ug/l	TM15/PM69
Chloroform	<2	<2									<2	ug/l	TM15/PM69
1,1,1-Trichloroethane	<2	<2									<2	ug/l	TM15/PM69
1,1-Dichloropropene	<3	<3									<3	ug/l	TM15/PM69
Carbon tetrachloride	<2	<2									<2	ug/l	TM15/PM69
1,2-Dichloroethane	<2	<2									<2	ug/l	TM15/PM69
Benzene	<0.5	<0.5									<0.5	ug/l	TM15/PM69
Trichloroethene (TCE)	<3	<3									<3	ug/l	TM15/PM69
1,2-Dichloropropane	<2	<2									<2	ug/l	TM15/PM69
Dibromomethane	<3	<3									<3	ug/l	TM15/PM69
Bromodichloromethane	<2	<2									<2	ug/l	TM15/PM69
cis-1-3-Dichloropropene	<2	<2									<2	ug/l	TM15/PM69
Toluene	<5	<5									<5	ug/l	TM15/PM69
trans-1-3-Dichloropropene	<2	<2									<2	ug/l	TM15/PM69
1,1,2-Trichloroethane	<2	<2									<2	ug/l	TM15/PM69
Tetrachloroethene (PCE)	<3	<3									<3	ug/l	TM15/PM69
1,3-Dichloropropane	<2	<2									<2	ug/l	TM15/PM69
Dibromochloromethane	<2	<2									<2	ug/l	TM15/PM69
1,2-Dibromoethane	<2	<2									<2	ug/l	TM15/PM69
Chlorobenzene	<2	<2									<2	ug/l	TM15/PM69
1,1,1,2-Tetrachloroethane	<2	<2									<2	ug/l	TM15/PM69
Ethylbenzene	<1	<1									<1	ug/l	TM15/PM69
m/p-Xylene	<2	<2									<2	ug/l	TM15/PM69
o-Xylene	<1	<1									<1	ug/l	TM15/PM69
Styrene	<2	<2									<2	ug/l	TM15/PM69
Bromoform	<2	<2									<2	ug/l	TM15/PM69
Isopropylbenzene	<3	<3									<3	ug/l	TM15/PM69
1,1,2,2-Tetrachloroethane	<4	<4									<4	ug/l	TM15/PM69
Bromobenzene	<2	<2									<2	ug/l	TM15/PM69
1,2,3-Trichloropropane	<3	<3									<3	ug/l	TM15/PM69
Propylbenzene	<3	<3									<3	ug/l	TM15/PM69
2-Chlorotoluene	<3	<3									<3	ug/l	TM15/PM69
1,3,5-Trimethylbenzene	<3	<3									<3	ug/l	TM15/PM69
4-Chlorotoluene	<3	<3									<3	ug/l	TM15/PM69
tert-Butylbenzene	<3	<3									<3	ug/l	TM15/PM69
1,2,4-Trimethylbenzene	<3	<3									<3	ug/l	TM15/PM69
sec-Butylbenzene	<3	<3									<3	ug/l	TM15/PM69
4-Isopropyltoluene	<3	<3									<3	ug/l	TM15/PM69
1,3-Dichlorobenzene	<3	<3									<3	ug/l	TM15/PM69
1,4-Dichlorobenzene	<3	<3									<3	ug/l	TM15/PM69
n-Butylbenzene	<3	<3									<3	ug/l	TM15/PM69
1,2-Dichlorobenzene	<3	<3									<3	ug/l	TM15/PM69
1,2-Dibromo-3-chloropropane	<2	<2									<2	ug/l	TM15/PM69
1,2,4-Trichlorobenzene	<3	<3									<3	ug/l	TM15/PM69
Hexachlorobutadiene	<3	<3									<3	ug/l	TM15/PM69
Naphthalene	<2	<2									<2	ug/l	TM15/PM69
1,2,3-Trichlorobenzene	<3	<3									<3	ug/l	TM15/PM69
Surrogate Recovery Toluene D8	95	111									<0	%	TM15/PM69
Surrogate Recovery 4-Bromofluorobenzene	93	87									<0	%	TM15/PM69

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All solid results are expressed on a dry weight basis unless stated otherwise.

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	81.1
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

EMT Job No	**19/13288**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**75**			
Client Sample No	**TP12**			
Depth/Other	**0.00-1.50**	**Inert**	**Stable Non-reactive**	**Hazardous**
Sample Date	**14/08/2019**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	12.07	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	237	500	-	-
PAH Sum of 6 (mg/kg)	7.18	-	-	-
PAH Sum of 17 (mg/kg)	13.04	100	-	-
Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.081	0.5	2	25
Barium	0.23	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.05	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.03	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	19	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	24	1000	20000	50000
Total Dissolved Solids	880	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	79.5
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

EMT Job No	**19/13288**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**78**			
Client Sample No	**TP12**			
Depth/Other	**1.50-3.00**	**Inert**	**Stable Non-reactive**	**Hazardous**
Sample Date	**14/08/2019**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	5.86	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	97	500	-	-
PAH Sum of 6 (mg/kg)	4.84	-	-	-
PAH Sum of 17 (mg/kg)	9.40	100	-	-
Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.108	0.5	2	25
Barium	0.24	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.17	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.05	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	13	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	76	1000	20000	50000
Total Dissolved Solids	1010	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	84.7
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

EMT Job No	**19/13288**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**84**			
Client Sample No	**TP19**			
Depth/Other	**0.00-0.70**	**Inert**	**Stable Non-reactive**	**Hazardous**
Sample Date	**14/08/2019**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)		3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	212	500	-	-
PAH Sum of 6 (mg/kg)	12.48	-	-	-
PAH Sum of 17 (mg/kg)	24.34	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.42	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	0.150	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.07	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.06	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.13	4	50	200
Chloride	10	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	38	1000	20000	50000
Total Dissolved Solids	870	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	85.1
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.85

		Landfill Waste Acceptance Criteria Limits		
EMT Job No	**19/13464**			
Sample No	**3**			
Client Sample No	**TP11**			
Depth/Other	**0.00-1.50**	**Inert**	**Stable Non-reactive**	**Hazardous**
Sample Date	**16/08/2019**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	22.09	3	5	6
Sum of BTEX (mg/kg)	0.031	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	67	500	-	-
PAH Sum of 6 (mg/kg)	3.58	-	-	-
PAH Sum of 17 (mg/kg)	8.99	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.460	0.5	2	25
Barium	0.06	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	0.064	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.06	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	0.12	0.5	10	50
Antimony	0.04	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	5	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	437	1000	20000	50000
Total Dissolved Solids	1290	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	63.5
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

EMT Job No	**19/13464**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**6**			
Client Sample No	**TP11**			
Depth/Other	**1.50-2.70**	**Inert**	**Stable Non-reactive**	**Hazardous**
Sample Date	**16/08/2019**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	31.39	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	<0.22	-	-	-
PAH Sum of 17 (mg/kg)	<0.64	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.060	0.5	2	25
Barium	0.25	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.03	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	11	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	144	1000	20000	50000
Total Dissolved Solids	900	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

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Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	87.9
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

EMT Job No	**19/13464**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**9**			
Client Sample No	**TP13**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**0.00-1.50**			
Sample Date	**16/08/2019**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)		3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	37	500	-	-
PAH Sum of 6 (mg/kg)	2.30	-	-	-
PAH Sum of 17 (mg/kg)	4.50	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.075	0.5	2	25
Barium	0.20	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.08	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.03	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	3	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	107	1000	20000	50000
Total Dissolved Solids	770	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	76.9
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

		Landfill Waste Acceptance Criteria Limits		
EMT Job No	**19/13464**			
Sample No	**12**			
Client Sample No	**TP13**			
Depth/Other	**1.50-2.70**	**Inert**	**Stable Non-reactive**	**Hazardous**
Sample Date	**16/08/2019**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	2.90	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	0.38	-	-	-
PAH Sum of 17 (mg/kg)	0.94	100	-	-
Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.044	0.5	2	25
Barium	<0.03	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.07	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.03	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	8	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	68	1000	20000	50000
Total Dissolved Solids	710	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

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All solid results are expressed on a dry weight basis unless stated otherwise.

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	90.6
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

EMT Job No	**19/13464**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**16**			
Client Sample No	**TP14**			
Depth/Other	**0.00-1.50**	**Inert**	**Stable Non-reactive**	**Hazardous**
Sample Date	**15/08/2019**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.41	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	281	500	-	-
PAH Sum of 6 (mg/kg)	0.69	-	-	-
PAH Sum of 17 (mg/kg)	1.30	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.040	0.5	2	25
Barium	0.03	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.17	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.03	4	50	200
Chloride	8	800	15000	25000
Fluoride	5	10	150	500
Sulphate as SO4	59	1000	20000	50000
Total Dissolved Solids	590	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	82.0
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

		Landfill Waste Acceptance Criteria Limits		
EMT Job No	**19/13464**			
Sample No	**19**			
Client Sample No	**TP14**			
Depth/Other	**1.50-3.00**	**Inert**	**Stable Non-reactive**	**Hazardous**
Sample Date	**15/08/2019**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.53	3	5	6
Sum of BTEX (mg/kg)	0.030	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	0.71	-	-	-
PAH Sum of 17 (mg/kg)	1.42	100	-	-
Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.047	0.5	2	25
Barium	<0.03	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.16	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	37	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	217	1000	20000	50000
Total Dissolved Solids	1030	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	91.7
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

EMT Job No	**19/13464**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**22**			
Client Sample No	**TP15**			
Depth/Other	**0.00-1.50**	**Inert**	**Stable Non-reactive**	**Hazardous**
Sample Date	**15/08/2019**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	1.02	3	5	6
Sum of BTEX (mg/kg)	0.122	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	1161	500	-	-
PAH Sum of 6 (mg/kg)	2.35	-	-	-
PAH Sum of 17 (mg/kg)	5.66	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.049	0.5	2	25
Barium	0.12	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.10	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.05	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	4	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	49	1000	20000	50000
Total Dissolved Solids	1080	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	60	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	80.3
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

EMT Job No	**19/13464**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**25**			
Client Sample No	**TP15**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.50-3.00**			
Sample Date	**15/08/2019**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	2.46	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	3.18	-	-	-
PAH Sum of 17 (mg/kg)	6.14	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.049	0.5	2	25
Barium	<0.03	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.17	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	5	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	314	1000	20000	50000
Total Dissolved Solids	1160	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	85.4
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

		Landfill Waste Acceptance Criteria Limits		
EMT Job No	**19/13464**			
Sample No	**28**			
Client Sample No	**TP16**			
Depth/Other	**0.00-1.50**	**Inert**	**Stable Non-reactive**	**Hazardous**
Sample Date	**15/08/2019**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	1.55	3	5	6
Sum of BTEX (mg/kg)	3.276	6	-	-
Sum of 7 PCBs (mg/kg)	<0.175	1	-	-
Mineral Oil (mg/kg)	1726	500	-	-
PAH Sum of 6 (mg/kg)	1.59	-	-	-
PAH Sum of 17 (mg/kg)	12.45	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.138	0.5	2	25
Barium	0.22	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.19	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.09	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.07	4	50	200
Chloride	4	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	205	1000	20000	50000
Total Dissolved Solids	1320	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	90	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	80.8
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.85

EMT Job No	**19/13464**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**31**			
Client Sample No	**TP16**			
Depth/Other	**1.50-1.90**	**Inert**	**Stable Non-reactive**	**Hazardous**
Sample Date	**15/08/2019**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	2.06	3	5	6
Sum of BTEX (mg/kg)	92.055	6	-	-
Sum of 7 PCBs (mg/kg)	<0.175	1	-	-
Mineral Oil (mg/kg)	7473	500	-	-
PAH Sum of 6 (mg/kg)	<2.20	-	-	-
PAH Sum of 17 (mg/kg)	33.65	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.175	0.5	2	25
Barium	0.24	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.36	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	0.22	0.5	10	50
Antimony	0.10	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	19	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	74	1000	20000	50000
Total Dissolved Solids	1191	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	100	500	800	1000

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Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	88.7
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

EMT Job No	**19/13464**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**34**			
Client Sample No	**TP17**			
Depth/Other	**0.00-1.50**	**Inert**	**Stable Non-reactive**	**Hazardous**
Sample Date	**15/08/2019**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	1.55	3	5	6
Sum of BTEX (mg/kg)	0.042	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	65	500	-	-
PAH Sum of 6 (mg/kg)	18.40	-	-	-
PAH Sum of 17 (mg/kg)	34.84	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.064	0.5	2	25
Barium	1.02	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.06	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.04	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	<3	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	88	1000	20000	50000
Total Dissolved Solids	750	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

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Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	84.9
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

EMT Job No	**19/13464**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**37**			
Client Sample No	**TP17**			
Depth/Other	**1.50-1.90**	**Inert**	**Stable Non-reactive**	**Hazardous**
Sample Date	**15/08/2019**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.98	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	2.25	-	-	-
PAH Sum of 17 (mg/kg)	3.91	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.092	0.5	2	25
Barium	0.04	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.02	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	5	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	41	1000	20000	50000
Total Dissolved Solids	740	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	86.1
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

EMT Job No	**19/13464**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**40**			
Client Sample No	**TP18**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**0.00-1.50**			
Sample Date	**16/08/2019**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.95	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	2.09	-	-	-
PAH Sum of 17 (mg/kg)	3.57	100	-	-
Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.408	0.5	2	25
Barium	0.05	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.11	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	0.08	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	4	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	11	1000	20000	50000
Total Dissolved Solids	600	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

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All solid results are expressed on a dry weight basis unless stated otherwise.

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	82.7
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

		Landfill Waste Acceptance Criteria Limits		
EMT Job No	**19/13464**			
Sample No	**43**			
Client Sample No	**TP18**			
Depth/Other	**1.50-2.70**	**Inert**	**Stable Non-reactive**	**Hazardous**
Sample Date	**16/08/2019**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.47	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	<0.22	-	-	-
PAH Sum of 17 (mg/kg)	<0.64	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.12	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.08	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	4	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	111	1000	20000	50000
Total Dissolved Solids	1100	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	86.1
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

EMT Job No	**19/13464**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**46**			
Client Sample No	**TP20**			
Depth/Other	**0.00-0.75**	**Inert**	**Stable Non-reactive**	**Hazardous**
Sample Date	**16/08/2019**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	3.64	3	5	6
Sum of BTEX (mg/kg)	0.049	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	186	500	-	-
PAH Sum of 6 (mg/kg)	3.19	-	-	-
PAH Sum of 17 (mg/kg)	5.59	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.61	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	0.144	0.5	10	70
Copper	0.40	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.06	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	0.19	0.5	10	50
Antimony	0.03	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	10	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	121	1000	20000	50000
Total Dissolved Solids	3942	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	50	500	800	1000

Client Name: Golder Associates Ltd

Reference: CMT

Location:

Contact: Ruth Treacy

Matrix : Solid

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	EPH Interpretation
19/13288	1	TP12	0.00-1.50	73-75	Possible fuel oil, possible PAHs and tarmac-bitumen
19/13288	1	TP12	1.50-3.00	76-78	Possible PAHs and possible tarmac-bitumen
19/13288	1	TP19	0.00-0.70	82-84	Possible PAHs and possible tarmac-bitumen
19/13464	1	TP11	0.00-1.50	1-3	Possible PAHs, possible lube oil and possible tarmac/bitumen
19/13464	1	TP11	1.50-2.70	4-6	No interpretation possible
19/13464	1	TP13	0.00-1.50	7-9	Possible lube oil and possible tarmac/bitumen
19/13464	1	TP13	1.50-2.70	10-13	No interpretation possible
19/13464	1	TP14	0.00-1.50	14-16	Lube oil and unknown pattern between 3 and 5 minutes
19/13464	1	TP14	1.50-3.00	17-19	No interpretation possible
19/13464	1	TP15	0.00-1.50	20-22	Degraded diesel and lube oil
19/13464	1	TP15	1.50-3.00	23-25	Possible PAHs, no petrol, diesel or lube oil
19/13464	1	TP16	0.00-1.50	26-28	Degraded petrol and degraded diesel
19/13464	1	TP16	1.50-1.90	29-31	Degraded petrol and degraded diesel
19/13464	1	TP17	0.00-1.50	32-34	PAHs and lube oil
19/13464	1	TP17	1.50-1.90	35-37	Possible PAH's
19/13464	1	TP18	0.00-1.50	38-40	Possible PAH's
19/13464	1	TP18	1.50-2.70	41-43	No interpretation possible
19/13464	1	TP20	0.00-0.75	44-46	Possible PAHs and lube oil

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level less than 0.1%, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Element Materials Technology consultant, Element Materials Technology cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Element Materials Technology:

Ryan Butterworth
Asbestos Team Leader

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Date Of Analysis	Analysis	Result
19/13288	1	TP1	0.00-1.50	2	27/08/2019	**General Description (Bulk Analysis)**	Soil/Stone
					27/08/2019	**Asbestos Fibres**	Fibre Bundles
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	Chrysotile
					27/08/2019	**Asbestos Level Screen**	less than 0.1%
					28/08/2019	**Total ACM Gravimetric Quantification (% Asb)**	<0.001 (mass %)
					28/08/2019	**Total Detailed Gravimetric Quantification (% Asb)**	<0.001 (mass %)
					28/08/2019	**Total Gravimetric Quantification (ACM + Detailed) (% Asb)**	<0.001 (mass %)
					28/08/2019	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					28/08/2019	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
19/13288	1	TP1	1.50-3.00	5	27/08/2019	**General Description (Bulk Analysis)**	Soil/Stone
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13288	1	TP2		11	27/08/2019	**General Description (Bulk Analysis)**	Soil/Stone
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13288	1	TP2	2.80-3.50	14	27/08/2019	**General Description (Bulk Analysis)**	Soil/Stone
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13288	1	TP3	0.00-1.50	17	27/08/2019	**General Description (Bulk Analysis)**	soil-stones
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13288	1	TP3	1.50-2.20	20	27/08/2019	**General Description (Bulk Analysis)**	soil-stones
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	NAD

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Date Of Analysis	Analysis	Result
19/13288	1	TP3	1.50-2.20	20	27/08/2019	**Asbestos Level Screen**	NAD
19/13288	1	TP3	2.20-3.80	23	27/08/2019	**General Description (Bulk Analysis)**	soil-stones
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13288	1	TP4	0.00-1.50	26	27/08/2019	**General Description (Bulk Analysis)**	soil-stones
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13288	1	TP4	1.50-2.50	29	27/08/2019	**General Description (Bulk Analysis)**	Soil/Stone
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13288	1	TP5	0.00-1.50	35	27/08/2019	**General Description (Bulk Analysis)**	Soil/Stone
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13288	1	TP5	1.50-2.50	38	27/08/2019	**General Description (Bulk Analysis)**	Soil/Stone
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13288	1	TP6	0.00-1.50	41	27/08/2019	**General Description (Bulk Analysis)**	Soil/Stone
					27/08/2019	**Asbestos Fibres**	Fibre Bundles
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	Chrysotile
					27/08/2019	**Asbestos Level Screen**	less than 0.1%
					28/08/2019	**Total ACM Gravimetric Quantification (% Asb)**	<0.001 (mass %)
					28/08/2019	**Total Detailed Gravimetric Quantification (% Asb)**	<0.001 (mass %)
					28/08/2019	**Total Gravimetric Quantification (ACM + Detailed) (% Asb)**	<0.001 (mass %)
					28/08/2019	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					28/08/2019	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
19/13288	1	TP6	1.50-2.60	44	27/08/2019	**General Description (Bulk Analysis)**	soil.stones
					27/08/2019	**Asbestos Fibres**	Fibre Bundles
					27/08/2019	**Asbestos Fibres (2)**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos ACM (2)**	ACM Debris
					27/08/2019	**Asbestos Type**	Chrysotile
					27/08/2019	**Asbestos Type (2)**	Amosite
					27/08/2019	**Asbestos Level Screen**	less than 0.1%
					28/08/2019	**Total ACM Gravimetric Quantification (% Asb)**	<0.001 (mass %)
					28/08/2019	**Total Detailed Gravimetric Quantification (% Asb)**	0.001 (mass %)

Client Name: Golder Associates Ltd
Reference: CMT
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Contact: Ruth Treacy

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Date Of Analysis	Analysis	Result
19/13288	1	TP6	1.50-2.60	44	28/08/2019	Total Gravimetric Quantification (ACM + Detailed) (% Asb)	0.001 (mass %)
					28/08/2019	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					28/08/2019	**Asbestos Gravimetric & PCOM Total**	0.001 (mass %)
19/13288	1	TP7	0.00-1.50	47	27/08/2019	**General Description (Bulk Analysis)**	soil.stones
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13288	1	TP7	1.50-3.00	50	27/08/2019	**General Description (Bulk Analysis)**	soil.stones
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13288	1	TP8	1.60-2.50	56	27/08/2019	**General Description (Bulk Analysis)**	soil.stones
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13288	1	TP8	2.50-3.50	59	27/08/2019	**General Description (Bulk Analysis)**	soil/stones
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos Fibres (2)**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos ACM (2)**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Type (2)**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13288	1	TP9	0.00-1.50	62	27/08/2019	**General Description (Bulk Analysis)**	soil/stones
					27/08/2019	**Asbestos Fibres**	Fibre Bundles
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	Chrysotile
					27/08/2019	**Asbestos Level Screen**	less than 0.1%
					28/08/2019	Total ACM Gravimetric Quantification (% Asb)	<0.001 (mass %)
					28/08/2019	Total Detailed Gravimetric Quantification (% Asb)	<0.001 (mass %)
					28/08/2019	Total Gravimetric Quantification (ACM + Detailed) (% Asb)	<0.001 (mass %)
					28/08/2019	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					28/08/2019	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
19/13288	1	TP9	1.50-3.00	65	27/08/2019	**General Description (Bulk Analysis)**	soil/stones
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos Fibres (2)**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos ACM (2)**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Type (2)**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13288	1	TP10	0.00-1.50	68	27/08/2019	**General Description (Bulk Analysis)**	soil/stones
					27/08/2019	**Asbestos Fibres**	Fibre Bundles

Client Name: Golder Associates Ltd
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EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Date Of Analysis	Analysis	Result
19/13288	1	TP10	0.00-1.50	68	27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	Chrysotile
					27/08/2019	**Asbestos Level Screen**	less than 0.1%
					28/08/2019	**Total ACM Gravimetric Quantification (% Asb)**	<0.001 (mass %)
					28/08/2019	**Total Detailed Gravimetric Quantification (% Asb)**	<0.001 (mass %)
					28/08/2019	**Total Gravimetric Quantification (ACM + Detailed) (% Asb)**	<0.001 (mass %)
					28/08/2019	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					28/08/2019	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
19/13288	1	TP10	1.50-2.80	71	27/08/2019	**General Description (Bulk Analysis)**	soil/stones
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13288	1	TP12	0.00-1.50	74	27/08/2019	**General Description (Bulk Analysis)**	soil/stones
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13288	1	TP12	1.50-3.00	77	27/08/2019	**General Description (Bulk Analysis)**	soil/stones
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos Fibres (2)**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos ACM (2)**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Type (2)**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13288	1	TP19	0.00-0.70	83	27/08/2019	**General Description (Bulk Analysis)**	soil/stones
					27/08/2019	**Asbestos Fibres**	Fibre Bundles
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	Chrysotile
					27/08/2019	**Asbestos Level Screen**	less than 0.1%
					28/08/2019	**Total ACM Gravimetric Quantification (% Asb)**	<0.001 (mass %)
					28/08/2019	**Total Detailed Gravimetric Quantification (% Asb)**	<0.001 (mass %)
					28/08/2019	**Total Gravimetric Quantification (ACM + Detailed) (% Asb)**	<0.001 (mass %)
					28/08/2019	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					28/08/2019	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
19/13464	1	TP11	0.00-1.50	2	28/08/2019	**General Description (Bulk Analysis)**	Soil
					28/08/2019	**Asbestos Fibres**	NAD
					28/08/2019	**Asbestos ACM**	NAD
					28/08/2019	**Asbestos Type**	NAD
					28/08/2019	**Asbestos Level Screen**	NAD
19/13464	1	TP11	1.50-2.70	5	28/08/2019	**General Description (Bulk Analysis)**	Soil
					28/08/2019	**Asbestos Fibres**	NAD
					28/08/2019	**Asbestos ACM**	NAD
					28/08/2019	**Asbestos Type**	NAD
					28/08/2019	**Asbestos Level Screen**	NAD

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Date Of Analysis	Analysis	Result
19/13464	1	TP13	0.00-1.50	8	28/08/2019	**General Description (Bulk Analysis)**	Soil
					28/08/2019	**Asbestos Fibres**	Fibre Bundles
					28/08/2019	**Asbestos ACM**	NAD
					28/08/2019	**Asbestos Type**	Chrysotile
					28/08/2019	**Asbestos Level Screen**	less than 0.1%
					28/08/2019	**Total ACM Gravimetric Quantification (% Asb)**	<0.001 (mass %)
					28/08/2019	**Total Detailed Gravimetric Quantification (% Asb)**	<0.001 (mass %)
					28/08/2019	**Total Gravimetric Quantification (ACM + Detailed) (% Asb)**	<0.001 (mass %)
					29/08/2019	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					29/08/2019	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
19/13464	1	TP13	1.50-2.70	11	27/08/2019	**General Description (Bulk Analysis)**	Soil/Stone
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13464	1	TP14	0.00-1.50	15	27/08/2019	**General Description (Bulk Analysis)**	soil/stones
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13464	1	TP14	1.50-3.00	18	27/08/2019	**General Description (Bulk Analysis)**	soil/stones
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13464	1	TP15	0.00-1.50	21	27/08/2019	**General Description (Bulk Analysis)**	soil/stones
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13464	1	TP15	1.50-3.00	24	27/08/2019	**General Description (Bulk Analysis)**	soil/stones
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13464	1	TP16	0.00-1.50	27	28/08/2019	**General Description (Bulk Analysis)**	Soil/Stones
					28/08/2019	**Asbestos Fibres**	NAD
					28/08/2019	**Asbestos ACM**	NAD
					28/08/2019	**Asbestos Type**	NAD
					28/08/2019	**Asbestos Level Screen**	NAD
19/13464	1	TP16	1.50-1.90	30	28/08/2019	**General Description (Bulk Analysis)**	Soil/Stones
					28/08/2019	**Asbestos Fibres**	NAD
					28/08/2019	**Asbestos ACM**	NAD
					28/08/2019	**Asbestos Type**	NAD
					28/08/2019	**Asbestos Level Screen**	NAD

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Date Of Analysis	Analysis	Result
19/13464	1	TP17	0.00-1.50	33	28/08/2019	**General Description (Bulk Analysis)**	Soil/Stones
					28/08/2019	**Asbestos Fibres**	NAD
					28/08/2019	**Asbestos ACM**	NAD
					28/08/2019	**Asbestos Type**	NAD
					28/08/2019	**Asbestos Level Screen**	NAD
19/13464	1	TP17	1.50-1.90	36	27/08/2019	**General Description (Bulk Analysis)**	Soil/Stone
					27/08/2019	**Asbestos Fibres**	NAD
					27/08/2019	**Asbestos ACM**	NAD
					27/08/2019	**Asbestos Type**	NAD
					27/08/2019	**Asbestos Level Screen**	NAD
19/13464	1	TP18	0.00-1.50	39	28/08/2019	**General Description (Bulk Analysis)**	soil.stones
					28/08/2019	**Asbestos Fibres**	NAD
					28/08/2019	**Asbestos ACM**	NAD
					28/08/2019	**Asbestos Type**	NAD
					28/08/2019	**Asbestos Level Screen**	NAD
19/13464	1	TP18	1.50-2.70	42	28/08/2019	**General Description (Bulk Analysis)**	soil.stones
					28/08/2019	**Asbestos Fibres**	NAD
					28/08/2019	**Asbestos ACM**	NAD
					28/08/2019	**Asbestos Type**	NAD
					28/08/2019	**Asbestos Level Screen**	NAD
19/13464	1	TP20	0.00-0.75	45	28/08/2019	**General Description (Bulk Analysis)**	soil.stones
					28/08/2019	**Asbestos Fibres**	NAD
					28/08/2019	**Asbestos ACM**	NAD
					28/08/2019	**Asbestos Type**	NAD
					28/08/2019	**Asbestos Level Screen**	NAD

Client Name: Golder Associates Ltd **Matrix : Solid**
Reference: CMT
Location:
Contact: Ruth Treacy

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Method No.	NDP Reason
19/13288	1	TP1	0.00-1.50	1-3	NONE/NONE	Asbestos detected in sample
19/13288	1	TP1	0.00-1.50	1-3	TM30/PM15	Asbestos detected in sample
19/13288	1	TP1	0.00-1.50	1-3	TM21/PM24	Asbestos detected in sample
19/13288	1	TP1	0.00-1.50	1-3	TM38/PM20	Asbestos detected in sample
19/13288	1	TP1	0.00-1.50	1-3	TM74/PM32	Asbestos detected in sample
19/13288	1	TP1	0.00-1.50	1-3	TM108/PM114	Asbestos detected in sample
19/13288	1	TP6	0.00-1.50	40-42	NONE/NONE	Asbestos detected in sample
19/13288	1	TP6	0.00-1.50	40-42	TM30/PM15	Asbestos detected in sample
19/13288	1	TP6	0.00-1.50	40-42	TM21/PM24	Asbestos detected in sample
19/13288	1	TP6	0.00-1.50	40-42	TM38/PM20	Asbestos detected in sample
19/13288	1	TP6	0.00-1.50	40-42	TM74/PM32	Asbestos detected in sample
19/13288	1	TP6	0.00-1.50	40-42	TM108/PM114	Asbestos detected in sample
19/13288	1	TP6	1.50-2.60	43-45	NONE/NONE	Asbestos detected in sample
19/13288	1	TP6	1.50-2.60	43-45	TM30/PM15	Asbestos detected in sample
19/13288	1	TP6	1.50-2.60	43-45	TM21/PM24	Asbestos detected in sample
19/13288	1	TP6	1.50-2.60	43-45	TM38/PM20	Asbestos detected in sample
19/13288	1	TP6	1.50-2.60	43-45	TM74/PM32	Asbestos detected in sample
19/13288	1	TP6	1.50-2.60	43-45	TM108/PM114	Asbestos detected in sample
19/13288	1	TP9	0.00-1.50	61-63	NONE/NONE	Asbestos detected in sample
19/13288	1	TP9	0.00-1.50	61-63	TM30/PM15	Asbestos detected in sample
19/13288	1	TP9	0.00-1.50	61-63	TM21/PM24	Asbestos detected in sample
19/13288	1	TP9	0.00-1.50	61-63	TM38/PM20	Asbestos detected in sample
19/13288	1	TP9	0.00-1.50	61-63	TM74/PM32	Asbestos detected in sample
19/13288	1	TP9	0.00-1.50	61-63	TM108/PM114	Asbestos detected in sample
19/13288	1	TP10	0.00-1.50	67-69	NONE/NONE	Asbestos detected in sample
19/13288	1	TP10	0.00-1.50	67-69	TM30/PM15	Asbestos detected in sample
19/13288	1	TP10	0.00-1.50	67-69	TM21/PM24	Asbestos detected in sample
19/13288	1	TP10	0.00-1.50	67-69	TM38/PM20	Asbestos detected in sample
19/13288	1	TP10	0.00-1.50	67-69	TM74/PM32	Asbestos detected in sample
19/13288	1	TP10	0.00-1.50	67-69	TM108/PM114	Asbestos detected in sample
19/13288	1	TP19	0.00-0.70	82-84	NONE/NONE	Asbestos detected in sample
19/13288	1	TP19	0.00-0.70	82-84	TM30/PM15	Asbestos detected in sample
19/13288	1	TP19	0.00-0.70	82-84	TM21/PM24	Asbestos detected in sample
19/13288	1	TP19	0.00-0.70	82-84	TM50/PM29	Asbestos detected in sample
19/13288	1	TP19	0.00-0.70	82-84	TM74/PM32	Asbestos detected in sample

Client Name: Golder Associates Ltd

Reference: CMT

Location:

Contact: Ruth Treacy

Matrix : Solid

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Method No.	NDP Reason
19/13288	1	TP19	0.00-0.70	82-84	TM108/PM114	Asbestos detected in sample
19/13464	1	TP13	0.00-1.50	7-9	NONE/NONE	Asbestos detected in sample
19/13464	1	TP13	0.00-1.50	7-9	TM30/PM15	Asbestos detected in sample
19/13464	1	TP13	0.00-1.50	7-9	TM21/PM24	Asbestos detected in sample
19/13464	1	TP13	0.00-1.50	7-9	TM50/PM29	Asbestos detected in sample
19/13464	1	TP13	0.00-1.50	7-9	TM74/PM32	Asbestos detected in sample
19/13464	1	TP13	0.00-1.50	7-9	TM108/PM114	Asbestos detected in sample

Client Name: Golder Associates Ltd

Reference: CMT

Location:

Contact: Ruth Treacy

Matrix : Solid

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 19/13288 19/13464

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher, this result is not accredited.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution

AB	x10 Dilution

EMT Job No: 19/13288 19/13464

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	
TM5	Modified 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16/PM30	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE/Water samples are extracted with solvent using a magnetic stirrer to create a vortex.			AR	Yes
TM5	Modified 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM16/PM30/PM69	please refer to PM16/PM30 and PM69 for method details			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details	Yes		AR	Yes

EMT Job No: 19/13288 19/13464

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM69	Modified BS EN 12457 method.One part soil is mixed with 10 parts water in a vial leaving no headspace. The mixture is shaken and then left to leach for 24 hours before VOC analysis.			AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM69	Modified BS EN 12457 method.One part soil is mixed with 10 parts water in a vial leaving no headspace. The mixture is shaken and then left to leach for 24 hours before VOC analysis.			AR	
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.			AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.			AR	
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.			AR	Yes
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes

EMT Job No: 19/13288 19/13464

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM20	Modified BS 1377-3: 1990/USEPA 160.3 Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.	Yes		AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.			AD	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM89	Preparation of positive asbestos samples for Eltra analysis			AD	Yes
TM22	Modified BS1377-3:1990 Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (35C-440C). On request modified ASTM D2974-00 LOI (105C-440C)	PM0	No preparation is required.			AD	Yes
TM22	Modified BS1377-3:1990 Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (35C-440C). On request modified ASTM D2974-00 LOI (105C-440C)	PM0	No preparation is required.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.	Yes		AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.			AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes		AR	Yes

EMT Job No: 19/13288 19/13464

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM17	Modified method BS EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.	Yes		AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results can be confirmed using GCMS.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results can be confirmed using GCMS.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results can be confirmed using GCMS.	PM69	Modified BS EN 12457 method.One part soil is mixed with 10 parts water in a vial leaving no headspace. The mixture is shaken and then left to leach for 24 hours before VOC analysis.			AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	PM0	No preparation is required.			AR	Yes

EMT Job No: 19/13288 19/13464

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	PM60	As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid.			AR	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	Dried and ground solid sample is boiled with dilute hydrochloric acid, the resulting liquor is then analysed.	Yes		AD	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	Dried and ground solid sample is boiled with dilute hydrochloric acid, the resulting liquor is then analysed.			AR	Yes
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060, APHA Standard Methods for Examination of Water and Wastewater 5310B, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.			AR	Yes
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM0	No preparation is required.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	

EMT Job No: 19/13288 19/13464

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	Yes
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM61	As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP.			AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes		AR	Yes
TM107	Determination of Sulphide/Thiocyanate by Skalar Continuous Flow Analyser	PM119	As received solid samples are extracted with 1M NaOH by orbital shaker for Sulphide and Thiocyanate analysis.			AR	Yes
TM108	Determination of Elemental Sulphur by Reversed Phase High Performance Liquid Chromatography with Ultra Violet spectroscopy.	PM114	End over end extraction of dried and crushed soil samples for organic analysis. The solvent mix varies depending on analysis required			AD	Yes
TM108	Determination of Elemental Sulphur by Reversed Phase High Performance Liquid Chromatography with Ultra Violet spectroscopy.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM131	Quantification of Asbestos Fibres and ACM, based on HSG248 and SCA method.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	Yes
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.			AR	Yes

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Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
NONE	No Method Code	NONE	No Method Code			AD	Yes
NONE	No Method Code	NONE	No Method Code			AR	Yes
NONE	No Method Code	PM17	Modified method BS EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.				
NONE	No Method Code	PM17	Modified method BS EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.			AR	
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.			AR	
TM15_A	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

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REPORT

Interpretative Ground Investigation Report

Claremont Development Site, Howth

Submitted to:

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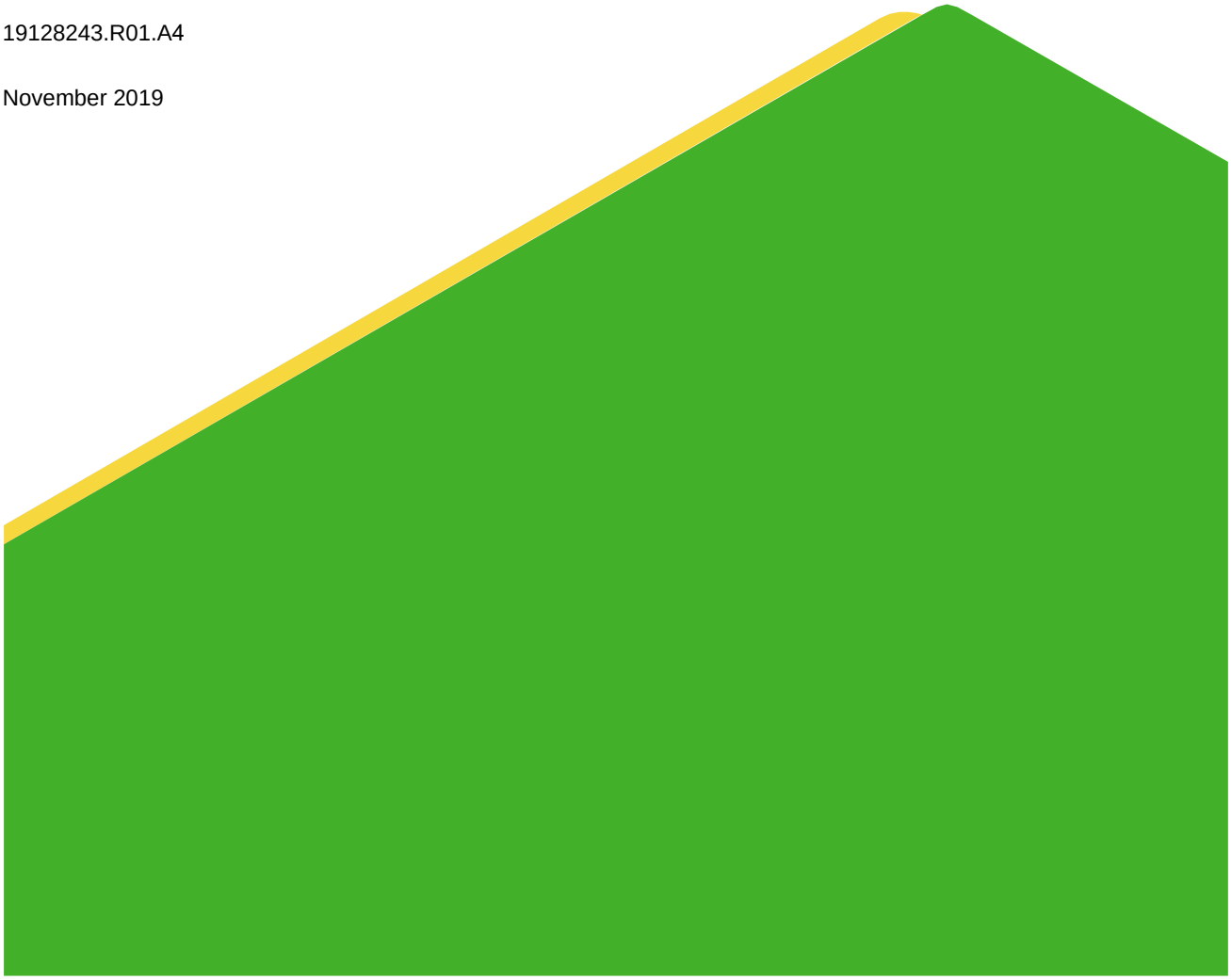
19128243.R01.A4

November 2019



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Laboratory Certificates

APPENDIX F
Ground and Surface Water Monitoring Data

APPENDIX G
Ground Gas Monitoring Data

APPENDIX H
IGSL GI Report 2017

1.0 INTRODUCTION

1.1 Terms of Reference

Golder Associates Ireland Limited (Golder) has been appointed by Atlas Limited Partnership (Atlas) to complete an interpretive ground investigation report which details the findings from the intrusive site investigation carried out by Golder in August and September 2019 at the Claremont development site, Howth, County Dublin (the Site). This report also relies upon factual information provided from a previous intrusive site investigation (Mixed Use Development, Techrete Site, Howth, Co Dublin, Ground Investigation Report (No. 19956), June 2017, IGSL Limited contained in Appendix H.

The work has been completed in accordance with Golder proposal "Proposal for provision of environmental consultancy services for Claremont, Howth, Co. Dublin", reference P19128243.P01.V0, dated 7 August 2019, and the terms of appointment included in the proposal, dated 07 August 2019.

The Site work comprised an intrusive investigation in order to characterise the nature of the Site's environmental ground (soil and groundwater) conditions and enable compilation of the data required to undertake detailed qualitative risk assessments (DQRA's). The overall objective of the DQRA's is to identify areas of potential concern and assess the requirement for remedial measures and to advise the Materials Management Plan required to address contamination at the Site prior to development.

1.2 Description of Development and Background

The proposed development will occur at a site bounded to the south by the Howth Road, to the east by a private dwelling, to the north by the DART line, and to the west by Local Authority lands. The site incorporates the former Techrete manufacturing facility, the former Beshoff's Motors showroom, and the former Howth Garden Centre.

The proposed development will include the demolition of all structures on site (c.8,162sqm GFA) and excavation of a basement. The proposed development comprises of the provision of a mixed use development of residential, retail/non retail uses and a childcare facility in 4 no. blocks (A to D), over part basement. Blocks A, B, and C range in height from part three and a half storeys with further floors setback of up to seven storeys in 'U' shaped blocks. Block D is part single storey and part six storey. The residential component will consist of 512 no. residential units. The proposed development will consist of;

Provision of two vehicular entrances on to Howth Road, excavation of basement to provide for car parking, plant, waste storage and ancillary use. Additional car parking spaces shall be provided at ground floor, to provide for a total of 439 no. spaces. 1,335 no. bicycle parking spaces shall be provided, including 49 no. bicycle spaces to cater for the retail units and creche. One vehicular access is located at Block A, serving car parking spaces. The second is at Block C, providing access to the basement, residential and retail parking, and a service area for the retail units. A service route will be provided along part of the northern perimeter of the site with access from the western end of the site at a junction with Howth Road and the main vehicular entrance at Block C;

A public walkway/cycleway to the north of the site shall be provided at podium level. A civic plaza will be provided between Blocks D and C, and a landscaped park to the west of Block A. A channel to the sea for the Bloody Stream with associated riparian strip shall be opened up and incorporated as a feature within a designed open space between Blocks A and B. Communal gardens will be provided for Blocks A, B and C;

The residential component consists of 512 no. residential units, which includes 4 no. studio, 222 no. one bed, 276 no. two bed, 10 no. three bed apartments, and communal facilities of 708 sqm. Ground floor units onto the Howth Road will have own door access. The units will be served by balconies or terraces on all elevations;

Block A, with a maximum of seven storeys, will provide for 234 units, a gym, residents' lounge, residents' support office, and 2 no. multi-purpose rooms. Own door access will be provided to ground floor units. Block B, with a maximum of seven storeys, shall provide for 154 no. units, residents' lounge, multi-purpose room, and creche of 236 sqm with outdoor play area. Own door access will be provided at ground floor. Block C, with a maximum of seven storeys will provide for 83 no. residential units in two wings over retail units and Block D, with a maximum of 6 storeys, shall provide for 41 no. residential units over retail units;

The commercial component in Blocks C and D consists of 4 no. units with 2,637 sqm gross floor area. In Block C it consists of 1,705 sqm anchor unit at ground floor. In Block D it consists of a restaurant (243 sqm) and retail unit (603 sqm), and café (86 sqm) at first floor;

The proposed development includes the provision of public and communal open space, green roofs, landscaping, boundary treatments, set down locations, substations, meter rooms, waste management and all ancillary site works, including upgrading of the public paths along Howth Road and relocation of bus stop in new setback with a bus shelter. Two set down areas are provided at either end of the site;

The gross floor area of the proposed development is 48,252 sqm on a site of 2.68 ha.

The Site is currently a redundant brownfield site; historical uses include a service station, metal fabrication works, pre-cast concrete manufacture, motor dealership, and garden centre. The Site adjoins the Baldoyle Bay a Special Area of Conservation (SAC), Special Protection Area (SPA) and a proposed National Heritage Area (pNHA).

1.3 Scope of Work

The scope of works aligns with the Royal Institute of British Architects (RIBA), consequently Golders work relates to RIBA stages 1-4 as necessary to support and inform the Environmental Impact Assessment Report (EIAR) to be submitted as part of the planning application for the Claremont project. The information derived from these investigations and further assessments will be utilised at detailed design and construction stages of the project (RIBA Stages 5-7) subject to instruction from Atlas. Tasks 1-3 below directly relate to this Interpretative Ground Investigation Report in support of delivering components of RIBA Stages 1-4.

- Task 1 – Prepare Sampling and Analysis Plan (SAP), to allow for:
  - The objectives for the sampling programme;
  - The rationale for the location, depth and number of samples to be collected;
  - The sampling methodology;
  - The laboratory tests to be undertaken; and
  - The safety measures needed to protect personnel and the environment.
- Task 2 – Ground Investigation Supervision & Sampling, to allow for:
  - Installation of 9 No. Boreholes;
  - 20 No. trial pits;
  - Sampling of soils;
  - Sampling of groundwater and surface water; and
  - Field monitoring.
- Task 3 - Interpretative Ground Investigation Report.

This Interpretative Report (incorporating factual data) on the ground conditions encountered shall be prepared detailing the findings from the site investigation, and associated Tier 1 environmental risk assessment. The work has been carried out in accordance with the following key standards:

- BS10175:2017 – Investigation of Contaminated Sites, Code of Practice, BSi;
- CLR 11 – Model Procedures for the Management of Contaminated Land, Environment Agency, June 2019;
- C552 – Contaminated Land Risk Assessment, A guide to good practice, Ciria, January 2001;
- C665 - Assessing Risk Posed by Hazardous Ground Gases to Buildings, Ciria, 2007; and
- BS8485:2015, Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings, BSi, June 2015.

2.0 SITE DESCRIPTION

2.1 Site Location

The Site is situated on the western side of Howth, Co. Dublin, approximately 400 m west of Howth Harbour. The Site borders Howth road to the south and the DART railway line to the north, with Baldoyle Bay located north of the railway line. A Fingal County Council pumping plant and associated lands was located adjacent to the west of site and there are residential and commercial properties adjoining the eastern site boundary. The Site is located approximately one mile from Howth town centre. Drawing 01 – Site Layout Plan contained in Appendix A presents the current layout of the site prior to development and in context with the surrounding environment.

2.2 Current Site Operations

The Site consists of three formerly separate sites which include a precast manufacturing plant (formerly Techrete), Teeling Motors Garage and a garden centre. The former Techrete area makes up the largest portion of the Site with the current infrastructure occupying significant floor area of the central and eastern section of Site. The western extent is open ground comprising a mix of vegetation cover and hardstanding bitumen/concrete. Teeling Motors Garage can be found directly bounding the Techrete area to the east and a small garden centre further to the east from the Techcrete area abounding the Teeling motor forecourt.

The current discharge of wastewater from the Site is into a 300 mm sewer that outfalls into the local authority pumping station located to the west of Site. This then carries the wastewater to a pumping station in Sutton by means of a 500 mm pressure main which cuts across a small portion of the site to the northwest corner.

3.0 SITE HISTORY

3.1 Historical Land Use

The Site primarily historically operated as a sheet metal engineering works by Parsons prior to the property being taken over by Techrete who manufactured precast concrete products at the site until 2008. The Techcrete site has largely remained redundant from 2008 until present day. The former Teeling's Motor garage has been in use as a car dealership until 2018 under various ownerships. Anecdotal evidence identified the site of the former garden centre to formerly comprise a service station with underground storage tanks (this existed prior to the garden centre use of this area).

The below table summarises the Site's historical evolvement from reclamation from mudflats to industrial use to present day.

Table 1: Historical Land Use

Date	Information Source	Site Description
1837-1842	OSI Map 6 Inch	**On-site:** The site shown as undeveloped consisting of coastal mudflats. There are several streams running through the Site and discharging to Baldoyle Bay. **Off-site:** A quarry is located approximately 0.6 km west of the site. A church is located opposite Howth road. At Howth Castle (approx. 0.3 km south) there are water features identified as 'fishpond', 'swan pond' and 'Black Jacks Well'. Howth Harbour is located 0.35 km from the Site.
1888-1913	OSI map 25 inch	**On-site:** A railway line is located on the north/northeast boundary of the Site and a tramway abounds the southern boundary of the site. The land appears partially infilled and streams are no longer visibly present. **Off-Site:** Railway lines are located along the north boundary of the Site with a train station and viaduct located a short distance east of the Site. Tram lines are located along the southern boundary of the site. Much of the quarry site to the west has been developed with residential buildings with a small pond remaining. There increased residential development immediate to Howth village. The number of small buildings are identified on the parapet of the west pier.
1830-1930	OSI Cassini map 6 inch	**On-site:** No significant changes. **Off-site:** Tram lines located to the south of the Site are no longer identified.
1995	OSI Arial photography	**On-site:** The current building layout on the Techcrete part of the site have been developed. A storage yard and bays associated with concrete products are identified at the site. A number of smaller buildings are identified at the Beshoff's Garage and garden centre site to the east of the site. **Off-site:** Increased development to the town of Howth. With additional developments to the land west of site.
2000	OSI Aerial Photography	**On-site:** The building layout remains unchanged for the site. **Off-site:** Offsite development remains similar to 1995.
2005	OSI Aerial Photography	**On-site:** The building layout remains unchanged for the site. Two additional storage silo's/bays appear to the north of the site along the rail boundary.

Date	Information Source	Site Description
		Off-site: Offsite development remains similar to 2000.
2005-2012	OSI Aerial Photography	**On-site:** The building layout remains unchanged for the site. Operations at the site appears to have ceased with all concrete products removed from site. **Off-site:** There is no significant development in the immediate site surrounds.

3.2 Current Land Use

The site description as recorded in the Construction Management Plan (CMP) prepared by Barrett Mahony (June 2019) reports that the Techcrete site is a precast manufacturing plant which closed in 2008 and has remained vacant to date. The site comprises redundant offices, manufacturing and storage facilities located within two-to-three storey industrial sheds with corrugated steel roof, steel framework and masonry walls. These buildings are in poor repair and are located mainly in the centre of the Site and spread towards the east, up to the Teeling Motors area south bounding with Howth Road. The remainder of the Site was used as a storage area for manufacturing equipment/material and the storage of the finished products i.e. concrete panels. The Techcrete area comprises a large portion of the site at c.2.672 hectares.

The Teeling Motors area (a motor car dealership), more recently owned by Beshoff Motors and consists of steel frame show room, separate garage and car park. This area is no longer in operation.

The final area of the Site, closest to Howth Village, is formerly a garden centre and a dog grooming facility, which are now vacant. The site consists of a single storey masonry building with a corrugated roof and concrete yard and was the site of a petrol station which is reported anecdotally to have closed in the late 1980's.

3.3 Proposed Land Use

The Site comprises a former Techcrete Plant, former Beshoff Motors garage, and former retail garden centre that was once a petrol station on the Howth Road, Dublin. The site layout plan is shown in Drawing 01 contained in Appendix A.

The proposed development will occur at a site bounded to the south by the Howth Road, to the east by a private dwelling, to the north by the DART line, and to the west by Local Authority lands. The site incorporates the former Techrete manufacturing facility, the former Beshoff's Motors showroom, and the former Howth Garden Centre.

The proposed development will include the demolition of all structures on site (c.8,162 sqm GFA) and excavation of a basement. The proposed development comprises of the provision of a mixed-use development of residential, retail/non-retail uses and a childcare facility in 4 no. blocks (A to D), over part basement. Blocks A, B, and C range in height from part three and a half storeys with further floors setback of up to seven storeys in 'U' shaped blocks. Block D is part single storey and part six storey. The residential component will consist of 512 no. residential units. The proposed development will consist of;

Provision of two vehicular entrances on to Howth Road, excavation of basement to provide for car parking, plant, waste storage and ancillary use. Additional car parking spaces shall be provided at ground floor, to

provide for a total of 439 no. spaces. 1,286 no. bicycle parking spaces shall be provided at lower ground floor level, with 49 no. bicycle spaces at surface level to cater for the retail units. One vehicular access is located at Block A, serving car parking spaces. The second is at Block C, providing access to the basement, residential and retail parking, and a service area for the retail units. A service route will be provided along part of the northern perimeter of the site with access from the western end of the site at a junction with Howth Road and the main vehicular entrance at Block C;

A public walkway/cycleway to the north of the site shall be provided at podium level. A civic plaza will be provided between Blocks D and C, and a landscaped park to the west of Block A. A channel to the sea for the Bloody Stream with associated riparian strip shall be opened up and incorporated as a feature within a designed open space between Blocks A and B. Communal gardens will be provided for Blocks A, B and C;

The residential component consists of 512 no. residential units, which includes 4 no. studio, 222 no. one bed, 276 no. two bed, 10 no. three bed apartments, and residential amenity space of 850 m. Residential support facilities of 1,376 sqm will be provided. Ground floor units onto the Howth Road will have own door access. The units will be served by balconies or terraces on all elevations;

Block A, with a maximum of seven storeys, will provide for 234 units, a meeting room, two amenity rooms, a gym, CHP, waste storage, plant. Own door access will be provided to ground floor units. Block B, with a maximum of seven storeys, shall provide for 154 no. units, waste storage, CHP, substation, and creche of 220 sqm with outdoor play area. Own door access will be provided at ground floor. Block C, with a maximum of seven storeys will provide for 83 no. residential units in two wings over retail units and Block D, with a maximum of 6 storeys, shall provide for 41 no. residential units over retail units;

The commercial component in Blocks C and D consists of 4 no. units with 2,630 sqm gross floor area. In Block C it consists of 1,748 sqm anchor unit at ground floor. In Block D it consists of a restaurant (235 sqm) and retail unit (563 sqm), and café (83 sqm) at first floor;

The proposed development includes the provision of public and communal open space, green roofs, landscaping, boundary treatments, set down locations, substations, meter rooms, waste management and all ancillary site works, including upgrading of the public paths along Howth Road and relocation of bus stop in new setback with a bus shelter. Two set down areas are provided at either end of the site. The gross floor area of the proposed development is 47,898 sqm on a site of 2.68 ha.

4.0 ENVIRONMENTAL SITE SETTING

4.1 Geology

4.1.1 Regional Geology

The regional geology of the eastern seaboard of Ireland is a complex and interesting one, regional geology is dominated by series of sedimentary limestone, sandstone, mudstone and siltstone formations. The regional geology to the southeast of Ireland has a metamorphic origin including formations of granite, schist, phyllite and slate. The regional geology of eastern Ireland including the Howth Peninsula is dominated by sedimentary formations. Sedimentary formations in this area are typically bioclastic limestone, limestone conglomerates and calcareous shales. Regionally important formations include:

- Lucan Formation: Dark-grey to black, fine-grained, occasionally cherty, micritic limestones that weather paler, usually to pale grey;
- Malahide Formation: Argillaceous bioclastic limestone, shale;
- Tober Collen Formation: Dark-grey, calcareous, commonly bioturbated mudstones/shale and subordinate thin micritic limestones; and

- Waulsortian Limestones: Pale grey massive unbedded lime, mudstone.

Quaternary deposits (superficial geology) within Ireland are dominated by widespread glacial till deposits, generally derived from sedimentary bedrock. The east of Ireland is dominated by glacial till, alluvium, gravel and windblown (aeolian) sands. The predominant superficial deposit is till deposits derived from limestone.

Faults are an important and complex feature of the geology of Ireland, however broadly speaking there is two preferential trends, northeast- southwest and northwest – southeast. Fault trends close to the Howth peninsula display slight variations from this trend. Waulsortian limestones is predominately broken up by fault discontinuities, however it is seen to be intersected by an east – west trending fault within the Howth peninsula.

4.1.2 Site Geology

The Site is underlain by the Waulsortian Limestone, massive unbedded lime-mudstone (GS1, 2018) often inaccurately called 'reef' limestone. They are dominantly pale grey massive limestones from the Carboniferous era, typically 300 to 500 m thick. The Waulsortian Limestones are thought to have formed from a build-up of shelly marine fossil fauna and lime mud 'banks' and generally lack any sign of a rigid supporting framework; therefore, lateral facies variation is common as a result of the formation method (Murray and Henry, 2018).

Onsite boreholes logs describe the bedrock as a fractured (becoming less fractured with depth) limestone with a honeycomb weathered structure in its upper layer become dolomitised (recalcified and veins) with depth, Golder consider this to be the Waulsortian Limestone. Limestone bedrock upper surface was found at varying depth across the Site with a depth range of between 2.0 - 5.1 mbGL. Bedrock geology is discussed in Section 5.2 of this report and borehole logs can be found as Appendix B of this report.

4.1.3 Superficial Geology

The superficial geology of the Site can be split into two main lithologies:

- Gravelly, slightly sandy SILT – Dark grey, stiff, gravelly, slightly sandy SILT. Sand is fine grained. Gravel is fine grained, sub-angular to sub-rounded of mixed lithology with occasional white shell fragments. This material was encountered within BH03 only at a depth of 4.6 m with a maximum apparent thickness of 0.5 m; and
- Silty SAND – Grey/Yellow, gravelly, silty SAND. Sand is fine to medium grained. Gravel is fine to coarse size, sub-rounded to rounded. This was encountered within BH01, BH03, BH04, BH08 and BH09 at a depth of 1.0 - 2.5 m with a maximum apparent thickness of 4 m.

4.2 Made Ground

Made ground was recorded from ground level to a maximum depth of 4 m in boreholes. The thickness of the layer ranged between 1 m and 4 m. In trial pits, observations of the made ground was recorded from ground level to a maximum depth of 3.6 m. The thickness of the layer ranged between 0.35 m and 3.5 m.

Made ground is commonly be described as dark brown/black, slightly silty, gravelly sandy CLAY. Gravel is frequently noted as fine to coarse size, angular to sub-rounded with inclusions of concrete, brick textiles, plastics, and glass.

4.3 Hydrogeology

4.3.1 Regional Hydrogeology

Generally, the Waulsortian Limestone is considered hydrogeologically unproductive due to its typically massive or poorly bedded nature (Murray & Henry 2018). However, the Geological Survey Ireland (GSI) classify the Waulsortian Limestone below the Site as a 'locally important aquifer'. This means the bedrock is moderately productive only in local zones. The GSI categorise the Waulsortian Limestone as 'Dinantian pure un-bedded

limestones'. The purity of the limestone makes it amenable to dissolution and karst development (Murray & Henry 2018) and will likely facilitate groundwater flow through the limestone.

The Waulsortian Limestone is formed from natural reef structures therefore the fractures and karstic features are likely to be random in nature and produce unpredictable flow paths.

4.3.2 Site Hydrogeology

According to the GSI map viewer the Site does not lie within a Group Scheme or Public Supply Source Protection Area (i.e. not a drinking water supply aquifer).

The GSI map viewer indicates the groundwater vulnerability beneath the Site is classed as 'E', for Extreme; indicating the absence of significant thickness of superficial/made ground deposits above the limestone bedrock to act as a mitigation or prevention to a potential contaminant pathway. Smaller areas of the Site are classed as 'X' defining groundwater vulnerability for 'Rock at or near Surface or Karst'.

It is noted the Waulsortian Limestone geology extends from beneath the Site and into Baldoyle Bay, thus the groundwater beneath the Site is in potential hydraulic continuity with saline conditions.

4.4 Sensitive Sites

The nearest Special Area of Conservation (SAC) is the Baldoyle Bay SAC, located adjacent to the north of the Site beyond the DART tram lines. It is protected due to qualifying interests identified as mudflats and sandflats not covered by seawater at low tide, Salicornia and other annuals colonizing mud and sand, Atlantic salt meadows and Mediterranean salt meadows. This area is also a registered proposed Natural Heritage Area.

The Baldoyle Bay beach (Claremont Beach) is currently classed as Excellent by Fingal County Council (last sampled on 9th September 2019) based on results of E.Coli and Intestinal Entercocci biological testing. The water quality has been rated as Sufficient (last assessment provided 2018) based on assessment of bacteriological results for the preceding four years[1].

5.0 WORKS UNDERTAKEN

5.1 Intrusive Investigation

The fieldwork for the investigation was carried out in two phases, cable percussion drilling and trial pitting from 13 to 23 August 2019 and rotary drilling from 26 August to 30 August 2019. BH02 monitoring well was found to be obstructed after installation and thus required to be re-installed on 11 September 2019. The work comprised the following:

i) 6 No. Cable percussion boreholes with well installations (3 No. monitoring wells installed into made ground and 3 No. monitoring wells installed into superficial deposits);

ii) 3 No. Rotary Borehole with monitoring well installations;

iii) 20 No. Trial pits;

iv) Logging of trial pits and boreholes arisings;

v) Rising head tests;

vi) Environmental soil sampling;

[1] https://www.beaches.ie/find-a-beach/#/beach/IEEABWC070_0000_0500

vii) Groundwater and surface water (Bloody Street Culvert and Baldoyle Bay) sampling;

viii) Ground gas, groundwater and surface water monitoring (including one transducer logging round for bedrock groundwater monitoring); and

ix) Environmental laboratory testing of selected samples.

Ground Investigation location positions are illustrated on Drawing 02 held in Appendix A. This drawing also illustrates the locations of the previous ground investigation completed by IGSL Limited in June 2017.

Records of ground investigation works are held in Appendix B – Ground Investigation Logs, Appendix C - Site Photos, Appendix F- Groundwater and Surface Water Monitoring Data and Appendix G – Ground Gas Monitoring Data.

5.1.1 Cable Percussion Drilling

Cable percussion drilling was carried out using a shell and auger cable percussion drilling rig. Cable percussion drilling was carried out in order to obtain the environmental properties of the soil profile beneath the site and to prove the depth to solid geology bedrock. Golder completed the following boreholes by cable percussion:

Made ground boreholes (BH1, 4, 7): 3 No. were drilled to a maximum depth of 3.8 metres below ground level (mbGl) and monitoring wells installed in made ground.

Superficial deposit boreholes (BH 3, 8, 9): 3 No. superficial deposits boreholes were drilled to a maximum depth of 6.7 mbGl and monitoring wells installed in superficial deposits. Drilling of BH03 encountered a refusal at 5.1 mbGl where the borehole was terminated, the refusal is believed to be due to the presence of bedrock. BH09 encountered a refusal at 3.2 mbGl where the borehole was terminated, the refusal is also believed to be due to the presence of bedrock.

5.1.2 Rotary Drilling

Rotary drilling was carried out using a track mounted drilling rig. Rotary core drilling was carried out in order to obtain the environmental properties of the rock profile beneath the Site and to prove the depth to solid geology rockhead.

Three boreholes (BH2, 5, 6) were drilled into bedrock and monitoring wells installed. Bedrock in each location was encountered as limestone and drilled to a maximum depth of 8.2 mbGl. It is noted the IGSL 2017 ground investigation similarly encountered limestone bedrock and to a maximum depth of 20.6 mbGl.

5.1.3 Trial Pits

The following was undertaken:

- Twenty trial pits were excavated using a tracked excavator;
- Bulk soil samples of made ground materials;
- The trial pits had a maximum depth range of 0.75 and 3.75 mbGl;
- Trial pits were terminated early when concrete slabs, underground piping, high flow of water or collapsing of excavation occurred;
- Groundwater seepage was encountered in 7 No. of the completed trial pits; and
- Representative small and bulk samples from selected horizons encountered in the inspection pits were recovered for environmental laboratory testing.

5.2 Visual and Olfactory Evidence of Potential Contamination

The following observations were recorded during the ground investigation works.

Table 2: Visual and olfactory evidence from trial pits

Exploratory Hole Location	Depth (mbGl)	Comment
BH06	0.0-4.0	Made ground soils noted oily hydrocarbon odour
BH09	0.6-3.1	Made ground soils with a slight tar odour and occasional soft to hard spray-crete/concrete material with no visible fibres.
TP1	3.0-3.4	Made ground soils with a slight odour.
TP1	0.0-2.5	Made ground soils with strong organic odour.
TP3	1.3-2.2	Made ground soils with a slight smell of oil.
TP5	0.7-1.1	Made ground soils with chemical smell.
TP8	2.5-3.5	Made ground soils with slight organic odour.
TP13	0.1-1.0	Made ground soils with tar and slight odour.
TP14	0.2-0.4	Gravel (superficial deposits) soils with hydrocarbon odour.
TP15	0.07-0.9 (odour), 2.4-2.5 (visual)	Made ground soils with very strong hydrocarbon smell Sand (superficial deposits) with amber colour horizon
TP16	0.2-1.9	Made ground soils with a strong to very strong hydrocarbon odour.

From the recorded observations the main trend is the observation of significant hydrocarbon odours in the trial pits located in the east of the Site (TP14, 15 & 16), in the area of the former vehicle filling station. These recordings were mainly concentrated to the uppermost metre with the exception of TP16 which recorded a reading as low as 1.9 mbGl.

5.3 Groundwater Monitoring

Three groundwater monitoring rounds have been undertaken by Golder engineers at the Site. Groundwater sampling was undertaken using waterra tubing with a foot-valve. Each borehole was purged three times the well volume prior to sampling. Monitoring visits were undertaken on:

- 3-4 September 2019: Four boreholes sampled: BH03, BH05, BH06 and BH08;
- 9 September 2019: Five boreholes sampled: BH03, BH05, BH06, BH08 and BH09; and
- 13 September 2019: Six boreholes sampled: BH02, BH03, BH05, BH06, BH08 and BH09.

To appropriately understand the groundwater regime on a potentially tidally influenced Site, groundwater dips were undertaken on 13 September and 18 September 2019 in one continuous monitoring visit. Based on these levels' groundwater is inferred to generally flow towards the coastline. Groundwater elevation data collected on 13 September and 18 September 2019 is presented in Table 3 below.

Transducers were also installed in boreholes BH02 and BH05 (installed in the Limestone bedrock) to collect groundwater elevation data between 16 September and 20 September 2019. BH02 is located close to the southern boundary of the Site and BH05 is located close to the northern Site boundary (i.e. closer to the coast). Transducer data indicates that groundwater elevation is consistently higher to the south of the Site and lower

towards the coast, consistent with a northerly direction of groundwater flow and discharge of groundwater to the Baldoyle Bay. Transducer data also suggests tidal influence may be greater in boreholes (and thus groundwater body) closer to the coast. Groundwater hydrographs for boreholes BH02 and BH05 are presented in Appendix F.

Table 3: Groundwater Elevations at the Site, 13 and 18 September 2019

Borehole	Groundwater Elevation (mAOD)	Manual Dip Date and Time	Groundwater Elevation (mAOD)	Manual Dip Date and Time
BH02	1.67	13/09/2019 10:10	1.68	18/09/2019 09:40
BH03	1.61	13/09/2019 10:45	1.52	18/09/2019 11:50
BH04^	Dry	13/09/2019 11:00	Dry	18/09/2019 11:20
BH05	1.05	13/09/2019 11:15	1.20	18/09/2019 11:08
BH06	1.14	13/09/2019 11:18	1.13	18/09/2019 12:20
BH07^	Dry	13/09/2019 11:30	Dry	18/09/2019 12:00
BH08	1.35	13/09/2019 12:45	1.33	18/09/2019 10:00
BH09	1.70	13/09/2019 14:00	1.76	18/09/2019 11:00

^ Dip to base of borehole BH04 measured at 2.91 mAOD on 13 and 18 September 2019. Dip to base of borehole BH07 measured at 2.09 mAOD on 13 and 18 September 2019.

Reviewing the monitoring data further, there is strong indication there is vertical hydraulic continuity between bedrock, superficial and made ground groundwater (where encountered) which is to be expected based on the strata encountered at the site in the exploratory hole locations. In summary, the following initial findings are reported for the hydrogeological conditions at the Site:

- The groundwater body is in likely vertical hydraulic continuity from approximately 2-3 mbgl and into the bedrock, and there is no evident perched (separate) groundwater body;
- The groundwater flows down-gradient from south to north (towards Baldoyle Bay);
- The groundwater body beneath the Site is tidally influenced; and
- The tidal influence upon groundwater levels is greater closer to the sea (the tidal influence is discussed in section 6 of the Controlled Waters Risk Assessment, (Report No. 19128243.R03. A1).

5.4 Surface Water Monitoring

A surface water monitoring round was undertaken alongside groundwater monitoring. The samples were taken using an open grab sampler at the following locations:

- 3-4 September 2019: SW1 and SAC;
- 9 September: SW1, SW2 and SAC; and
- 16 September: SW1, SW2 and SAC.

5.5 Rising Head Tests

Rising head permeability tests were carried out for BH02, BH05 and BH06. Field reports for these tests are included in appendix F.

5.6 Ground Gas Monitoring

Ground gas monitoring was undertaken alongside groundwater monitoring and for three return visits. All monitoring wells (BH01 to BH09 were monitored on each visit, with the exception of BH02 on the first visit due to damaged monitoring well).

6.0 ENVIRONMENTAL LABORATORY TESTING

6.1 Soil Quality Results

Soil samples for environmental testing were collected from trial pits and borehole locations, in accordance with BS10175 standards. Samples were collected at approximately 1 m intervals in the made ground and also targeting material where visual or olfactory evidence of contamination was recorded. Samples were taken from each point and analysed for varying suites of Metals, VOCs inc. BTEX, SVOC's, PAH's and TPH-CWG.

Selected soil samples collected for environmental analyses were also scheduled for asbestos screening and where positively identified for quantification. All laboratory was completed within the recommended holding times.

6.2 Groundwater Quality Results

Groundwater samples were collected from the borehole locations. Field parameters (Conductivity, pH, Dissolved Oxygen, Temperature and Redox) were taken before sampling and any visual or olfactory evidence of contamination was recorded.

The groundwater samples were taken from each point and analysed for varying suites of Metals, VOCs inc. BTEX, SVOC's, PAH's and TPH-CWG. All laboratory samples were completed within the recommended holding times.

6.3 Surface Water Quality Results

Surface water samples were collected from the surface water sample points. Samples were taken from each point and analysed for varying suites of Metals, VOCs inc. BTEX, SVOC's, PAH's and TPH-CWG. All laboratory samples were completed within the recommended holding times.

7.0 CONCEPTUAL SITE MODEL

In the definition that has become accepted by the environmental industries and regulators (and discussed in the EPA (2013) *Guidance on the management of contaminated land*), there are three components to consider when developing a Conceptual Site Model (CSM):

- The *source* is the Contaminant of Potential Concern (COPC) identified;
- The *pathways* are any routes linking the source with the receptors (in which degradation and attenuation processes may also occur); and
- The *receptors* are humans, controlled waters and sensitive bodies (e.g. statutory receptors) that are connected to the source by the pathways, such as soils, vapours, aquifers, surface watercourses (including culverts), local supply boreholes, or springs.

These three components are linked within a conceptual model for a site. Should either one of the source, pathway, or receptor be absent from the site setting the pollutant linkage is deemed not to be present therefore negligible risk will be posed to human health and/or controlled water environments.

7.1 Description of the Source (COPC)

Tier 1 screening of soils, soil leachates and groundwaters at the site has identified the following sources with the potential to cause harm to the identified receptors. The CSM is illustrated as Drawing 07 in Appendix A.

- On-site contaminated soils (hotspots) and historical operations and infrastructure:
  - Made ground soils, primarily comprising metals (mostly Arsenic & Lead), speciated PAHs and asbestos fibres (mostly chrysotile).

7.2 Pathways

The potential pathways identified for the Site are summarised below:

- Dispersion and ingestion/inhalation of dust from near surface soil (wind erosion/dispersion);
- Dermal contact;
- Volatilisation/migration and inhalation of vapours/ground gas (indoor and outdoor);
- Permeation to water supply network;
- Leaching from soil to groundwater/surface water (Baldoyle Bay, a Special Area of Conservation) and groundwater/culvert migration; and
- Leaks/spills from existing infrastructure/USTs.

7.3 Receptors

The following receptors have been identified at the Site:

- Human health:
  - Ground and construction workers who come into contact with contaminated soils, asbestos and contaminated groundwater; and
  - Future site users.
- There is considered not to be a likely contaminant pathway to human health from underlying groundwater due to the groundwater body not identified as drinking water body. Also, users of the Claremont Beach are not considered as a receptor due to the absence of likely contaminant pathway from onsite groundwater or surface water with the potential to cause harm. Controlled waters:
  - Groundwater - the Waulsortian Limestone is considered to be a 'regionally important aquifer', meaning the bedrock is moderately productive only in local zones. However, is it also noted the aquifer beneath the site has not been identified as part of a Public Supply Source Protection thus is not considered a pathway to human health; and
  - Surface water - the Site is located adjacent to Baldoyle Bay Special Area of Conservation (a statutory receptor).

It is noted the Bloody Stream, currently a culvert in the existing Site condition and to be become a 'daylighted' riparian strip in the future end use of the site, is identified as a pathway only in the Site's current condition and also not as a receptor (or pathway) in the future end use of the Site as it will be an engineered lined construction protecting it from any potential future contaminant migration.

8.0 ENVIRONMENTAL RISK ASSESSMENT

IGSL Limited (IGSL, 2017) conducted a ground investigation at the Site from March to May 2017. The investigation included drilling and sampling for testing which consisted of 26 boreholes, 9 trial pits, and groundwater monitoring at 8 borehole locations (IGSL, 2017). In August 2019, Golder carried out an intrusive investigation, followed by three rounds of surface and groundwater monitoring.

Screening was carried out against all soil, soil leachate and groundwater samples retrieved during the two site investigations programmes undertaken on the Site. The analytical results from the samples taken as part of IGSL investigation have not been verified but have been screened with the assumption that the data is reliable.

For the purpose of this Tier 1 interpretative ground investigation report a qualitative environmental risk assessment has been provide based on the findings from the Tier 1 screening presented below. The qualitative environmental risk assessment is presented in Section 8.6.

8.1 Soil Screening

8.1.1 Initial Screening Approach

Soils were screened against Generic Assessment Criteria (GAC) predominantly sourced from the following documents (in order of screening value preference):

- The LQM/CIEH Suitable 4 Use Levels (Nathanail *et al*, 2015); and
- EIC/AGS/CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment (EIC/AGS/CL:AIRE, 2010).

To facilitate the presentation of the soil screening, the Site has been divided into three areas based on future land use: Area 1 (Western Parkland), Area 2 (Block A, Block B and Riparian Strip), and Area 3 (Block C, Block D, Basement Parking and Civic Space). The boundary of each area is based on professional judgment and the most recent site plan (Henry J Lyons, 2019). The result of the Tier 1 soil screening is presented in Appendix D, and exceedances illustrated on Drawings 3A to 6 in Appendix A. The tables only present determinands that were above detection limits in the samples taken.

In addition, the following assumptions were made during the soil risk screening process:

- The ‘Residential Without Home Grown Produce’ (RWOHG) end use scenario was used to screen the soil data. This scenario assumes a two-storey house built on a ground-bearing slab with a private garden. The exposure pathways include direct soil and indoor dust ingestion, skin contact with soils and indoor dust and inhalation of indoor and outdoor dust and vapours.
- The GACs for organic determinands are dependent on the soil organic matter (SOM), however, the Site’s SOM data is highly variable, ranging from 0.82 to 132.65, with an average SOM across the site of 12.18. For the purposes of screening, the soil concentrations were screening against GAC for a SOM content of 1%, which is also the most conservative GAC.
- The GACs were developed assuming that there is no living space below ground, as such this screening does not account for exposure to residents while in the basement car park. The GACs would likely be lower if below ground spaces were considered as it would increase the volume of indoor air that may be contaminated by vapour intrusion.
- The GACs for Lead have been developed as a range of values (130 mg/kg to 330 mg/kg for residential without home grown produce); for the purposes of this assessment, the most conservative GAC value was applied (130 mg/kg). However, in the summary tables presented in the report, the range has been presented to provide further context.

- There is currently no readily available GAC values for Total Petroleum Hydrocarbon (TPH) Aliphatic >C35-40 and TPH Aromatic >C35-40; however, there are GAC values for TPH Aliphatic >C35-44 and TPH Aromatic >C35-44 and these have been applied here. It should be noted that this is a less conservative approach, as TPH bands >C35-C40 are a subset of the TPH bands >C35-C44, and is only used to provide a frame of reference for the concentrations.
- There are no GACs available for total TPH values. Additive effects of the hydrocarbon fractions are assessed by calculating individual hazard quotients (ratio of the soil concentration and the hydrocarbon fraction GAC) and summing the hazard quotients.

8.1.2 Initial Screening Findings

The majority of determinants analysed did not report exceedances above Tier 1 screening values, the exceedances that are observed can be summarised below:

- Metals:
  - Arsenic reported between 43.9 and 88 mg/kg, exceeding 17 no. times from 132 no. analyses;
  - Barium reported between 2,188 and 2,676 mg/kg, exceeding 2 no. times from 132 no. analyses;
  - Lead between 135 and 3,973 mg/kg, exceeding 53 no. times from 132 no. analyses; and
  - Nickel reported once at 253.5 mg/kg from 17 no. analyses.
- PAHs:
  - Naphthalene reported between 7.04 mg/kg and 25.65 mg/kg, exceeding 2 no. times from 99 no. analyses;
  - Benzo(a)anthracene reported between 11.9 mg/kg and 23.8 mg/kg, exceeding 2 no. times from 99 no. analyses;
  - Benzo(a)pyrene reported between 3.48 mg/kg and 21.53 mg/kg, exceeding 16 no. times from 99 no. analyses;
  - Dibenzo(ah)anthracene reported between 0.32 mg/kg and 3.21 mg/kg, exceeding 22 no. times from 99 no. analyses; and
  - Benzo(b)fluoranthene reported between 3.92 mg/kg and 27.17 mg/kg, exceeding 16 no. times from 99 no. analyses.
- TPHs:
  - Aliphatic C6 to C8 reported once at 178.1 mg/kg/ from 120 no. analyses;
  - Aliphatic C8 to C10 reported once at 320.2 mg/kg/ from 120 no. analyses;
  - Aliphatic C12 to C16 reported between 299.5 mg/kg and 1,1519.9 mg/kg/ from 120 no. analyses;
  - Aliphatic C16 to C21 reported once at 2,683 mg/kg/ from 120 no. analyses;
  - Aromatic C8 to C10 reported once at 92.1 mg/kg/ from 120 no. analyses; and
  - Aromatic C10 to C12 reported between 335.8 mg/kg and 1,324.8 mg/kg/ from 120 no. analyses.
- PCBs:
  - Total PCBs (7 congeners) reported once at 102 ug/kg from 17 no. analyses; and

- Asbestos:
  - Fibres bundles (mostly chrysotile, and three reports of amosite) all at concentrations of <0.001 mass %, except for one at <0.1% and 0.003%. This was reported in 24 no. samples from 119 analyses.

8.2 Soil Leachate Screening

8.2.1 Initial Screening Approach

Soil Leachate laboratory results have been screened against the Groundwater Regulations 2010 and S.I. No 266/2016 amendment (GTVs). Screening of soil leachate analysis results highlighted a number of screening level exceedances.

8.2.2 Initial Screening Findings

The majority of determinants analysed did not report exceedances above Tier 1 screening values, the exceedances that are observed can be summarised below:

- Metals:
  - Arsenic reported between 7.8 and 46.0 ug/l, exceeding 28 no. times from 108 no. analyses;
  - Chromium reported once at 49.6 ug/l from 108 no. analyses;
  - Lead between 8.0 and 49.0 ug/l, exceeding 8 no. times from 108 no. analyses; and
  - Mercury between 0.78 and 17.0 ug/l, exceeding 18 no. times from 108 no. analyses.
- Total PAHs:
  - Reported between 0.7 and 9.8 ug/l, exceeding 9 no. times from 12 no. analyses.
- Sulphate:
  - Reported between 228.59 and 317.3 mg/l, exceeding 8 no. times from 95 no. analyses.
- Ammoniacal Nitrogen (as N):
  - Reported between 0.22 and 4.99 mg/l, exceeding 33 no. times from 95 no. analyses.

8.3 Groundwater Screening Assessment

8.3.1 Initial Screening Approach

Groundwater laboratory results have been screened against the Groundwater Regulations 2010 and S.I. No 266/2016 amendment (GTVs). Screening of groundwater analysis results highlighted a number of screening level exceedances.

8.3.2 Initial Screening Findings

The majority of determinants analysed did not report exceedances above Tier 1 screening values, the exceedances that are observed can be summarised below:

- Groundwater salinity – one conductivity reading greater than 800 uS/cm and several in the region of 600 to 700 uS/cm suggesting saline influenced conditions;
- Metals:
  - Arsenic reported between 8.6 and 18.9 ug/l, exceeding 8 no. times from 27 no. analyses; and
  - Nickel reported between 29 and 49 ug/l, exceeding 3 no. times from 27 no. analyses.

- Total PAHs:
  - Reported between 0.6 and 29.2 ug/l, exceeding 9 no. times from 25 no. analyses.
- Total TPH:
  - 1no. exceedance reported at 5,430 ug/l from 25 no. analyses.
- Sulphate:
  - Reported between 192.1 and 562.8 mg/l, exceeding 8 no. times from 27 no. analyses.
- Nitrite (as NO_2):
  - 1no. exceedance reported at 0.54 mg/l from 27 no. analyses.
- Ammoniacal Nitrogen (as N):
  - Reported between 0.21 and 23.9 mg/l, exceeding 22 no. times from 27 no. analyses.

8.4 Surface Water Screening Assessment

8.4.1 Initial Screening Approach

Surface water laboratory results have been results have been screened against the European Communities Environmental Objectives (Surface Waters) 2009 and S.I. No. 327/2012, S.I. No. 386/2015 and S.I. No. 77/2019 amendments, and European Communities (Quality of Shellfish Waters) 2006. Screening of surface water analysis results highlighted a number of screening level exceedances.

8.4.2 Initial Screening Findings

The majority of determinants analysed did not report exceedances above Tier 1 screening values, the exceedances that are observed can be summarised below:

- Total PAHs:
  - 1 no. exceedance reported at 1.9 ug/l from 11 no. analyses.
- Ammoniacal Nitrogen (as N):
  - Reported between 0.3 and 0.71 mg/l, exceeding 6 no. times from 13 no. analyses.

8.5 Ground Gas Screening Assessment

Ground gas monitoring has been undertaken on three return monitoring visits from BHs 1 to 9, the findings from these monitoring visits are held in Appendix G. In summary, limited elevations of methane and some elevated carbon dioxide readings have been recorded, these are considered further through Gas Screening Values (GSVs) generated for the site setting (Situation A as per CIRIA C665, Assessing risk posed by hazardous ground gases to buildings); these GSVs are presented for methane and carbon dioxide for each borehole location and return monitoring visit. Concentrations (ppm) of hydrogen sulphide have been reported at 0 ppm for all locations and monitoring visits, whilst Carbon Monoxide has similarly been reported at 0 ppm except for BH05 (4 ppm) and BH08 (2 ppm) from the first monitoring visits only (subsequent monitoring visits reported 0ppm for these BH locations). To further review the methane and carbon dioxide concentrations, these have been converted to GSVs allowing for ground gas flow to be considered (as per CIRIA C665).

These GSVs can be then aligned against a hazard potential, Characteristic Situation (CS), and recommendations in accordance with BS 8485: 2015, Code of practice for the design of protective measures

for methane and carbon dioxide ground gases for new buildings. The below tables provide findings of this assessment for hazardous gases.

Table 4: GSV, hazard potential, characteristic situation and recommendation per Borehole - Methane

Borehole	GSV (l/hr)*	Hazard Potential	Characteristic Situation	Recommended remedial work
BH01	0.0002	Very low	CS1	None required
BH02	0.0002	Very low	CS1	None required
BH03	0.0002	Very low	CS1	None required
BH04	0.0001	Very low	CS1	None required
BH05	0.0004	Very low	CS1	None required
BH06	0.0040	Very low	CS1	None required
BH07	0.0002	Very low	CS1	None required
BH08	0.0001	Very low	CS1	None required
BH09	0.0002	Very low	CS1	None required

Note: * peak GSV values utilised

Table 5: GSV, hazard potential, characteristic situation and recommendation per Borehole - Carbon Dioxide

Borehole	GSV (l/hr)*	Hazard Potential	Characteristic Situation	Recommended remedial work
BH01	0.0103	Very low	CS1 (CS2 potential)	None required
BH02	0.0008	Very low	CS1	None required
BH03	0.0062	Very low	CS1	None required
BH04	0.0008	Very low	CS1	None required
BH05	0.0010	Very low	CS1	None required
BH06	0.0390	Very low	CS1	None required
BH07	0.0194	Very low	CS1	None required
BH08	0.0046	Very low	CS1	None required
BH09	0.0066	Very low	CS1	None required

Note: * peak GSV values utilised.

The findings from the ground gas review have identified a Characteristic Situation 1 for all boreholes, this means no ground gas protective measures are likely to be required.

There is one minor potential for a Characteristic Situation 2 to arise for BH01 (the monitoring well for this location is installed within made ground soils, which extend from ground level to 2.5 m bgl), this is only noted due to the presence of Carbon Dioxide above 5%v/v on each monitoring visit which requires further consideration.

BH01 is located in the south west corner of residential Block 1A and comprises a single tier under croft car parking (lower ground floor) which has a final floor level of approximately 2.8 m Above Ordnance Datum (AOD), the made ground in this Borehole extends to approximately 1.8 m AOD, thus it is likely the made ground (which is the source of the elevated Carbon Dioxide in this area) will be removed and therefore mitigate against elevated Carbon Dioxide risks in this part of the site. However, notwithstanding this further monitoring should be undertaken to confirm the final understanding of ground gas on the site, with particular reference to BH01.

8.6 Qualitative Environmental risk assessment

The qualitative environmental risk assessment has been undertaken with cognisance of CIRIA 552, Contaminated Land Risk Assessment, A Guide to Good Practice, 2001. This allows the comparison of probability against consequence[2] for a particular source-pathway-receptor contaminant linkage to potentially cause significant harm or actual significant harm to a receptor. The ability to cause potential or actual harm to a receptor is based on source-pathway-receptor contaminant linkages that can provide the contaminant conduit, thus the assessment is not based on worse-case pollutant linkages, but all linkages identified with the ability to cause potential or actual harm. This assessment takes due cognisance of the proposed masterplan development proposals for the Site when considering the future end use (primarily this concerns the installation of hard standing surfaces and barrier/cover layers).

The following receptors have been identified at the Site:

- **Human health**:
  - Risks to ground and construction workers are a likely probability and with severe consequence resulting in a **High** risk, however this risk can be mitigated with the appropriate use or Personal Protective Equipment and contaminant remedial works completed prior to construction works commencing. The appropriate implementation of these mitigations can reduce the risks to Low.
  - Risks to future site users are an unlikely probability and minor consequence resulting in a **Very Low** risk. This assessment requires that appropriate barriers are installed between any residual contamination at the Site as part of the Masterplan development (this includes hardstanding areas, water-tight basement car parking (or active dewatering systems) and cover layer in landscaped areas.
- **Controlled waters**:
  - Risks to the groundwater are significantly limited due to the absence of an identified protected resource for drinking water purposes (and thus contaminant pathway to human health). However, under the European Union Groundwater Directive, 2000, there is the requirement to prevent and mitigate hazardous and non-hazardous substances from entering and migrating through groundwater body and leaving the Site (which can consider groundwater sample results observations at the boundaries of the Site). Therefore, there is a low to likely probability and mild consequence resulting in a **Low to Low/Moderate** risk.

[2] 'Consequence' is a defined term in C552: it is the magnitude of the potential severity of risk occurring and can be classified as 'severe', 'medium', 'mild' or 'minor' depending on the definitions provided within Table 6.3 of C552. For example 'severe' can be defined as short-term (acute) risk to human health likely to result in significant harm as defined by the Environment Protection Act 1990, Part IIA (source examples that can trigger this are provided as high concentrations of cyanide on the surface of a recreational area, or a major spillage of contaminants into controlled water).

- Risks to the adjacent Baldoyle Bay are unlikely to low likelihood probability and minor consequence, therefore there is a **Very Low** to **Low** risk.

9.0 CONCLUSIONS & RECOMMENDATIONS

This interpretative ground investigation report has identified several conclusions and recommendations which require further action as follows:

- The environmental risk assessment has identified risks to receptors ranging from **Very Low** to **High.** The appropriate management of these risks to ensure no deterioration (i.e. increase in risk) and the mitigation or removal of risks will be provided within the Materials Management Plan and Remedial Strategy;
- A portion of the Site remains un-investigated (the area of the existing building structures), further ground investigation and analytical testing should be completed in these gap areas to ensure full assessment of the Site. It is often the case development projects have to proceed through the planning process with such constraints (due to absence of planning consent / demolition warrant) thus such further investigation and assessment can take the form of a second phase / enabling works in support of finalising detailed design and regulatory compliance;
- Ground gas conditions have identified limited potential for risk to the final development (Characteristic Situation 1), thus it is not expected that protective measures will be required for the development. Notwithstanding, this any further investigation should allow for monitoring of existing wells to ensure ground gas conditions remain as expected or appropriately re-assessed if changes are encountered; and
- Completion of further Environmental Risk Assessment utilising quantitative methods where necessary to establish the initial design requirements for the appropriate management of risks to human health and controlled waters from this development (to be reported through the Materials Management Plan and Remedial Strategy).

10.0 REFERENCES

- Mixed Use Development, Techrete Site, Howth, Co Dublin, Ground Investigation Report (No. 19956), June 2017, IGSL Limited (IGSL 2017);
- Department of Arts, Heritage and the Gaeltacht, 2013: Site Synopsis: Howth Head SAC;
- Environmental Protection Agency 2019: Unified GIS Application ‘EPA Maps’, accessed 17th September 2019;
- Murray, J. & Henry, T. 2018: Waulsortian Limestone: Geology and Hydrogeology;
- Roughan and O’Donovan, December 2015. Stage II Environmental Risk Assessment of Contaminated Land, Mixed Use Development Techrete Site Howth (ROD, 2015); and
- Construction Management Plan, Claremont Project, Howth, Barrett Mahony Consulting Engineers Civil & Structural, June 2019 (BM, 2019).

Signature Page

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Study Limitations

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

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b) Save for Atlas GP Ltd, no duty is undertaken, or warranty or representation made to any party in respect of the opinions, advice, recommendations or conclusions herein set out.

c) Regard should be given to the agreement between Golder and Atlas GP Ltd [07 August 2019], when considering this report and reliance to be placed on it.

d) All work carried out in preparing this report has used, and is based upon, Golder's professional knowledge and understanding of the relevant Irish, UK and European Community legislation at the time that the works were undertaken.

e) Changes in the legislation may cause the opinion, advice, recommendations or conclusions set out in this report to become inappropriate or incorrect. However, in giving its opinions, advice, recommendations and conclusions, Golder has considered pending changes to environmental legislation and regulations of which it is currently aware. Golder will have no obligation to advise Atlas GP Ltd of any such changes, or of their repercussions.

f) Golder acknowledges that it was retained, in part, because of its knowledge and experience with respect to environmental matters. Golder has considered and analysed all information provided to it in the context of Golder's knowledge and experience and all other relevant information known to Golder. To the extent that the information provided to Golder was not inconsistent or incompatible therewith, Golder shall be entitled to rely upon and assume, without independent verification, the accuracy and completeness of all such information and Golder shall have no obligation to verify the accuracy and completeness of such information.

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h) In order to properly understand the factual data, interpretation, suggestions, recommendations and opinions expressed in this report, reference must be made to the entire document.

i) If the scope of the work included borings, test pits, inspections or engineering interpretation of such information, attention is drawn to the fact that special risks occur whenever engineering and related disciplines are applied to identify subsurface conditions. Even a comprehensive sampling and testing programme implemented in accordance with a professional Standard of Care may fail to detect certain conditions. The environmental, geological, geotechnical, geochemical and hydrogeological conditions that Golder interprets to exist between sampling points may differ from those that actually exist. Passage of time, natural occurrences, and activities near the Site may substantially alter discovered conditions.

j) In any Conclusions and/or Recommendations section of this report, Golder has set out its key findings and provided a summary and overview of its advice, opinions and recommendations.

However, other parts of this report will often indicate the limitations of the information obtained by Golder and therefore any advice, opinions or recommendations set out in any Conclusions and Recommendations sections ought not to be relied upon until considered in the context of the whole report.

APPENDIX A

Drawings

NOTES:

GRID REFERENCES ARE IN METRES & TO IRISH NATIONAL GRID.

LEVELS ARE IN METRES & TO OS DATUM MALIN HEAD.

BACKGROUND SURVEY INFORMATION IS AS SUPPLIED FROM CLIENT AND IS CIRCA 2007/2008.

LEGEND:

SITE BOUNDARY LINE (Sep. 2011)

0 20 40 60m

1:1,000

CLIENT

ATLAS GP Ltd.

CONSULTANT

GOLDER

YYYY-MM-DD	2019-Sep-24
PREPARED	POB
DESIGN	POB
REVIEW	RT
APPROVED	RT

PROJECT

CLAREMONT PROJECT

TITLE

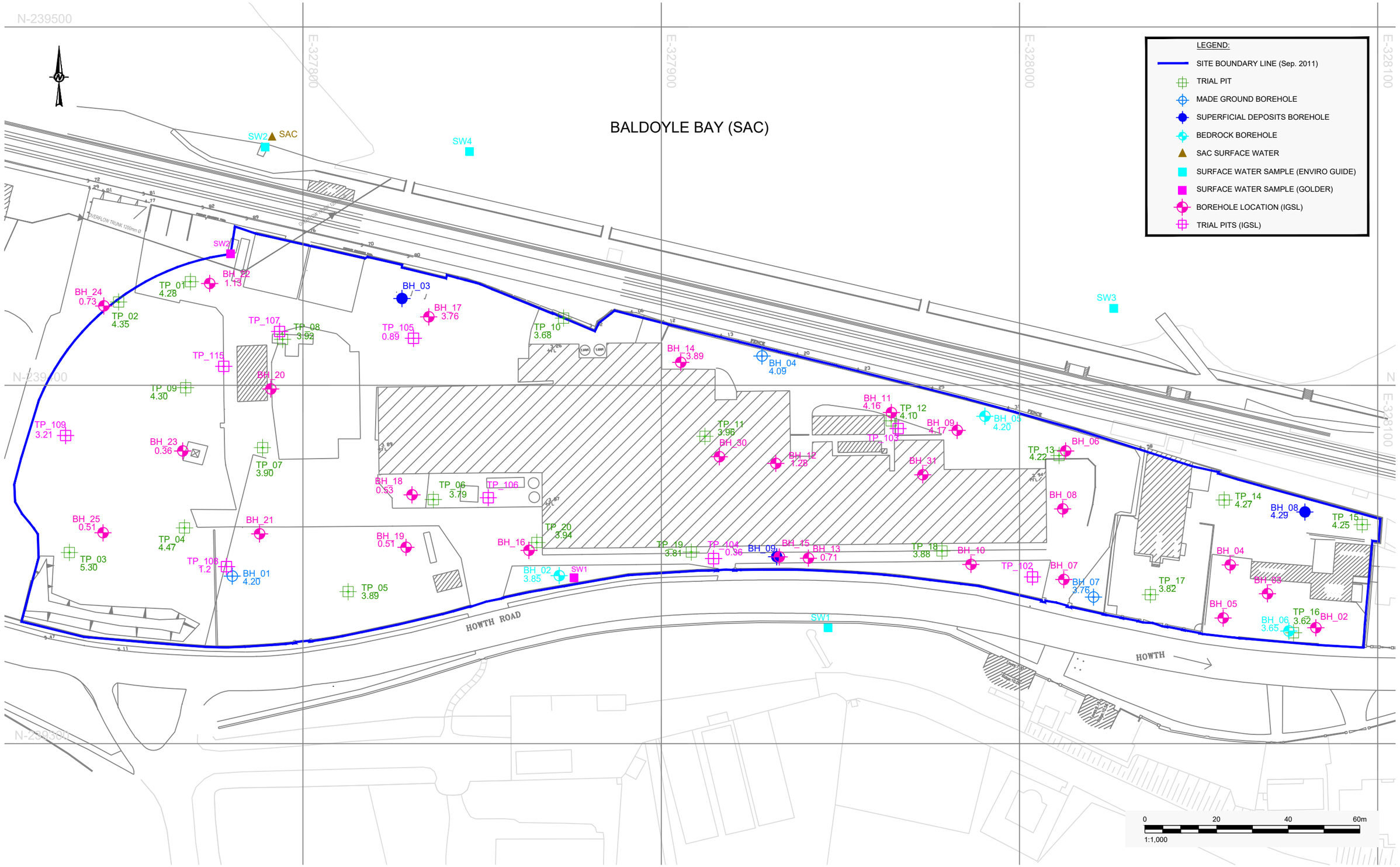
SITE LAYOUT PLAN

PROJECT No.	DRAWING No.	Rev.	SCALE
19128243	01	A	1:1,000 A3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ISO A3

25 mm

Path: \\naa1-s-main01\Company\PROJECTS\2019\19128243 - Marlet_Howth_Strategy Plan\5. Technical Work\GRAPHICS\5. WORKING DRAWINGS\02 - Working\ | File Name: 01 - Site Layout Plan.dwg



NOTES:

GRID REFERENCES ARE IN METRES & TO IRISH NATIONAL GRID.

LEVELS ARE IN METRES & TO OS DATUM MALIN HEAD.

BACKGROUND SURVEY INFORMATION IS AS SUPPLIED FROM CLIENT AND IS CIRCA 2007/2008.

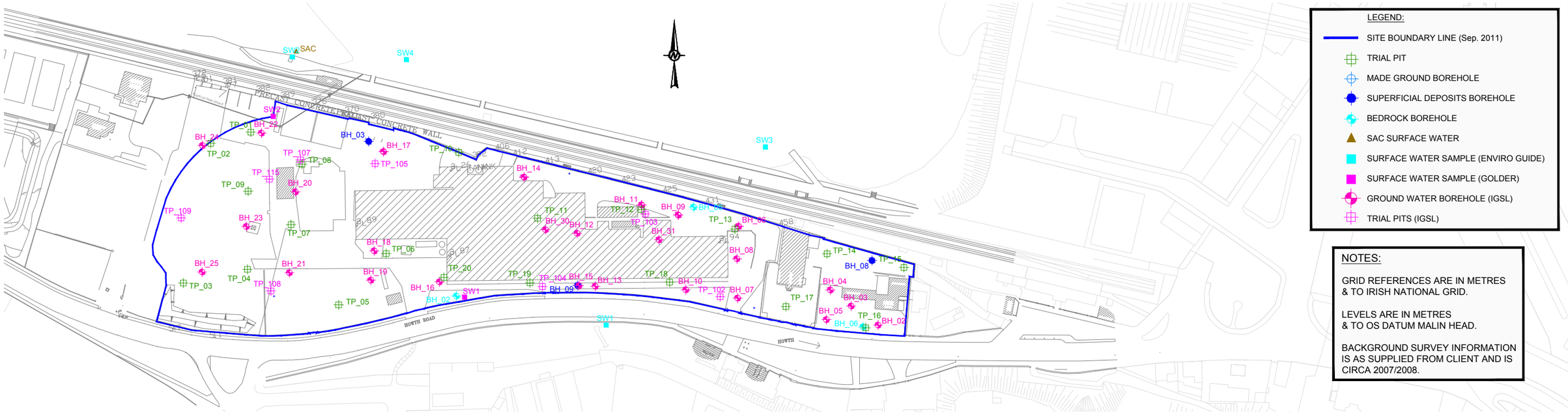
CLIENT	ATLAS GP Ltd.	PROJECT	CLAREMONT PROJECT
CONSULTANT	GOLDER	TITLE	GROUND INVESTIGATION PLAN
YYYY-MM-DD	2019-Sep-24		
PREPARED	JD		
DESIGN	JD		
REVIEW	RT		
APPROVED	RT		

PROJECT No.	DRAWING No.	Rev.	SCALE
19128243	02	A	1:1,000 A3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ISO A3

25 mm

Path: \\NAA1-S-MAIN01\Company\PROJECTS\2019\19128243 - Market_Howth_Strategy Plan\5. Technical Work\GRAPHICS\5. WORKING DRAWINGS\02 - Working\ | File Name: 02 - Ground Investigation Plan.dwg



NOTES:

GRID REFERENCES ARE IN METRES & TO IRISH NATIONAL GRID.

LEVELS ARE IN METRES & TO OS DATUM MALIN HEAD.

BACKGROUND SURVEY INFORMATION IS AS SUPPLIED FROM CLIENT AND IS CIRCA 2007/2008.

			Sample Location	TP105	TP106	TP106	TP108	TP115	BH14	BH16	BH16	BH17	BH17	BH18	BH18	BH18	BH18	BH18
			Sample Depth	1.30	0.9	2.1	1.2	2.8	1	1	2	1	3	1	1	2	3	3
			Soil Type	Made Ground	Made Ground	Clayey Sandy GRAVEL	Made Ground	Gravelly Silty SAND	Made Ground	Made Ground	Made Ground	Made Ground	SILT/CLAY	Made Ground	Made Ground	Made Ground	Silty Gravel	Silty Gravel
			Lab Receipt Date	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	03/04/2017	28/04/2017	03/04/2017	03/04/2017	28/04/2017
Determinand	Units	RWOHG GAC[2,3]	Source															
Arsenic	mg/kg	40	LQM, 2014	61.1	18.2	34.3	52.2	23.8	2.5	8.8	69.7	44.5	6.5	26.9	19.8	53.7	23.4	16.1
Barium	mg/kg	1300	CL:AIRE, 2010	65	416	458	126	177	2188	201	263	132	663	150	229	256	218	123
Lead[4]	mg/kg	130	DEFRA, 2013	74	679	737	125	163	<5	363	890	108	34	257	400	631	440	198
Benzo(a)pyrene	mg/kg	3.2	LQM, 2014	6.41	9.16	1.5	6.39	1.09	0.1	1.72	1.03	0.19	<0.04	2.61	2.49	3.25	2.22	0.45
Dibenzo(ah)anthracene	mg/kg	0.31	LQM, 2014	0.87	1.48	0.32	1.2	0.12	<0.04	0.17	0.11	<0.04	<0.04	0.41	0.25	0.53	0.42	<0.04
Benzo(b)fluoranthene	mg/kg	3.9	LQM, 2014	8.25	11.62	1.85	7.57	1.38	0.16	2.09	1.27	0.24	<0.05	3.15	3.03	3.92	3.12	0.62
Asbestos Fibres	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	Fibre Bundles	NAD	Fibre Bundles	NAD	Fibre Bundles	Fibre Bundles	Fibre Bundles	Fibre Bundles
Asbestos Type	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	Chrysotile	NAD	Chrysotile	NAD	Chrysotile	Chrysotile	Chrysotile	Chrysotile
Asbestos Gravimetric & PCOM Total	mass %	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	0.003	NAD	<0.001	<0.001	<0.001	<0.001

BH19	BH19	BH20	BH20	BH21	BH22	BH22	BH22	BH23	TP1	TP1	TP4	TP6	TP6	TP7	TP7	TP9	TP9	TP10
1	3	1	3	2	1	3	4	1	0.00-1.50	1.50-3.00	0.00-1.50	0.00-1.50	1.50-2.60	0.00-1.50	1.50-3.00	0.00-1.50	1.50-3.00	0.00-1.50
Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	21/04/2017	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019
35.2	16.8	26.4	21.9	88	62.7	47.5	31.3	66.5	NDP	25.4	28.4	NDP	NDP	21.7	12.6	NDP	27.7	NDP
99	113	175	202	585	189	842	297	821	NDP	470	183	NDP	NDP	216	92	NDP	259	NDP
116	67	194	156	621	288	3973	327	565	NDP	583	141	NDP	NDP	156	167	NDP	141	NDP
3.29	0.18	1.35	0.95	1	2.9	7.9	1	3.46	-	-	-	-	-	-	-	-	-	-
0.51	<0.04	0.21	0.18	0.17	0.25	1.13	0.15	0.36	-	-	-	-	-	-	-	-	-	-
3.83	0.24	1.63	1.16	1.25	3.41	9.23	1.23	4.08	-	-	-	-	-	-	-	-	-	-
NAD	Fibre Bundles	NAD	NAD	NAD	Fibre Bundles	Fibre Bundles	Fibre Bundles	NAD	Fibre Bundles	NAD	NAD	Fibre Bundles	Fibre Bundles	NAD	NAD	Fibre Bundles	NAD	Fibre Bundles
NAD	Chrysotile	NAD	NAD	NAD	Chrysotile	Chrysotile	Chrysotile	NAD	Chrysotile	NAD	NAD	Chrysotile	Chrysotile	NAD	NAD	Chrysotile	NAD	Chrysotile
NAD	<0.001	NAD	NAD	NAD	<0.001	<0.001	<0.001	NAD	<0.001	-	-	<0.001	0.001	-	-	<0.001	-	<0.001

0 40 80 120m

1:2,000

CLIENT

ATLAS GP Ltd

CONSULTANT

GOLDER

YYYY-MM-DD	2019-Sep-27
PREPARED	JD
DESIGN	JD
REVIEW	RT
APPROVED	RT

PROJECT

CLAREMONT PROJECT

TITLE

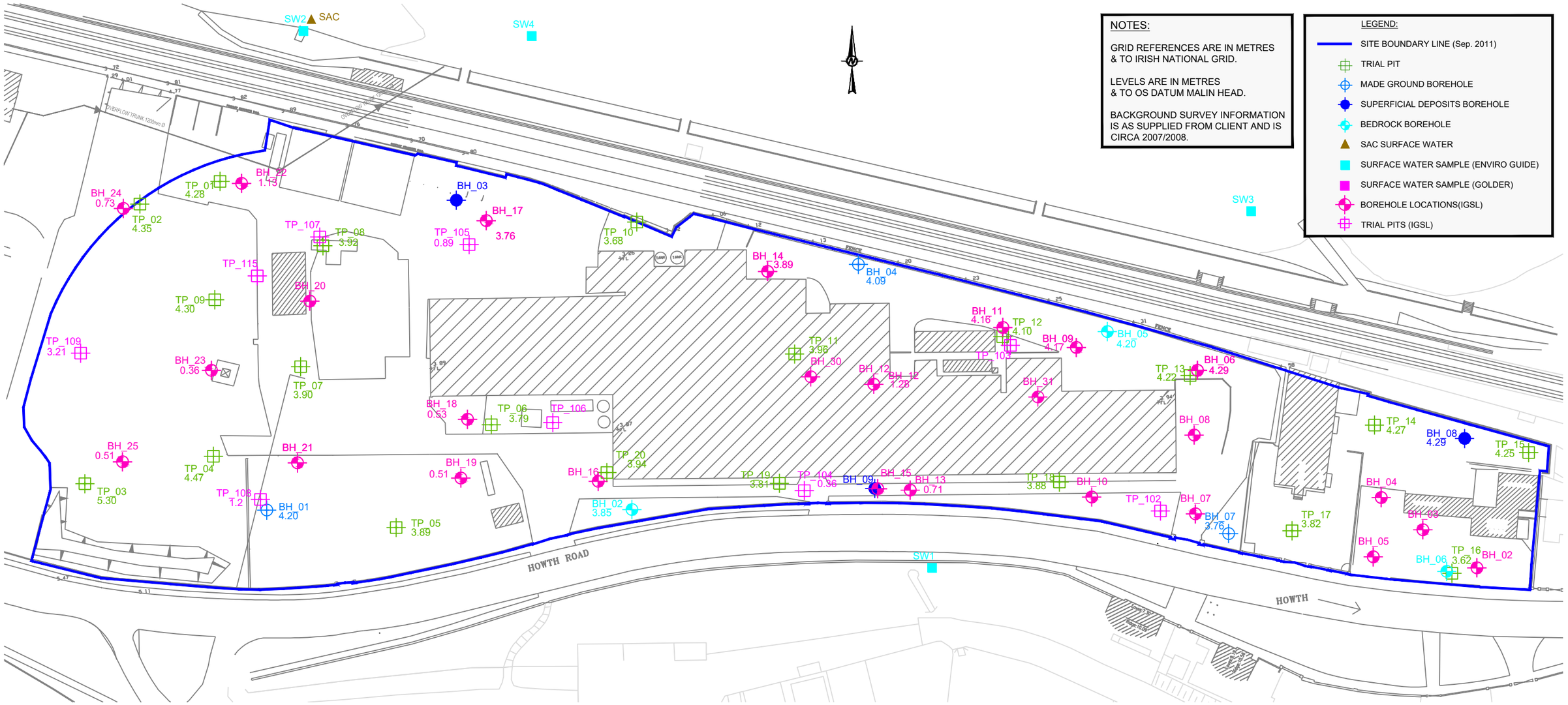
SOIL EXCEEDANCES - APARTMENTS & BASEMENTS

PROJECT No.	DRAWING No.	Rev.	SCALE
1912843	03A	A	1:2,000 A3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ISO A3

0 25mm

Path: \\na1-s-main01\Company\PROJECTS\2019\1912843 - Mariel_Howth_Strategy Plan\5_Technical Work\GRAPHICS\5_WORKING DRAWINGS\02 - Working\ | File Name: 03 - Soil Exceedances - Terraced Housing.dwg



			Sample Location	TP109							BH25			TP2	
			Sample Depth	0.6	1.7	2.9	1	1	2	3	1	2	3		2.80-3.50
			Soil Type	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Soil	Soil
			Lab Receipt Date	31/03/2017	31/03/2017	31/03/2017	03/04/2017	28/04/2017	28/04/2017	03/04/2017	28/04/2017	28/04/2017	28/04/2017	13/08/2019	<>
Determinand	Units	RWOHG GAC[2,3]	Source												
Arsenic	mg/kg	40	LQM, 2014	18.6	10.9	17.8	23.9	27.9	87.3	47	18.8	23.2	44.4	20.6	47
Barium	mg/kg	1300	CL:AIRE, 2010	142	195	298	348	377	176	2672	188	204	454	225	564
Lead[4]	mg/kg	130	DEFRA, 2013	138	250	207	317	367	144	326	94	168	430	150	390
Nickel	mg/kg	180	LQM, 2014	39.1	55	26.9	63.8	74.8	31.8	253.5	30.3	45.5	80.1	36.3	109.7
Benzo(a)pyrene	mg/kg	3.2	LQM, 2014	21.53	0.65	0.37	4.55	3.45	<0.04	0.27	3.8	3.48	2.88	-	-
Dibenzo(ah)anthracene	mg/kg	0.31	LQM, 2014	3.21	0.15	0.07	0.73	0.43	<0.04	<0.04	0.44	0.38	0.51	-	-
Benzo(b)fluoranthene	mg/kg	3.9	LQM, 2014	27.17	0.81	0.45	5.51	4.09	<0.05	0.35	4.28	3.86	3.45	-	-
Total 7 PCBs[7]	ug/kg	8	EA, 2009	<35	<35	<35	102	<35	<35	<35	<35	<35	<35	<35	<35
Asbestos Fibres	--	-		Fibre Bundles	NAD	NAD	NAD	Fibre Bundles	NAD	Fibre Bundles	NAD	NAD	NAD	NAD	NAD
Asbestos Type	--	-		Chrysotile	NAD	NAD	NAD	Chrysotile	NAD	Chrysotile	NAD	NAD	NAD	NAD	NAD
Asbestos Gravimetric & PCOM Total	mass %	-		<0.001	NAD	NAD	NAD	<0.001	NAD	<0.001	NAD	NAD	NAD	-	-

0 20 40 60m
1:1,000

CLIENT
ATLAS GP Ltd

CONSULTANT
GOLDER

YYYY-MM-DD	2019-Sep-27
PREPARED	JD
DESIGN	JD
REVIEW	RT
APPROVED	RT

PROJECT
CLAREMONT PROJECT

TITLE
SOIL EXCEEDANCES - PUBLIC OPEN SPACES

PROJECT No.	DRAWING No.	Rev.	SCALE
1912843	03B	A	1:1,000 A3

Path: \\NAA1-S-MAIN01\Company\PROJECTS\2019\1912843 - Market_Howth_Strategy Plan\5. Technical Work\GRAPHICS\5. WORKING DRAWINGS\02 - Working\ | File Name: 03B - Soil Exceedances - Public Open Spaces.dwg

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ISO A3

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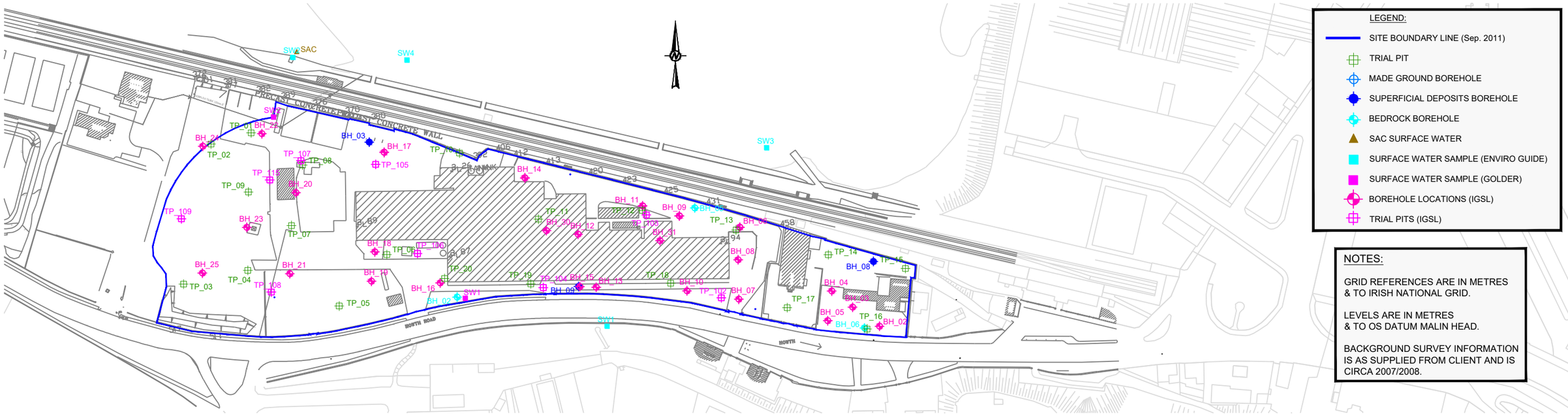

LEGEND:

- SITE BOUNDARY LINE (Sep. 2011)
- TRIAL PIT
- MADE GROUND BOREHOLE
- SUPERFICIAL DEPOSITS BOREHOLE
- BEDROCK BOREHOLE
- SAC SURFACE WATER
- SURFACE WATER SAMPLE (ENVIRO GUIDE)
- SURFACE WATER SAMPLE (GOLDER)
- BOREHOLE LOCATIONS (IGSL)
- TRIAL PITS (IGSL)

NOTES:

GRID REFERENCES ARE IN METRES & TO IRISH NATIONAL GRID.

LEVELS ARE IN METRES & TO OS DATUM MALIN HEAD.

BACKGROUND SURVEY INFORMATION IS AS SUPPLIED FROM CLIENT AND IS CIRCA 2007/2008.

			Sample Location	TP105	TP106	TP106	TP108	TP115	BH14	BH16	BH16	BH17	BH17	BH18	BH18	BH18	BH18	BH18
			Sample Depth	1.30	0.9	2.1	1.2	2.8	1	1	2	1	3	1	1	2	3	3
			Soil Type	Made Ground	Made Ground	Clayey Sandy GRAVEL	Made Ground	Gravelly Silty SAND	Made Ground	Made Ground	Made Ground	Made Ground	SILT/CLAY	Made Ground	Made Ground	Made Ground	Silty Gravel	Silty Gravel
			Lab Receipt Date	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	03/04/2017	28/04/2017	03/04/2017	03/04/2017	28/04/2017
Determinand	Units	RWOHG GAC[2,3]	Source															
Arsenic	mg/kg	40	LQM, 2014	61.1	18.2	34.3	52.2	23.8	2.5	8.8	69.7	44.5	6.5	26.9	19.8	53.7	23.4	16.1
Barium	mg/kg	1300	CL:AIRE, 2010	65	416	458	126	177	2188	201	263	132	663	150	229	256	218	123
Lead[4]	mg/kg	130	DEFRA, 2013	74	679	737	125	163	<5	363	890	108	34	257	400	631	440	198
Benzo(a)pyrene	mg/kg	3.2	LQM, 2014	6.41	9.16	1.5	6.39	1.09	0.1	1.72	1.03	0.19	<0.04	2.61	2.49	3.25	2.22	0.45
Dibenzo(ah)anthracene	mg/kg	0.31	LQM, 2014	0.87	1.48	0.32	1.2	0.12	<0.04	0.17	0.11	<0.04	<0.04	0.41	0.25	0.53	0.42	<0.04
Benzo(b)fluoranthene	mg/kg	3.9	LQM, 2014	8.25	11.62	1.85	7.57	1.38	0.16	2.09	1.27	0.24	<0.05	3.15	3.03	3.92	3.12	0.62
Asbestos Fibres	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	Fibre Bundles	NAD	Fibre Bundles	NAD	Fibre Bundles	Fibre Bundles	Fibre Bundles	Fibre Bundles
Asbestos Type	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	Chrysotile	NAD	Chrysotile	NAD	Chrysotile	Chrysotile	Chrysotile	Chrysotile
Asbestos Gravimetric & PCOM Total	mass %	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	0.003	NAD	<0.001	<0.001	<0.001	<0.001

BH19	BH19	BH20	BH20	BH21	BH22	BH22	BH22	BH23	TP1	TP1	TP4	TP6	TP6	TP7	TP7	TP9	TP9	TP10
1	3	1	3	2	1	3	4	1	0.00-1.50	1.50-3.00	0.00-1.50	0.00-1.50	1.50-2.60	0.00-1.50	1.50-3.00	0.00-1.50	1.50-3.00	0.00-1.50
Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	21/04/2017	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019
35.2	16.8	26.4	21.9	88	62.7	47.5	31.3	66.5	NDP	25.4	28.4	NDP	NDP	21.7	12.6	NDP	27.7	NDP
99	113	175	202	585	189	842	297	821	NDP	470	183	NDP	NDP	216	92	NDP	259	NDP
116	67	194	156	621	288	3973	327	565	NDP	583	141	NDP	NDP	156	167	NDP	141	NDP
3.29	0.18	1.35	0.95	1	2.9	7.9	1	3.46	-	-	-	-	-	-	-	-	-	-
0.51	<0.04	0.21	0.18	0.17	0.25	1.13	0.15	0.36	-	-	-	-	-	-	-	-	-	-
3.83	0.24	1.63	1.16	1.25	3.41	9.23	1.23	4.08	-	-	-	-	-	-	-	-	-	-
NAD	Fibre Bundles	NAD	NAD	NAD	Fibre Bundles	Fibre Bundles	Fibre Bundles	NAD	Fibre Bundles	NAD	NAD	Fibre Bundles	Fibre Bundles	NAD	NAD	Fibre Bundles	NAD	Fibre Bundles
NAD	Chrysotile	NAD	NAD	NAD	Chrysotile	Chrysotile	Chrysotile	NAD	Chrysotile	NAD	NAD	Chrysotile	Chrysotile	NAD	NAD	Chrysotile	NAD	Chrysotile
NAD	<0.001	NAD	NAD	NAD	<0.001	<0.001	<0.001	NAD	<0.001	-	-	<0.001	0.001	-	-	<0.001	-	<0.001

0 40 80 120m

1:2,000

CLIENT: ATLAS GP Ltd

CONSULTANT: GOLDER

YYYY-MM-DD	2019-Sep-27
PREPARED	JD
DESIGN	JD
REVIEW	RT
APPROVED	RT

PROJECT: CLAREMONT PROJECT

TITLE: **SOIL EXCEEDANCES - TERRACED HOUSING**

PROJECT No.	DRAWING No.	Rev.	SCALE
1912843	03C	A	1:2,000 A3

Path: \\NAA1-S-MAN01\Company\PROJECTS\2019\1912843 - Market_Howth_Strategy Plan\5. Technical Work\GRAPHICS\5. WORKING DRAWINGS\02 - Working\ | File Name: 03C - Soil Exceedances - Terraced Housing.dwg

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ISO A3

25 mm

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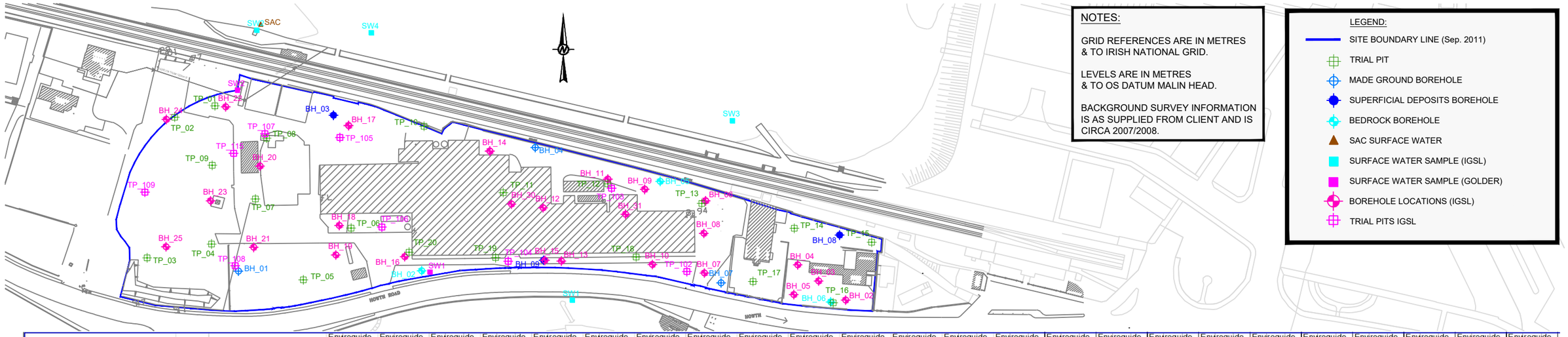

NOTES:

GRID REFERENCES ARE IN METRES & TO IRISH NATIONAL GRID.

LEVELS ARE IN METRES & TO OS DATUM MALIN HEAD.

BACKGROUND SURVEY INFORMATION IS AS SUPPLIED FROM CLIENT AND IS CIRCA 2007/2008.

LEGEND:

- SITE BOUNDARY LINE (Sep. 2011)
- TRIAL PIT
- MADE GROUND BOREHOLE
- SUPERFICIAL DEPOSITS BOREHOLE
- BEDROCK BOREHOLE
- SAC SURFACE WATER
- SURFACE WATER SAMPLE (IGSL)
- SURFACE WATER SAMPLE (GOLDER)
- BOREHOLE LOCATIONS (IGSL)
- TRIAL PITS IGSL

			Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide
Sample ID	**Units**	**Groundwater Regulations 2010 (S.I. No. 9 of 2010) and amendment S.I. No. 366/2016 (GTVs)**	**TP102**	**TP103**				**TP104**		**TP105**			**TP106**		**TP108**			**TP109**			**BH1**	**BH2**	**BH3**		**BH4**		**BH6**
Depth			**0.40**	**0.50**	**2.50**	**3.50**	**0.5**	**2.20**	**0.70**	**1.30**	**2.2**	**0.9**	**2.1**	**1.2**	**2.5**	**3.7**	**0.6**	**1.7**	**2.9**	**2.8**	**1**	**1**	**3**	**1**	**3**	**1**
Sampled Date			**31/03/2017**	**31/03/2017**	**31/03/2017**	**31/03/2017**	**11/04/2017**	**31/03/2017**	**31/03/2017**	**31/03/2017**	**31/03/2017**	**31/03/2017**	**31/03/2017**	**31/03/2017**	**31/03/2017**	**31/03/2017**	**31/03/2017**	**31/03/2017**	**31/03/2017**	**31/03/2017**	**21/04/2017**	**11/05/2017**	**11/05/2017**	**21/04/2017**	**21/04/2017**	**28/04/2017**
Lab Ref. No.			**17/6349**	**17/6349**	**17/6349**	**17/6349**	**17/6858**	**17/6349**	**17/6349**	**17/6349**	**17/6349**	**17/6349**	**17/6349**	**17/6349**	**17/6349**	**17/6349**	**17/6349**	**17/6349**	**17/6349**	**17/6349**	**17/7329**	**17/8435**	**17/8435**	**17/7329**	**17/7329**	**17/7789**
Dissolved Arsenic	ug/l	7.5	11.60	14.10	4.10	<2.5	10.70	<2.5	4.00	13.60	<2.5	2.60	<2.5	24.80	17.70	10.70	<2.5	30.00	22.50	<2.5	10.30	32.80	<2.5	<2.5	24.70	<2.5
Dissolved Chromium	ug/l	37.5	9.10	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	1.90	<1.5	<1.5	<1.5	<1.5	<1.5	31.50	<1.5	<1.5
Dissolved Lead	ug/l	7.5	6.00	<5	<5	<5	<5	<5	<5	<5	<5	<5	8.00	<5	<5	<5	<5	49.00	<5	<5	<5	<5	<5	<5	<5	<5
Dissolved Mercury	ug/l	0.75	0.95	1.30	0.07	0.19	0.22	0.07	0.11	0.20	<0.01	0.85	0.43	<0.01	0.29	0.31	0.18	0.17	1.50	0.59	0.90	0.18	<0.01	<0.01	0.27	<0.01
Total PAHs (sum of 6)	ug/l	0.075																								
Sulphate as SO4	mg/l	187.5	7.75	1.17	17.46	45.59	8.12	142.03	20.64	21.99	15.97	16.53	8.87	3.15	0.65	27.89	30.83	175.24	22.81	21.14	1.26	5.58	317.3	11.07	10.99	3.9
Ammoniacal Nitrogen as N	mg/l	0.175	<0.03	0.03	2.24	3.35	<0.03	0.45	2.14	1.23	1.67	0.03	0.03	<0.03	0.37	0.14	0.47	1.77	0.54	0.72	0.03	0.12	4.95	0.29	<0.03	0.22

Enviroguide	Enviroguide	Enviroguide																								
BH9	**BH10**	**BH11**	**BH12**	**BH13**		**BH17**	**BH18**		**BH19**	**BH22**			**BH24**		**BH25**		**BH30**	**BH31**		**TP1**	**TP2**	**TP3**		**TP4**		**TP5**	**TP7**	**TP8**	**TP9**
2	**1**	**1**	**1**	**1**	**3**	**1**	**1**	**2**	**2**	**1**	**3**	**4**	**1**	**4**	**1**	**2**	**5**	**1**	**2**	**0.00-1.50**	**2.80-3.50**	**0.00-1.50**	**1.50-2.20**	**0.00-1.50**	**1.50-2.50**	**1.50-2.50**	**0.00-1.50**	**2.50-3.50**	**0.00-1.50**
28/04/2017	**28/04/2017**	**28/04/2017**	**28/04/2017**	**28/04/2017**	**28/04/2017**	**28/04/2017**	**03/04/2017**	**03/04/2017**	**28/04/2017**	**28/04/2017**	**28/04/2017**	**28/04/2017**	**03/04/2017**	**28/04/2017**	**28/04/2017**	**28/04/2017**	**11/05/2017**	**11/05/2017**	**11/05/2017**	**16/08/2019**	**16/08/2019**	**16/08/2019**	**16/08/2019**	**16/08/2019**	**16/08/2019**	**16/08/2019**	**16/08/2019**	**16/08/2019**	**16/08/2019**
17/7789	**17/7789**	**17/7789**	**17/7789**	**17/7789**	**17/7789**	**17/7789**	**17/6443**	**17/6443**	**17/7789**	**17/7789**	**17/7789**	**17/7789**	**17/6443**	**17/7789**	**17/7789**	**17/7789**	**17/8435**	**17/8435**	**17/8435**	**19/13288**	**19/13288**	**19/13288**	**19/13288**	**19/13288**	**19/13288**	**19/13288**	**19/13288**	**19/13288**	**19/13288**
<2.5	34.90	20.10	<2.5	16.10	<2.5	5.30	4.10	<2.5	3.20	5.50	13.10	11.40	<2.5	<2.5	25.60	18.50	11.60	7.80	6.70	5.10	27.70	6.40	11.10	6.20	19.70	<2.5	6.80	5.10	5.50
<1.5	<1.5	<1.5	49.60	<1.5	<1.5	<1.5	1.50	1.50	3.00	<1.5	<1.5	<1.5	2.70	<1.5	1.90	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
<5	<5	<5	11.00	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	7.00	<5	<5	<5	<5	<5	5.00	7.00	6.00	6.00	11.00	<5	6.00	<5	<5
0.01	2.55	0.13	12.10	0.30	<0.01	0.02	0.86	1.81	0.78	0.01	0.02	<0.01	1.01	<0.01	0.99	0.93	0.52	2.10	1.12	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
																				0.7	0.0	2.9	5.4	9.8	5.7	1.0	2.5	2.7	1.3
62.31	11.47	41.66	14.06	11.48	105.42	24.19	16.59	17.04	24.19	39.17	68.8	68.04	16.24	228.59	65.98	65.01	32.7	12.35	9.85	17.9	21.1	97.1	122.1	21.7	26.3	3.4	22	39.7	23.4
2.9	0.18	0.14	<0.03	<0.03	4	3.83	0.5	0.71	<0.03	1.88	13.88	3.8	<0.03	1.36	0.53	0.05	0.03	0.05	0.04	3.91	4.99	0.92	3.01	<0.03	1.06	<0.03	0.74	0.27	1.07

TP11	**TP12**		**TP16**		**TP17**	**TP18**	**TP19**	**TP20**
0.00-1.50	**0.00-1.50**	**1.50-3.00**	**0.00-1.50**	**1.50-1.90**	**1.50-1.90**	**0.00-1.50**	**0.00-0.70**	**0.00-0.75**
16/08/2019	**16/08/2019**	**16/08/2019**	**15/08/2019**	**15/08/2019**	**15/08/2019**	**16/08/2019**	**16/08/2019**	**16/08/2019**
19/13464	**19/13288**	**19/13288**	**19/13464**	**19/13464**	**19/13464**	**19/13464**	**19/13288**	**19/13464**
46.00			13.80	17.50	9.20	40.80		<2.5
6.40	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	14.40
12.00	<5	<5	<5	22.00	<5	8.00	<5	19.00
<0.01	5.00	17.00	<0.01	<0.01	<0.01	<0.01	7.00	<0.01
	2.4	7.6					3.8	
	<0.03	0.09					0.12	

0 40 80 120m

1:2,000

CLIENT

ATLAS GP Ltd.

CONSULTANT

GOLDER

YYYY-MM-DD	2019-Sep-27
PREPARED	JD
DESIGN	JD
REVIEW	RT
APPROVED	RT

PROJECT

CLAREMONT PROJECT

TITLE

SOIL LEACHATE EXCEEDANCES

PROJECT No.	DRAWING No.	Rev.	SCALE
19128243	04	A	1:2,000 A3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ISO A3

25 mm

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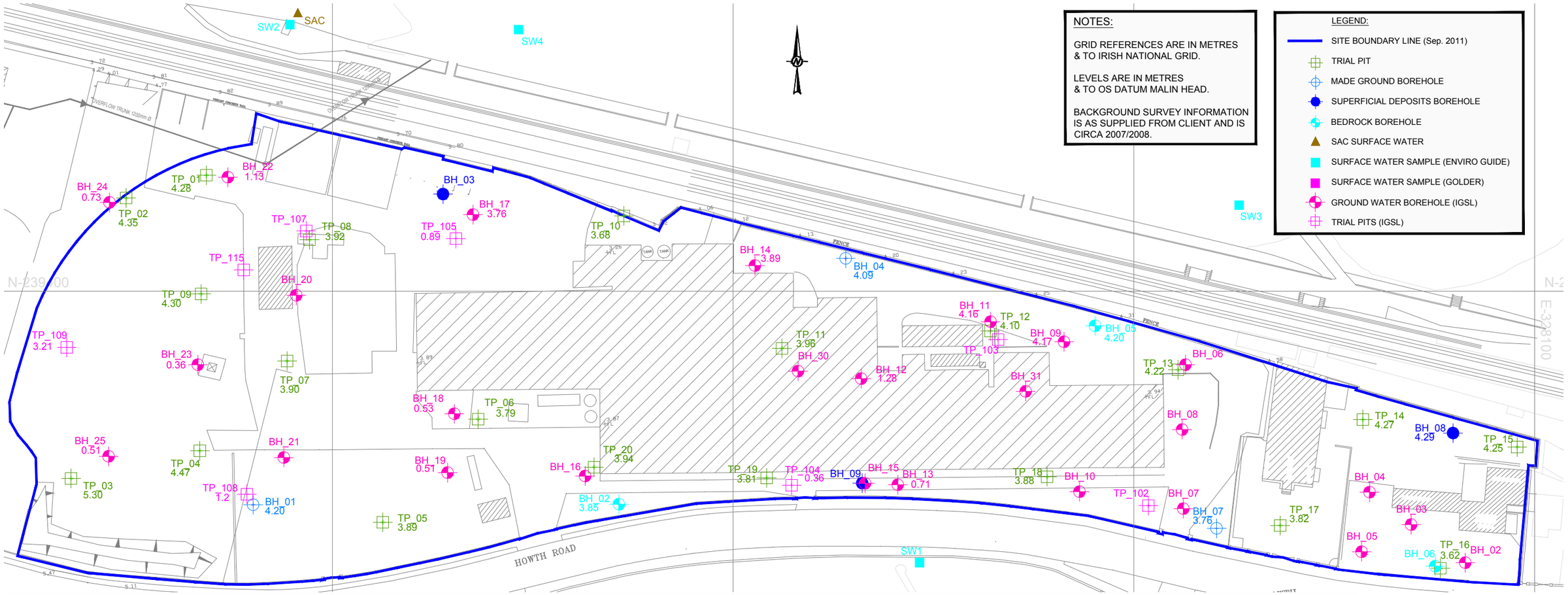
Path: \\WA1-S-MAIN01\Company\PROJECTS\2019\19128243 - Market_Howth_Strategy Plan\5_Technical Work\GRAPHICS\5_WORKING DRAWINGS\02 - Working\ | File Name: 04 - Leachate Exceedances.dwg



Sample ID / Sampled Date	Units	Groundwater Regulations 2010 (S.I. No. 9 of 2010) and amendment S.I. No. 366/2016 (GTVs)	BH02			BH3			BH04	BH5			BH6			BH8		
			13/09/2019	17/09/2019	20/09/2019	04/09/2019	09/09/2019	13/09/2019	14/01/2019	04/09/2019	09/09/2019	13/09/2019	04/09/2019	09/09/2019	13/09/2019	04/09/2019	09/09/2019	13/09/2019
Conductivity	us/cm	800 (saline intrusion)							874									
Dissolved Arsenic	ug/l	7.5	6.5	7.4	8.6	6.1	7.1	12	<2.5	13.9	13.9	18.9	<2.5	<2.5	4	<2.5	4.7	4.8
Dissolved Nickel	ug/l	15	27	3	4	3	4	<2	49	<2	<2	<2	<2	<2	<2	31	29	<2
Total PAHs (sum of 6)	ug/l	0.075	0.7	0.0	0.0	0.0	0.0	0.0	0.0	4.3	0.6	1.6	0.0	0.0	0.0	0.0	2.5	0.8
Total aliphatics and aromatics(C5-35)	ug/l	7.5		<10	<10	<10	<10		<10	<10	<10		<10	<10		<10	<10	
Chloride	mg/l	187.5	40.7	39.2	38	124.1	113.7	112.4	55.1	39.7	211	192.1	457	479.3	473.3	41.7	42.4	46.5
Nitrite as NO2	mg/l	0.375	0.69	0.06	0.1	<0.02	<0.02	<0.02	0.03	<0.02	0.03	0.12	0.49	0.06	0.06	0.11	0.54	0.07
Ammoniacal Nitrogen as N	mg/l	0.175	0.7	0.06	0.16	3.96	3.22	3.07	0.26	11.32	4.22	4.43	0.04	0.04	<0.03	0.82	0.89	0.09

BH9			BH11		BH15	BH16		BH17	BH22	
03/09/2019	09/09/2019	13/09/2019	05/05/2017	10/01/2019	10/01/2019	05/05/2017	10/01/2019	10/01/2019	05/05/2017	10/01/2019
				516.8	12.5	NDP	624.6	768	NDP	117.1
10.5	7.2	11.6	9.5	<2.5	<2.5	6.9	<2.5	<2.5	10.3	<2.5
3	3	<2	4	2	4	6.1	4	<2	4.2	<2
123.6	2.8	29.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5430	<10		-	<10	<10	-	<10	<10	-	<10
24	36.5	46.5	18.3	26.9	55.4	37.1	68.9	193.8	456.5	562.8
<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.09	<0.02	<0.02	<0.02	<0.02
1.29	1.27	1.38	0.21	0.61	0.63	0.52	0.05	3.01	23.18	19.33

CLIENT: ATLAS GP Ltd.

PROJECT: CLAREMONT PROJECT

CONSULTANT: GOLDER

YYYY-MM-DD	2019-Sep-27
PREPARED	JD
DESIGN	JD
REVIEW	RT
APPROVED	RT

TITLE: **GROUNDWATER EXCEEDANCES**

PROJECT No.	DRAWING No.	Rev.	SCALE
19128243	05	A	1:1,000 A3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ISO A3

25 mm

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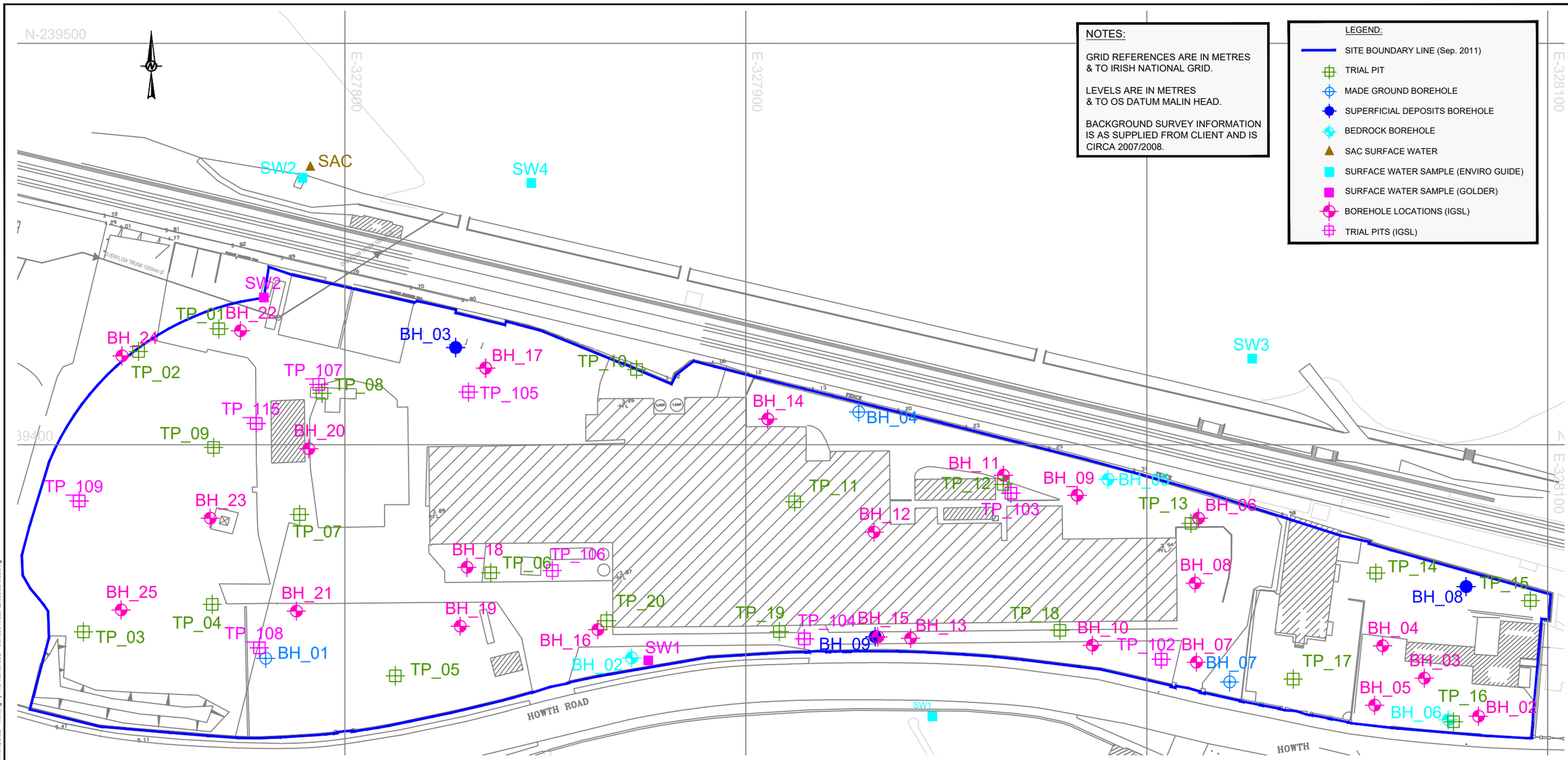
Path: \\naa1-s-main01\Company\PROJECTS\19128243 - Market_Howth_Strategy Plan\5_Technical Work\GRAPHICS\5. WORKING DRAWINGS\02 - Working\ | File Name: 05 - Groundwater and Surface Water Exceedances.dwg



		Bloody Stream (Culverted)						Baldoyle Bay					
Sample ID	Units	S.I. No. 272/2009 - European Communities Environmental Objectives (Surface Waters) Regulations 2009 including amendments S.I. No. 327/2012, S.I. No. 386/2015 and S.I. No. 77/2019.		SW1	SW2			S.I. No. 272/2009 - European Communities Environmental Objectives (Surface Waters) Regulations 2009 including amendments S.I. No. 327/2012, S.I. No. 386/2015 and S.I. No. 77/2019.		Marine SI No 268-2009	SW2 *	SW3	SW4
Sampled Date				09/09/2019	10/01/2019	09/09/2019	13/09/2019				10/01/2019	23/04/2019	23/04/2019
Lab Ref. No.		AA-EQS Inland Surface Waters	MAC-EQS Inland Surface Waters	19-14572	19/410	19-14572	19-15004	AA-EQS Other Surface Waters	MAC-EQS Other Surface Waters	EQS- Shellfish marine waters	19/410	19/6647	19/6647
Total PAHs (sum of six)	ug/l	--	--	1.9	0.0	0.0	0.0	--	--	--	0.0	0.0	0.0
Ammoniacal Nitrogen as N	mg/l	0.14	0.14	0.04	0.3	0.34	0.3	0.14	0.14	--	0.3	0.69	0.71

0 20 40 60m
1:1,000

CLIENT
ATLAS GP Ltd.

CONSULTANT
GOLDER

YYYY-MM-DD	2019-Sep-24
PREPARED	POB
DESIGN	POB
REVIEW	RT
APPROVED	RT

PROJECT
CLAREMONT PROJECT

TITLE
SURFACE WATER EXCEEDANCES

PROJECT No.	DRAWING No.	Rev.	SCALE
19128243	06	A	1:1,000 A3

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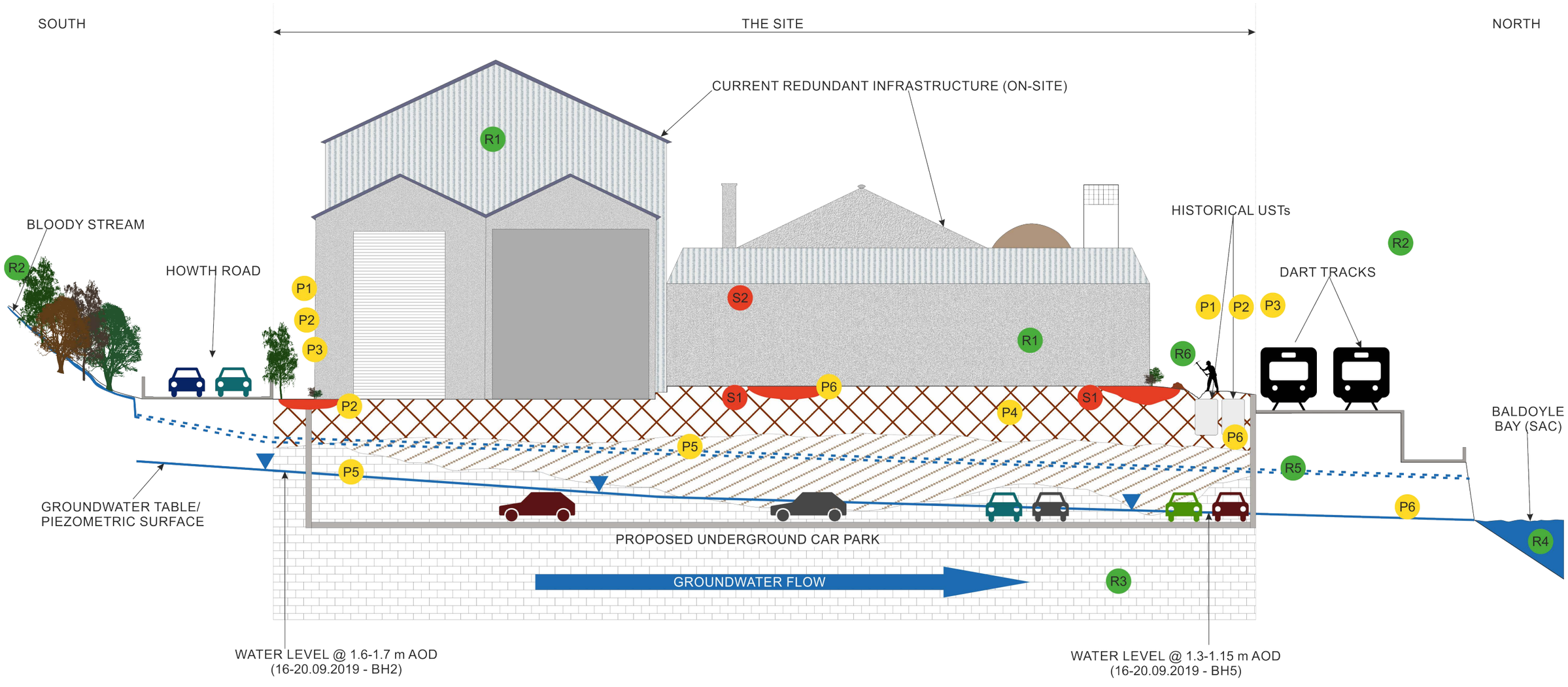
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ISO A3

25 mm
0

SOURCE	
S1	ON-SITE CONTAMINATED SOIL (HOTSPOTS)
S2	HISTORICAL OPERATIONS AND INFRASTRUCTURE

PATHWAY	
P1	DISPERSION AND INGESTION/INHALATION OF DUST FROM NEAR SURFACE SOIL (WIND EROSION/DISPERSION)
P2	DERMAL CONTACT
P3	VOLATILISATION/MIGRATION AND INHALATION OF VAPOURS/GROUND GAS (INDOOR AND OUTDOOR)
P4	PERMEATION TO WATER SUPPLY NETWORK
P5	LEACHING FROM SOIL TO GROUNDWATER/SURFACE WATER (BALDOYLE BAY(SAC)) AND GROUNDWATER/CULVERT MIGRATION
P6	LEAKS/SPILLS FROM EXISTING INFRASTRUCTURE/USTs

RECEPTOR	
R1	ON-SITE FUTURE RESIDENTIAL SITE USERS/STRUCTURES
R2	OFF-SITE USERS
R3	UNDERLYING GROUNDWATER
R4	BALDOYLE BAY (SAC)
R5	BLOODY STREAM (CULVERT)
R6	GROUND/CONSTRUCTION WORKERS



KEY:

- MADE GROUND
- SUPERFICIAL DEPOSITS
- BEDROCK
- CONTAMINANT HOTSPOT

CLIENT

ATLAS GP LTD

CONSULTANT

GOLDER

YYYY-MM-DD	2019-09-27
PREPARED	IH
DESIGN	KC
REVIEW	IH
APPROVED	RT

PROJECT

CLAREMONT PROJECT

TITLE

CONCEPTUAL SITE MODEL

PROJECT No.	DRAWING No.	Rev.	SCALE
19128243	07	B	**NOT TO SCALE**

APPENDIX B

Ground Investigation Logs

GOLDER

Client : Atlas GP Ltd.

Hole No. **BH01**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : Cable Percussion

Contractor : Ground Investigations Ireland

Date Started : 25/05/2019 **Completed :** 20/08/2019

Logged by : JN

Ground Level (mAOD) : 4.30

Co-ordinates : E 727703.4 N 739371.8

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
					0.50			(2.50)	MADE GROUND comprising dark brown slightly silty gravelly SAND with ocassional fragments of brick and glass. Fine to medium grained SAND. Fine to coarse grained subangular and subrounded GRAVEL.
					0.40				Black tarmacadam, gravels and occasional clinker fragments at 2.0m bgl.
						1.80		2.50	
					0.30			(1.30)	Dark brown and yellowish brown gravelly silty SAND. Yellowish brown fine to medium grained SAND. Dark brown fine to coarse subrounded to rounded GRAVEL.
						0.50		3.80	
									End of Hole at 3.80m

Remarks :

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **BH02**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : Rotary Drilling

Contractor : Ground Investigations Ireland

Date Started : 28/08/2019 **Completed :** 29/08/2019

Logged by : MBD

Ground Level (mAOD) : 3.99

Co-ordinates : E 727794.6 N 739372.0

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES: Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	STRATA RECORD: Level (mAOD)	Legend	Depth (Thickness) m	Description
								(2.70)	MADE GROUND over superficial glaciofluvial gravel deposits. Poor recovery 30%.
1									Rock strike at 2.3 to 2.7m bgl.
						1.29		2.70	Fractured, weathered LIMESTONE bedrock with brown rusty oxidation and honeycomb weathering pattern. Becoming less fractured with depth.
								(3.50)	
						-2.21		6.20	*End of Hole at 6.20m*

Remarks :

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **BH03**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : Cable Percussion

Contractor : Ground Investigations Ireland

Date Started : 21/08/2019 **Completed :** 21/08/2019

Logged by : JN

Ground Level (mAOD) : 3.74

Co-ordinates : E 727750.7 N 739449.3

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES: Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	STRATA RECORD: Level (mAOD)	Legend	Depth (Thickness) m	Description
						3.69		0.05	Concrete.
								(1.15)	MADE GROUND comprising dark brown to black silty sandy GRAVEL with fragments of rubber matting, brick, concrete and plastic. Fine to medium grained SAND. Fine to coarse subangular to subrounded GRAVEL.
					1.00	2.54		1.20	
					1.50			(2.30)	MADE GROUND comprising dark brown gravelly sandy SILT with frequent fragments of fine brick, occasional rootlets and a very slight hydrocarbon odour. Fine grained SAND. Fine subangular to subrounded SAND.
					0.30	0.24		3.50	
					0.00	-0.86		(1.10) 4.60	Dark grey silty SAND with a slight organic odour, fine white shell fragments and occasional subrounded to rounded GRAVELS.
					0.00	-1.36		(0.50) 5.10	Dark grey stiff slightly sandy gravelly SILT/CLAY with small white fragments of shell. Fine SAND. Fine subangular to subrounded grained various lithologies GRAVEL
									Tool bouncing on assumed bedrock. No rock recovered at 5.1m bgl. *End of Hole at 5.10m*

Remarks :

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **BH04**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : Cable Percussion

Contractor : Ground Investigations Ireland

Date Started : 21/08/2019 **Completed :** 21/08/2019

Logged by : JN

Ground Level (mAOD) : 4.14

Co-ordinates : E 727851.2 N 739433.2

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES: Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	STRATA RECORD: Level (mAOD)	Legend	Depth (Thickness) m	Description
						4.09		0.05	MADE GROUND TARMACADAM.
								(0.75)	MADE GROUND comprising grey brown silty gravelly SAND with occasional fragments of concrete and brick. Fine to medium SAND. Gravel is fine to pebble sized angular to subrounded. Sunangular to subrounded GRAVEL.
						3.34		0.80	
								(0.40)	MADE GROUND comprising black damp sandy gravel with occasional vuggy clinker and fragments of brick. Fine to medium grained SAND. Subangular to subrounded GRAVEL.
					0.00	2.94		1.20	
									Red brown gravelly silty SAND with some black fine gravels assumed to have caved from above. Fine SAND. Fine to medium grained subangular to subrounded GRAVEL.
					0.00			(1.80)	
▼ 1						1.14		3.00	
					0.00				*End of Hole at 3.00m*

Remarks :

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **BH05**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : Rotary Drilling

Contractor : Ground Investigations Ireland

Date Started : 28/08/2019 **Completed :** 28/08/2019

Logged by : MBD

Ground Level (mAOD) : 4.23

Co-ordinates : E 727913.5 N 739416.4

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
		0.10	3.00	C				(3.00)	MADE GROUND comprising gravel. Subrounded to subangular grained GRAVEL. Very poor recovery.
▼1						1.23		3.00	
		3.00	3.90	C					Fractured weathered LIMESTONE bedrock with coarse crystals and calcite veining. Less fractured at depth, rusty brown oxidation and fractures fractures continue to EOH.
		3.90	5.20	C					
		5.20	7.00	C				(5.20)	
		7.00	8.20	C					
						-3.97		8.20	*End of Hole at 8.20m*

Remarks :

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **BH06**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : Rotary Drilling

Contractor : Ground Investigations Ireland

Date Started : 29/08/2019 **Completed :** 29/08/2019

Logged by : MBD

Ground Level (mAOD) : 3.81

Co-ordinates : E 728016.2 N 739354.6

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES: Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	STRATA RECORD: Level (mAOD)	Legend	Depth (Thickness) m	Description
								(4.00)	MADE GROUND comprising rounded pebbles and concrete. Poor recovery. Oily hydrocarbon odour.
						-0.19		4.00	
								(0.70)	Weathered pink brown LIMESTONE bedrock with coarse crystals and vuggy calcite crystals
						-0.89		4.70	
								(3.30)	Pink brown LIMESTONE bedrock with coarse crystals. Vuggy and black calcite crystals.
						-4.19		8.00	*End of Hole at 8.00m*

Remarks :

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **BH07**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : Cable Percussion

Contractor : Ground Investigations Ireland

Date Started : 19/08/2019 **Completed :** 19/08/2019

Logged by : HM

Ground Level (mAOD) : 3.10

Co-ordinates : E 727943.8 N 739366.0

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
						2.90		0.20	MADE GROUND TARMAC
								(0.60)	MADE GROUND comprising dark grey slightly clayey very sandy GRAVEL with fragments of steel.
						2.30		0.80	
						2.10		1.00	MADE GROUND comprising grey to orangey brown slightly gravelly very sandy CLAY with occasional brick fragments. Sand is fine.
								(2.20)	Orangey very sandy CLAY. Fine SAND.
						-0.10		3.20	
						-0.40		3.50	Clayey very gravelly SAND. Subrounded to rounded grained limestone clasts GRAVEL.
									Refusal on possible boulder at 3.5m bgl. *End of Hole at 3.50m*

Remarks :

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **BH08**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : Cable Percussion

Contractor : Ground Investigations Ireland

Date Started : 19/08/2019 **Completed :** 19/08/2019

Logged by : JN

Ground Level (mAOD) : 4.34

Co-ordinates : E 728002.8 N 739389.7

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES: Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	STRATA RECORD: Level (mAOD)	Legend	Depth (Thickness) m	Description
								(0.60)	Tarmac over MADE GROUND comprising dark brown to black sandy gravel with occasional fine fragments of brick and tarmac. Fine to medium grained SAND. Fine to coarse grained subangular to subrounded of various lithologies GRAVEL.
						3.74		0.60	
								(0.40)	MADE GROUND comprising brown damp slightly silty slightly gravelly sand with occasional black gravels (possibly tarmac). Sand is fine to medium grained. Gravel is fine to pebble sized angular to subrounded of various lithologies.
						3.34		1.00	Brown slightly silty SAND with occasional fine to medium subrounded to rounded grained gravel.
								(3.00)	
						0.34		4.00	Black silty SAND with occasional coarse well rounded gravel and a slight organic odour. Fine to medium grained SAND.
						-0.66		(1.00)	Brown SAND/GRAVEL. Fine to medium grained SAND. Medium to coarse subangular to subrounded grained GRAVEL.
						-1.16		5.00 (0.50) 5.50	Calcite rich crystaline LIMESTONE bedrock.
								(1.20)	
						-2.36		6.70	*End of Hole at 6.70m*

Remarks :

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **BH09**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : Cable Percussion

Contractor : Ground Investigations Ireland

Date Started : 20/08/2019 **Completed :** 20/08/2019

Logged by : JN

Ground Level (mAOD) : 3.74

Co-ordinates : E 727855.3 N 739377.2

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES: Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	STRATA RECORD: Level (mAOD)	Legend	Depth (Thickness) m	Description
								(0.60)	Concrete over MADE GROUND comprising dark brown sandy GRAVEL with occasional fragments of concrete. Fine to medium grained SAND. Fine to coarse subangular to subrounded GRAVEL of various lithologies.
						3.14		0.60	
					1.40				MADE GROUND comprising black gravelly silty SAND with a slight tar odour and occasional white soft to hard spray-crete/concrete material with no visible fibres. Fine to medium grained SAND. Fine to coarse subangular to subrounded GRAVEL.
					0.90				
								(2.50)	
					0.40				
						0.64		3.10	
					1.00	0.54		3.20	Assumed rock at 3.1m bgl. Recovered as fragments of yellow brown calcite rich medium to coarse grained LIMESTONE. *End of Hole at 3.20m*

Remarks :

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **TP01**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : 360 Excavator

Contractor : Ground Investigations Ireland

Date Started : 14/08/2019 **Completed :** 14/08/2019

Logged by : HM

Ground Level (mAOD) : 4.28

Co-ordinates : E 727691.7 N 739454.0

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
		0.10	1.50	D		4.18		0.10	Concrete slab
									MADE GROUND comprising brown grey slightly gravelly sandy CLAY with some concrete, wood, plastic and red brick. Subrounded to subangular grained limestone GRAVEL. Increasing clay content with depth.
		1.50	3.00	D				(2.90)	
▼1						1.28		3.00	
								(0.40)	MADE GROUND comprising black grey slightly gravelly sandy CLAY with fragments of ceramic and a slight odour. Approx. 0.1% made waste.
						0.88		3.40	
									Trial pit collapsed at 3.4m bgl. *End of Hole at 3.40m*

Remarks :
Trial pit backfilled with arisings.

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **TP02**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : 360 Excavator

Contractor : Ground Investigations Ireland

Date Started : 13/08/2019 **Completed :** 13/08/2019

Logged by : RT

Ground Level (mAOD) : 4.35

Co-ordinates : E 727671.6 N 739448.3

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
		0.10		D				(1.10)	MADE GROUND comprising dark brown gravelly clayey SAND with cobbles, textiles, plastics, metal and timber. Strong organic odour.
						3.25		1.10	
								(1.45)	MADE GROUND comprising dark grey to black sandy gravelly CLAY with a strong organic odour, decomposed household waste, broken tile, plastic and glass
						1.80		2.55	
▼1		2.80	3.50	D				(0.95)	MADE GROUND comprising dark grey to black very gravelly SAND with cobbles, timber, tile and pipe. Groundwater seepage at 2.85m bgl.
						0.85		3.50	
									End of Hole at 3.50m

Remarks :
Trial pit backfilled with arisings.

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **TP03**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : 360 Excavator

Contractor : Ground Investigations Ireland

Date Started : 14/08/2019 **Completed :** 14/08/2019

Logged by : HM

Ground Level (mAOD) : 5.30

Co-ordinates : E 727657.9 N 739378.4

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
		0.10	1.50	D		5.15		0.15	TOPSOIL comprising dark brown moist silty CLAY with rootlets.
								(1.05)	MADE GROUND comprising light brown to black very sandy CLAY with an earthy odour, concrete boulders and slabs, asphalt, bits of traffic cone, red brick and cloth. Sand is coarse. Approx. 5% made waste.
						4.10		1.20	
						4.00		1.30	MADE GROUND comprising light brown to grey slightly silty slightly gravelly SAND. Approx. 1% made waste.
		1.50	2.20	D				(0.90)	MADE GROUND comprising black to dark grey household waste layer with a slight smell of oil, containing plastic, cloth, brick and charred waste
						3.10		2.20	
		2.20	3.80	D				(1.60)	Light brown slightly gravelly slightly silty SAND with wood fragments. Medium to coarse grained SAND Possible natural ground.
						1.50		3.80	*End of Hole at 3.80m*

Remarks :
Trial pit backfilled with arisings.

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **TP04**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : 360 Excavator

Contractor : Ground Investigations Ireland

Date Started : 14/08/2019 **Completed :** 14/08/2019

Logged by : HM

Ground Level (mAOD) : 4.47

Co-ordinates : E 727690.0 N 739385.3

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
		0.10	1.50	D		4.32		0.15	Dark brown TOPSOIL.
								(1.45)	MADE GROUND comprising dark brown dry slightly gravelly silty sandy CLAY with ceramics, glass, red brick, grout, concrete boulders and plastic bags. Approx. 3% made waste.
		1.50	2.50	D		2.87		1.60	
								(0.90)	MADE GROUND comprising dark grey dry slightly silty gravelly clay with bricks, concrete cobbles and glass bottles. Approx. 0.5% made waste.
▼ 1		2.50	3.75	D		1.97		2.50	
								(1.25)	Light brown yellowish wet slightly gravelly SAND with some shells, occasional cobbles and an organic odour like seaweed. Medium to coarse grained SAND. Possible natural ground. Grey coarse grained SAND at 3.0m bgl.
						0.72		3.75	*End of Hole at 3.75m*

Remarks :
Trial pit backfilled with arisings.

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **TP05**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : 360 Excavator

Contractor : Ground Investigations Ireland

Date Started : 14/08/2019 **Completed :** 14/08/2019

Logged by : HM

Ground Level (mAOD) : 3.89

Co-ordinates : E 727735.7 N 739367.5

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
		0.10	1.50	D		3.79		0.10	Silty clay TOPSOIL
						3.59		0.30	MADE GROUND comprising grey black slightly silty gravelly CLAY with fragments of plastic and concrete cobbles. Approx. 0.5% made waste.
								(1.00)	MADE GROUND comprising grey brown sandy gravelly CLAY with fragments of brick and cobbles of limestone and concrete. Approx. 0.1% made waste. Chemical smell similar to milton or Jeyes fluid from 0.7m to 1.1m bgl.
						2.59		1.30	MADE GROUND comprising yellow brown slightly clayey sandy GRAVEL with occasional brick and plastic.
▼1		1.50	2.50	D				(1.20)	
						1.39		2.50	*End of Hole at 2.50m*

Remarks :
Trial pit backfilled with arisings.

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **TP06**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : 360 Excavator

Contractor : Ground Investigations Ireland

Date Started : 05/01/1900 **Completed :** 14/08/2019

Logged by : HM

Ground Level (mAOD) : 3.79

Co-ordinates : E 727759.5 N 739393.2

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
		0.10	1.50	D		3.59		0.20	MADE GROUND comprising light brown to yellow sand and GRAVEL with bits of concrete slabs.
						3.44		0.35	MADE GROUND comprising pale yellow to grey sandy GRAVEL with a storm water (red clay) pipe parallel to the hole.
								(0.75)	MADE GROUND comprising black slightly clayey slightly gravelly SAND with red brick and glass. Approx. 1% made waste.
						2.69		1.10	
		1.50	2.60	D				(1.50)	MADE GROUND comprising brown slightly gravelly sandy CLAY with occasional glass.
▼1						1.19		2.60	Slightly clayey from 2.4m bgl to EOH.
									End of Hole at 2.60m

Remarks :
Trial pit backfilled with arisings.

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **TP07**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : 360 Excavator

Contractor : Ground Investigations Ireland

Date Started : 14/08/2019 **Completed :** 14/08/2019

Logged by : HM

Ground Level (mAOD) : 3.90

Co-ordinates : E 727711.8 N 739407.7

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
		0.10	1.50	D		3.70		0.20	TOPSOIL.
						3.40		0.50	MADE GROUND comprising light brown slightly clayey silty gravelly SAND with fragments of tile, plastic, ceramic, red brick, occasional wood and granite gravel. Approx. 1% made waste.
		1.50	3.00	D				(1.80)	MADE GROUND comprising dark brown to grey sandy very gravelly CLAY with a slight organic odour and fragments of glass, red brick, ceramic and concrete cobbles. Approx. 0.5% made waste.
▼						1.60		2.30	Grey slightly clayey slightly gravelly very silty SAND with some wood, shells and sandstone GRAVEL.
						0.40		(1.20)	
								3.50	*End of Hole at 3.50m*

Remarks :
Trial pit backfilled with arisings.

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **TP08**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : 360 Excavator

Contractor : Ground Investigations Ireland

Date Started : 13/08/2019 **Completed :** 13/08/2019

Logged by : RT

Ground Level (mAOD) : 3.92

Co-ordinates : E 727717.4 N 739437.9

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
		0.10	1.10	D		2.32		(1.60) 1.60	MADE GROUND comprising dark greyish brown gravelly very sandy silt/clay with large angular cobbles, concrete and red clay pipe. Approx. 0.5% made waste.
		1.60	2.50	D		1.42		(0.90) 2.50	MADE GROUND comprising light to dark grey SILT with decomposed black organics.
▼		2.50	3.50	D		0.42		(1.00) 3.50	MADE GROUND comprising dark grey to black silty SAND with a slight organic odour, cobbles, occasional timber, plastic, textile, pottery, shells and metal. Groundwater seepage at 2.8m bgl.
									End of Hole at 3.50m

Remarks :
Trial pit backfilled with arisings.

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **TP09**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : 360 Excavator

Contractor : Ground Investigations Ireland

Date Started : 14/08/2019 **Completed :** 14/08/2019

Logged by : HM

Ground Level (mAOD) : 4.30

Co-ordinates : E 727690.4 N 739424.4

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
		0.10	1.50	D		4.20		0.10	TOPSOIL.
								(1.90)	MADE GROUND comprising grey brown slightly gravelly silty clayey SAND with occasional concrete cobbles, cloth, glass and red brick. Approx. 0.1% made waste.
		1.50	3.00	D		2.30		2.00	
								(0.60)	MADE GROUND comprising brown sand and GRAVEL with occasional red brick and glass.
						1.70		2.60	
▼1								(0.60)	MADE GROUND comprising dark grey sandy GRAVEL with occasional bottles, red bricks and yellow horizons. Approx. 0.1% made waste.
						1.10		3.20	
						1.00		3.30	Grey clayey SAND with fragments of coarse shell. Possible natural ground.
									Trial pit collapsed at 3.3m bgl.
									End of Hole at 3.30m

Remarks :
Trial pit backfilled with arisings.

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **TP10**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : 360 Excavator

Contractor : Ground Investigations Ireland

Date Started : 14/08/2019 **Completed :** 14/08/2019

Logged by : HM

Ground Level (mAOD) : 3.68

Co-ordinates : E 727795.9 N 739443.8

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
		0.10	1.50	D				(1.40)	MADE GROUND comprising black coarse gravelly SAND with loose fragments of brick and cloth. All made waste is very fine. Approx. 0.5% made waste.
						2.28		1.40	
		1.50	2.80	D				(1.10)	MADE GROUND comprising light brownish to orange moist clayey gravelly SAND with fragments of clinker.
▼1						1.18		2.50	
						0.88		2.80	MADE GROUND comprising light brown to grey slightly silty sandy GRAVEL with occasional fragments of red brick.
									End of Hole at 2.80m

Remarks :
Trial pit backfilled with arisings.

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **TP11**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : 360 Excavator

Contractor : Ground Investigations Ireland

Date Started : 16/08/2019 **Completed :** 16/08/2019

Logged by : HM

Ground Level (mAOD) : 3.97

Co-ordinates : E 727835.3 N 739410.8

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
						3.77		0.20	Concrete with rebar.
						3.27		(0.50) 0.70	MADE GROUND comprising rust brown dry very coarse sandy GRAVEL with occasional limestone clasts, concrete and clinker. Approx. 0.5% made waste.
▼1						1.27		(2.00) 2.70	MADE GROUND comprising black gravelly sand with fragmets of clinker. Approx. 5% made waste. Finer grained sandy GRAVEL with shell fragments at 2.6m bgl. *End of Hole at 2.70m*

Remarks :
Trial pit backfilled with arisings.

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **TP12**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : 360 Excavator

Contractor : Ground Investigations Ireland

Date Started : 14/08/2019 **Completed :** 14/08/2019

Logged by : HM

Ground Level (mAOD) : 4.10

Co-ordinates : E 727887.3 N 739415.2

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
		0.10	1.50	D		4.00		0.10	TOPSOIL.
								(1.40)	MADE GROUND comprising black sandy fine GRAVEL with occasional cobbles of concrete, fragmets of clinker and red brick. Approx. 2% made waste.
		1.50	2.00	D		2.60		1.50	MADE GROUND comprising light brownish to grey brown clayey SAND with an ash layer, glass bottles and occasional fragments of red brick inclusions.
								(1.70)	
		3.00	3.60	D		0.90		3.20	
						0.50		(0.40) 3.60	MADE GROUND comprising dark grey slightly sandy CLAY with occasional wood, bricks, pottery. Approx. 2% made waste.
									End of Hole at 3.60m

Remarks :
Trial pit backfilled with arisings.

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **TP13**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : 360 Excavator

Contractor : Ground Investigations Ireland

Date Started : 16/08/2019 **Completed :** 16/08/2019

Logged by : HM

Ground Level (mAOD) : 4.22

Co-ordinates : E 727934.1 N 739405.5

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
						4.12		0.10	Tarmac
								(0.90)	MADE GROUND comprising light brown very sandy GRAVEL with tar, concrete and limestone gravel, occasional brick fragments.
						3.22		1.00	
								(1.50)	Grey slightly gravelly slightly clayey SAND with some wood fragments, broken shells and a slight odour.
						1.72		2.50	*End of Hole at 2.50m*

Remarks :
Trial pit backfilled with arisings.

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **TP14**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : 360 Excavator

Contractor : Ground Investigations Ireland

Date Started : 15/08/2019 **Completed :** 15/08/2019

Logged by : HM

Ground Level (mAOD) : 4.27

Co-ordinates : E 727980.2 N 739393.1

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
						4.20		0.07	Tarmac
						4.07		0.20	MADE GROUND comprising light brown sandy GRAVEL.
						3.87		0.40	Dark grey sandy GRAVEL with a hydrocarbon odour an occasional cobbles.
								(0.65)	Coarse layer of SAND. Clayey sand matrix with subrounded to rounded limestone gravel and cobbles.
						3.22		1.05	
								(1.85)	Light brown slightly gravelly SAND with rare broken brachiopod shells. Possible natural. Very clean sand.
						1.37		2.90	
						1.27		3.00	Dark grey slightly gravelly sandy CLAY with very fine fragments of shells. Possible not ground.
									End of Hole at 3.00m

Remarks :
Trial pit backfilled with arisings.

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **TP15**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : 360 Excavator

Contractor : Ground Investigations Ireland

Date Started : 15/08/2019 **Completed :** 15/08/2019

Logged by : HM

Ground Level (mAOD) : 4.25

Co-ordinates : E 728018.8 N 739386.2

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
						4.18		0.07	Tarmac
								(0.83)	MADE GROUND comprising mottled grey to light brown clayey very sandy gravel with a very strong hydrocarbon odour. Concrete blocks at 0.2m bgl.
						3.35		0.90	
								(2.00)	Light brown to grey gravelly SAND with occasional wood, an organic odour and shells. Possible natural ground. Amber coloured horizon from 2.4m to 2.5m bgl.
						1.35		2.90	
▼1								(0.50)	Black to dark grey slightly silty slightly sandy CLAY. Fragmets of shells, occasional wood and cloth. Possible natural ground.
						0.85		3.40	
									End of Hole at 3.40m

Remarks :
Trial pit backfilled with arisings.

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **TP16**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : 360 Excavator

Contractor : Ground Investigations Ireland

Date Started : 15/08/2019 **Completed :** 15/08/2019

Logged by : HM

Ground Level (mAOD) : 3.62

Co-ordinates : E 727999.6 N 739356.0

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
						3.55		0.07	Tarmac.
						3.42		0.20	MADE GROUND comprising concrete with some rebar.
								(0.80)	MADE GROUND comprising dark grey to dark brown clayey gravelly SAND with a very strong hydrocarbon odour, occasional fragments of concrete and remnants of clay pipes. Approx. 2% made waste. Encountered translucent yellowy plastic (possibly HDPE) tube. Strong hydrocarbon odour, dry/congealed inside pipe. No flow from pipe.
						2.62		1.00	
								(0.90)	MADE GROUND comprising light grey slightly gravelly SAND with a hydrocarbon odour.
						1.72		1.90	
									End of Hole at 1.90m

Remarks :
Trial pit backfilled with arisings. Encountered translucent yellowy plastic (possibly HDPE) tube. Strong hydrocarbon odour, dry/congealed inside pipe. No flow from pipe. Unclear where pipe leads to or from. Appears same as that running along guttering of garden centre roof. Remnants of electrical cable at 0.5m bgl. Loose in ground, not live.

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **TP17**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : 360 Excavator

Contractor : Ground Investigations Ireland

Date Started : 15/08/2019 **Completed :** 15/08/2109

Logged by : HM

Ground Level (mAOD) : 3.82

Co-ordinates : E 727959.6 N 739366.7

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
						3.75		0.07	Tarmac.
						3.72		0.10	MADE GROUND comprising light grey sandy GRAVEL.
						3.52		0.30	MADE GROUND comprising light brown to grey slightly silty sandy GRAVEL. Subangular to subrounded limestone GRAVEL.
						3.42		0.40	MADE GROUND comprising cobbles and gravels with rare fragments of red brick and glass. Cobbles and gravel are weathered rust limestone.
								(0.60)	
						2.82		1.00	MADE GROUND comprising dark grey to black gravelly SAND. Laterally discontinuous layer of rusted iron, thin rebar, wire coils with slight odour in western side of pit from 0.5m to 1.0m bgl.
								(0.90)	Light brown clean SAND with very fine shell fragments.
						1.92		1.90	*End of Hole at 1.90m*

Remarks :
Trial pit backfilled with arisings. Laterally discontinuous layer of rusted iron, thin rebar, wire coils with slight odour in the western side of pit from 0.5m to 1.0m bgl.

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **TP18**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : 360 Excavator

Contractor : Ground Investigations Ireland

Date Started : 16/08/2019 **Completed :** 16/08/2019

Logged by : HM

Ground Level (mAOD) : 3.88

Co-ordinates : E 727901.5 N 739378.8

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
						3.58		0.30	Concrete and rebar.
						2.88		(0.70) 1.00	MADE GROUND comprising grey brown slightly clayey gravelly SAND with fragments of concrete, glass and red brick. Approx. 0.5% made waste.
						1.58		(1.30) 2.30	Light brown gravelly SAND with large shell fragments.
▼1						1.18		(0.40) 2.70	Grey slightly gravelly sandy CLAY with occasional very fine shell fragments. Possible natural.
									End of Hole at 2.70m

Remarks :
Trial pit backfilled with arisings.

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **TP19**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : 360 Excavator

Contractor : Ground Investigations Ireland

Date Started : 14/08/2019 **Completed :** 14/08/2019

Logged by : HM

Ground Level (mAOD) : 3.81

Co-ordinates : E 727831.5 N 739378.5

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
		0.10	0.70	D		3.61		0.20	MADE GROUND comprising brown slightly gravelly clayey SAND with rootlets and occasional brick fragments.
						3.51		0.30	MADE GROUND comprising light brownish yellowish red mottled dry slightly gravelly very clayey SAND with frequent fragments of brick. Approx. 5% made waste.
								(0.40)	
						3.11		0.70	MADE GROUND comprising black slightly clayey gravelly SAND with frequent red brick. Concrete band around clay pipe from 0.6m to 0.7m bgl.
									Trial pit terminated at 0.7m bgl due to concrete band. *End of Hole at 0.70m*

Remarks :
Trial pit backfilled with arisings.

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

GOLDER

Client : Atlas GP Ltd.

Hole No. **TP20**

Site : Howth, Dublin

Project : Marlet Howth Strategy Plan

Project No : 19128243

Equipment & Methods : 360 Excavator

Contractor : Ground Investigations Ireland

Date Started : 16/08/2019 **Completed :** 16/08/2019

Logged by : HM

Ground Level (mAOD) : 3.94

Co-ordinates : E 727788.4 N 739381.2

WATER/ PROGRESS	INSTALLATION /BACKFILL	SAMPLES				STRATA RECORD			
		Sample Top (m)	Sample Base (m)	Sample Type	PID (ppm)	Level (mAOD)	Legend	Depth (Thickness) m	Description
						3.54		(0.40)	MADE GROUND comprising concrete and rebar above sandy GRAVEL fill with fragments of red brick.
						3.44		0.40	MADE GROUND comprising red brick horizon.
						3.19		0.50	MADE GROUND comprising black gravelly SAND with frequent concrete blocks
								0.75	Refusal at 0.75m bgl. Possible concrete wall. *End of Hole at 0.75m*

Remarks :
Trial pit backfilled with arisings.

Checked By: CF

Scale 1:50

GAUK-CP PID April 2008

APPENDIX C

Site Photos

Photograph 1: TP01

Photograph 2: TP01 arisings

Photograph 3: TP02

Photograph 4: TP02 arisings

Photograph 5: TP03

Photograph 6: TP03 arisings

Photograph 7: TP04

Photograph 8: TP04 arisings

Photograph 9: TP05

Photograph 10: TP05 arisings

Photograph 11: TP06

Photograph 12: TP06 arisings

Photograph 13: TP07

Photograph 14: TP07 arisings

Photograph 15: TP08

Photograph 16: TP08 arisings

Photograph 17: TP09

Photograph 18: TP09 arisings

Photograph 19: TP10

Photograph 20: TP10 arisings

Photograph 21: TP11

Photograph 22: TP11 arisings

Photograph 23: TP12

Photograph 24: TP12 arisings

Photograph 25: TP13

Photograph 26: TP13 arisings

Photograph 27: TP14

Photograph 28: TP14 arisings

Photograph 29: TP15

Photograph 30: TP15 arisings

Photograph 31: TP16

Photograph 32: TP16 arisings

Photograph 33: TP17

Photograph 34: TP17 arisings

Photograph 35: TP18

Photograph 36: TP18 arisings

Photograph 37: TP19

Photograph 38: TP19 arisings

Photograph 39: TP20

Photograph 40: TP20 arisings

APPENDIX D

Screening Sheets

Sample ID	Units	Groundwater Regulations 2010 (S.I. No. 9 of 2010) and amendment S.I. No. 366/2016 (GTVs)	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide	Enviroguide
			TP102				TP103			TP104			TP105			TP106		TP107		TP108			TP109			TP115		BH2	BH3			BH4		BH5	BH6	BH7	BH9	
Depth			0.40	0.80	1.50	4.30	0.50	2.50	3.50	0.5	1.5	2.20	0.70	1.30	2.2	0.9	2.1	0.6	1.5	1.2	2.5	3.7	0.6	1.7	2.9	0.8	2.8	1	1	3	4	1	3	1	1	3	1	2
Sampled Date			31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	11/04/2017	11/04/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	11/04/2017	11/04/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	21/04/2017	11/05/2017	11/05/2017	11/05/2017	21/04/2017	21/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017
Lab Ref. No.			17/6349	17/6349	17/6349	17/6349	17/6349	17/6349	17/6349	17/6858	17/6858	17/6349	17/6349	17/6349	17/6349	17/6349	17/6349	17/6858	17/6858	17/6349	17/6349	17/6349	17/6349	17/6349	17/6349	17/6349	17/6349	17/7329	17/8435	17/8435	17/8435	17/7329	17/7329	17/7789	17/7789	17/7789	17/7789	17/7789
pH	pH																																						
Total Hardness	mg/l																																						
Total Dissolved Solids	mg/l		104	39	39	61	69	155	120	67	191	507	58	82	81	127	86	74	93	84	93	127	196	422	166	137	172	65	65	587	133	384	76	59	65	151	63	235
Dissolved Antimony	ug/l	--	<2	<2	<2	2	<2	<2	2	3	6	<2	3	4	10.0	4.0	9.0	<2	7	<2	6.0	8.0	19.0	29.0	6.0	8.0	14.0	2	3	3	<2	<2	7	<2	<2	5	<2	2
Dissolved Arsenic	ug/l	7.5	11.60	2.80	2.70	4.10	14.10	4.10	<2.5	10.70	6.20	<2.5	4.00	13.60	<2.5	2.60	<2.5	3.90	6.50	24.80	17.70	10.70	<2.5	30.00	22.50	<2.5	<2.5	10.30	32.80	<2.5	<2.5	<2.5	24.70	6.80	<2.5	5.40	<2.5	<2.5
Dissolved Barium	ug/l	--	7	4	<3	<3	11	25	6	7	31	60	15	19	51.0	21.0	49.0	31	23	7.0	<3	<3	32.0	21.0	6.0	16.0	26.0	<3	<3	22	34	77	<3	<3	5	23	9.000	37
Dissolved Beryllium	ug/l	--																																					
Dissolved Boron	ug/l	750	<12	18	15	<12	<12	179	190	26	61	68	43	41	41	16	15	<12	42	<12	52	20	117	654	97	38	73	<12	<12	472	<12	<12	<12	<12	<12	82	19	136
Dissolved Cadmium	ug/l	3.75	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Chromium	ug/l	37.5	9.10	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	1.90	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	31.50	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
Dissolved Chromium III	ug/l	--																																					
Hexavalent Chromium	ug/l	7.5																																					
Dissolved Copper	ug/l	1500	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	8	<7	<7	9.0	<7	<7	<7	<7	<7	<7	22.0	8	<7	7	<7	<7	<7	<7	75	<7	<7	<7	9	<7	<7
Dissolved Lead	ug/l	7.5	6.00	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	8.00	<5	<5	<5	<5	<5	<5	49.00	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dissolved Mercury	ug/l	0.75	0.95	0.70	0.06	0.04	1.30	0.07	0.19	0.22	0.19	0.07	0.11	0.20	<0.01	0.85	0.43	<0.01	0.25	<0.01	0.29	0.31	0.18	0.17	1.50	0.04	0.59	0.90	0.18	<0.01	<0.01	<0.01	0.27	0.32	<0.01	0.44	<0.01	0.01
Dissolved Molybdenum	ug/l	--	3	11	6	10	4	41	52	4	16	10	9	8	30	5	<2	4	10	<2	11	25	33	63.0	16	10	31	3	7	38	<2	20	11	6	9	11	6	29
Dissolved Nickel	ug/l	15	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	7	<2	<2	<2	<2	<2	<2	<2	10	3	<2	<2	2	<2	<2
Dissolved Selenium	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Dissolved Vanadium	ug/l	--																																					
Dissolved Zinc		--	<3	4	3	<3	<3	<3	3	3	5	25	3	4	<3	4	5	3	4	3	<3	<3	<3	34	<3	4	7	4	<3	<3	<3	<3	5	<3	<3	<3	<3	<3	<3
Dichlorodifluoromethane	ug/l	--																																					
Chloromethane	ug/l	--																																					
Vinyl Chloride	ug/l	0.375																																					
Bromomethane	ug/l	--																																					
Chloroethane	ug/l	--																																					
Trichlorofluoromethane	ug/l	--																																					
1,1-Dichloroethene (1,1 DCE)	ug/l	--																																					
Dichloromethane (DCM)	ug/l	15																																					
trans-1-2-Dichloroethene	ug/l	--																																					
1,1-Dichloroethane	ug/l	--																																					
cis-1-2-Dichloroethene	ug/l	--																																					
2,2-Dichloropropane	ug/l	--																																					
Bromochloromethane	ug/l	--																																					
Chloroform	ug/l	--																																					
1,1,1-Trichloroethane	ug/l	--																																					
1,1-Dichloropropene	ug/l	--																																					
Carbon tetrachloride	ug/l	--																																					
1,2-Dichloroethane	ug/l	2.25																																					
Trichloroethene (TCE)	ug/l	7.5																																					
1,2-Dichloropropane	ug/l	--																																					
Dibromomethane	ug/l	--																																					
Bromodichloromethane	ug/l	--																																					
cis-1-3-Dichloropropene	ug/l	--																																					
trans-1-3-Dichloropropene	ug/l	--																																					
1,1,2-Trichloroethane	ug/l	--																																					
Tetrachloroethene (PCE)	ug/l	7.5																																					
1,3-Dichloropropane	ug/l	--																																					
Dibromochloromethane	ug/l	--																																					
1,2-Dibromoethane	ug/l	--																																					
Chlorobenzene	ug/l	--																																					
1,1,1,2-Tetrachloroethane	ug/l	--																																					
Styrene	ug/l	--																																					
Bromoform	ug/l	--																																					
Isopropylbenzene	ug/l	--																																					
1,1,2,2-Tetrachloroethane	ug/l	7.5																																					
Bromobenzene	ug/l	--																																					
1,2,3-Trichloropropane	ug/l	--																																					
Propylbenzene	ug/l	--																																					
2-Chlorotoluene	ug/l	--																																					
1,3,5-Trimethylbenzene	ug/l	--																																					
4-Chlorotoluene	ug/l	--																																					
tert-Butylbenzene	ug/l	--																																					
1,2,4-Trimethylbenzene	ug/l	--																																					
sec-Butylbenzene	ug/l	--																																					
4-Isopropyltoluene	ug/l	--																																					
1,3-Dichlorobenzene	ug/l	--																																					
1,4-Dichlorobenzene	ug/l	--																																					
n-Butylbenzene	ug/l	--																																					
1,2-Dichlorobenzene	ug/l	--																																					
1,2-Dibromo-3-chloropropane	ug/l	--																																					
1,2,4-Trichlorobenzene	ug/l	--																																					
Hexachlorobutadiene	ug/l	--																																					
Naphthalene	ug/l	--																																					
1,2,3-Trichlorobenzene	ug/l	--																																					
Methyl Tertiary Butyl Ether	ug/l	10																																					
Benzene	ug/l	0.75																																					
Toluene	ug/l	525																																					
Ethylbenzene	ug/l	--																																					
p/m-Xylene	ug/l	--																																					
o-Xylene	ug/l	--																																					
2-Chlorophenol	ug/l	-																																					
2-Methylphenol	ug/l	-																																					
2-Nitrophenol	ug/l	-																																					
2,4-Dichlorophenol	ug/l	-																																					
2,4-Dimethylphenol	ug/l	-																																					
2,4,5-Trichlorophenol	ug/l	-																																					
2,4,6-Trichlorophenol	ug/l	-																																					
4-Chloro-3-methylphenol	ug/l	-																																					
4-Methylphenol	ug/l	-																																					
4-Nitrophenol	ug/l	-																																					
Pentachlorophenol	ug/l	-																																					
Phenol	ug/l	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

Sample ID	Units	Groundwater Regulations 2010 (S.I. No. 9 of 2010) and amendment S.I. No. 366/2016 (GTVs)	TP102				TP103			TP104			TP105			TP106		TP107		TP108			TP109			TP115		BH2	BH3			BH4		BH5	BH6	BH7	BH9	
Depth			0.40	0.80	1.50	4.30	0.50	2.50	3.50	0.5	1.5	2.20	0.70	1.30	2.2	0.9	2.1	0.6	1.5	1.2	2.5	3.7	0.6	1.7	2.9	0.8	2.8	1	1	3	4	1	3	1	1	3	1	2
Sampled Date			31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	11/04/2017	11/04/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	11/04/2017	11/04/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	21/04/2017	11/05/2017	11/05/2017	11/05/2017	21/04/2017	21/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017
Lab Ref. No.			17/6349	17/6349	17/6349	17/6349	17/6349	17/6349	17/6349	17/6858	17/6858	17/6349	17/6349	17/6349	17/6349	17/6349	17/6349	17/6858	17/6858	17/6349	17/6349	17/6349	17/6349	17/6349	17/6349	17/6349	17/6349	17/7329	17/8435	17/8435	17/8435	17/7329	17/7329	17/7789	17/7789	17/7789	17/7789	17/7789
2-Chloronaphthalene	ug/l	--																																			
2-Methylnaphthalene	ug/l	--																																			
Naphthalene	ug/l	--																																			
Acenaphthylene	ug/l	--																																			
Acenaphthene	ug/l	--																																			
Fluorene	ug/l	--																																			
Phenanthrene	ug/l	--																																			
Anthracene	ug/l	--																																			
Fluoranthene	ug/l	--																																			
Pyrene	ug/l	--																																			
Benzo(a)anthracene	ug/l	--																																			
Chrysene	ug/l	--																																			
Benzo(bk)fluoranthene	ug/l	--																																			
Benzo(a)pyrene	ug/l	0.0075																																			
Indeno(123cd)pyrene	ug/l	--																																			
Dibenzo(ah)anthracene	ug/l	--																																			
Benzo(ghi)perylene	ug/l	--																																			
Total PAHs (sum of six)	ug/l	0.075																																			
Bis(2-ethylhexyl) phthalate	ug/l	6																																			
Butylbenzyl phthalate	ug/l	--																																			
Di-n-butyl phthalate	ug/l																																				
Di-n-Octyl phthalate	ug/l	--																																			
Diethyl phthalate	ug/l	--																																			
Dimethyl phthalate	ug/l	--																																			
1,2-Dichlorobenzene	ug/l	--																																			
1,2,4-Trichlorobenzene	ug/l	--																																			
1,3-Dichlorobenzene	ug/l	--																																			
1,4-Dichlorobenzene	ug/l	--																																			
2-Nitroaniline	ug/l	--																																			
2,4-Dinitrotoluene	ug/l	--																																			
2,6-Dinitrotoluene	ug/l	--																																			
3-Nitroaniline	ug/l	--																																			
4-Bromophenylphenylether	ug/l	--																																			
4-Chloroaniline	ug/l	--																																			
4-Chlorophenylphenylether	ug/l	--																																			
4-Nitroaniline	ug/l	--																																			
Azobenzene	ug/l	--																																			
Bis(2-chloroethoxy)methane	ug/l	--																																			
Bis(2-chloroethyl)ether	ug/l	--																																			
Carbazole	ug/l	--																																			
Dibenzofuran	ug/l	--																																			
Hexachlorobenzene	ug/l	--																																			
Hexachlorobutadiene	ug/l	--																																			
Hexachlorocyclopentadiene	ug/l	--																																			
Hexachloroethane	ug/l	--																																			
Isophorone	ug/l	--																																			
N-nitrosodi-n-propylamine	ug/l	--																																			
Nitrobenzene	ug/l	--																																			
>C5-C6	ug/l	--																																			
>C6-C8	ug/l	--																																			
>C8-C10	ug/l	--																																			
>C10-C12	ug/l	--																																			
>C12-C16	ug/l	--																																			
>C16-C21	ug/l	--																																			
>C21-C35	ug/l	--																																			
Total aliphatics C5-35	ug/l	--																																			
>C5-EC7	ug/l	--																																			
>EC7-EC8	ug/l	--																																			
>EC8-EC10	ug/l	--																																			
>EC10-EC12	ug/l	--																																			
>EC12-EC16	ug/l	--																																			
>EC16-EC21	ug/l	--																																			
>EC21-EC35	ug/l	--																																			
Total aromatics C5-35	ug/l	--																																			
Total aliphatics and aromatics(C5-35)	ug/l	7.5																																			
PCB 77	ug/l	--																																			
PCB 81	ug/l	--																																			
PCB 105	ug/l	--																																			
PCB 114	ug/l	--																																			
PCB 118	ug/l	--																																			
PCB 123	ug/l	--																																			
PCB 126	ug/l	--																																			
PCB 156	ug/l	--																																			
PCB 157	ug/l	--																																			
PCB 167	ug/l	--																																			
PCB 169	ug/l	--																																			
PCB 189	ug/l	--																																			
Total 12 PCBs	ug/l	--																																			
PCB 28	ug/l	--																																			
PCB 52	ug/l	--																																			
PCB 101	ug/l	--																																			
PCB 118	ug/l	--																																			
PCB 138	ug/l	--																																			
PCB 153	ug/l	--																																			
PCB 180	ug/l	--																																			
Total 7 PCBs	ug/l	--																																			
Fluoride	mg/l	--	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.9	0.4	0.7	<0.3	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.3	<0.3	<0.3
Sulphate as SO4	mg/l	187.5	7.75	0.43	2.4	0.57	1.17	17.46	45.59	8.12	57.24	142.03	20.64	21.99	15.97	16.53	8.87	16.73	35.9	3.15	0.65	27.89	30.83	175.24	22.81	55.55	21.14	1.26	5.58	317.3	15.82	11.07	10.99	3.23	3.9	24.3	5.8	62.31
Chloride	mg/l	187.5	<0.3	<0.3	<0.3	<0.3	<0.3	10.3	2.2	0.4	0.4	110.9	4.7	<0.3	1.1	3.5	4.2	0.3	0.3	<0.3	<0.3	<0.3	4	35.2	29.6	3.4	2.9	0.5	2	11.6	1.8	5.5	1.5	<0.3	0.8	2	4.4	2.4
Ammoniacal Nitrogen as N	mg/l	0.175	<0.03	0.05	0.04	<0.03	0.03	2.24	3.35	<0.03	0.05	0.45	2.14	1.23	1.67	0.03	0.03	<0.03	0.05	<0.03	0.37	0.14	0.47	1.77	0.54	<0.03	0.72	0.03	0.12	4.95	0.04	0.29	<0.03	<0.03	0.22	<0.03	0.04	2.9
Dissolved Organic Carbon	mg/l	--	3	8	6	3	4	9	18	3	5	7	7	8	5	4	3	<2	3	4	6	4	7	24	8	7	6	5	5	18	<2	10	5	4	2	5	3	6

| Sample ID | Units | Groundwater Regulations 2010 (S.I. No. 9 of 2010) and amendment S.I. No. 366/2016 (GTVs) | Enviroguide | Enviroguide | Enviroguide

Sample ID	Units	Groundwater Regulations 2010 (S.I. No. 9 of 2010) and amendment S.I. No. 366/2016 (GTVs)	BH10		BH11	BH12	BH13		BH14		BH15	BH16		BH17		BH18					BH19		BH20		BH21			BH22			BH23	BH24							BH25		
Depth			1	2	1	1	1	3	1	3	1	1	2	1	3	1	1	2	3	3	1	3	1	3	1	2	3	1	3	4	1	1	1	2	3	4	4	1	2	3
Sampled Date			28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	03/04/2017	03/04/2017	03/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	21/04/2017	03/04/2017	28/04/2017	28/04/2017	03/04/2017	03/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017
Lab Ref. No.			17/7789	17/7789	17/7789	17/7789	17/7789	17/7789	17/7789	17/7789	17/7789	17/7789	17/7789	17/7789	17/7789	17/7789	17/6443	17/6443	17/6443	17/7789	17/7789	17/7789	17/7789	17/7789	17/7789	17/7789	17/7789	17/7789	17/7789	17/7789	17/7789	17/7329	17/6443	17/7789	17/7789	17/6443	17/6443	17/7789	17/7789	17/7789	17/7789
2-Chloronaphthalene	ug/l	--																																						
2-Methylnaphthalene	ug/l	--																																						
Naphthalene	ug/l	--																																						
Acenaphthylene	ug/l	--																																						
Acenaphthene	ug/l	--																																						
Fluorene	ug/l	--																																						
Phenanthrene	ug/l	--																																						
Anthracene	ug/l	--																																						
Fluoranthene	ug/l	--																																						
Pyrene	ug/l	--																																						
Benzo(a)anthracene	ug/l	--																																						
Chrysene	ug/l	--																																						
Benzo(bk)fluoranthene	ug/l	--																																						
Benzo(a)pyrene	ug/l	0.0075																																						
Indeno(123cd)pyrene	ug/l	--																																						
Dibenzo(ah)anthracene	ug/l	--																																						
Benzo(ghi)perylene	ug/l	--																																						
Total PAHs (sum of six)	ug/l	0.075																																						
Bis(2-ethylhexyl) phthalate	ug/l	6																																						
Butylbenzyl phthalate	ug/l	--																																						
Di-n-butyl phthalate	ug/l																																							
Di-n-Octyl phthalate	ug/l	--																																						
Diethyl phthalate	ug/l	--																																						
Dimethyl phthalate	ug/l	--																																						
1,2-Dichlorobenzene	ug/l	--																																						
1,2,4-Trichlorobenzene	ug/l	--																																						
1,3-Dichlorobenzene	ug/l	--																																						
1,4-Dichlorobenzene	ug/l	--																																						
2-Nitroaniline	ug/l	--																																						
2,4-Dinitrotoluene	ug/l	--																																						
2,6-Dinitrotoluene	ug/l	--																																						
3-Nitroaniline	ug/l	--																																						
4-Bromophenylphenylether	ug/l	--																																						
4-Chloroaniline	ug/l	--																																						
4-Chlorophenylphenylether	ug/l	--																																						
4-Nitroaniline	ug/l	--																																						
Azobenzene	ug/l	--																																						
Bis(2-chloroethoxy)methane	ug/l	--																																						
Bis(2-chloroethyl)ether	ug/l	--																																						
Carbazole	ug/l	--																																						
Dibenzofuran	ug/l	--																																						
Hexachlorobenzene	ug/l	--																																						
Hexachlorobutadiene	ug/l	--																																						
Hexachlorocyclopentadiene	ug/l	--																																						
Hexachloroethane	ug/l	--																																						
Isophorone	ug/l	--																																						
N-nitrosodi-n-propylamine	ug/l	--																																						
Nitrobenzene	ug/l	--																																						
>C5-C6	ug/l	--																																						
>C6-C8	ug/l	--																																						
>C8-C10	ug/l	--																																						
>C10-C12	ug/l	--																																						
>C12-C16	ug/l	--																																						
>C16-C21	ug/l	--																																						
>C21-C35	ug/l	--																																						
Total aliphatics C5-35	ug/l	--																																						
>C5-EC7	ug/l	--																																						
>EC7-EC8	ug/l	--																																						
>EC8-EC10	ug/l	--																																						
>EC10-EC12	ug/l	--																																						
>EC12-EC16	ug/l	--																																						
>EC16-EC21	ug/l	--																																						
>EC21-EC35	ug/l	--																																						
Total aromatics C5-35	ug/l	--																																						
Total aliphatics and aromatics(C5-35)	ug/l	7.5																																						
PCB 77	ug/l	--																																						
PCB 81	ug/l	--																																						
PCB 105	ug/l	--																																						
PCB 114	ug/l	--																																						
PCB 118	ug/l	--																																						
PCB 123	ug/l	--																																						
PCB 126	ug/l	--																																						
PCB 156	ug/l	--																																						
PCB 157	ug/l	--																																						
PCB 167	ug/l	--																																						
PCB 169	ug/l	--																																						
PCB 189	ug/l	--																																						
Total 12 PCBs	ug/l	--																																						
PCB 28	ug/l	--																																						
PCB 52	ug/l	--																																						
PCB 101	ug/l	--																																						
PCB 118	ug/l	--																																						
PCB 138	ug/l	--																																						
PCB 153	ug/l	--																																						
PCB 180	ug/l	--																																						
Total 7 PCBs	ug/l	--																																						
Fluoride	mg/l	--	<0.3	<0.3	<0.3	0.6	<0.3	<0.3	<0.3	<0.3	0.6	0.5	0.6	0.3	<0.3	0.4	0.3	0.4	<0.3	0.4	0.3	0.4	0.3	0.5	0.8	<0.3	<0.3	<0.3	<0.3	<0.3	0.6	<0.3	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.4
Sulphate as SO4	mg/l	187.5	11.47	7.27	41.66	14.06	11.48	105.42	43.7	10.34	7.22	10.8	12.43	24.19	14.36	27.15	16.59	17.04	35.38	86.68	15.16	25.02	9.65	21.2	73.9	24.19	39.19	39.17	68.8	68.04	38.27	16.24	10.59	9.73	44.67	19.28	228.59	65.98	65.01	26.99
Chloride	mg/l	187.5	0.5	0.4	0.6	0.7	0.6	2.5	0.4	<0.3	0.3	0.5	0.6	1.4	0.8	1.8	1.6	1.7	1.7	1.4	1.8	0.6	0.5	4.2	0.7	1.7	5	4.1	6.2	10.2	0.9	0.6	0.6	<0.3	12.1	30.3	28.7	135.1	83.5	1.2
Ammoniacal Nitrogen as N	mg/l	0.175	0.18	<0.03	0.14	<0.03	<0.03	4	0.03	0.07	<0.03	<0.03	<0.03	3.83	0.05	0.11	0.5	0.71	0.09	0.09	0.04	<0.03	0.04	0.08	<0.03	<0.03	<0.03	1.88	13.88	3.8	<0.03	<0.03	0.03	<0.03	<0.03	0.03	1.36	0.53	0.05	<0.03
Dissolved Organic Carbon	mg/l	--	6	2	4	5	4	10	<2	<2	3	3	3	6	<2	6	7	7	3	3	3	<2	4	6	5	3	3	5	5	4	4	5	4	4	8	3	3	19	14	5

Sample ID	Units	Groundwater Regulations 2010 (S.I. No. 9 of 2010) and amendment S.I. No. 366/2016 (GTVs)	Enviroguide BH30	Enviroguide BH30	Enviroguide BH30	Enviroguide BH31	Enviroguide BH31	Enviroguide BH31	TP1	TP2	TP3	TP3	TP4	TP4	TP5	TP6	TP7	TP8	TP9	TP10	TP11	TP11	TP12	TP12	TP13	TP13	TP14	TP14	TP15	TP15	TP16	TP16	TP17	TP17	TP18	TP18	TP19	TP20
Depth			1	2	5	1	2	2.8	0.00-1.50	2.80-3.50	0.00-1.50	1.50-2.20	0.00-1.50	1.50-2.50	1.50-2.50	1.50-2.60	0.00-1.50	2.50-3.50	0.00-1.50	1.50-2.80	0.00-1.50	1.50-2.70	0.00-1.50	1.50-3.00	0.00-1.50	1.50-2.70	0.00-1.50	1.50-3.00	0.00-1.50	1.50-3.00	0.00-1.50	1.50-1.90	0.00-1.50	1.50-1.90	0.00-1.50	1.50-2.70	0.00-0.70	0.00-0.75
Sampled Date			11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
Lab Ref. No.			17/8435	17/8435	17/8435	17/8435	17/8435	17/8435	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13464	19/13464	19/13288	19/13288	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13288	19/13464
pH	pH								7.29	7.63	7.39	7.53	7.27	7.39	7.4	7.84	7.62	7.43	7.56	7.5																		
Total Hardness	mg/l								94	119	119	106	76	67	40	126	81	88	92	72																		
Total Dissolved Solids	mg/l		169	96	161	96	66	88															88	101											87	
Dissolved Antimony	ug/l	--	2	<2	6	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	4	2	3	5	3	3	2	<2	5	<2	9	10	4	<2	<2	<2	6	3
Dissolved Arsenic	ug/l	7.5	<2.5	5.30	11.60	7.80	6.70	3.90	5.10	27.70	6.40	11.10	6.20	19.70	<2.5	3.10	6.80	5.10	5.50	<2.5	46.00	6.00			7.50	4.40	4.00	4.70	4.90	4.90	13.80	17.50	6.40	9.20	40.80	<2.5	-	<2.5
Dissolved Barium	ug/l	--	11	6	28	9	4	8	57	60	73	84	32	19	8	51	38	25	33	16	6	25	23	24	20	<3	3	<3	12	<3	22	24	102	4	5	12	42	61
Dissolved Beryllium	ug/l	--							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Boron	ug/l	750	40	26	115	21	21	<12	79	272	114	243	35	74	<12	57	73	23	52	20	31	25	<12	18	15	27	<12	25	15	26	19	30	<12	<12	<12	22	<12	<12
Dissolved Cadmium	ug/l	3.75	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Chromium	ug/l	37.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	6.40	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	14.40
Dissolved Chromium III	ug/l	--							<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6																		
Hexavalent Chromium	ug/l	7.5							<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6																		
Dissolved Copper	ug/l	1500	<7	<7	<7	<7	<7	<7	<7	<7	7	14	<7	11	<7	<7	8	<7	<7	<7	7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	40
Dissolved Lead	ug/l	7.5	<5	<5	<5	<5	<5	<5	<5	5.00	7.00	6.00	6.00	11.00	<5	6.00	6.00	<5	<5	<5	12.00	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	22.00	<5	<5	8.00	<5	<5	19.00
Dissolved Mercury	ug/l	0.75	0.16	0.71	0.52	2.10	1.12	<0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.01	<0.01	5.00	17.00	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	7.00	<0.01
Dissolved Molybdenum	ug/l	--	18	12	17	8	8	8													6	3	5	17	8	7	17	16	10	17	19	36	6	2	11	8	7	6
Dissolved Nickel	ug/l	15	<2	<2	<2	<2	<2	<2	2	<2	7	11	<2	4	<2	<2	<2	<2	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Dissolved Selenium	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
Dissolved Vanadium	ug/l	--							<1.5	<1.5	<1.5	<1.5	3.4	14.1	<1.5	2.6	5.1	2.5	2.2	<1.5			-	-												-		
Dissolved Zinc		--	<3	4	92	<3	5	<3	4	5	12	19	7	8	<3	8	8	3	27	<3	<3	<3	-	-	<3	<3	3	<3	<3	<3	7	<3	<3	<3	<3	<3	-	<3
Dichlorodifluoromethane	ug/l	--							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
Chloromethane	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
Vinyl Chloride	ug/l	0.375							<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1																		
Bromomethane	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
Chloroethane	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
Trichlorofluoromethane	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
1,1-Dichloroethene (1,1 DCE)	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
Dichloromethane (DCM)	ug/l	15							<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5																		
trans-1-2-Dichloroethene	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
1,1-Dichloroethane	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
cis-1-2-Dichloroethene	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
2,2-Dichloropropane	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
Bromochloromethane	ug/l	--							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
Chloroform	ug/l	--							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
1,1,1-Trichloroethane	ug/l	--							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
1,1-Dichloropropene	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
Carbon tetrachloride	ug/l	--							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
1,2-Dichloroethane	ug/l	2.25							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
Trichloroethene (TCE)	ug/l	7.5							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
1,2-Dichloropropane	ug/l	--							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
Dibromomethane	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
Bromodichloromethane	ug/l	--							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
cis-1-3-Dichloropropene	ug/l	--							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
trans-1-3-Dichloropropene	ug/l	--							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
1,1,2-Trichloroethane	ug/l	--							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
Tetrachloroethene (PCE)	ug/l	7.5							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
1,3-Dichloropropane	ug/l	--							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
Dibromochloromethane	ug/l	--							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
1,2-Dibromoethane	ug/l	--							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
Chlorobenzene	ug/l	--							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
1,1,1,2-Tetrachloroethane	ug/l	--							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
Styrene	ug/l	--							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
Bromoform	ug/l	--							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
Isopropylbenzene	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
1,1,2,2-Tetrachloroethane	ug/l	7.5							<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4																		
Bromobenzene	ug/l	--							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
1,2,3-Trichloropropane	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
Propylbenzene	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
2-Chlorotoluene	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
1,3,5-Trimethylbenzene	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
4-Chlorotoluene	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
tert-Butylbenzene	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
1,2,4-Trimethylbenzene	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
sec-Butylbenzene	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
4-Isopropyltoluene	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
1,3-Dichlorobenzene	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
1,4-Dichlorobenzene	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
n-Butylbenzene	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
1,2-Dichlorobenzene	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
1,2-Dibromo-3-chloropropane	ug/l	--							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
1,2,4-Trichlorobenzene	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
Hexachlorobutadiene	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
Naphthalene	ug/l	--							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
1,2,3-Trichlorobenzene	ug/l	--							<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3																		
Methyl Tertiary Butyl Ether	ug/l	10							<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1																		
Benzene	ug/l	0.75							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5																		
Toluene	ug/l	525							<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5																		
Ethylbenzene	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
p/m-Xylene	ug/l	--							<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2																		
o-Xylene	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
2-Chlorophenol	ug/l	-							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
2-Methylphenol	ug/l	-							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5																		
2-Nitrophenol	ug/l	-							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5																		
2,4-Dichlorophenol	ug/l	-							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5																		
2,4-Dimethylphenol	ug/l	-							<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1																		
2,4,5-Trichlorophenol	ug/l	-							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5																		
2,4,6-Trichlorophenol	ug/l	-							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
4-Chloro-3-methylphenol	ug/l	-							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5																		
4-Methylphenol	ug/l	-							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
4-Nitrophenol	ug/l	-							<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10																		
Pentachlorophenol	ug/l	-							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
Phenol	ug/l	-	<10	<10	<10	<10	<10	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1			<1	<1											<1			

Sample ID	Units	Groundwater Regulations 2010 (S.I. No. 9 of 2010) and amendment S.I. No. 366/2016 (GTVs)	BH30			BH31			TP1	TP2	TP3		TP4		TP5	TP6	TP7	TP8	TP9	TP10	TP11		TP12		TP13		TP14		TP15		TP16		TP17		TP18		TP19	TP20
Depth			1	2	5	1	2	2.8	0.00-1.50	2.80-3.50	0.00-1.50	1.50-2.20	0.00-1.50	1.50-2.50	1.50-2.50	1.50-2.60	0.00-1.50	2.50-3.50	0.00-1.50	1.50-2.80	0.00-1.50	1.50-2.70	0.00-1.50	1.50-3.00	0.00-1.50	1.50-2.70	0.00-1.50	1.50-3.00	0.00-1.50	1.50-3.00	0.00-1.50	1.50-1.90	0.00-1.50	1.50-1.90	0.00-1.50	1.50-2.70	0.00-0.70	0.00-0.75
Sampled Date			11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	15/08/2019	16/08/2019	16/08/2019	16/08/2019	16/08/2019
Lab Ref. No.			17/8435	17/8435	17/8435	17/8435	17/8435	17/8435	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13288	19/13464	19/13464	19/13288	19/13288	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13464	19/13288	19/13464
2-Chloronaphthalene	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
2-Methylnaphthalene	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
Naphthalene	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
Acenaphthylene	ug/l	--							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5																		
Acenaphthene	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
Fluorene	ug/l	--							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5																		
Phenanthrene	ug/l	--							<0.5	<0.5	<0.5	1.4	<0.5	0.7	0.6	<0.5	<0.5	<0.5	<0.5	<0.5																		
Anthracene	ug/l	--							<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5																		
Fluoranthene	ug/l	--							0.7	<0.5	1.4	4.4	5.8	2.7	1	<0.5	0.8	1.7	0.8	<0.5																		
Pyrene	ug/l	--							0.6	<0.5	1.3	3.6	4.4	2.2	0.7	<0.5	0.7	1.2	0.7	<0.5																		
Benzo(a)anthracene	ug/l	--							0.7	<0.5	1.1	1.7	2.2	1.5	0.5	<0.5	0.7	0.9	0.7	<0.5																		
Chrysene	ug/l	--							<0.5	<0.5	0.8	1.3	1.8	1.2	<0.5	<0.5	0.6	0.7	<0.5	<0.5																		
Benzo(bk)fluoranthene	ug/l	--							<1	<1	1	1	3	2	<1	<1	1	1	<1	<1																		
Benzo(a)pyrene	ug/l	0.0075							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
Indeno(123cd)pyrene	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
Dibenzo(ah)anthracene	ug/l	--							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5																		
Benzo(ghi)perylene	ug/l	--							<0.5	<0.5	0.5	<0.5	1	1	<0.5	<0.5	0.7	<0.5	0.5	<0.5																		
Total PAHs (sum of six)	ug/l	0.075							0.7	0.0	2.9	5.4	9.8	5.7	1.0	0.0	2.5	2.7	1.3	0.0																		
Bis(2-ethylhexyl) phthalate	ug/l	6							<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5																		
Butylbenzyl phthalate	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
Di-n-butyl phthalate	ug/l								<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5																		
Di-n-Octyl phthalate	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
Diethyl phthalate	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
Dimethyl phthalate	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
1,2-Dichlorobenzene	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
1,2,4-Trichlorobenzene	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
1,3-Dichlorobenzene	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
1,4-Dichlorobenzene	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
2-Nitroaniline	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
2,4-Dinitrotoluene	ug/l	--							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5																		
2,6-Dinitrotoluene	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
3-Nitroaniline	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
4-Bromophenylphenylether	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
4-Chloroaniline	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
4-Chlorophenylphenylether	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
4-Nitroaniline	ug/l	--							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5																		
Azobenzene	ug/l	--							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5																		
Bis(2-chloroethoxy)methane	ug/l	--							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5																		
Bis(2-chloroethyl)ether	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
Carbazole	ug/l	--							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5																		
Dibenzofuran	ug/l	--							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5																		
Hexachlorobenzene	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
Hexachlorobutadiene	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
Hexachlorocyclopentadiene	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
Hexachloroethane	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
Isophorone	ug/l	--							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5																		
N-nitrosodi-n-propylamine	ug/l	--							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5																		
Nitrobenzene	ug/l	--							<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1																		
>C5-C6	ug/l	--							<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10																		
>C6-C8	ug/l	--							<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10																		
>C8-C10	ug/l	--							<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10																		
>C10-C12	ug/l	--							<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5																		
>C12-C16	ug/l	--							<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10																		
>C16-C21	ug/l	--							<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10																		
>C21-C35	ug/l	--							<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10																		
Total aliphatics C5-35	ug/l	--							<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10																		
>C5-EC7	ug/l	--							<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10																		
>EC7-EC8	ug/l	--							<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10																		
>EC8-EC10	ug/l	--							<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10																		
>EC10-EC12	ug/l	--							<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5																		
>EC12-EC16	ug/l	--							<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10																		
>EC16-EC21	ug/l	--							<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10																		
>EC21-EC35	ug/l	--							<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10																		
Total aromatics C5-35	ug/l	--							<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10																		
Total aliphatics and aromatics(C5-35)	ug/l	7.5							<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10																		
PCB 77	ug/l	--																																				
PCB 81	ug/l	--																																				
PCB 105	ug/l	--																																				
PCB 114	ug/l	--																																				
PCB 118	ug/l	--																																				
PCB 123	ug/l	--																																				
PCB 126	ug/l	--																																				
PCB 156	ug/l	--																																				
PCB 157	ug/l	--																																				
PCB 167	ug/l	--																																				
PCB 169	ug/l	--																																				
PCB 189	ug/l	--																																				
Total 12 PCBs	ug/l	--																																				
PCB 28	ug/l	--							<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1																		
PCB 52	ug/l	--							<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1																		
PCB 101	ug/l	--							<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1																		
PCB 118	ug/l	--							<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1																		
PCB 138	ug/l	--							<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1																		
PCB 153	ug/l	--							<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1																		
PCB 180	ug/l	--							<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1																		
Total 7 PCBs	ug/l	--							<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7																		
Fluoride	mg/l	--	0.4	<0.3	<0.3	0.5	0.4	<0.3	-	-	-	-	-	-	-	-	-	-	-	-			<0.3	<0.3													<0.3	
Sulphate as SO4	mg/l	187.5	44.92	12.91	32.7	12.35	9.85	24.22	17.9	21.1	97.1	122.1	21.7	26.3	3.4	13.9	22	39.7	23.4	14.9			2.4	7.6													3.8	
Chloride	mg/l	187.5	1.5	1.1	2.1	0.9	0.8	1.3															1.9	1.3													1	
Ammoniacal Nitrogen as N	mg/l	0.175	0.04	0.03	0.03	0.05	0.04	0.04	3.91	4.99	0.92	3.01	<0.03	1.06	<0.03	0.12	0.74	0.27	1.07	0.06			<0.03	0.09													0.12	
Dissolved Organic Carbon	mg/l	--	4	6	8	6	6	3	6	7	17	20	5	8	3	3	6	4	6	4			4	4													3	

		Bloody Stream (Culverted)		Enviroguide	Golder	Golder	Golder	Enviroguide	Golder	Golder	Baldoyle Bay			Enviroguide	Enviroguide	Enviroguide	Golder	Golder	Golder
Sample ID	**Units**	**S.I. No. 272/2009 - European Communities Environmental Objectives (Surface Waters) Regulations 2009 including amendments S.I. No. 327/2012, S.I. No. 386/2015 and S.I. No. 77/2019.**		**SW1**				**SW2**			**S.I. No. 272/2009 - European Communities Environmental Objectives (Surface Waters) Regulations 2009 including amendments S.I. No. 327/2012, S.I. No. 386/2015 and S.I. No. 77/2019.**		**Marine SI No 268-2009**	**SW2 ***	**SW3**	**SW4**	**SAC**		
Sampled Date				**10/01/2019**	**03/09/2019**	**09/09/2019**	**13/09/2019**	**10/01/2019**	**09/09/2019**	**13/09/2019**				**10/01/2019**	**23/04/2019**	**23/04/2019**	**04/09/2019**	**09/09/2019**	**13/09/2019**
Lab Ref. No.		**AA-EQS Inland Surface Waters**	**MAC-EQS Inland Surface Waters**	**19/410**	**19-14327**	**19-14572**	**19-15004**	**19/410**	**19-14572**	**19-15004**	**AA-EQS Other Surface Waters**	**MAC-EQS Other Surface Waters**	**EQS- Shellfish marine waters**	**19/410**	**19/6647**	**19/6647**	**19-14327**	**19-14572**	**19-15004**
Conductivity	us/cm	--	--	208.4				50826			--	--	--	50826	50107	50606			
pH	pH	6 to 9	6 to 9	8.93	7.97	8.15	7.95	7.84	7.61	7.69	6 to 9	6 to 9	7 to 9	7.84	7.24	7.65	8.01	8.58	8.21
Dissolved Oxygen	%	--	--	117.4				100.1			--	--	>69	100.1	115	104.3			
Temperature	°C	--	--	8.5				9			--	--	--	9	10.7	10.5			
ORP	mV	--	--	224.7				260.5			--	--	--	260.5	49.5	48			
Hardness	mg/l	--	--		221	199	217		194	282	--	--	--				7329	6872	5201
Dissolved Antimony	ug/l	--	--	<2				<2			--	--	--	<2	<2	<2			
Dissolved Arsenic	ug/l	25	--	<2.5	8.7	10.7	7.1	<2.5	<2.5	<2.5	20	--	40	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Dissolved Barium	ug/l	--	--	21	19	25	21	21	33	41	--	--	--	21	4	<3	5	9	11
Dissolved Boron	ug/l	--	--		25	37	29		35	33	--	--					3265	2569	3090
Dissolved Cadmium	ug/l	0.25	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.2	1.5	5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Chromium	ug/l	3.4	32	<1.5	<1.5	<1.5	4.7	<1.5	<1.5	<1.5	0.6	32	30	<1.5	<1.5	<1.5	<1.5	3.2	<1.5
Dissolved Chromium III	ug/l	--	32	<6	<6	<6	<6	<6	<6	<6	--	--	-	<6	<6	<6	<6	<6	<6
Hexavalent Chromium	ug/l	3.4	--	<6	<6	<6	<6	<6	<6	<6	0.6	32	-	<6	<6	<6	<6	<6	<6
Dissolved Copper	ug/l	30	--	<7	<7	<7	<7	<7	<7	<7	5	--	10	<7	<7	<7	<7	<7	<7
Dissolved Lead	ug/l	1.2	14	<5	<5	<5	<5	<5	<5	<5	1.3	14	20	<5	<5	<5	<5	<5	<5
Dissolved Mercury	ug/l	--	0.07	<1	<1	<1	<1	<1	<1	<1	--	0.07	0.4	<1	<1	<1	<1	<1	<1
Dissolved Molybdenum	ug/l		-	<2				2			--	--	--	2	7	6			
Dissolved Nickel	ug/l	4	34	<2	4	<2	<2	<2	<2	<2	8.6	34	50	<2	<2	<2	<2	<2	<2
Dissolved Selenium	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	<3	<3	<3	<3	<3
Dissolved Vanadium	ug/l	--	--		<1.5	1.8	<1.5		<1.5	<1.5	--	--					<1.5	5	<1.5
Dissolved Zinc	ug/l	100	--	<3	<3	<3	<3	<3	27	16	40	--	200	<3	<3	<3	<3	<3	<3
			--																
Dichlorodifluoromethane	ug/l	--	--	<2	<2	<2	<2	<2	<2	<2	--	--	--	<2	-	-	<2	<2	<2
Chloromethane	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
Vinyl Chloride	ug/l	--	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	--	<0.1	-	-	<0.1	<0.1	<0.1
Bromomethane	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
Chloroethane	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
Trichlorofluoromethane	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
1,1-Dichloroethene (1,1 DCE)	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
Dichloromethane (DCM)	ug/l	20	--	<5	<5	<5	<5	<5	<5	<5	20	--	--	<5	-	-	<5	<5	<5
trans-1-2-Dichloroethene	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
1,1-Dichloroethane	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
cis-1-2-Dichloroethene	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
2,2-Dichloropropane	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
Bromochloromethane	ug/l	--	--	<2	<2	<2	<2	<2	<2	<2	--	--	--	<2	-	-	<2	<2	<2
Chloroform	ug/l	--	--	<2	<2	<2	<2	3	5	8	--	--	--	3	-	-	<2	<2	<2
1,1,1-Trichloroethane	ug/l	--	--	<2	<2	<2	<2	<2	<2	<2	--	--	--	<2	-	-	<2	<2	<2
1,1-Dichloropropene	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
Carbon tetrachloride	ug/l	12	--	<2	<2	<2	<2	<2	<2	<2	12	--	--	<2	-	-	<2	<2	<2
1,2-Dichloroethane	ug/l	10	--	<2	<2	<2	<2	<2	<2	<2	10	--	--	<2	-	-	<2	<2	<2
Trichloroethene (TCE)	ug/l	10	--	<3	<3	<3	<3	<3	<3	<3	10	--	--	<3	-	-	<3	<3	<3
1,2-Dichloropropane	ug/l	--	--	<2	<2	<2	<2	<2	<2	<2	--	--	--	<2	-	-	<2	<2	<2
Dibromomethane	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
Bromodichloromethane	ug/l	--	--	<2	<2	<2	<2	<2	<2	<2	--	--	--	<2	-	-	<2	<2	<2
cis-1-3-Dichloropropene	ug/l	--	--	<2	<2	<2	<2	<2	<2	<2	--	--	--	<2	-	-	<2	<2	<2
trans-1-3-Dichloropropene	ug/l	--	--	<2	<2	<2	<2	<2	<2	<2	--	--	--	<2	-	-	<2	<2	<2
1,1,2-Trichloroethane	ug/l	--	--	<2	<2	<2	<2	<2	<2	<2	--	--	--	<2	-	-	<2	<2	<2
Tetrachloroethene (PCE)	ug/l	10	--	<3	<3	<3	<3	<3	<3	<3	10	--	--	<3	-	-	<3	<3	<3
1,3-Dichloropropane	ug/l	--	--	<2	<2	<2	<2	<2	<2	<2	--	--	--	<2	-	-	<2	<2	<2
Dibromochloromethane	ug/l	--	--	<2	<2	<2	<2	<2	<2	<2	--	--	--	<2	-	-	<2	<2	<2
1,2-Dibromoethane	ug/l	--	--	<2	<2	<2	<2	<2	<2	<2	--	--	--	<2	-	-	<2	<2	<2
Chlorobenzene	ug/l	--	--	<2	<2	<2	<2	<2	<2	<2	--	--	--	<2	-	-	<2	<2	<2
1,1,1,2-Tetrachloroethane	ug/l	--	--	<2	<2	<2	<2	<2	<2	<2	--	--	--	<2	-	-	<2	<2	<2
Styrene	ug/l	--	--	<2	<2	<2	<2	<2	<2	<2	--	--	--	<2	-	-	<2	<2	<2
Bromoform	ug/l	--	--	<2	<2	<2	<2	<2	<2	<2	--	--	--	<2	-	-	<2	<2	<2
Isopropylbenzene	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
1,1,2,2-Tetrachloroethane	ug/l	--	--	<4	<4	<4	<4	<4	<4	<4	--	--	--	<4	-	-	<4	<4	<4
Bromobenzene	ug/l	--	--	<2	<2	<2	<2	<2	<2	<2	--	--	--	<2	-	-	<2	<2	<2
1,2,3-Trichloropropane	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
Propylbenzene	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
2-Chlorotoluene	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
1,3,5-Trimethylbenzene	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
4-Chlorotoluene	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
tert-Butylbenzene	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
1,2,4-Trimethylbenzene	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
sec-Butylbenzene	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
4-Isopropyltoluene	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
1,3-Dichlorobenzene	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
1,4-Dichlorobenzene	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
n-Butylbenzene	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
1,2-Dichlorobenzene	ug/l	--	--	<3	<3	<3	<3	<3	<3	<3	--	--	--	<3	-	-	<3	<3	<3
1,2-Dibromo-3-chloropropane	ug/l	--	--	<2	<2	<2	<2	<2	<2	<2	--	--	--	<2	-	-	<2	<2	<2
1,2,4-Trichlorobenzene	ug/l	0.4	--	<3	<3	<3	<3	<3	<3	<3	0. 4	--	--	<3	-	-	<3	<3	<3
Hexachlorobutadiene	ug/l	--	0.6	<3	<3	<3	<3	<3	<3	<3	--	0.6	--	<3	-	-	<3	<3	<3
Naphthalene	ug/l	2	130	<2	<2	<2	<2	<2	<2	<2	2	130	--	<2	-	-	<2	<2	<2
1,2,3-Trichlorobenzene	ug/l	0.4	--	<3	<3	<3	<3	<3	<3	<3	0. 4	--	--	<3	-	-	<3	<3	<3
Methyl Tertiary Butyl Ether	ug/l	--	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	--	--	--	<0.1	-	-	<0.1	<0.1	<0.1
Benzene	ug/l	10	50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	8	50	--	<0.5	-	-	<0.5	<0.5	<0.5
Toluene	ug/l	10	--	<5	<5	<5	<5	<5	<5	<5	10	--	--	<5	-	-	<5	<5	<5
Ethylbenzene	ug/l		--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
p/m-Xylene	ug/l	10	--	<2	<2	<2	<2	<2	<2	<2	10	--	--	<2	-	-	<2	<2	<2
o-Xylene	ug/l	10	--	<1	<1	<1	<1	<1	<1	<1	10	--	--	<1	-	-	<1	<1	<1
2-Chlorophenol	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
2-Methylphenol	ug/l	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	<0.5	-	-	<0.5	<0.5	<0.5
2-Nitrophenol	ug/l	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	<0.5	-	-	<0.5	<0.5	<0.5
2,4-Dichlorophenol	ug/l	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	<0.5	-	-	<0.5	<0.5	<0.5
2,4-Dimethylphenol	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
2,4,5-Trichlorophenol	ug/l	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	<0.5	-	-	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
4-Chloro-3-methylphenol	ug/l	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	<0.5	-	-	<0.5	<0.5	<0.5
4-Methylphenol	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
4-Nitrophenol	ug/l	--	--	<10	<10	<10	<10	<10	<10	<10	--	--	--	<10	-	-	<10	<10	<10
Pentachlorophenol	ug/l	0.4	1	<1	<1	<1	<1	<1	<1	<1	0.4	1	--	<1	-	-	<1	<1	<1
Phenol	ug/l	8	46	<1	<1	<1	<1	<1	<1	<1	8	46	--	<1	-	-	<1	<1	<1

Sample ID		S.I. No. 272/2009 - European Communities Environmental Objectives (Surface Waters) Regulations 2009 including amendments S.I. No. 327/2012, S.I. No. 386/2015 and S.I. No. 77/2019.		SW1				SW2			S.I. No. 272/2009 - European Communities Environmental Objectives (Surface Waters) Regulations 2009 including amendments S.I. No. 327/2012, S.I. No. 386/2015 and S.I. No. 77/2019.		Marine SI No 268-2009	SW2 *	SW3	SW4	SAC		
Sampled Date	Units			10/01/2019	03/09/2019	09/09/2019	13/09/2019	10/01/2019	09/09/2019	13/09/2019				10/01/2019	23/04/2019	23/04/2019	04/09/2019	09/09/2019	13/09/2019
Lab Ref. No.		AA-EQS Inland Surface Waters	MAC-EQS Inland Surface Waters	19/410	19-14327	19-14572	19-15004	19/410	19-14572	19-15004	AA-EQS Other Surface Waters	MAC-EQS Other Surface Waters	EQS- Shellfish marine waters	19/410	19/6647	19/6647	19-14327	19-14572	19-15004
2-Chloronaphthalene	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
2-Methylnaphthalene	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
Naphthalene	ug/l	2	130	<1	<1	<1	<1	<1	<1	<1	2	130	--	<1	-	-	<1	<1	<1
Acenaphthylene	ug/l	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	<0.5	-	-	<0.5	<0.5	<0.5
Acenaphthene	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
Fluorene	ug/l	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	<0.5	-	-	<0.5	<0.5	<0.5
Phenanthrene	ug/l	--	--	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	<0.5	-	-	<0.5	<0.5	<0.5
Anthracene	ug/l	0.1	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.1	0.1	--	<0.5	-	-	<0.5	<0.5	<0.5
Fluoranthene	ug/l	0.0063	0.12	<0.5	<0.5	1.1	<0.5	<0.5	<0.5	<0.5	0.0063	0.12	--	<0.5	-	-	<0.5	<0.5	<0.5
Pyrene	ug/l	--	--	<0.5	<0.5	1	<0.5	<0.5	<0.5	<0.5	--	--	--	<0.5	-	-	<0.5	<0.5	<0.5
Benzo(a)anthracene	ug/l	--	--	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	--	--	--	<0.5	-	-	<0.5	<0.5	<0.5
Chrysene	ug/l	--	--	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	--	--	--	<0.5	-	-	<0.5	<0.5	<0.5
Benzo(bk)fluoranthene	ug/l	--	0.017	<1	<1	<1	<1	<1	<1	<1	--	0.017	--	<1	-	-	<1	<1	<1
Benzo(a)pyrene	ug/l	0.00017	0.27	<1	<1	<1	<1	<1	<1	<1	0.00017	0.27	--	<1	-	-	<1	<1	<1
Indeno(123cd)pyrene	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
Dibenzo(ah)anthracene	ug/l	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	<0.5	-	-	<0.5	<0.5	<0.5
Benzo(ghi)perylene	ug/l	--	0.00082	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	--	0.00082	--	<0.5	-	-	<0.5	<0.5	<0.5
Total PAHs (sum of six)	ug/l	--	--	0.0	0.0	1.9	0.0	0.0	0.0	0.0	--	--	--	0.0	0.0	0.0	0.0	0.0	0.0
Bis(2-ethylhexyl) phthalate	ug/l	1.3	--	<5	<5	<5	<5	<5	<5	<5	1.3	--	--	<5	-	-	<5	<5	<5
Butylbenzyl phthalate	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
Di-n-butyl phthalate	ug/l	--	--	<1.5	1.8	<1.5	<1.5	<1.5	<1.5	<1.5	--	--	--	<1.5	-	-	<1.5	<1.5	<1.5
Di-n-Octyl phthalate	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
Diethyl phthalate	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
Dimethyl phthalate	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
1,2-Dichlorobenzene	ug/l		--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
1,2,4-Trichlorobenzene	ug/l	0.4	--	<1	<1	<1	<1	<1	<1	<1	0. 4	--	--	<1	-	-	<1	<1	<1
1,3-Dichlorobenzene	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
1,4-Dichlorobenzene	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
2-Nitroaniline	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
2,4-Dinitrotoluene	ug/l	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	<0.5	-	-	<0.5	<0.5	<0.5
2,6-Dinitrotoluene	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
3-Nitroaniline	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
4-Bromophenylphenylether	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
4-Chloroaniline	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
4-Chlorophenylphenylether	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
4-Nitroaniline	ug/l	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	<0.5	-	-	<0.5	<0.5	<0.5
Azobenzene	ug/l	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	<0.5	-	-	<0.5	<0.5	<0.5
Bis(2-chloroethoxy)methane	ug/l	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	<0.5	-	-	<0.5	<0.5	<0.5
Bis(2-chloroethyl)ether	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
Carbazole	ug/l	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	<0.5	-	-	<0.5	<0.5	<0.5
Dibenzofuran	ug/l	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	<0.5	-	-	<0.5	<0.5	<0.5
Hexachlorobenzene	ug/l	--	0.05	<1	<1	<1	<1	<1	<1	<1	--	0.05	--	<1	-	-	<1	<1	<1
Hexachlorobutadiene	ug/l	--	0.6	<1	<1	<1	<1	<1	<1	<1	--	0.6	--	<1	-	-	<1	<1	<1
Hexachlorocyclopentadiene	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
Hexachloroethane	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
Isophorone	ug/l	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	<0.5	-	-	<0.5	<0.5	<0.5
N-nitrosodi-n-propylamine	ug/l	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	<0.5	-	-	<0.5	<0.5	<0.5
Nitrobenzene	ug/l	--	--	<1	<1	<1	<1	<1	<1	<1	--	--	--	<1	-	-	<1	<1	<1
>C5-C6	ug/l	--	--	<10	<10	<10	<10	<10	<10	<10	--	--	--	<10	-	-	<10	<10	<10
>C6-C8	ug/l	--	--	<10	<10	<10	<10	<10	<10	<10	--	--	--	<10	-	-	<10	<10	<10
>C8-C10	ug/l	--	--	<10	<10	<10	<10	<10	<10	<10	--	--	--	<10	-	-	<10	<10	<10
>C10-C12	ug/l	--	--	<5	<5	<5	<5	<5	<5	<5	--	--	--	<5	-	-	<5	<5	<5
>C12-C16	ug/l	--	--	<10	<10	<10	<10	<10	<10	<10	--	--	--	<10	-	-	<10	<10	<10
>C16-C21	ug/l	--	--	<10	<10	<10	<10	<10	<10	<10	--	--	--	<10	-	-	<10	<10	<10
>C21-C35	ug/l	--	--	<10	<10	<10	<10	<10	<10	<10	--	--	--	<10	-	-	<10	<10	<10
Total aliphatics C5-35	ug/l	--	--	<10	<10	<10	<10	<10	<10	<10	--	--	--	<10	-	-	<10	<10	<10
>C5-EC7	ug/l	--	--	<10	<10	<10	<10	<10	<10	<10	--	--	--	<10	-	-	<10	<10	<10
>EC7-EC8	ug/l	--	--	<10	<10	<10	<10	<10	<10	<10	--	--	--	<10	-	-	<10	<10	<10
>EC8-EC10	ug/l	--	--	<10	<10	<10	<10	<10	<10	<10	--	--	--	<10	-	-	<10	<10	<10
>EC10-EC12	ug/l	--	--	<5	<5	<5	<5	<5	<5	<5	--	--	--	<5	-	-	<5	<5	<5
>EC12-EC16	ug/l	--	--	<10	<10	<10	<10	<10	<10	<10	--	--	--	<10	-	-	<10	<10	<10
>EC16-EC21	ug/l	--	--	<10	<10	<10	<10	<10	<10	<10	--	--	--	<10	-	-	<10	<10	<10
>EC21-EC35	ug/l	--	--	<10	<10	<10	<10	<10	<10	<10	--	--	--	<10	-	-	<10	<10	<10
Total aromatics C5-35	ug/l	--	--	<10	<10	<10	<10	<10	<10	<10	--	--	--	<10	-	-	<10	<10	<10
Total aliphatics and aromatics(C5-35)	ug/l	--	--	<10	<10	<10	<10	<10	<10	<10	--	--	--	<10	-	-	<10	<10	<10
PCBs (Total vs Aroclor 1254)	ug/l	--	--	<0.2				<0.2			--	--	--	<0.2	-	-			
PCB 77	ug/l	--	--	-				-			--	--	--	-	-	-			
PCB 81	ug/l	--	--	-				-			--	--	--	-	-	-			
PCB 105	ug/l	--	--	-				-			--	--	--	-	-	-			
PCB 114	ug/l	--	--	-				-			--	--	--	-	-	-			
PCB 118	ug/l	--	--	-				-			--	--	--	-	-	-			
PCB 123	ug/l	--	--	-				-			--	--	--	-	-	-			
PCB 126	ug/l	--	--	-				-			--	--	--	-	-	-			
PCB 156	ug/l	--	--	-				-			--	--	--	-	-	-			
PCB 157	ug/l	--	--	-				-			--	--	--	-	-	-			
PCB 167	ug/l	--	--	-				-			--	--	--	-	-	-			
PCB 169	ug/l	--	--	-				-			--	--	--	-	-	-			
PCB 189	ug/l	--	--	-				-			--	--	--	-	-	-			
Total 12 PCBs	ug/l	--	--	-				-			--	--	--	-	-	-			
PCB 28	ug/l	--	--	-	<0.5	<0.1	<0.1	-	<0.1	<0.1	--	--	--	-	-	-	<0.1	<0.1	<0.1
PCB 52	ug/l	--	--	-	<0.5	<0.1	<0.1	-	<0.1	<0.1	--	--	--	-	-	-	<0.1	<0.1	<0.1
PCB 101	ug/l	--	--	-	<0.5	<0.1	<0.1	-	<0.1	<0.1	--	--	--	-	-	-	<0.1	<0.1	<0.1
PCB 118	ug/l	--	--	-	<0.5	<0.1	<0.1	-	<0.1	<0.1	--	--	--	-	-	-	<0.1	<0.1	<0.1
PCB 138	ug/l	--	--	-	<0.5	<0.1	<0.1	-	<0.1	<0.1	--	--	--	-	-	-	<0.1	<0.1	<0.1
PCB 153	ug/l	--	--	-	<0.5	<0.1	<0.1	-	<0.1	<0.1	--	--	--	-	-	-	<0.1	<0.1	<0.1
PCB 180	ug/l	--	--	-	<0.5	<0.1	<0.1	-	<0.1	<0.1	--	--	--	-	-	-	<0.1	<0.1	<0.1
Total 7 PCBs	ug/l	--	--	-	<3.5	<0.7	<0.7	-	<0.7	<0.7	--	--	0.3	-	-	-	<0.7	<0.7	<0.7
Fluoride	mg/l	0.5	--	<0.3	<0.3	<0.3	<0.3	0.4	<0.3	0.4	1.5	--	--	0.4	-	-	1.2	1.2	1.3
Sulphate as SO4	mg/l	--	--	22.5	12.2	14.5	9.2	741.3	27.3	48.9	--	--	--	741.3	-	-	2614.6	3029.7	2339.4
Chloride	mg/l	--	--	59.5	52.8	60.1	53.7	6193.7	43.7	49.1	--	--	--	6193.7	-	-	18993	19154.4	17433.7
Nitrate as NO3	mg/l	--	--	2.4	0.3	0.7	<0.2	2.7	2.6	11	--	--	--	2.7	-	-	<0.2	<0.2	<0.2
Nitrite as NO2	mg/l	--	--	<0.02	<0.02	<0.02	2.46	<0.02	<0.02	0.11	--	--	--	<0.02	-	-	<0.02	<0.02	<0.02
Ammoniacal Nitrogen as N	mg/l	0.14	0.14	0.09	0.03	0.04	0.08	0.3	0.34	0.3	0.14	0.14	--	0.3	0.69	0.71	0.05	0.05	0.09
Dissolved Organic Carbon	mg/l	--	--	6	4	6	5	4	3	<2	--	--	--	4	--	--	<2	<2	<2
Total Organic Carbon	mg/l	--	--	6	5	7	5	5	3	<2	--	--	--	5	--	--	<2	2	3

Notes:
* considers tidally influenced conditions

Sample ID	Units	Groundwater Regulations 2010 (S.I. No. 9 of 2010) and amendment S.I. No. 366/2016 (GTVs)	BH02			BH3			BH04	BH5			BH6			BH8			BH9			Enviroguide BH11	Enviroguide BH11	Enviroguide BH15	Enviroguide BH16	Enviroguide BH16	Enviroguide BH17	Enviroguide BH22	Enviroguide BH22
Sampled Date			13/09/2019	17/09/2019	20/09/2019	04/09/2019	09/09/2019	13/09/2019	14/01/2019	04/09/2019	09/09/2019	13/09/2019	04/09/2019	09/09/2019	13/09/2019	04/09/2019	09/09/2019	13/09/2019	03/09/2019	09/09/2019	13/09/2019	05/05/2017	10/01/2019	10/01/2019	05/05/2017	10/01/2019	10/01/2019	05/05/2017	10/01/2019
Lab Ref. No.			19-15004	19-15459	19-15459	19-14327	19-14572	19-15004	19/407	19-14327	19-14572	19-15004	19-14327	19-14572	19-15004	19-14327	19-14572	19-15004	19-14327	19-14572	19-15004	17/7987	19/410	19/407	17/7987	19/410	19/410	17/7987	19/410
Conductivity	us/cm	800 (saline intrusion)							874														516.8	12.5	NDP	624.6	768	NDP	117.1
pH	pH	--	7.64	7.52	7.57	7.2	6.96	7	7.9	7.69	7.54	7.55	7.8	7.62	7.55	7.66	7.63	7.47	7.46	7.46	7.46	7.18	7.12	7.73	7.13	7.32	6.94	7.99	7.33
Dissolved Oxygen	%	--							99.7														99.1	99.1		112.4	70.1		63.9
Temperature	°C	--							8.6														11.2	10.1		10.8	11.3		11.5
ORP	mV	--							64.1														-70.1	106.5		84.9	-68.8		-5.6
Total Hardness Dissolved (as CaCO3)	mg/l		346	396	397	467	451	435		324	462	456	609	591	597	371	357	452	453	417	377								
Dissolved Aluminium	ug/l	150																				5.6			3.8			1.5	
Dissolved Antimony	ug/l	--							<2													9	<2	<2	5	<2	<2	3	<2
Dissolved Arsenic	ug/l	7.5	6.5	7.4	8.6	6.1	7.1	12	<2.5	13.9	13.9	18.9	<2.5	<2.5	4	<2.5	4.7	4.8	10.5	7.2	11.6	9.5	<2.5	<2.5	6.9	<2.5	<2.5	10.3	<2.5
Dissolved Barium	ug/l	--	33	50	47	224	170	187	21	55	82	38	<3	<3	<3	52	39	30	108	111	92	122.3	109	88	99.7	98	193	199.7	268
Dissolved Berylium	ug/l	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	<0.5	-
Dissolved Boron	ug/l	750	91	57	63	188	132	160	-	688	324	380	65	55	65	99	120	57	185	187	138	88	-	-	94	-	-	631	-
Dissolved Cadmium	ug/l	3.75	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.03	<0.5	<0.5	<0.03	<0.5	<0.5	<0.03	<0.5
Dissolved Calcium	ug/l	--							-													154.7	-	-	182.9	-	-	143.1	-
Dissolved Chromium	ug/l	37.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	5	4.3	<1.5	<1.5	5	<1.5	<1.5	<1.5	<0.2	<1.5	<1.5	0.2	<1.5	<1.5	<0.2	<1.5
Dissolved Chromium III	ug/l	--	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	-	<6	<6	-	<6	<6	-	<6
Hexavalent Chromium	ug/l	7.5	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	-	<6	<6	-	<6	<6	-	<6
Dissolved Cobalt	ug/l	--							-													2.2	-	-	2.3	-	-	0.9	-
Dissolved Copper	ug/l	1500	<7	<7	<7	<7	15	<7	14	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<3	<7	<7	4	<7	<7	<3	<7
Dissolved Lead	ug/l	7.5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.4	<5	<5	<0.4	<5	<5	<0.4	<5
Dissolved Magnesium	mg/l	--							-													10.3	-	-	12.4	-	-	27.1	-
Dissolved Manganese	ug/l	--							-													445.4	-	-	615.6	-	-	804.2	-
Dissolved Mercury	ug/l	0.75	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.07	<1	<1	0.47	<1	<1	<0.01	<1
Dissolved Molybdenum	ug/l	--							10													14.5	6	5	6.4	2	10	18.8	12
Dissolved Nickel	ug/l	15	27	3	4	3	4	<2	49	<2	<2	<2	<2	<2	<2	31	29	<2	3	3	<2	4	2	4	6.1	4	<2	4.2	<2
Dissolved Potassium	mg/l	--							-													6	-	-	9.9	-	-	31.8	-
Dissolved Selenium	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<1.2	<3	<3	<1.2	<3	<3	<1.2	<3
Dissolved Silver	ug/l	--							-													<5	-	-	<5	-	-	<5	-
Dissolved Sodium	mg/l	--							-													18	-	-	39.3	-	-	427.4	-
Dissolved Strontium	ug/l	--							-													606	-	-	696	-	-	1211	-
Dissolved Uranium	ug/l	--							-													<5	-	-	<5	-	-	<5	-
Dissolved Vanadium	ug/l	--	2.8	<1.5	<1.5	2.8	11.4	<1.5		2.7	4.9	<1.5	<1.5	11.1	<1.5	4.1	6.1	<1.5	3.6	2.1	<1.5								
Dissolved Zinc	ug/l	--	8	38	52	5	3	<3	11	<3	<3	<3	<3	<3	<3	17	11	17	4	4	<3	35	<3	3	22.7	27	6	28.1	<3
Dichlorodifluoromethane	ug/l	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	-	<2	<2	-	<2
Chloromethane	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
Vinyl Chloride	ug/l	0.375	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.2	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1
Bromomethane	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
Chloroethane	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
Trichlorofluoromethane	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
1,1-Dichloroethene (1,1 DCE)	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
Dichloromethane (DCM)	ug/l	15	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	<5	-	<5
trans-1-2-Dichloroethene	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
1,1-Dichloroethane	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
cis-1-2-Dichloroethene	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
2,2-Dichloropropane	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
Bromochloromethane	ug/l	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	-	<2	<2	-	<2
Chloroform	ug/l	--	<2	<2	<2	<2	<2	<2	<2	10	5	3	4	<2	<2	<2	<2	4	<2	<2	<2	-	<2	<2	-	<2	<2	-	<2
1,1,1-Trichloroethane	ug/l	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	-	<2	<2	-	<2
1,1-Dichloropropene	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
Carbon tetrachloride	ug/l	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	-	<2	<2	-	<2
1,2-Dichloroethane	ug/l	2.25	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	-	<2	<2	-	<2
Trichloroethene (TCE)	ug/l	7.5	<3	<3	<3	<3	<3	<3	<3	<3	8	8	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
1,2-Dichloropropane	ug/l	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	-	<2	<2	-	<2
Dibromomethane	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
Bromodichloromethane	ug/l	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	-	<2	<2	-	<2
cis-1-3-Dichloropropene	ug/l	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	-	<2	<2	-	<2
trans-1-3-Dichloropropene	ug/l	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	-	<2	<2	-	<2
1,1,2-Trichloroethane	ug/l	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	-	<2	<2	-	<2
Tetrachloroethene (PCE)	ug/l	7.5	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
1,3-Dichloropropane	ug/l	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	-	<2	<2	-	<2
Dibromochloromethane	ug/l	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	-	<2	<2	-	<2
1,2-Dibromoethane	ug/l	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	-	<2	<2	-	<2
Chlorobenzene	ug/l	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	-	<2	<2	-	<2
1,1,1,2-Tetrachloroethane	ug/l	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	-	<2	<2	-	<2
Styrene	ug/l	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	-	<2	<2	-	<2
Bromoform	ug/l	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	-	<2	<2	-	<2
Isopropylbenzene	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
1,1,2,2-Tetrachloroethane	ug/l	7.5	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	-	<4	<4	-	<4	<4	-	<4
Bromobenzene	ug/l	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	-	<2	<2	-	<2
1,2,3-Trichloropropane	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
Propylbenzene	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
2-Chlorotoluene	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
1,3,5-Trimethylbenzene	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
4-Chlorotoluene	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
tert-Butylbenzene	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
1,2,4-Trimethylbenzene	ug/l	--	<3	<3	<3	8	3	3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
sec-Butylbenzene	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
4-Isopropyltoluene	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
1,3-Dichlorobenzene	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
1,4-Dichlorobenzene	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
n-Butylbenzene	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
1,2-Dichlorobenzene	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
1,2-Dibromo-3-chloropropane	ug/l	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	-	<2	<2	-	<2
1,2,4-Trichlorobenzene	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
Hexachlorobutadiene	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
Naphthalene	ug/l	--	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	-	<2	<2	-	<2
1,2,3-Trichlorobenzene	ug/l	--	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	-	<3	<3	-	<3	<3	-	<3
Methyl Tertiary Butyl Ether	ug/l	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<5	<0.1	<0.1	-	<0.1	<0.1	<5	<0.1
Benzene	ug/l	0.75	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	-	<0.5	<0.5	<5	<0.5
Toluene	ug/l	525	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5
Ethylbenzene	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	-	<1	<1	<5	<1
p/m-Xylene	ug/l	--	<2	<2	<2	6	3	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<5	<2	<2	-	<2	<2	<5	<2
o-Xylene	ug/l	--	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	-	<1	<1	<5	<1
2-Chlorophenol	ug/l	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
2-Methylphenol	ug/l	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
2-Nitrophenol	ug/l	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
2,4-Dichlorophenol	ug/l	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
2,4-Dimethylphenol	ug/l	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
2,4,5-Trichlorophenol	ug/l	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
2,4,6-Trichlorophenol	ug/l	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
4-Chloro-3-methylphenol	ug/l	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
4-Methylphenol	ug/l	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
4-Nitrophenol	ug/l	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	-	<10	<10	-	<10
Pentachlorophenol	ug/l	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
Phenol	ug/l	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
2-Chloronaphthalene	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
2-Methylnaphthalene	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	-	<1	<1	-	<1	<1	-	<1
Naphthalene	ug/l	--	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	3	<1	1	-	<1	<1	-	<1	<1	-	<1
Acenaphthylene	ug/l	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.4	<0.5	1	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
Acenaphthene	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	-	<1	<1	-	<1	<1	-	<1
Fluorene	ug/l	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.4	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
Phenanthrene	ug/l	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3	1.3	1.4	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	11.6	0.7	3	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
Anthracene	ug/l	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.7	<0.5	1.2	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
Fluoranthene	ug/l	--	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.8	0.6	1.6	<0.5	<0.5	<0.5	<0.5	1.5	0.8	23.8	1	5.8	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5

Sample ID	Units	Groundwater Regulations 2010 (S.I. No. 9 of 2010) and amendment S.I. No. 366/2016 (GTVs)	BH02			BH3			BH04	BH5			BH6			BH8			BH9			BH11		BH15	BH16		BH17	BH22	
Sampled Date			13/09/2019	17/09/2019	20/09/2019	04/09/2019	09/09/2019	13/09/2019	14/01/2019	04/09/2019	09/09/2019	13/09/2019	04/09/2019	09/09/2019	13/09/2019	04/09/2019	09/09/2019	13/09/2019	03/09/2019	09/09/2019	13/09/2019	05/05/2017	10/01/2019	10/01/2019	05/05/2017	10/01/2019	10/01/2019	05/05/2017	10/01/2019
Lab Ref. No.			19-15004	19-15459	19-15459	19-14327	19-14572	19-15004	19/407	19-14327	19-14572	19-15004	19-14327	19-14572	19-15004	19-14327	19-14572	19-15004	19-14327	19-14572	19-15004	17/7987	19/410	19/407	17/7987	19/410	19/410	17/7987	19/410
Pyrene	ug/l	--	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	1.4	0.6	21.5	0.9	5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
Benzo(a)anthracene	ug/l	--	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	0.9	<0.5	<0.5	<0.5	<0.5	1	0.7	15	0.9	5.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
Chrysene	ug/l	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	0.8	0.5	15.6	0.6	4.2	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
Benzo(bk)fluoranthene	ug/l	--	<1	<1	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	1	<1	32	1	9	-	<1	<1	-	<1	<1	-	<1
Benzo(a)pyrene	ug/l	0.0075	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	24	<1	5	-	<1	<1	-	<1	<1	-	<1
Indeno(123cd)pyrene	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	18	<1	4	-	<1	<1	-	<1	<1	-	<1
Dibenzo(ah)anthracene	ug/l	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.5	<0.5	1	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
Benzo(ghi)perylene	ug/l	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	25.8	0.8	5.4	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
Total PAHs (sum of six)	ug/l	0.075	0.7	0.0	0.0	0.0	0.0	0.0	0.0	4.3	0.6	1.6	0.0	0.0	0.0	0.0	2.5	0.8	123.6	2.8	29.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bis(2-ethylhexyl) phthalate	ug/l	6	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	<5	-	<5
Butylbenzyl phthalate	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
Di-n-butyl phthalate	ug/l		<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	-	<1.5	<1.5	-	<1.5	<1.5	-	<1.5
Di-n-Octyl phthalate	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
Diethyl phthalate	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
Dimethyl phthalate	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
1,2-Dichlorobenzene	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
1,2,4-Trichlorobenzene	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
1,3-Dichlorobenzene	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
1,4-Dichlorobenzene	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
2-Nitroaniline	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
2,4-Dinitrotoluene	ug/l	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
2,6-Dinitrotoluene	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
3-Nitroaniline	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
4-Bromophenylphenylether	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
4-Chloroaniline	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
4-Chlorophenylphenylether	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
4-Nitroaniline	ug/l	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
Azobenzene	ug/l	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
Bis(2-chloroethoxy)methane	ug/l	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
Bis(2-chloroethyl)ether	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
Carbazole	ug/l	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.3	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
Dibenzofuran	ug/l	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.3	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
Hexachlorobenzene	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
Hexachlorobutadiene	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
Hexachlorocyclopentadiene	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
Hexachloroethane	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
Isophorone	ug/l	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
N-nitrosodi-n-propylamine	ug/l	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5
Nitrobenzene	ug/l	--	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1
>C5-C6	ug/l	--	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	-	<10	<10	-	<10
>C6-C8	ug/l	--	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	-	<10	<10	-	<10
>C8-C10	ug/l	--	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	-	<10	<10	-	<10
>C10-C12	ug/l	--	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	<5	-	<5
>C12-C16	ug/l	--	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	70	<10	<10	-	<10	<10	-	<10	<10	-	<10
>C16-C21	ug/l	--	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	640	<10	<10	-	<10	<10	-	<10	<10	-	<10
>C21-C35	ug/l	--	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	1540	<10	<10	-	<10	<10	-	<10	<10	-	<10
Total aliphatics C5-35	ug/l	--	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	2250	<10	<10	-	<10	<10	-	<10	<10	-	<10
>C5-EC7	ug/l	--	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	-	<10	<10	-	<10
>EC7-EC8	ug/l	--	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	-	<10	<10	-	<10
>EC8-EC10	ug/l	--	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	-	<10	<10	-	<10
>EC10-EC12	ug/l	--	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	<5	-	<5
>EC12-EC16	ug/l	--	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	-	<10	<10	-	<10
>EC16-EC21	ug/l	--	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	250	<10	<10	-	<10	<10	-	<10	<10	-	<10
>EC21-EC35	ug/l	--	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	2930	<10	<10	-	<10	<10	-	<10	<10	-	<10
Total aromatics C5-35	ug/l	--		<10	<10	<10	<10		<10	<10	<10		<10	<10		<10	<10		3180	<10		-	<10	<10	-	<10	<10	-	<10
Total aliphatics and aromatics(C5-35)	ug/l	7.5		<10	<10	<10	<10		<10	<10	<10		<10	<10		<10	<10		5430	<10		-	<10	<10	-	<10	<10	-	<10
PCB 77	ug/l	--							<0.1													-	<0.1	-	-	-	-	-	<0.1
PCB 81	ug/l	--							<0.1													-	<0.1	-	-	-	-	-	<0.1
PCB 105	ug/l	--							<0.1													-	<0.1	-	-	-	-	-	<0.1
PCB 114	ug/l	--							<0.1													-	<0.1	-	-	-	-	-	<0.1
PCB 118	ug/l	--							<0.1													-	<0.1	-	-	-	-	-	<0.1
PCB 123	ug/l	--							<0.1													-	<0.1	-	-	-	-	-	<0.1
PCB 126	ug/l	--							<0.1													-	<0.1	-	-	-	-	-	<0.1
PCB 156	ug/l	--							<0.1													-	<0.1	-	-	-	-	-	<0.1
PCB 157	ug/l	--							<0.1													-	<0.1	-	-	-	-	-	<0.1
PCB 167	ug/l	--							<0.1													-	<0.1	-	-	-	-	-	<0.1
PCB 169	ug/l	--							<0.1													-	<0.1	-	-	-	-	-	<0.1
PCB 189	ug/l	--							<0.1													-	<0.1	-	-	-	-	-	<0.1
Total 12 PCBs	ug/l	--							<1.2													-	<1.2	-	-	-	-	-	<1.2
PCB 28	ug/l	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	-	<0.1	-	-	-	-	-	<0.1
PCB 52	ug/l	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	-	<0.1	-	-	-	-	-	<0.1
PCB 101	ug/l	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	-	<0.1	-	-	-	-	-	<0.1
PCB 118	ug/l	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	-	<0.1	-	-	-	-	-	<0.1
PCB 138	ug/l	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	-	<0.1	-	-	-	-	-	<0.1
PCB 153	ug/l	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	-	<0.1	-	-	-	-	-	<0.1
PCB 180	ug/l	--	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	-	<0.1	-	-	-	-	-	<0.1
Total 7 PCBs	ug/l	--	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<7.0	<0.7	<0.7	-	<0.7	-	-	-	-	-	<0.7
Fluoride	mg/l	--	0.4	<0.3	<0.3	<0.3	<0.3	0.3	0.3	<0.3	<0.3	<0.3	<0.3	0.4	<0.3	0.3	0.4	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.3	<0.3	<0.3	<0.3	<0.3
Sulphate as SO4	mg/l	187.5	59.2	62.5	61.8	26.9	24.2	24.4	86.9	20.9	77.3	76.5	98.2	107.3	96.2	58.5	60.2	71.7	133	127.2	46.9	24.9	23.9	30.3	50.9	38.8	73.1	12	25.6
Chloride	mg/l	187.5	40.7	39.2	38	124.1	113.7	112.4	55.1	39.7	211	192.1	457	479.3	473.3	41.7	42.4	46.5	24	36.5	46.5	18.3	26.9	55.4	37.1	68.9	193.8	456.5	562.8
Nitrate as NO3	mg/l	37.5	2.7	6.2	5.8	<0.2	<0.2	0.5	2.7	<0.2	0.7	0.7	5	6.2	6.4	0.6	1.2	11.4	<0.2	0.4	0.6	<0.2	<0.2	<0.2	<0.2	3.1	<0.2	<0.2	<0.2
Nitrite as NO2	mg/l	0.375	0.69	0.06	0.1	<0.02	<0.02	<0.02	0.03	<0.02	0.03	0.12	0.49	0.06	0.06	0.11	0.54	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.09	<0.02	<0.02	<0.02	<0.02
Ammoniacal Nitrogen as N	mg/l	0.175	0.7	0.06	0.16	3.96	3.22	3.07	0.26	11.32	4.22	4.43	0.04	0.04	<0.03	0.82	0.89	0.09	1.29	1.27	1.38	0.21	0.61	0.63	0.52	0.05	3.01	23.18	19.33
Dissolved Organic Carbon	mg/l	--	5	<2	<2	<2	<2	4	6	9	<2	5	<2	<2	<2	5	3	<2	6	4	4	-	<2	5	-	<2	4	-	7
Total Organic Carbon	mg/l	--	4	<2	4	<2	2	7	7	11	<2	9	<2	<2	<2	<2	3	2	5	7	6	<2	3	10	12	<2	10	14	13

			Sample Location	TP109			BH24								BH25					TP2		TP3		
			Sample Depth	0.6	1.7	2.9	1	1	1	2	3	4	4	5	1	2	2	3	5		2.80-3.50	0.00-1.50	1.50-2.20	2.20-3.80
			Soil Type	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Gravelly Silty SAND	Gravelly Silty SAND	Sandy Gravelly CLAY	Made Ground	Made Ground	Made Ground	Made Ground	Sandy Gravelly CLAY	Made Ground	Sandy Gravelly CLAY	Made Ground	Made Ground	Gravelly Silty SAND
			Lab Receipt Date	31/03/2017	31/03/2017	31/03/2017	11/05/2017	03/04/2017	28/04/2017	28/04/2017	03/04/2017	03/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	11/05/2017	28/04/2017	28/04/2017	13/08/2019	<>	14/08/2019	14/08/2019	14/08/2019
Determinand	Units	RWOHG CAC[23]	Source																					
Antimony	mg/kg	550	CL:AIRE, 2010	4	5	<1	-	7	7	6	6	2	4	-	3	4	-	5	-	-	-	-	-	-
Arsenic	mg/kg	40	LQM, 2014	18.6	10.9	17.8	-	23.9	27.9	87.3	47	10.6	26.8	-	18.8	23.2	-	44.4	-	20.6	47	19.1	11.8	12.7
Barium	mg/kg	1300	CL:AIRE, 2010	142	195	298	-	348	377	176	2672	143	1296	-	188	204	-	454	-	225	564	283	179	80
Cadmium	mg/kg	85	LQM, 2014	1	0.5	0.3	-	1.3	1.7	<0.1	2.2	0.3	0.9	-	0.9	1.1	-	0.4	-	1	1.1	0.6	0.5	0.3
Chromium	mg/kg	-		20.3	126.8	51.9	-	71.1	42	68.2	23	68	46.7	-	40	52.7	-	34.3	-	72.5	68.4	56.5	40.9	80.5
Chromium III	mg/kg	910	LQM, 2014	20.3	126.8	51.9	-	71.1	42	68.2	23	68	46.7	-	40	52.7	-	34.3	-	72.5	68.4	56.5	40.9	80.5
Hexavalent Chromium	mg/kg	6	LQM, 2014	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3	<0.3	-	<0.3	-	<0.006	<0.006	<0.006	<0.006	<0.006
Copper	mg/kg	7100	LQM, 2014	95	49	29	-	176	193	67	229	46	73	-	52	76	-	173	-	82	299	54	46	27
Total Cyanide	mg/kg	-		4.4	0.7	<0.5	-	1	0.7	<0.5	0.8	<0.5	<0.5	-	6.6	15.8	-	0.8	-	-	-	-	-	-
Lead[4]	mg/kg	130	DEFRA, 2013	138	250	207	-	317	367	144	326	51	83	-	94	168	-	430	-	150	390	98	78	49
Mercury[5]	mg/kg	56	LQM, 2014	<0.1	<0.1	0.4	-	0.6	0.8	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	0.2	-	<0.1	0.4	<0.1	<0.1	<0.1
Molybdenum	mg/kg	670	CL:AIRE, 2010	2.2	3.3	2.9	-	4.7	2.4	7.5	13.2	6.6	11.4	-	3.8	4.7	-	12	-	-	-	-	-	-
Nickel	mg/kg	180	LQM, 2014	39.1	55	26.9	-	63.8	74.8	31.8	253.5	27.3	177.7	-	30.3	45.5	-	80.1	-	36.3	109.7	38	35.9	33.6
Selenium	mg/kg	430	LQM, 2014	1	2	1	-	1	<1	2	82	3	59	-	2	2	-	3	-	<1	3	1	1	<1
Total Sulphate as SO4	mg/kg	-		1676	982	1499	-	786	745	418	1972	734	7153	-	866	1086	-	1838	-	-	-	-	-	-
Sulphate as SO4 (2:1 Ext)	g/l	-		-	-	-	0.1515	-	-	-	-	-	-	0.0361	-	-	0.1046	-	0.0917	0.1401	0.3381	0.3786	0.4916	0.0568
Elemental Sulphur	mg/kg	-		-	121	60	-	55	11	21	26	287	708	-	36	63	-	107	9.16	110	954	156	289	38
Sulphide	mg/kg	-		<10	<10	<10	-	<10	<10	<10	<10	<10	<10	-	<10	<10	-	<10	-	<10	30	<10	11	<10
Water Soluble Boron	mg/kg	11000	LQM, 2014	2.9	4.3	4.3	-	2.4	1.9	1	1.8	1.2	1.7	-	2.1	3.2	-	2	-	-	-	-	-	-
Ammoniacal Nitrogen as N	mg/kg	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.9	23.8	6.8	9	12.9
Zinc	mg/kg	40000	LQM, 2014	275	216	102	-	617	712	162	13390	436	3212	-	203	472	-	591	-	-	-	-	-	-
Naphthalene	mg/kg	2.3	LQM, 2014	1.29	<0.04	<0.04	-	0.18	0.1	<0.04	<0.04	<0.04	<0.04	-	0.2	0.13	-	0.14	-	-	-	-	-	-
Acenaphthylene	mg/kg	2900	LQM, 2014	1.26	0.15	0.07	-	1.1	0.42	<0.03	0.05	<0.03	0.07	-	0.26	0.4	-	0.53	-	-	-	-	-	-
Acenaphthene	mg/kg	3000	LQM, 2014	19.72	<0.05	<0.05	-	0.15	0.14	<0.05	<0.05	<0.05	<0.05	-	0.35	0.25	-	0.14	-	-	-	-	-	-
Fluorene	mg/kg	2800	LQM, 2014	15.95	<0.04	<0.04	-	0.19	0.14	<0.04	<0.04	<0.04	<0.04	-	0.28	0.29	-	0.19	-	-	-	-	-	-
Phenanthrene	mg/kg	1300	LQM, 2014	29.76++	0.19	0.24	-	1.57	2.2	<0.03	0.12	<0.03	0.27	-	1.81	2.01	-	2.45	-	-	-	-	-	-
Anthracene	mg/kg	31000	LQM, 2014	14.17	0.15	0.11	-	0.95	0.89	<0.04	0.06	<0.04	0.09	-	0.91	1.04	-	0.72	-	-	-	-	-	-
Fluoranthene	mg/kg	1500	LQM, 2014	55.94++	0.65	0.65	-	5.45	6.03	<0.03	0.32	0.09	0.62	-	5.47	5.27	-	5.08	-	-	-	-	-	-
Pyrene	mg/kg	3700	LQM, 2014	41.96++	0.7	0.57	-	5.21	4.96	<0.03	0.28	0.1	0.51	-	4.65	4.77	-	4.12	-	-	-	-	-	-
Benzo(a)anthracene	mg/kg	11	LQM, 2014	23.8	0.49	0.49	-	3.74	3.12	<0.06	0.26	0.17	0.39	-	2.92	2.77	-	2.66	-	-	-	-	-	-
Chrysene	mg/kg	30	LQM, 2014	20.24	0.49	0.32	-	4.08	2.73	<0.02	0.24	0.12	0.39	-	2.59	2.45	-	2.49	-	-	-	-	-	-
Benzo(bk)fluoranthene	mg/kg	-		37.74	1.13	0.63	-	7.65	5.68	<0.07	0.48	0.19	0.65	-	5.94	5.36	-	4.79	-	-	-	-	-	-
Benzo(a)pyrene	mg/kg	3.2	LQM, 2014	21.53	0.65	0.37	-	4.55	3.45	<0.04	0.27	0.14	0.35	-	3.8	3.48	-	2.88	-	-	-	-	-	-
Indeno(123cd)pyrene	mg/kg	45	LQM, 2014	12.87	0.4	0.22	-	2.53	2.42	<0.04	0.17	<0.04	0.24	-	2.55	2.2	-	1.95	-	-	-	-	-	-
Dibenzo(ah)anthracene	mg/kg	0.31	LQM, 2014	3.21	0.15	0.07	-	0.73	0.43	<0.04	<0.04	<0.04	0.07	-	0.44	0.38	-	0.51	-	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	360	LQM, 2014	11.54	0.43	0.2	-	2.97	1.97	<0.04	0.17	0.1	0.23	-	2.13	1.8	-	1.62	-	-	-	-	-	-
Coronene	mg/kg	-		2.02	0.13	<0.04	-	0.59	0.54	<0.04	<0.04	<0.04	0.07	-	0.5	0.55	-	0.43	-	-	-	-	-	-
PAH 6 Total #	mg/kg	-		139.62	3.26	2.07	-	23.15	19.55	<0.22	1.41	0.52	2.09	-	19.89	18.11	-	16.32	-	-	-	-	-	-
PAH 17 Total	mg/kg	-		313	5.71	3.94	-	41.64	35.22	<0.64	2.42	0.91	3.95	-	34.8	33.15	-	30.7	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	3.9	LQM, 2014	27.17	0.81	0.45	-	5.51	4.09	<0.05	0.35	0.14	0.47	-	4.28	3.86	-	3.45	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	110	LQM, 2014	10.57	0.32	0.18	-	2.14	1.59	<0.02	0.13	0.05	0.18	-	1.66	1.5	-	1.34	-	-	-	-	-	-
Benzo(j)fluoranthene	mg/kg	-		10	<1	<1	-	3	1	<1	<1	<1	<1	-	1	1	-	<1	-	-	-	-	-	-
Mineral Oil (C10 C40)	mg/kg	-		1389	36	<30	-	194	80	<30	30	<30	52	-	176	340	-	113	-	-	-	-	-	-
>C5 C6	mg/kg	42	LQM, 2014	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
>C6 C8	mg/kg	100	LQM, 2014	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
>C8 C10	mg/kg	27	LQM, 2014	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	0.7	0.3	-	<0.1	<0.1	-	1	-	<0.1	<0.1	<0.1	<0.1	<0.1
>C6 C10	mg/kg		LQM, 2014	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	0.7	0.3	-	<0.1	<0.1	-	1.1	-	-	-	-	-	-
>C10 C12	mg/kg	130	LQM, 2014	2.1	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2
>C12 C16	mg/kg	1100	LQM, 2014	46	<4	<4	-	<4	<4	<4	<4	<4	<4	-	<4	9	-	<4	-	<4	10	9	12	<4
>C16 C21	mg/kg	-		150	<7	<7	-	<7	<7	<7	<7	<7	<7	-	24	40	-	<7	-	<7	31	23	43	<7
>C10 C25	mg/kg			386	<10	<10	-	16	<10	<10	<10	<10	<10	-	42	55	-	17	-	118	182	272	320	<7
>C21 C35	mg/kg	-		1058	36	<7	-	147	70	<7	30	<7	52	-	120	192	-	77	-	-	-	-	-	-
>C25 C35	mg/kg			815	39	<10	-	128	69	<10	28	<10	42	-	93	162	-	58	-	-	-	-	-	-
>C16 C35	mg/kg	65000	LQM, 2014	1208	43	<14	-	154	77	<14	37	<14	59	-	144	232	-	84	-	<7	31	23	43	<7
>C35 C40	mg/kg	65000	LQM, 2014	133	<7	<7	-	47	10	<7	<7	<7	<7	-	32	99	-	36	-	-	-	-	-	-
Total aliphatics (C5 to 40)	mg/kg	-		1389	36	<26	-	194	80	<26	30	<26	52	-	176	340	-	114	-	-	-	-	-	-
>C5 EC7	mg/kg	370	LQM, 2014	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
>EC7 EC8	mg/kg	860	LQM, 2014	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
>EC8 EC10	mg/kg	47	LQM, 2014	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
>EC6 EC10	mg/kg		LQM, 2014	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	-	-	-	-	-
>EC10 EC12	mg/kg	250	LQM, 2014	3.9	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<1.0	<1.0	<0.2
>EC12 EC16	mg/kg	1800	LQM, 2014	121	<4	<4	-	8	5	<4	<4	<4	<4	-	<4	8	-	<4	-	11	10	<20	<20	<4
>EC16 EC21	mg/kg	1900	LQM, 2014	553	13	18	-	84	116	<7	<7	<7	17	-	46	77	-	77	-	107	64	<35	<35	<7
>EC10 EC25	mg/kg		LQM, 2014	1005	31	44	-	165	249	<10	<10	<10	42	-	98	134	-	275	-	-	-	-	-	-
>EC21 EC35	mg/kg	1900	LQM, 2014	1776	181	100	-	389	477	<7	44	21	196	-	277	490	-	604	-	668	466	558	578	<7
>EC25 EC35	mg/kg		LQM, 2014	1330	156	90	-	300	364	<10	45	20	118	-	223	414	-	318	-	-	-	-	-	-
>EC35 EC40[6]	mg/kg	1900	LQM, 2014	413	102	48	-	96	93	<7	<7	<7	<7	-	97	252	-	156	-	-	-	-	-	-
Total aromatics (C5 to 40)	mg/kg	-		2867	296	166	-	577	691	<26	44	<26	213	-	420	827	-	837	-	-	-	-	-	-
Total aliphatics and aromatics(C5 to 40)	mg/kg	-		4256	332	166	-	771	771	<52	74	<52	265	-	596	1167	-	951	-	-	-	-	-	-
MTBE	ug/kg	73000	CL:AIRE, 2010	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	-	-	-	-
Benzene	ug/kg	380	LQM, 2014	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	-	-	-	-
Toluene	ug/kg	880000	LQM, 2014	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	-	-	-	-
Ethylbenzene	ug/kg	83000	LQM, 2014	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	-	-	-	-
m/p Xylene	ug/kg	79000	LQM, 2014	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	-	<5	<5	-	7	-	-	-	-	-	-
o Xylene	ug/kg	88000	LQM, 2014	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	-	-	-	-
PCB 28	ug/kg	-		<5	<5	<5	-	10	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5
PCB 52	ug/kg	-		<5	<5	<5	-	34	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5
PCB 101	ug/kg	-		<5	<5	<5	-	25	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5
PCB 118	ug/kg	-		<5	<5	<5	-	16	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5
PCB 138	ug/kg	-		<5	<5	<5	-	10	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5
PCB 153	ug/kg	-		<5	<5	<5	-	7	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5
PCB 180	ug/kg	-		<5	<5	<5	-	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5
Total 7 PCBs[7]	ug/kg	8	EA, 2009	<35	<35	<35	-	102	<35	<35	<35	<35	<35	-	<35	<35	-	<35	-	<35	<35	<35	<35	<35
Phenol	mg/kg	750	LQM, 2014	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	-	-	-	-	-	-
Natural Moisture Content	%			30.4	14.7	21.5	-	20.3	20.8	17.5	28.5	21.6	23.7	-	10.9	18.6	-	30.6	-	22.5	64.2	16.1	12.8	17.5
Moisture Content (% Wet Weight)	%			-	12.8	17.7	-	16.9	-	14.9	-	17.8	19.1	-	9.8	15.7	-	23.4	-	-	-	-	-	-
Total Organic Carbon	%			NDP	2.31	1.51	-	6.65	NDP	9.73	NDP	1.03	6.11	-	3.56	6.85	-	16.65	-	-	-	-	-	-
SOM (Calculated)	%			-	3.98	2.60	-	11.47	-	16.78	-	1.78	10.53	-	6.14	11.81	-	28.71	-					
pH	pH units	-		7.87	8.24	8.59	8.21	7.86	8.15	8.2	7.51	7.75	7.33	8.9	8.4	8.31	8.1	7.99	-					
General Description (Bulk Analysis)	--	-		Soil/Stone/ Brick/Silt	Soil Clay/ Silt/ Brick/ Stone	soil/stones	-	soil/stones	soil stones	soil stones	Soil/Stone/Silt	soil/stones	soil/stones	-	soil/stones	soil/stones	-	soil/stones	-	Soil/Stone	Soil/Stone	soil-stones	soil-stones	soil-stones
Asbestos Fibres	--	-		Fibre Bundles	NAD	NAD	-	NAD	Fibre Bundles	NAD	Fibre Bundles	NAD	NAD	-	NAD	NAD	-	NAD	-	NAD	NAD	NAD	NAD	NAD
Asbestos Fibres (2)	--	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos ACM	--	-		NAD	NAD	NAD	-	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	NAD	-	NAD	-	NAD	NAD	NAD	NAD	NAD
Asbestos Type	--	-		Chrysotile	NAD	NAD	-	NAD	Chrysotile	NAD	Chrysotile	NAD	NAD	-	NAD	NAD	-	NAD	-	NAD	NAD	NAD	NAD	NAD
Asbestos Type (2)	--	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos Level Screen	%	-		<0.1	NAD	NAD	-	NAD	<0.1	NAD	<0.1	NAD	NAD	-	NAD	NAD	-	NAD	-	NAD	NAD	NAD	NAD	NAD
Asbestos Gravimetric Quantification	mass %	-		<0.001	NAD	NAD	-	NAD	<0.001	NAD	<0.001	NAD	NAD	-	NAD	NAD	-	NAD	-	-	-	-	-	-
Asbestos PCOM Quantification (Fibres)	mass %	-		<0.001	NAD	NAD	-	NAD	<0.001	NAD	<0.001	NAD	NAD	-	NAD	NAD	-	NAD	-	-	-	-	-	-
Asbestos Gravimetric & PCOM Total	mass %	-		<0.001	NAD	NAD	-	NAD	<0.001	NAD	<0.001	NAD	NAD	-	NAD	NAD	-	NAD	-	-	-	-	-	-

			Sample Location	TP105	TP105	TP105	TP106	TP106	TP107	TP107	TP108	TP108	TP108	TP115	TP115	BH14	BH14	BH16	BH16	BH16	BH17	BH17	BH17	BH18	BH18	BH18	BH18	BH18	BH18	BH18
			Sample Depth	0.70	1.30	2.2	0.9	2.1	0.6	1.5	1.2	2.5	3.7	0.8	2.8	1	3	1	1	2	1	1	3	1	1	2	3	3	4	4
			Soil Type	Made Ground	Made Ground	Made Ground	Made Ground	Clayey Sandy GRAVEL	Made Ground	Made Ground	Made Ground	Sandy Gravelly CLAY	Gravelly Silty SAND	Made Ground	Gravelly Silty SAND	Made Ground	Sandy SILT	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Sandy Gravelly CLAY	Sandy Gravelly CLAY
			Lab Receipt Date	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	11/04/2017	11/04/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	28/04/2017	28/04/2017	11/05/2017	28/04/2017	28/04/2017	11/05/2017	28/04/2017	28/04/2017	03/04/2017	28/04/2017	03/04/2017	03/04/2017	28/04/2017	03/04/2017	28/04/2017
Determinand	Units	RWOHG GAC[2,3]	Source																											
Antimony	mg/kg	550	CL:AIRE, 2010	2	4	3	5	9	2	2	4	3	2	2	6	4	2	-	8	9	-	4	<1	3	6	6	7	8	-	-
Arsenic	mg/kg	40	LQM, 2014	13.9	61.1	17.5	18.2	34.3	17.2	26.5	52.2	16.2	14.5	19.3	23.8	2.5	9.8	-	8.8	69.7	-	44.5	6.5	26.9	19.8	53.7	23.4	16.1	-	-
Barium	mg/kg	1300	CL:AIRE, 2010	117	65	140	416	458	126	99	126	74	60	106	177	2188	464	-	201	263	-	132	663	150	229	256	218	123	-	-
Cadmium	mg/kg	85	LQM, 2014	0.5	0.8	0.4	0.4	0.3	0.2	0.2	0.6	0.6	0.5	0.4	0.4	<0.1	<0.1	-	0.1	0.2	-	0.2	<0.1	0.4	0.5	0.7	1.2	0.5	-	-
Chromium	mg/kg	-		80	164.3	57	57.5	111.5	44.5	49.3	76.8	70.9	64.5	56	56	92.2	45.6	-	82.3	21.7	-	54.3	10.5	102.2	20.8	25.1	35.1	23.6	-	-
Chromium III	mg/kg	910	LQM, 2014	80	164.3	57	57.5	111.5	44.5	49.3	76.8	70.9	64.5	56	56	92.2	45.6	-	82.3	21.7	-	54.3	10.5	102.2	20.8	25.1	35.1	23.6	-	-
Hexavalent Chromium	mg/kg	6	LQM, 2014	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3	<0.3	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	-
Copper	mg/kg	7100	LQM, 2014	55	24	45	176	934	14	35	64	28	28	36	103	47	38	-	111	181	-	46	88	163	137	168	178	76	-	-
Total Cyanide	mg/kg	-		<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	<0.5	-	-
Lead[4]	mg/kg	130	DEFRA, 2013	96	74	99	679	737	36	65	125	37	43	77	163	<5	49	-	363	890	-	108	34	257	400	631	440	198	-	-
Mercury[5]	mg/kg	56	LQM, 2014	<0.1	<0.1	<0.1	1	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	0.4	1	-	<0.1	<0.1	0.3	0.9	0.6	0.9	0.2	-	-
Molybdenum	mg/kg	670	CL:AIRE, 2010	5.7	1.3	2.4	6.8	8.4	3.6	3.8	7.3	3.9	3.1	3.6	3.5	12.7	5.1	-	6.1	3.1	-	3.3	2.7	6.7	2.8	3	2.8	2.1	-	-
Nickel	mg/kg	180	LQM, 2014	24.3	55.7	33.6	48.1	60.9	28.5	20.5	45.2	66.5	32.7	22.5	22.1	78.8	48.8	-	41.5	36.5	-	39.4	26.7	70.1	43.7	46.7	58.8	32.9	-	-
Selenium	mg/kg	430	LQM, 2014	1	2	1	1	1	<1	<1	1	1	2	1	1	3	2	-	2	<1	-	2	<1	2	1	2	5	2	-	-
Total Sulphate as SO4	mg/kg	-		1485	300	980	863	434	707	637	315	266	780	1235	586	1198	294		547	743		554	550	619	655	831	2348	3515	-	-
Sulphate as SO4 (2:1 Ext)	g/l	-																0.1462			0.1464									-	-
Elemental Sulphur	mg/kg	-		12	19	145	23	10	7	115	27	15	38	84	20	24	20		35	5		35	3	17	5	8	14	14	-	-
Sulphide	mg/kg	-		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	-	-
Water Soluble Boron	mg/kg	11000	LQM, 2014	0.5	1	1	1.3	0.7	0.6	0.9	0.5	0.9	1.3	1.8	1.3	0.7	0.6	-	0.6	0.7	-	1.4	0.5	1.3	1	1.6	2.1	1.3	-	-
Ammoniacal Nitrogen as N	mg/kg	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	mg/kg	40000	LQM, 2014	95	146	98	211	236	108	184	200	140	79	200	310	150	31	-	144	258	-	152	37	743	189	519	276	158	-	-
Naphthalene	mg/kg	2.3	LQM, 2014	0.07	0.18	<0.04	0.38	0.13	<0.04	0.05	0.17	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	-	0.22	0.24	-	<0.04	<0.04	0.31	0.46	0.39	0.23	<0.04	-	-
Acenaphthylene	mg/kg	2900	LQM, 2014	0.09	0.45	<0.03	0.9	0.24	<0.03	0.1	2.3	<0.03	<0.03	0.08	0.12	<0.03	<0.03	-	0.34	0.22	-	<0.03	<0.03	0.52	0.54	0.57	0.37	0.07	-	-
Acenaphthene	mg/kg	3000	LQM, 2014	<0.05	0.54	<0.05	0.94	0.07	<0.05	<0.05	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	0.07	0.07	-	<0.05	<0.05	0.3	0.15	0.32	0.16	<0.05	-	-
Fluorene	mg/kg	2800	LQM, 2014	0.07	0.79	<0.04	2.03	0.1	<0.04	0.05	0.17	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	-	0.16	0.14	-	<0.04	<0.04	0.56	0.25	0.48	0.19	<0.04	-	-
Phenanthrene	mg/kg	1300	LQM, 2014	0.51	6.97	0.16	17	0.86	<0.03	0.36	1.02	<0.03	<0.03	0.25	0.45	0.21	0.04	-	1.64	1.25	-	0.24	<0.03	3.19	2.68	3.44	1.62	0.18	-	-
Anthracene	mg/kg	31000	LQM, 2014	0.2	2.88	0.09	6.04	0.45	<0.04	0.19	0.91	<0.04	<0.04	0.14	0.21	<0.04	<0.04	-	0.66	0.39	-	0.07	<0.04	1.44	1.07	1.38	0.68	0.1	-	-
Fluoranthene	mg/kg	1500	LQM, 2014	0.97	14.21	0.32	21.84	2.11	0.08	1.29	3.17	0.04	<0.03	0.76	1.57	0.2	<0.03	-	3.38	1.89	-	0.36	<0.03	5.02	4.33	5.57	3.68	0.72	-	-
Pyrene	mg/kg	3700	LQM, 2014	0.89	11.59	0.28	17.12	1.98	0.08	1.11	3.08	<0.03	<0.03	0.72	1.53	0.2	<0.03	-	2.89	1.59	-	0.29	<0.03	4.36	3.79	4.89	3.37	0.62	-	-
Benzo(a)anthracene	mg/kg	11	LQM, 2014	0.78	7.95	0.27	11.9	1.31	0.09	0.74	4.23	<0.06	<0.06	0.48	1.01	0.2	<0.06	-	1.79	1.03	-	0.23	<0.06	2.71	2.4	3.16	1.8	0.43	-	-
Chrysene	mg/kg	30	LQM, 2014	0.61	6.81	0.18	10.29	1.35	0.06	0.71	3.05	0.02	<0.02	0.4	0.97	0.2	0.04	-	1.67	1.02	-	0.21	<0.02	2.73	2.43	3.19	2.36	0.43	-	-
Benzo(bk)fluoranthene	mg/kg	-		1.09	11.46	0.34	16.14	2.57	0.08	1.35	10.52	<0.07	<0.07	1.03	1.91	0.22	<0.07	-	2.9	1.77	-	0.34	<0.07	4.37	4.21	5.44	4.33	0.86	-	-
Benzo(a)pyrene	mg/kg	3.2	LQM, 2014	0.58	6.41	0.2	9.16	1.5	0.05	0.78	6.39	<0.04	<0.04	0.56	1.09	0.1	<0.04	-	1.72	1.03	-	0.19	<0.04	2.61	2.49	3.25	2.22	0.45	-	-
Indeno(123cd)pyrene	mg/kg	45	LQM, 2014	0.35	3.83	0.13	4.96	0.99	<0.04	0.47	4.6	<0.04	<0.04	0.38	0.67	0.09	<0.04	-	1.08	0.66	-	0.14	<0.04	1.33	1.57	1.69	1.43	0.34	-	-
Dibenzo(ah)anthracene	mg/kg	0.31	LQM, 2014	0.11	0.87	<0.04	1.48	0.32	<0.04	0.13	1.2	<0.04	<0.04	0.07	0.12	<0.04	<0.04	-	0.17	0.11	-	<0.04	<0.04	0.41	0.25	0.53	0.42	<0.04	-	-
Benzo(ghi)perylene	mg/kg	360	LQM, 2014	0.4	3.81	0.12	4.77	1.12	<0.04	0.44	5.08	<0.04	<0.04	0.35	0.61	0.1	<0.04	-	0.95	0.59	-	0.12	<0.04	1.44	1.4	1.71	1.59	0.27	-	-
Coronene	mg/kg	-		0.1	0.79	<0.04	0.96	0.26	<0.04	0.08	1.2	<0.04	<0.04	0.09	0.15	<0.04	<0.04	-	0.24	0.15	-	<0.04	<0.04	0.24	0.28	0.34	0.33	0.06	-	-
PAH 6 Total #	mg/kg	-		3.39	39.72	1.11	56.87	8.29	<0.22	4.33	29.76	<0.22	<0.22	3.08	5.85	0.71	<0.22	-	10.03	5.94	-	1.15	<0.22	14.77	14	17.66	13.25	2.64	-	-
PAH 17 Total	mg/kg	-		6.82	79.54	2.09	125.91	15.36	<0.64	7.85	47.21	<0.64	<0.64	5.31	10.41	1.52	<0.64	-	19.88	12.15	-	2.19	<0.64	31.54	28.3	36.35	24.78	4.53	-	-
Benzo(b)fluoranthene	mg/kg	3.9	LQM, 2014	0.78	8.25	0.24	11.62	1.85	0.06	0.97	7.57	<0.05	<0.05	0.74	1.38	0.16	<0.05	-	2.09	1.27	-	0.24	<0.05	3.15	3.03	3.92	3.12	0.62	-	-
Benzo(k)fluoranthene	mg/kg	110	LQM, 2014	0.31	3.21	0.1	4.52	0.72	0.02	0.38	2.95	<0.02	<0.02	0.29	0.53	0.06	<0.02	-	0.81	0.5	-	0.1	<0.02	1.22	1.18	1.52	1.21	0.24	-	-
Benzo(j)fluoranthene	mg/kg	-		<1	3	<1	5	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	1	1	1	<1	<1	-	-
Mineral Oil (C10 C40)	mg/kg	-		<30	136	48	39	369	<30	415	<30	<30	<30	289	260	<30	<30	-	124	97	-	41	<30	42	<30	33	33	168	-	-
>C5 C6	mg/kg	42	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
>C6 C8	mg/kg	100	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
>C8 C10	mg/kg	27	LQM, 2014	<0.1	0.2	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
>C10 C12	mg/kg	130	LQM, 2014	1.5	<0.2	3.8	<0.2	<0.2	<0.2	5.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-
>C12 C16	mg/kg	1100	LQM, 2014	<4	<4	<4	<4	<4	<4	45	<4	<4	<4	23	<4	<4	<4	-	<4	<4	-	<4	<4	<4	<4	<4	<4	<4	-	-
>C16 C21	mg/kg	-		<7	12	<7	<7	40	<7	87	<7	<7	<7	79	<7	<7	<7	-	14	10	-	<7	<7	<7	<7	<7	<7	13	-	-
>C21 C35	mg/kg	-		9	108	34	39	267	<7	210	18	<7	<7	145	173	12	<7	-	91	75	-	41	<7	42	28	33	33	114	-	-
>C16 C35	mg/kg	65000	LQM, 2014	16	120	41	46	307	<14	297	25	<14	<14	224	180	19	<14	-	105	85	-	48	<14	49	35	40	40	127	-	-
>C35 C40	mg/kg	65000	LQM, 2014	<7	**16**	**10**	<7	**62**	<7	**67**	<7	<7	<7	**42**	**87**	<7	<7	-	**19**	**12**	-	<7	<7	<7	<7	<7	<7	**41**	-	-
Total aliphatics (C5 to 40)	mg/kg	-		<26	136	49	39	369	<26	415	<26	<26	<26	289	260	<26	<26	-	124	97	-	41	<26	42	28	33	33	168	-	-
>C5 EC7	mg/kg	370	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
>EC7 EC8	mg/kg	860	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
>EC8 EC10	mg/kg	47	LQM, 2014	<0.1	0.3	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
>EC10 EC12	mg/kg	250	LQM, 2014	0.7	<0.2	2.9	<0.2	<0.2	<0.2	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	0.8	<0.2	<0.2	<0.2	<0.2	-	-
>EC12 EC16	mg/kg	1800	LQM, 2014	<4	<4	<4	<4	12	<4	39	<4	<4	<4	6	<4	<4	<4	-	10	9	-	<4	<4	<4	<4	8	<4	<4	-	-
>EC16 EC21	mg/kg	1900	LQM, 2014	<7	49	<7	27	95	<7	146	29	<7	<7	44	33	<7	<7	-	77	62	-	<7	<7	21	18	47	<7	42	-	-
>EC21 EC35	mg/kg	1900	LQM, 2014	45	246	61	136	510	60	609	298	<7	<7	258	269	36	<7	-	235	280	-	84	<7	21	131	197	131	283	-	-
>EC35 EC40[6]	mg/kg	1900	LQM, 2014	<7	46	20	31	145	52	234	73	<7	<7	96	106	21	<7	-	56	75	-	34	<7	<7	27	49	56	91	-	-
Total aromatics (C5 to 40)	mg/kg	-		46	341	84	194	762	112	1029	400	<26	<26	404	408	57	<26	-	378	426	-	118	<26	43	176	301	187	416	-	-
Total aliphatics and aromatics(C5 to 40)	mg/kg	-		<52	477	133	233	1131	112	1444	400	<52	<52	693	668	57	<52	-	502	523	-	159	<52	85	204	334	220	584	-	-
MTBE	ug/kg	73000	CL:AIRE, 2010	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	-	-
Benzene	ug/kg	380	LQM, 2014	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	-	-	-	-	<5	<5	-	-	-	<5	-	-	-
Toluene	ug/kg	880000	LQM, 2014	<5	<5	<5	<5	<5	8	<5	<5	<5	<5	<5	<5	-	<5	-	-	-	-	<5	<5	-	-	-	<5	-	-	-
Ethylbenzene	ug/kg	83000	LQM, 2014	<5	58	13	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	-	-	-	-	12	<5	-	-	-	<5	-	-	-
m/p Xylene	ug/kg	79000	LQM, 2014	40	188	136	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	-	-	-	-	164	44	-	-	-	<5	-	-	-
o Xylene	ug/kg	88000	LQM, 2014	<5	43	25	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	-	-	-	-	30	<5	-	-	-	<5	-	-	-
PCB 28	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	-	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	-	-
PCB 52	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	-	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	-	-
PCB 101	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	-	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	-	-
PCB 118	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	-	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	-	-
PCB 138	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	-	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	-	-
PCB 153	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	-	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	-	-
PCB 180	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	-	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	-	-
Total 7 PCBs[7]	ug/kg	8	EA, 2009	<35	<35	<35	<35	<35	<35	<35	<35	<35	<38	<35	<35	<210	<35	-	<35	<35	-	<35	<35	<35	<35	<35	<35	<35	-	-
Phenol	mg/kg	750	LQM, 2014	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
Natural Moisture Content	%			10.20	8.50	18.70	19.50	26.80	14.10	15.90	20.10	14.80	24.30	14.30	13.20	7.10	13.40	-	10.50	24.60	-	15.40	30.70	9.30	13.90	14.80	134.10	20.80	-	-
Moisture Content (% Wet Weight)	%			9.20	7.80	15.80	16.30	21.10	12.40	13.70	16.70	12.90	19.60	12.50	11.60	6.60	11.90	-	9.50	-	-	13.30		8.50	-	-	-	-	-	-
Total Organic Carbon	%			3.57	0.47	2.93	19.53	19.81	0.14	3.53	5.24	1.15	4.88	3.92	1.80	3.93	5.70	-	8.79	NDP	-	3.32	NDP	6.70	NDP	NDP	NDP	NDP	-	-
SOM (Calculated)	%			6.16	0.81	5.05	33.67	34.16	0.24	6.09	9.03	1.98	8.41	6.76	3.10	6.78	9.83	-	15.16	-	-	5.72		11.55	-	-	-	-	-	-
pH	pH units	-		8.13	8.26	7.88	8.14	8.14	8.19	8.09	8.32	7.87	7.76	7.95	8.00	7.99	8.59	8.18	8.48	8.42	8.22	8.27	8.20	8.15	8.24	8.12	7.99	7.97	8.71	8.71
General Description (Bulk Analysis)	--	-		Soil/Stone	Soil/Stones	Soil/Stones	Soil/Stones	Soil/Stones	Soil/Stone	Soil/Stone	Soil/Stones	Soil Clay/Silt/Brick/S	soil/stones	soil/stones	soil/stones	soil/stones	soil/stones	-	soil/stones	soil/stones	-	soil stones	soil stones	soil/stones	soil stones	Soil/Stone/Sil	Soil/Stone	soil stones	-	-
Asbestos Fibres	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	Fibre Bundles	-	NAD	Fibre Bundle	NAD	Fibre Bundle	Fibre Bundle	Fibre Bundle	Fibre Bundle	-	-
Asbestos Fibres (2)	--	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos ACM	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	NAD	-	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	-
Asbestos Type	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	Chrysotile	-	NAD	Chrysotile	NAD	Chrysotile	Chrysotile	Chrysotile	Chrysotile	-	-
Asbestos Type (2)	--	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos Level Screen	%	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	<0.1%	-	NAD	<0.1	NAD	<0.1	<0.1	<0.1	<0.1	-	-
Asbestos Gravimetric Quantification	mass %	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	-	-	NAD	0.003	NAD	<0.001	<0.001	<0.001	<0.001	-	-
Asbestos PCOM Quantification (Fibres)	mass %	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	-	-	NAD	<0.001	NAD	<0.001	<0.001	<0.001	<0.001	-	-
Asbestos Gravimetric & PCOM Total	mass %	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	-	-	NAD	0.003	NAD	<0.001	<0.001	<0.001	<0.001	-	-

Determinand	Units	RWOHG GAC[2,3]	Source	Sample Location	BH19	BH19	BH19	BH20	BH20	BH20	BH21	BH21	BH21	BH21	BH21	BH22	BH22	BH22	BH22	BH22	BH23	BH23	TP1	TP1	TP4	TP4	TP5	TP5	TP6	TP6
				Sample Depth	1	2	3	1	1	3	1	1	2	3	4	Gravelly CLAY	1	2	3	4	5	1	4	0.00-1.50	1.50-3.00	0.00-1.50	1.50-2.50	0.00-1.50	1.50-2.50	0.00-1.50	1.50-2.60
				Soil Type	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Gravelly CLAY	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Sandy Gravelly CLAY	Made Ground	Sandy Gravelly CLAY	Made Ground	Sandy Gravelly CLAY	Sandy Gravelly CLAY	Silty Gravel	Made Ground	Made Ground
				Lab Receipt Date	28/04/2017	11/05/2017	28/04/2017	11/05/2017	28/04/2017	28/04/2017	11/05/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	11/05/2017	28/04/2017	28/04/2017	11/05/2017	21/04/2017	21/04/2017	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019
Antimony	mg/kg	550	CL:AIRE, 2010		2	-	2	-	3	4	-	2	12	2	-	2	-	35	4	-	10	-	-	-	-	-	-	-	-	-
Arsenic	mg/kg	40	LQM, 2014		35.2	-	16.8	-	26.4	21.9	-	10.3	88	13.6	-	62.7	-	47.5	31.3	-	66.5	-	NDP	25.4	28.4	16.1	9.3	5.5	NDP	NDP
Barium	mg/kg	1300	CL:AIRE, 2010		99	-	113	-	175	202	-	322	585	43	-	189	-	842	297	-	821	-	NDP	470	183	111	168	69	NDP	NDP
Cadmium	mg/kg	85	LQM, 2014		0.3	-	0.6	-	0.4	0.5	-	0.2	0.4	0.2	-	0.5	-	1.3	0.7	-	1.1	-	NDP	4.4	0.6	0.3	0.8	1.2	NDP	NDP
Chromium	mg/kg	-			30	-	24.2	-	41.8	49.8	-	46.5	54.7	59.7	-	30.7	-	45.4	23.8	-	43.4	-	NDP	55.6	54.1	34.4	47.9	30.4	NDP	NDP
Chromium III	mg/kg	910	LQM, 2014		30	-	24.2	-	41.8	49.8	-	46.5	54.7	59.7	-	30.7	-	45.4	23.8	-	43.4	-	27.8	55.6	54.1	34.4	47.9	30.4	18	26.5
Hexavalent Chromium	mg/kg	6	LQM, 2014		<0.3	-	<0.3	-	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	-	<0.3	<0.3	-	<0.3	-	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	-
Copper	mg/kg	7100	LQM, 2014		100	-	42	-	48	55	-	30	248	18	-	69	-	208	95	-	3517	-	NDP	1528	83	43	58	30	NDP	NDP
Total Cyanide	mg/kg	-			<0.5	-	<0.5	-	<0.5	<0.5	-	1.1	0.8	<0.5	-	<0.5	-	1.7	0.8	-	11.9	-	-	-	-	-	-	-	-	-
Lead[4]	mg/kg	130	DEFRA, 2013		116	-	67	-	194	156	-	107	621	36	-	288	-	3973	327	-	565	-	NDP	583	141	78	77	15	NDP	NDP
Mercury[5]	mg/kg	56	LQM, 2014		<0.1	-	<0.1	-	<0.1	0.1	-	<0.1	1.2	<0.1	-	<0.1	-	0.7	0.3	-	0.3	-	NDP	<0.1	<0.1	<0.1	<0.1	<0.1	NDP	NDP
Molybdenum	mg/kg	670	CL:AIRE, 2010		3.2	-	1.6	-	4.5	6	-	5	14.6	3.7	-	3.1	-	6.9	4.8	-	10.6	-	-	-	-	-	-	-	-	-
Nickel	mg/kg	180	LQM, 2014		26.5	-	39.7	-	23.3	27.4	-	20.1	94	28.3	-	42.2	-	64.8	43.5	-	49.1	-	NDP	46.1	31.4	17.2	27.9	17.4	NDP	NDP
Selenium	mg/kg	430	LQM, 2014		2	-	2	-	2	2	-	1	4	1	-	2	-	3	1	-	4	-	NDP	<1	<1	<1	<1	<1	NDP	NDP
Total Sulphate as SO4	mg/kg	-			187		460		874	781		679	2455	1197	-	777		3508	5105		2121	-								
Sulphate as SO4 (2:1 Ext)	g/l	-				0.0995		0.1379			0.1758				-		0.0761			0.2677	-	0.1413	0.4449	0.0917	0.0977	0.0423	0.0191	0.0172	0.0391
Elemental Sulphur	mg/kg	-			14	-	4	-	38	72	-	9	56	15	-	14	-	58	63	-	474	-	37	475	41	41	45	6	3	<1
Sulphide	mg/kg	-			<10	-	<10	-	<10	<10	-	<10	<10	<10	-	<10	-	<10	<10	-	<10	-	<10	<10	<10	<10	<10	<10	<10	<10
Water Soluble Boron	mg/kg	11000	LQM, 2014		0.9	-	1	-	1.4	1.7	-	1.4	1.8	0.5	-	2	-	7.2	6.2	-	1.5	-	2.5	-	-	-	-	-	1.5	1.5
Ammoniacal Nitrogen as N	mg/kg	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18.3	28.3	<0.6	6	<0.6	<0.6	<0.6	<0.6
Zinc	mg/kg	40000	LQM, 2014		483	-	96	-	268	357	-	97	649	51	-	255	-	786	400	-	690	-	264	-	-	-	-	-	740	519
Naphthalene	mg/kg	2.3	LQM, 2014		0.47	-	<0.04	-	0.1	0.06	-	0.08	0.12	<0.04	-	0.06	-	0.16	0.07	-	0.14	-	-	-	-	-	-	-	-	-
Acenaphthylene	mg/kg	2900	LQM, 2014		0.59	-	<0.03	-	0.11	0.15	-	0.23	0.27	<0.03	-	0.32	-	0.75	0.13	-	0.53	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/kg	3000	LQM, 2014		0.5	-	<0.05	-	0.15	<0.05	-	<0.05	<0.05	<0.05	-	0.08	-	0.24	<0.05	-	0.1	-	-	-	-	-	-	-	-	-
Fluorene	mg/kg	2800	LQM, 2014		0.7	-	<0.04	-	0.17	0.07	-	<0.04	0.09	<0.04	-	0.11	-	0.27	0.07	-	0.15	-	-	-	-	-	-	-	-	-
Phenanthrene	mg/kg	1300	LQM, 2014		4.08	-	0.13	-	1.53	0.69	-	0.73	1.91	<0.03	-	1.26	-	3.81	0.48	-	2.27	-	-	-	-	-	-	-	-	-
Anthracene	mg/kg	31000	LQM, 2014		1.82	-	0.05	-	0.42	0.27	-	0.3	0.36	<0.04	-	0.59	-	1.84	0.21	-	0.91	-	-	-	-	-	-	-	-	-
Fluoranthene	mg/kg	1500	LQM, 2014		6.84	-	0.28	-	2.43	1.55	-	2.56	2.37	0.07	-	4.49	-	13.53	1.51	-	6.44	-	-	-	-	-	-	-	-	-
Pyrene	mg/kg	3700	LQM, 2014		5.4	-	0.26	-	1.99	1.34	-	2.09	1.91	0.06	-	3.62	-	10.61	1.25	-	5.06	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	mg/kg	11	LQM, 2014		3.59	-	0.18	-	1.32	0.93	-	1.59	1.15	0.09	-	2.8	-	8.14	0.97	-	3.57	-	-	-	-	-	-	-	-	-
Chrysene	mg/kg	30	LQM, 2014		3.4	-	0.18	-	1.35	0.94	-	1.56	1.17	0.06	-	2.46	-	6.91	0.88	-	3.53	-	-	-	-	-	-	-	-	-
Benzo(bk)fluoranthene	mg/kg	-			5.32	-	0.33	-	2.27	1.61	-	2.92	1.74	0.09	-	4.74	-	12.82	1.71	-	5.66	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	mg/kg	3.2	LQM, 2014		3.29	-	0.18	-	1.35	0.95	-	1.64	1	0.06	-	2.9	-	7.9	1	-	3.46	-	-	-	-	-	-	-	-	-
Indeno(123cd)pyrene	mg/kg	45	LQM, 2014		2.11	-	0.15	-	0.95	0.73	-	1.14	0.67	0.06	-	1.85	-	4.91	0.73	-	2.07	-	-	-	-	-	-	-	-	-
Dibenzo(ah)anthracene	mg/kg	0.31	LQM, 2014		0.51	-	<0.04	-	0.21	0.18	-	0.3	0.17	<0.04	-	0.25	-	1.13	0.15	-	0.36	-	-	-	-	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	360	LQM, 2014		1.76	-	0.12	-	0.81	0.65	-	0.94	0.53	0.05	-	1.41	-	3.76	0.56	-	1.98	-	-	-	-	-	-	-	-	-
Coronene	mg/kg	-			0.51	-	0.05	-	0.31	0.2	-	0.24	0.15	<0.04	-	0.29	-	1.01	0.15	-	0.48	-	-	-	-	-	-	-	-	-
PAH 6 Total #	mg/kg	-			19.32	-	1.06	-	7.81	5.49	-	9.2	6.31	0.33	-	15.39	-	42.92	5.51	-	19.61	-	-	-	-	-	-	-	-	-
PAH 17 Total	mg/kg	-			40.89	-	1.91	-	15.47	10.32	-	16.32	13.61	<0.04	-	27.23	-	77.79	9.87	-	36.71	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	3.9	LQM, 2014		3.83	-	0.24	-	1.63	1.16	-	2.1	1.25	0.06	-	3.41	-	9.23	1.23	-	4.08	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	110	LQM, 2014		1.49	-	0.09	-	0.64	0.45	-	0.82	0.49	0.03	-	1.33	-	3.59	0.48	-	1.58	-	-	-	-	-	-	-	-	-
Benzo(j)fluoranthene	mg/kg	-			1	-	<1	-	<1	<1	-	<1	<1	<1	-	1	-	3	<1	-	<1	-	-	-	-	-	-	-	-	-
Mineral Oil (C10 C40)	mg/kg	-			159	-	37	-	<30	<30	-	<30	<30	<30	-	84	-	51	32	-	<30	-	-	-	-	-	-	-	-	-
>C5 C6	mg/kg	42	LQM, 2014		<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<1.0	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C6 C8	mg/kg	100	LQM, 2014		<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<1.0	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C8 C10	mg/kg	27	LQM, 2014		<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<1.0	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C10 C12	mg/kg	130	LQM, 2014		<0.2	-	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>C12 C16	mg/kg	1100	LQM, 2014		<4	-	<4	-	<4	<4	-	<4	<4	<4	-	<4	-	<4	<4	-	<4	-	<4	<4	<4	7	<4	<4	<4	<4
>C16 C21	mg/kg	-			<7	-	<7	-	<7	<7	-	<7	<7	<7	-	<7	-	<7	<7	-	<7	-	<7	<7	11	12	14	<7	29	29
>C21 C35	mg/kg	-			110	-	20	-	15	<7	-	<7	<7	<7	-	66	-	51	32	-	15	-	-	-	-	-	-	-	-	-
>C16 C35	mg/kg	65000	LQM, 2014		117	-	27	-	22	<14	-	<14	<14	<14	-	73	-	58	39	-	22	-	<7	<7	11	12	14	<7	29	29
>C35 C40	mg/kg	65000	LQM, 2014		**49**	-	**17**	-	<7	<7	-	<7	<7	<7	-	**18**	-	<7	<7	-	<7	-	-	-	-	-	-	-	-	-
Total aliphatics (C5 to 40)	mg/kg	-			159	-	37	-	<26	<26	-	<26	<26	<26	-	84	-	51	32	-	<26	-	-	-	-	-	-	-	-	-
>C5 EC7	mg/kg	370	LQM, 2014		<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<1.0	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC7 EC8	mg/kg	860	LQM, 2014		<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<1.0	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC8 EC10	mg/kg	47	LQM, 2014		<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<1.0	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC10 EC12	mg/kg	250	LQM, 2014		<0.2	-	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>EC12 EC16	mg/kg	1800	LQM, 2014		<4	-	<4	-	<4	<4	-	<4	<4	<4	-	<4	-	<4	<4	-	<4	-	<4	6	5	7	8	<4	<4	<4
>EC16 EC21	mg/kg	1900	LQM, 2014		22	-	<7	-	9	42	-	12	24	<7	-	28	-	35	14	-	11	-	19	54	39	44	85	13	25	37
>EC21 EC35	mg/kg	1900	LQM, 2014		205	-	86	-	99	150	-	142	146	<7	-	235	-	224	128	-	127	-	146	336	259	240	500	113	242	318
>EC35 EC40[6]	mg/kg	1900	LQM, 2014		108	-	55	-	37	35	-	38	38	<7	-	83	-	43	29	-	50	-	-	-	-	-	-	-	-	-
Total aromatics (C5 to 40)	mg/kg	-			335	-	141	-	145	227	-	192	208	<26	-	346	-	302	171	-	188	-	-	-	-	-	-	-	-	-
Total aliphatics and aromatics(C5 to 40)	mg/kg	-			494	-	178	-	145	227	-	192	208	<52	-	430	-	353	203	-	188	-	-	-	-	-	-	-	-	-
MTBE	ug/kg	73000	CL:AIRE, 2010		<5	-	<5	-	<5	<5	-	<5	<5	<5	-	<5	-	<5	<5	-	<50	-	-	-	-	-	-	-	-	-
Benzene	ug/kg	380	LQM, 2014		-	-	-	-	<5	-	-	-	-	<5	-	<5	-	<5	<5	-	<50	-	-	-	-	-	-	-	-	-
Toluene	ug/kg	880000	LQM, 2014		-	-	-	-	<5	-	-	-	-	<5	-	<5	-	<5	<5	-	<50	-	-	-	-	-	-	-	-	-
Ethylbenzene	ug/kg	83000	LQM, 2014		-	-	-	-	<5	-	-	-	-	<5	-	<5	-	<5	<5	-	<50	-	-	-	-	-	-	-	-	-
m/p Xylene	ug/kg	79000	LQM, 2014		-	-	-	-	<5	-	-	-	-	<5	-	<5	-	<5	<5	-	<50	-	-	-	-	-	-	-	-	-
o Xylene	ug/kg	88000	LQM, 2014		-	-	-	-	<5	-	-	-	-	<5	-	<5	-	<5	<5	-	<50	-	-	-	-	-	-	-	-	-
PCB 28	ug/kg	-			<5	-	<5	-	<5	<5	-	<5	<5	<5	-	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5
PCB 52	ug/kg	-			<5	-	<5	-	<5	<5	-	<5	<5	<5	-	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5
PCB 101	ug/kg	-			<5	-	<5	-	<5	<5	-	<5	<5	<5	-	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5
PCB 118	ug/kg	-			<5	-	<5	-	<5	<5	-	<5	<5	<5	-	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5
PCB 138	ug/kg	-			<5	-	<5	-	<5	<5	-	<5	<5	<5	-	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5
PCB 153	ug/kg	-			<5	-	<5	-	<5	<5	-	<5	<5	<5	-	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5
PCB 180	ug/kg	-			<5	-	<5	-	<5	<5	-	<5	<5	<5	-	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5
Total 7 PCBs[7]	ug/kg	8	EA, 2009		<35	-	<35	-	<35	<35	-	<35	<35	<35	-	<35	-	<35	<35	-	<35	-	<35	<35	<35	<35	<35	<35	<35	<35
Phenol	mg/kg	750	LQM, 2014		<0.01	-	<0.01		<0.01	<0.01		<0.01	<0.01	<0.01	-	<0.01	-	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	-
Natural Moisture Content	%				7.60		22.60		12.80	19.80	-	17.80	47.00	8.90		17.60		41.80	40.20		31.80		18.3	27.7	14.3	16.7	9.2	12.1	13	35.9
Moisture Content (% Wet Weight)	%				7.10		-	-	11.30	16.50	-	15.10	32.00	8.20		-	-	-	-	-	24.10		-	-	-	-	-	-	-	-
Total Organic Carbon	%				3.43		NDP	-	2.50	4.00	-	29.68	27.81	0.67		NDP	-	NDP	NDP	-	15.63		NDP	-	-	-	-	-	-	-
SOM (Calculated)	%				5.91		-	-	4.31	6.90	-	51.17	47.95	1.16		-	-	-	-	-	26.95									
pH	pH units	-			7.95	8.11	8.00	8.22	7.99	7.76	8.19	8.02	7.83	7.98	9.39	7.90	8.08	7.74	7.73	8.28	8.18	9.25								
General Description (Bulk Analysis)	--	-			soil/stones	-	soil/stones	-	soil/stones	soil/stones	-	soil/stones	soil/stones	soil/stones	-	soil/stones	-	soil stones	soil stones	-	Soil/Stones	-	Soil/Stone	Soil/Stone	soil-stones	Soil/Stone	Soil/Stone	Soil/Stone	Soil/Stone	soil.stones
Asbestos Fibres	--	-			NAD	-	Fibre Bundles	-	NAD	NAD	-	NAD	NAD	NAD	-	Fibre Bundle	-	Fibre Bundle	Fibre Bundle	-	NAD	-	Fibre Bundles	NAD	NAD	NAD	NAD	NAD	Fibre Bundles	Fibre Bundles
Asbestos Fibres (2)	--	-			-	-	-	-	-	-	-	-	-	-	-	-	-	Free Fibres	NAD	-	-	-	-	-	-	-	-	-	-	NAD
Asbestos ACM	--	-			NAD	-	NAD	-	NAD	NAD	-	NAD	NAD	NAD	-	NAD	-	NAD	-	-	NAD	-	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Type	--	-			NAD	-	Chrysotile	-	NAD	NAD	-	NAD	NAD	NAD	-	Chrysotile	-	Chrysotile	Chrysotile	-	NAD	-	Chrysotile	NAD	NAD	NAD	NAD	NAD	Chrysotile	Chrysotile
Asbestos Type (2)	--	-			-	-	-	-	-	-	-	-	-	-	-	-	-	Amosite	-	-	-	-	-	-	-	-	-	-	-	Amosite
Asbestos Level Screen	%	-			NAD	-	<0.1	-	NAD	NAD	-	NAD	NAD	NAD	-	<0.1	-	<0.1	<0.1	-	NAD	-	less than 0.1%	NAD	NAD	NAD	NAD	NAD	less than 0.1%	less than 0.1%
Asbestos Gravimetric Quantification	mass %	-			NAD	-	<0.001	-	NAD	NAD	-	NAD	NAD	NAD	-	<0.001	-	<0.001	<0.001	-	NAD	-	<0.001	-	-	-	-	-	<0.001	<0.001
Asbestos PCOM Quantification (Fibres)	mass %	-			NAD	-	<0.001	-	NAD	NAD	-	NAD	NAD	NAD	-	<0.001	-	<0.001	<0.001	-	NAD	-	<0.001	-	-	-	-	-	<0.001	<0.001
Asbestos Gravimetric & PCOM Total	mass %	-			NAD	-	<0.001	-	NAD	NAD	-	NAD	NAD	NAD	-	<0.001	-	<0.001	<0.001	-	NAD	-	<0.001	-	-	-	-	-	<0.001	0.001

Determinand	Units	RWOHG GAC[2,3]	Source	Sample Location	TP7	TP7	TP8	TP8	TP9	TP9	TP10	TP10	TP20
				Sample Depth	0.00-1.50	1.50-3.00	1.60-2.50	2.50-3.50	0.00-1.50	1.50-3.00	0.00-1.50	1.50-2.80	0.00-0.75
				Soil Type	Made Ground	Sandy Gravelly CLAY	Made Ground	Made Ground	Made Ground	Silty Gravel	Made Ground	Sandy Gravelly CLAY	Sandy Gravelly CLAY
				Lab Receipt Date	14/08/2019	14/08/2019	13/08/2019	13/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	
Antimony	mg/kg	550	CL:AIRE, 2010	-	-	-	-	-	-	-	-	3
Arsenic	mg/kg	40	LQM, 2014	21.7	12.6	17	10.3	NDP	27.7	NDP	8.7	7.9
Barium	mg/kg	1300	CL:AIRE, 2010	216	92	94	57	NDP	259	NDP	85	107
Cadmium	mg/kg	85	LQM, 2014	0.5	0.3	0.3	0.2	NDP	0.5	NDP	0.6	0.6
Chromium	mg/kg	-		58.9	64.7	42.6	41	NDP	57.3	NDP	56	88.8
Chromium III	mg/kg	910	LQM, 2014	58.9	64.7	42.6	41	15.6	57.3	21	56	88.8
Hexavalent Chromium	mg/kg	6	LQM, 2014	-	-							<0.3
Copper	mg/kg	7100	LQM, 2014	80	300	42	14	NDP	133	NDP	26	45
Total Cyanide	mg/kg	-		-	-	-	-	-	-	-	-	<0.5
Lead[4]	mg/kg	130	DEFRA, 2013	156	167	43	20	NDP	141	NDP	15	94
Mercury[5]	mg/kg	56	LQM, 2014	0.5	<0.1	<0.1	<0.1	NDP	<0.1	NDP	<0.1	<0.1
Molybdenum	mg/kg	670	CL:AIRE, 2010	-	-	-	-	-	-	-	-	5.6
Nickel	mg/kg	180	LQM, 2014	29.7	16.9	17.2	11.3	NDP	37.4	NDP	31.4	23.7
Selenium	mg/kg	430	LQM, 2014	1	<1	<1	<1	NDP	<1	NDP	<1	<1
Total Sulphate as SO4	mg/kg	-										2175
Sulphate as SO4 (2:1 Ext)	g/l	-		0.1973	0.1853	0.2251	0.1033	0.118	0.3174	0.0223	0.0562	
Elemental Sulphur	mg/kg	-		55	28	49	36	32	118	<1	106	6
Sulphide	mg/kg	-		<10	<10	<10	<10	<10	<10	<10	<10	<10
Water Soluble Boron	mg/kg	11000	LQM, 2014	-	-	-	-	1.4	-	1.2	-	0.7
Ammoniacal Nitrogen as N	mg/kg	-		4.4	2.5	2.4	2.3	5.1	6.8	<0.6	<0.6	2.6
Zinc	mg/kg	40000	LQM, 2014	-	-	-	-	223	-	191	-	105
Naphthalene	mg/kg	2.3	LQM, 2014	-	-	-	-	-	-	-	-	0.08
Acenaphthylene	mg/kg	2900	LQM, 2014	-	-	-	-	-	-	-	-	0.06
Acenaphthene	mg/kg	3000	LQM, 2014	-	-	-	-	-	-	-	-	<0.05
Fluorene	mg/kg	2800	LQM, 2014	-	-	-	-	-	-	-	-	<0.04
Phenanthrene	mg/kg	1300	LQM, 2014	-	-	-	-	-	-	-	-	0.35
Anthracene	mg/kg	31000	LQM, 2014	-	-	-	-	-	-	-	-	0.11
Fluoranthene	mg/kg	1500	LQM, 2014	-	-	-	-	-	-	-	-	0.78
Pyrene	mg/kg	3700	LQM, 2014	-	-	-	-	-	-	-	-	0.7
Benzo(a)anthracene	mg/kg	11	LQM, 2014	-	-	-	-	-	-	-	-	0.5
Chrysene	mg/kg	30	LQM, 2014	-	-	-	-	-	-	-	-	0.41
Benzo(bk)fluoranthene	mg/kg	-		-	-	-	-	-	-	-	-	1.09
Benzo(a)pyrene	mg/kg	3.2	LQM, 2014	-	-	-	-	-	-	-	-	0.56
Indeno(123cd)pyrene	mg/kg	45	LQM, 2014	-	-	-	-	-	-	-	-	0.39
Dibenzo(ah)anthracene	mg/kg	0.31	LQM, 2014	-	-	-	-	-	-	-	-	0.11
Benzo(ghi)perylene	mg/kg	360	LQM, 2014	-	-	-	-	-	-	-	-	0.37
Coronene	mg/kg	-		-	-	-	-	-	-	-	-	0.08
PAH 6 Total #	mg/kg	-		-	-	-	-	-	-	-	-	3.19
PAH 17 Total	mg/kg	-		-	-	-	-	-	-	-	-	5.59
Benzo(b)fluoranthene	mg/kg	3.9	LQM, 2014	-	-	-	-	-	-	-	-	0.78
Benzo(k)fluoranthene	mg/kg	110	LQM, 2014	-	-	-	-	-	-	-	-	0.31
Benzo(j)fluoranthene	mg/kg	-		-	-	-	-	-	-	-	-	<1
Mineral Oil (C10 C40)	mg/kg	-		-	-	-	-	-	-	-	-	186
>C5 C6	mg/kg	42	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C6 C8	mg/kg	100	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C8 C10	mg/kg	27	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C10 C12	mg/kg	130	LQM, 2014	<0.2	<0.2	3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>C12 C16	mg/kg	1100	LQM, 2014	<4	<4	26	<4	<4	<4	<4	<4	6
>C16 C21	mg/kg	-		<7	<7	33	<7	<7	21	<7	<7	14
>C21 C35	mg/kg	-		-	-	-	-	-	-	-	-	166
>C16 C35	mg/kg	65000	LQM, 2014	<7	<7	33	<7	<7	21	<7	<7	180
>C35 C40	mg/kg	65000	LQM, 2014	-	-	-	-	-	-	-	-	<7
Total aliphatics (C5 to 40)	mg/kg	-		-	-	-	-	-	-	-	-	186
>C5 EC7	mg/kg	370	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC7 EC8	mg/kg	860	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC8 EC10	mg/kg	47	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC10 EC12	mg/kg	250	LQM, 2014	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>EC12 EC16	mg/kg	1800	LQM, 2014	<4	<4	20	<4	<4	<4	<4	<4	<4
>EC16 EC21	mg/kg	1900	LQM, 2014	25	25	59	12	22	16	<7	<7	12
>EC21 EC35	mg/kg	1900	LQM, 2014	182	120	321	103	181	145	<7	<7	92
>EC35 EC40[6]	mg/kg	1900	LQM, 2014	-	-	-	-	-	-	-	-	<7
Total aromatics (C5 to 40)	mg/kg	-		-	-	-	-	-	-	-	-	104
Total aliphatics and aromatics(C5 to 40)	mg/kg	-		-	-	-	-	-	-	-	-	290
MTBE	ug/kg	73000	CL:AIRE, 2010	-	-	-	-	-	-	-	-	<5
Benzene	ug/kg	380	LQM, 2014	-	-	-	-	-	-	-	-	<5
Toluene	ug/kg	880000	LQM, 2014	-	-	-	-	-	-	-	-	8
Ethylbenzene	ug/kg	83000	LQM, 2014	-	-	-	-	-	-	-	-	15
m/p Xylene	ug/kg	79000	LQM, 2014	-	-	-	-	-	-	-	-	26
o Xylene	ug/kg	88000	LQM, 2014	-	-	-	-	-	-	-	-	<5
PCB 28	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 52	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 101	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 118	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 138	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 153	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 180	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5
Total 7 PCBs[7]	ug/kg	8	EA, 2009	<35	<35	<35	<35	<35	<35	<35	<35	<35
Phenol	mg/kg	750	LQM, 2014	-	-	-	-	-	-	-	-	<0.01
Natural Moisture Content	%			15	18	11	13.3	11.5	21	28.2	16.4	16.8
Moisture Content (% Wet Weight)	%			-	-	-	-	-	-	-	-	14.4
Total Organic Carbon	%			-	-	-	-	-	-	-	-	3.64
SOM (Calculated)	%											
pH	pH units	-										12.08
General Description (Bulk Analysis)	--	-		soil.stones	soil.stones	soil.stones	soil/stones	soil/stones	soil/stones	soil/stones	soil/stones	soil.stones
Asbestos Fibres	--	-		NAD	NAD	NAD	NAD	Fibre Bundles	NAD	Fibre Bundles	NAD	NAD
Asbestos Fibres (2)	--	-		-	-	-	NAD	-	NAD	-	-	
Asbestos ACM	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Type	--	-		NAD	NAD	NAD	NAD	Chrysotile	NAD	Chrysotile	NAD	NAD
Asbestos Type (2)	--	-		-	-	-	NAD	-	NAD	-	-	
Asbestos Level Screen	%	-		NAD	NAD	NAD	NAD	less than 0.1%	NAD	less than 0.1%	NAD	NAD
Asbestos Gravimetric Quantification	mass %	-		-	-	-	-	<0.001	-	<0.001	-	-
Asbestos PCOM Quantification (Fibres)	mass %	-		-	-	-	-	<0.001	-	<0.001	-	-
Asbestos Gravimetric & PCOM Total	mass %	-		-	-	-	-	<0.001	-	<0.001	-	-

Sample Location				TP102				TP103			TP104			BH2	BH3			BH4			BH5		BH6		BH7	
Sample Depth				0.40	0.80	1.50	4.30	0.50	2.50	3.50	0.5	1.5	2.20	1	1	3	4	1	2	3	1	3	1	4	2	3
Soil Type				Made Ground	Made Ground	Sandy Gravelly CLAY	Soil	Made Ground	Sandy Gravelly SILT	SILT	Made Ground	Made Ground	Made Ground	Silty SAND	SAND	SILT	SILT	Made Ground	Silty SAND	Silty SAND	Silty SAND	Sandy SILT	Made Ground	Sandy SILT	Made Ground	Made Ground
Lab Receipt Date				31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	11/04/2017	11/04/2017	31/03/2017	21/04/2017	11/05/2017	11/05/2017	11/05/2017	21/04/2017	21/04/2017	21/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017
Determinand	Units	RWOHG GAC[2,3]	Source																							
Antimony	mg/kg	550	CL:AIRE, 2010	4	3	2	1	3	2	1	1	3	3	1	3	2	1	7	-	<1	1	-	2	-	-	4
Arsenic	mg/kg	40	LQM, 2014	11.6	19.7	10	10.2	33.7	17.4	12.5	3.7	24.5	39	9.9	16	12.1	10.7	50	-	6.6	8.1	-	12.4	-	-	38.5
Barium	mg/kg	1300	CL:AIRE, 2010	132	83	49	55	201	77	72	60	120	70	39	52	41	236	92	-	30	24	-	83	-	-	165
Cadmium	mg/kg	85	LQM, 2014	0.3	0.4	0.5	0.7	0.3	0.3	0.2	<0.1	0.4	0.7	<0.1	0.7	0.3	<0.1	0.3	-	0.7	<0.1	-	0.4	-	-	0.3
Chromium	mg/kg	-		152.1	68.7	67.7	60.3	71.5	64.6	59.7	85.4	69.7	78	40.6	56.1	55.4	26.9	45.4	-	38.8	39.6	-	56.2	-	-	79.4
Chromium III	mg/kg	910	LQM, 2014	150.7	68.7	67.7	60.3	71.5	64.6	59.7	85.4	69.7	78	40.6	56.1	55.4	26.9	45.4	-	38.8	39.6	-	56.2	-	-	79.4
Hexavalent Chromium	mg/kg	6	LQM, 2014	1.4	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3	<0.3	-		-	-	<0.3
Copper	mg/kg	7100	LQM, 2014	80	30	17	19	105	43	29	27	47	95	15	18	23	11	24	-	16	11	-	22	-	-	69
Total Cyanide	mg/kg	-		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-		-	-	<0.5
Lead[4]	mg/kg	130	DEFRA, 2013	247	63	13	14	223	135	94	31	120	369	65	39	59	30	80	-	34	27	-	16	-	-	354
Mercury[5]	mg/kg	56	LQM, 2014	<0.1	<0.1	<0.1	<0.1	0.5	<0.1	<0.1	<0.1	<0.1	0.8	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	-	0.5
Molybdenum	mg/kg	670	CL:AIRE, 2010	4.6	5.5	4.8	4.6	4.6	5.7	4.3	8	4.9	7.4	1.6	4.6	3.1	1	12.1	-	3.2	2.5	-	3	-	-	3.8
Nickel	mg/kg	180	LQM, 2014	90.8	41.6	28.3	41.5	27.1	28.2	26.5	10.6	27	30.3	23	23.8	25.6	10.3	14	-	11.4	11.5	-	41.4	-	-	35.9
Selenium	mg/kg	430	LQM, 2014	2	2	1	1	<1	1	1	<1	<1	3	<1	1	1	<1	2	-	<1	<1	-	2	-	-	2
Total Sulphate as SO4	mg/kg	-		579	289	125	170	675	1212	3479	234	823	4448	516	432	3921	1002	2719	-	417	531	-	181	-	-	1011
Sulphate as SO4 (2:1 Ext)	g/l	-		-	-	-	-	-	-	-	-	-	-	-	0.0112	1.4642	-	-	-	-	-	0.3288		0.3557	0.0492	-
Elemental Sulphur	mg/kg	-		1	3	<1	2	34	170	2287	NDP	120	106	11	21	1994	11	4	-	34	18	-		-	-	57
Sulphide	mg/kg	-		<10	<10	<10	<10	<10	<10	92	<10	<10	<10	<10	<10	110	<10	<10	-	<10	<10	-	-	-	-	<10
Water Soluble Boron	mg/kg	11000	LQM, 2014	0.5	0.8	0.4	0.3	0.6	3.5	5.5	0.8	1.2	5.3	0.3	0.7	7	1.9	0.4	-	0.5	0.6	-	0.5	-	-	2.3
Ammoniacal Nitrogen as N	mg/kg	-									-								-			-		-	-	
Zinc	mg/kg	40000	LQM, 2014	118	77	65	47	118	155	102	19	218	336	46	103	101	20	47	-	37	39	-	62	-	-	143
Naphthalene	mg/kg	2.3	LQM, 2014	<0.04	<0.04	<0.04	<0.04	0.21	0.23	0.43	0.16	<0.04	0.4	<0.04	<0.04	<0.04	<0.04	<0.04	-	0.07	<0.04	-	<0.04	-	-	0.12
Acenaphthylene	mg/kg	2900	LQM, 2014	0.05	0.04	<0.03	<0.03	0.35	0.66	1.07	0.2	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.03	-	<0.03	-	-	0.26
Acenaphthene	mg/kg	3000	LQM, 2014	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	0.17	<0.05	<0.05	1.07	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	-	-	0.15
Fluorene	mg/kg	2800	LQM, 2014	<0.04	<0.04	<0.04	<0.04	0.06	0.43	0.44	<0.04	<0.04	1.34	<0.04	<0.04	<0.04	<0.04	<0.04	-	<0.04	<0.04	-	<0.04	-	-	0.16
Phenanthrene	mg/kg	1300	LQM, 2014	0.13	0.31	<0.03	<0.03	0.62	3.88	4.75	0.45	0.41	2.13	0.07	0.06	0.06	0.03	0.36	-	0.08	0.05	-	<0.03	-	-	1.45
Anthracene	mg/kg	31000	LQM, 2014	0.07	0.12	<0.04	<0.04	0.46	1.43	2.74	0.23	0.22	0.47	<0.04	<0.04	<0.04	<0.04	0.13	-	<0.04	<0.04	-	<0.04	-	-	0.44
Fluoranthene	mg/kg	1500	LQM, 2014	0.27	0.61	<0.03	<0.03	2.84	6.33	11.1	1.13	1.4	1.16	0.15	0.13	0.14	0.04	0.5	-	0.15	0.09	-	<0.03	-	-	2.76
Pyrene	mg/kg	3700	LQM, 2014	0.25	0.66	<0.03	<0.03	2.85	5.56	8.74	1.11	1.1	1.07	0.13	0.11	0.12	0.04	0.38	-	0.15	0.08	-	<0.03	-	-	2.35
Benzo(a)anthracene	mg/kg	11	LQM, 2014	0.18	0.87	<0.06	<0.06	2.44	3.64	8.23	1.09	0.75	0.63	0.13	0.14	0.14	<0.06	0.26	-	0.15	0.11	-	<0.06	-	-	1.6
Chrysene	mg/kg	30	LQM, 2014	0.19	0.91	<0.02	<0.02	1.8	3.38	5.8	0.93	0.59	0.69	0.12	0.1	0.09	0.03	0.22	-	0.13	0.07	-	<0.02	-	-	1.52
Benzo(bk)fluoranthene	mg/kg	-		0.36	1.37	<0.07	<0.07	3.15	5.51	9.64	1.79	1.07	1.26	0.15	0.12	0.13	<0.07	0.3	-	0.17	0.12	-	<0.07	-	-	2.53
Benzo(a)pyrene	mg/kg	3.2	LQM, 2014	0.16	0.58	<0.04	<0.04	1.86	3.35	5.54	1.11	0.58	0.76	0.09	0.08	0.09	<0.04	0.19	-	0.12	0.07	-	<0.04	-	-	1.59
Indeno(123cd)pyrene	mg/kg	45	LQM, 2014	0.12	0.31	<0.04	<0.04	0.98	1.79	2.61	0.77	0.37	0.47	0.06	0.04	<0.04	<0.04	0.1	-	0.07	0.06	-	<0.04	-	-	0.98
Dibenzo(ah)anthracene	mg/kg	0.31	LQM, 2014	<0.04	0.08	<0.04	<0.04	0.28	0.54	0.95	0.18	0.09	0.17	<0.04	<0.04	<0.04	<0.04	<0.04	-	<0.04	<0.04	-	<0.04	-	-	0.21
Benzo(ghi)perylene	mg/kg	360	LQM, 2014	0.15	0.39	<0.04	<0.04	1.09	1.82	2.35	0.76	0.33	0.64	0.05	<0.04	<0.04	<0.04	0.11	-	0.07	0.05	-	<0.04	-	-	0.91
Coronene	mg/kg	-		<0.04	0.08	<0.04	<0.04	0.2	0.32	0.52	0.26	0.07	0.14	<0.04	<0.04	<0.04	<0.04	<0.04	-	<0.04	<0.04	-	<0.04	-	-	0.27
PAH 6 Total #	mg/kg	-		1.06	3.26	<0.22	<0.22	9.92	18.8	31.24	5.56	3.75	4.29	0.5	0.37	0.36	<0.22	1.2	-	0.58	0.39	-	<0.22	-	-	8.77
PAH 17 Total	mg/kg	-		1.93	6.33	<0.64	<0.64	19.19	38.98	65.08	10.17	7.03	12.4	0.95	0.78	0.77	<0.64	2.55	-	1.16	0.7	-	<0.64	-	-	17.3
Benzo(b)fluoranthene	mg/kg	3.9	LQM, 2014	0.26	0.99	<0.05	<0.05	2.27	3.97	6.94	1.29	0.77	0.91	0.11	0.09	0.09	<0.05	0.22	-	0.12	0.09	-	<0.05	-	-	1.82
Benzo(k)fluoranthene	mg/kg	110	LQM, 2014	0.1	0.38	<0.02	<0.02	0.88	1.54	2.7	0.5	0.3	0.35	0.04	0.03	0.04	<0.02	0.08	-	0.05	0.03	-	<0.02	-	-	0.71
Benzo(j)fluoranthene	mg/kg	-		<1	<1	<1	<1	<1	1	3	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	-	-	<1
Mineral Oil (C10 C40)	mg/kg	-		70	<30	<30	<30	<30	<30	<30	104	85	91	<30	<30	<30	<30	<30	-	<30	<30	-	<30	-	-	<30
>C5 C6	mg/kg	42	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	-	<0.1
>C6 C8	mg/kg	100	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	-	<0.1
>C8 C10	mg/kg	27	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	-	<0.1	<0.1	-	<0.1	-	-	<0.1
>C10 C12	mg/kg	130	LQM, 2014	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-	-	<0.2
>C12 C16	mg/kg	1100	LQM, 2014	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	-	<4	<4	-	<4	-	-	<4
>C16 C21	mg/kg	-		9	<7	<7	<7	<7	<7	<7	<7	10	30	<7	<7	<7	<7	<7	-	<7	<7	-	<7	-	-	<7
>C21 C35	mg/kg	-		61	<7	<7	<7	<7	<7	<7	72	54	61	<7	<7	<7	<7	<7	-	<7	<7	-	<7	-	-	<7
>C16 C35	mg/kg	65000	LQM, 2014	70	<14	<14	<14	<14	<14	<14	79	64	91	<14	<14	<14	<14	<14	-	<14	<14	-	<14	-	-	<14
>C35 C40	mg/kg	65000	LQM, 2014	<7	<7	<7	<7	<7	<7	<7	32	21	<7	<7	<7	<7	<7	<7	-	<7	<7	-	<7	-	-	<7
Total aliphatics (C5 to 40)	mg/kg	-		70	<26	<26	<26	<26	<26	<26	104	85	91	<26	<26	<26	<26	<26	-	<26	<26	-	<26	-	-	<26
>C5 EC7	mg/kg	370	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	-	<0.1
>EC7 EC8	mg/kg	860	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	-	<0.1
>EC8 EC10	mg/kg	47	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	-	<0.1
>EC10 EC12	mg/kg	250	LQM, 2014	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-	-	<0.2
>EC12 EC16	mg/kg	1800	LQM, 2014	<4	<4	<4	<4	<4	9	7	<4	6	<4	<4	<4	<4	<4	<4	-	<4	<4	-	<4	-	-	<4
>EC16 EC21	mg/kg	1900	LQM, 2014	<7	<7	<7	<7	<7	106	95	11	48	31	<7	<7	19	<7	<7	-	<7	<7	-	<7	-	-	27
>EC21 EC35	mg/kg	1900	LQM, 2014	49	<7	<7	<7	37	328	294	232	279	169	<7	<7	90	<7	<7	-	<7	<7	-	<7	-	-	144
>EC35 EC40[6]	mg/kg	1900	LQM, 2014	<7	<7	<7	<7	<7	54	44	121	107	37	<7	<7	<7	<7	<7	-	<7	<7	-	<7	-	-	27
Total aromatics (C5 to 40)	mg/kg	-		49	<26	<26	<26	37	497	440	364	440	237	<26	<26	109	<26	<26	-	<26	<26	-	<26	-	-	198
Total aliphatics and aromatics(C5 to 40)	mg/kg	-		119	<52	<52	<52	<52	497	440	468	525	328	<52	<52	109	<52	<52	-	<52	<52	-	<52	-	-	198
MTBE	ug/kg	73000	CL:AIRE, 2010	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	<5
Benzene	ug/kg	380	LQM, 2014	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	-
Toluene	ug/kg	880000	LQM, 2014	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	-
Ethylbenzene	ug/kg	83000	LQM, 2014	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	23	<5	-	<5	-	-	-
m/p Xylene	ug/kg	79000	LQM, 2014	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	24	<5	-	<5	-	-	-
o Xylene	ug/kg	88000	LQM, 2014	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	11	<5	-	<5	-	-	-
PCB 28	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	<5
PCB 52	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	<5
PCB 101	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	<5
PCB 118	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	<5
PCB 138	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	<5
PCB 153	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	<5
PCB 180	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	<5
Total 7 PCBs[7]	ug/kg	8	EA, 2009	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	-	<35	<35	-	<35	-	-	<35
Phenol	mg/kg	750	LQM, 2014	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	-	-	-	-	<0.01
Natural Moisture Content	%			13.2	16.7	10.3	11.8	15.1	37.3	44.1	27.5	26	126.5	11.8	9.6	33.7	3.4	15.4	-	19.7	17.4	-	15.9	-	-	17.5
Moisture Content (% Wet Weight)	%			11.7	14.3	9.4	10.6	13.1	27.2	30.6	21.6	20.6	55.8	10.6	8.8	25.2	3.3	13.3	-	16.4	14.8	-	13.7	-	-	14.9
Total Organic Carbon	%			4.58	1.96	0.05	0.08	8.77	12.97	11.34	77.12	2.35	25.91	1.68	0.56	3.24	0.52	0.29	-	0.36	0.36	-	-	-	-	3.17
SOM (Calculated)	%			7.90	3.38	0.09	0.14	15.12	22.36	19.55	132.97	4.05	44.67	2.90	0.97	5.59	0.90	0.50	-	0.62	0.62	-	-	-	-	5.47
pH	pH units	-		9.06	8.61	8.63	8.66	8.42	7.93	8.12	8.48	7.74	7.42	9.24	9.1	8.22	8.44	12.26	10.35	9.67	8.9	8.16	8.46	8.01	8.42	8.03
General Description (Bulk Analysis)	--	-		Soil/ Stone/ Silt	Soil/Stone	Soil Clay/Silt/ Brick/Stone	Soil/Stone	Soil/Stone	Soil/Stone	Soil Clay/ Silt/ Brick/ Stone	Soil/Stone	Soil/Stone	Soil/Stone	Sand/Stones	Sand/Stones	Soil Silt/Stones	soil/stones	Soil/Stones	-	Sand/Stones	Soil/Stone	-	Soil/Stone	-	-	Soil/Stone
Asbestos Fibres	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	NAD	-	NAD	-	-	NAD
Asbestos Fibres (2)	--	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos ACM	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	NAD	-	NAD	-	-	NAD
Asbestos Type	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	NAD	-	NAD	-	-	NAD
Asbestos Type (2)	--	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos Level Screen	%	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	NAD	-	NAD	-	-	NAD
Asbestos Gravimetric Quantification	mass %	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	NAD	-	NAD	-	-	NAD
Asbestos PCOM Quantification (Fibres)	mass %	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	NAD	-	NAD	-	-	NAD
Asbestos Gravimetric & PCOM Total	mass %	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	NAD	-	NAD	-	-	NAD

				Sample Location	BH8	BH9		BH10			BH11		BH12		BH13		BH15		BH30			BH31			TP12		TP19
				Sample Depth	2	1	2	1	1.5	2	1	3	1	2	1	3	1	1	1	2	5	1	2	2.8	0.00-1.50	1.50-3.00	0.00-0.70
				Soil Type	Sandy SILT	Made Ground	Sandy SILT	Made Ground	Made Ground	Made Ground	Made Ground	Sandy SILT	Made Ground	Sandy Silty GRAVEL	Made Ground	Cobbles and Boulder	Made Ground	Made Ground	Made Ground	Made Ground	Bedrock	Made Ground	Made Ground	Cobbles and Boulder	Sandy GRAVEL	Clayey SAND	Made Ground
				Lab Receipt Date	28/04/2017	28/04/2017	28/04/2017	28/04/2017	11/05/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	11/05/2017	28/04/2017	28/04/2017	11/05/2017	28/04/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	14/08/2019	14/08/2019	14/08/2019
Determinand	Units	RWOHG GAC[2,3]	Source																								
Antimony	mg/kg	550	CL:AIRE, 2010	-	1	2	6	-	2	2	-	7	-	3	2	-	7	5	3	8	2	2	2	3	4	NDP
Arsenic	mg/kg	40	LQM, 2014	-	6.2	14.2	43.9	-	9.2	21.3	-	21.6	-	5.9	18.7	-	13.3	24.3	18.2	177.1	33.3	19	8.8	10	25.2	NDP
Barium	mg/kg	1300	CL:AIRE, 2010	-	76	60	178	-	70	117	-	973	-	144	60	-	242	159	97	336	137	113	76	350	186	NDP
Cadmium	mg/kg	85	LQM, 2014	-	0.2	0.1	0.1	-	0.4	0.1	-	2.1	-	<0.1	0.3	-	0.5	0.6	0.6	1.6	0.6	0.7	0.1	0.3	0.4	NDP
Chromium	mg/kg	-		-	52.1	35.4	55.3	-	58.5	25.8	-	75.7	-	76.7	58.7	-	22	24.9	58.4	69.5	20	49.3	65	92.5	122.3	NDP
Chromium III	mg/kg	910	LQM, 2014	-	52.1	35.4	55.3	-	58.5	25.8	-	75.7	-	76.7	58.7	-	22	24.9	58.4	69.5	20	49.3	65	92.5	122.3	37.9
Hexavalent Chromium	mg/kg	6	LQM, 2014	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	-	<0.3	-	<0.3	<0.3	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3			
Copper	mg/kg	7100	LQM, 2014	-	16	21	56	-	17	52	-	248	-	102	28	-	154	178	68	96	86	62	5	71	103	NDP
Total Cyanide	mg/kg	-		-	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	16.6	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lead[4]	mg/kg	130	DEFRA, 2013	-	10	143	216	-	14	177	-	1314	-	52	80	-	690	424	196	507	266	190	8	310	371	NDP
Mercury[5]	mg/kg	56	LQM, 2014	-	<0.1	<0.1	0.4	-	<0.1	0.7	-	2.7	-	<0.1	0.2	-	1.2	1.9	0.6	0.6	2.5	1.4	<0.1	0.4	0.5	NDP
Molybdenum	mg/kg	670	CL:AIRE, 2010	-	4.4	2	3.5	-	3.1	2.6	-	5.1	-	7.4	2.8	-	1.9	3.2	4.4	12.4	2.8	3.3	3.4	6.1	7.9	NDP
Nickel	mg/kg	180	LQM, 2014	-	19.1	24	38.5	-	34.5	25.1	-	43.3	-	52.9	28.8	-	32.5	43.9	29.1	63.3	28.2	33	26.1	44.8	35.8	NDP
Selenium	mg/kg	430	LQM, 2014	-	1	1	2	-	2	1	-	3	-	1	2	-	1	<1	2	7	<1	2	2	<1	1	NDP
Total Sulphate as SO4	mg/kg	-		-	126	3388	537	-	386	1299	-	1202	-	292	3816	-	692	978	779	2501	580	725	104	403	709	NDP
Sulphate as SO4 (2:1 Ext)	g/l	-		0.0957	-	-	-	0.0388	-	-	-	-	0.0233	-	-	0.171	-	0.1465	-	-	0.0365	-	-	-	-	-
Elemental Sulphur	mg/kg	-		-	3	3873	22	-	4	-	-	59	-	12	2824	-	5	<1	19	259	1	11	13	38	37	10
Sulphide	mg/kg	-		-	<10	59	<10	-	<10	<10	-	<10	-	<10	45	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Water Soluble Boron	mg/kg	11000	LQM, 2014	-	0.4	6.9	0.9	-	0.4	0.9	-	2.1	-	0.7	9	-	0.6	1.6	1.1	3	1.6	1	0.4	-	-	0.7
Ammoniacal Nitrogen as N	mg/kg	-		-				-			-		-			-								<0.3	0.9	1.2
Zinc	mg/kg	40000	LQM, 2014	-	26	102	147	-	58	151	-	929	-	39	143	-	267	180	138	2175	203	178	42	-	-	641
Naphthalene	mg/kg	2.3	LQM, 2014	-	<0.04	<0.04	0.16	-	<0.04	0.05	-	0.51	-	0.59	<0.04	-	0.74	<0.04	<0.04	<0.04	0.05	<0.04	<0.04	0.2	0.25	0.46
Acenaphthylene	mg/kg	2900	LQM, 2014	-	<0.03	0.18	0.85	-	<0.03	0.1	-	2.92	-	0.65	0.16	-	0.43	<0.03	0.06	<0.03	0.11	0.08	<0.03	0.33	0.16	0.4
Acenaphthene	mg/kg	3000	LQM, 2014	-	<0.05	<0.05	0.13	-	<0.05	<0.05	-	<0.25	-	0.53	<0.05	-	0.31	<0.05	<0.05	<0.05	0.17	<0.05	<0.05	<0.05	0.08	0.12
Fluorene	mg/kg	2800	LQM, 2014	-	<0.04	0.08	0.2	-	<0.04	0.05	-	<0.20	-	0.59	0.09	-	0.41	<0.04	<0.04	<0.04	0.18	<0.04	<0.04	0.06	0.1	0.16
Phenanthrene	mg/kg	1300	LQM, 2014	-	0.06	0.68	1.33	-	<0.03	0.45	-	3.32	-	5.4	0.77	-	3.3	0.19	0.28	0.45	2.26	0.65	<0.03	0.63	0.72	2.21
Anthracene	mg/kg	31000	LQM, 2014	-	<0.04	0.27	0.53	-	<0.04	0.21	-	2.02	-	1.88	0.29	-	0.94	0.06	0.09	0.14	0.72	0.3	<0.04	0.38	0.22	0.82
Fluoranthene	mg/kg	1500	LQM, 2014	-	0.06	1.23	2.28	-	<0.03	0.85	-	17.74	-	10.56	1.58	-	4.1	0.3	0.64	0.65	2.84	0.81	0.05	1.5	1.19	3.64
Pyrene	mg/kg	3700	LQM, 2014	-	0.05	0.97	2.16	-	<0.03	0.71	-	16.07	-	8.57	1.17	-	3.36	0.27	0.63	0.58	2.19	0.83	0.04	1.55	1.18	3.09
Benzo(a)anthracene	mg/kg	11	LQM, 2014	-	<0.06	0.7	1.47	-	<0.06	0.55	-	12.39	-	6.08	0.93	-	2.22	0.24	0.48	0.35	1.29	0.95	0.07	1.12	0.76	2.02
Chrysene	mg/kg	30	LQM, 2014	-	0.03	0.62	1.59	-	<0.02	0.46	-	11.94	-	5.53	0.84	-	2.1	0.16	0.47	0.31	1.18	0.67	0.04	1.19	0.8	1.9
Benzo(bk)fluoranthene	mg/kg	-		-	<0.07	0.9	2.75	-	<0.07	0.75	-	25.12	-	11.31	1.29	-	3.41	0.24	0.92	0.53	1.58	1.09	<0.07	2.45	1.61	3.82
Benzo(a)pyrene	mg/kg	3.2	LQM, 2014	-	<0.04	0.56	1.92	-	<0.04	0.44	-	15.39	-	7.14	0.8	-	1.91	0.17	0.56	0.36	0.96	0.71	<0.04	1.3	0.81	1.7
Indeno(123cd)pyrene	mg/kg	45	LQM, 2014	-	<0.04	0.31	1.06	-	<0.04	0.26	-	10.26	-	4.49	0.51	-	1.14	0.09	0.39	0.21	0.47	0.34	<0.04	0.93	0.59	1.68
Dibenzo(ah)anthracene	mg/kg	0.31	LQM, 2014	-	<0.04	0.08	0.31	-	<0.04	0.07	-	1.28	-	0.71	0.09	-	<0.20	<0.04	0.08	0.06	0.12	0.12	<0.04	0.21	0.16	0.36
Benzo(ghi)perylene	mg/kg	360	LQM, 2014	-	<0.04	0.23	1.23	-	<0.04	0.21	-	9.21	-	3.96	0.41	-	1.14	0.09	0.53	0.25	0.44	0.37	<0.04	1	0.64	1.64
Coronene	mg/kg	-		-	<0.04	0.08	0.35	-	<0.04	0.06	-	2.22	-	0.91	0.1	-	0.26	<0.04	0.14	0.06	0.12	0.12	<0.04	0.19	0.13	0.32
PAH 6 Total #	mg/kg	-		-	<0.22	3.23	9.24	-	<0.22	2.51	-	77.72	-	37.46	4.59	-	11.7	0.89	3.04	2	6.29	3.32	<0.22	7.18	4.84	12.48
PAH 17 Total	mg/kg	-		-	<0.64	6.89	18.32	-	<0.64	5.22	-	130.39	-	68.9	9.03	-	25.77	1.81	5.27	3.95	14.68	7.04	<0.64	13.04	9.4	24.34
Benzo(b)fluoranthene	mg/kg	3.9	LQM, 2014	-	<0.05	0.65	1.98	-	<0.05	0.54	-	18.09	-	8.14	0.93	-	2.46	0.17	0.66	0.38	1.14	0.78	<0.05	1.76	1.16	2.75
Benzo(k)fluoranthene	mg/kg	110	LQM, 2014	-	<0.02	0.25	0.77	-	<0.02	0.21	-	7.03	-	3.17	0.36	-	0.95	0.07	0.26	0.15	0.44	0.31	<0.02	0.69	0.45	1.07
Benzo(j)fluoranthene	mg/kg	-		-	<1	<1	<1	-	<1	<1	-	6	-	4	<1	-	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1
Mineral Oil (C10 C40)	mg/kg	-		-	<30	<30	34	-	<30	<30	-	277	-	89	<30	-	183	<30	<30	<30	<30	<30	<30	237	97	212
>C5 C6	mg/kg	42	LQM, 2014	-	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C6 C8	mg/kg	100	LQM, 2014	-	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	0.4	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C8 C10	mg/kg	27	LQM, 2014	-	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C10 C12	mg/kg	130	LQM, 2014	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>C12 C16	mg/kg	1100	LQM, 2014	-	<4	<4	<4	-	<4	<4	-	23	-	<4	<4	-	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
>C16 C21	mg/kg	-		-	<7	<7	<7	-	<7	<7	-	95	-	<7	<7	-	16	<7	<7	<7	<7	<7	<7	26	35	15
>C21 C35	mg/kg	-		-	<7	<7	34	-	<7	<7	-	159	-	69	<7	-	142	<7	29	<7	<7	<7	<7	<7	<7	25
>C16 C35	mg/kg	65000	LQM, 2014	-	<14	<14	41	-	<14	<14	-	254	-	76	<14	-	158	<14	36	<14	<14	<14	<14	33	42	40
>C35 C40	mg/kg	65000	LQM, 2014	-	<7	<7	<7	-	<7	<7	-	<7	-	20	<7	-	25	<7	<7	<7	<7	<7	<7	<7	<7	25
Total aliphatics (C5 to 40)	mg/kg	-		-	<26	<26	34	-	<26	<26	-	277	-	89	<26	-	183	<26	29	<26	<26	<26	<26	237	97	212
>C5 EC7	mg/kg	370	LQM, 2014	-	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC7 EC8	mg/kg	860	LQM, 2014	-	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC8 EC10	mg/kg	47	LQM, 2014	-	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC10 EC12	mg/kg	250	LQM, 2014	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>EC12 EC16	mg/kg	1800	LQM, 2014	-	<4	<4	5	-	<4	<4	-	6	-	<4	<4	-	<4	<4	<4	<4	<4	<4	<4	7	14	<4
>EC16 EC21	mg/kg	1900	LQM, 2014	-	<7	14	45	-	<7	15	-	104	-	72	26	-	42	<7	25	<7	<7	19	<7	136	69	27
>EC21 EC35	mg/kg	1900	LQM, 2014	-	<7	70	266	-	<7	72	-	587	-	430	117	-	249	<7	260	71	76	106	<7	930	296	270
>EC35 EC40[6]	mg/kg	1900	LQM, 2014	-	<7	<7	48	-	<7	<7	-	90	-	99	38	-	72	<7	47	17	21	34	<7	88	30	58
Total aromatics (C5 to 40)	mg/kg	-		-	<26	84	364	-	<26	87	-	787	-	601	181	-	363	<26	332	88	97	159	<26	1161	409	355
Total aliphatics and aromatics(C5 to 40)	mg/kg	-		-	<52	84	398	-	<52	87	-	1064	-	690	181	-	546	<52	361	88	97	159	<52	1398	506	567
MTBE	ug/kg	73000	CL:AIRE, 2010	-	<5	<5	<5	-	<5	<5	-	<5	-	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Benzene	ug/kg	380	LQM, 2014	-	<5	<5	<5	-	<5	<5	-	-	-	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene	ug/kg	880000	LQM, 2014	-	<5	<5	<5	-	<5	<5	-	-	-	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	ug/kg	83000	LQM, 2014	-	<5	<5	<5	-	<5	<5	-	-	-	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
m/p Xylene	ug/kg	79000	LQM, 2014	-	<5	<5	<5	-	<5	<5	-	-	-	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
o Xylene	ug/kg	88000	LQM, 2014	-	<5	<5	<5	-	<5	<5	-	-	-	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 28	ug/kg	-		-	<5	<5	<5	-	<5	<5	-	<25	-	<25	<5	-	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 52	ug/kg	-		-	<5	<5	<5	-	<5	<5	-	<25	-	<25	<5	-	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 101	ug/kg	-		-	<5	<5	<5	-	<5	<5	-	<25	-	<25	<5	-	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 118	ug/kg	-		-	<5	<5	<5	-	<5	<5	-	<25	-	<25	<5	-	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 138	ug/kg	-		-	<5	<5	<5	-	<5	<5	-	<25	-	<25	<5	-	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 153	ug/kg	-		-	<5	<5	<5	-	<5	<5	-	<25	-	<25	<5	-	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 180	ug/kg	-		-	<5	<5	<5	-	<5	<5	-	<25	-	<25	<5	-	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total 7 PCBs[7]	ug/kg	8	EA, 2009	-	<35	<35	<35	-	<35	<35	-	<175	-	<175	<35	-	<350	<35	<35	<35	<35	<35	<35	<35	<35	<35
Phenol	mg/kg	750	LQM, 2014	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01
Natural Moisture Content	%			-	7.5	42.9	14.5	-	12.9	24.7	-	23.9	-	11.2	49.7	-	23.5	24.4	20.7	36.3	21.4	17.8	<0.1	23.9	31.1	15.7
Moisture Content (% Wet Weight)	%			-	7	30	12.6	-	11.4	-	-	19.3	-	10	33.2	-	-	-	17.2	26.6		15.1	<0.1	19.3	23.7	13.6
Total Organic Carbon	%			-	0.39	2.09	3.53	-	0.14	NDP	-	12.75	-	25.11	1.81	-	NDP	NDP	11.63	13.75	NDP	1.86	0.69	12.07	5.86	NDP
SOM (Calculated)	%			-	0.67	3.60	6.09	-	0.24	-	-	21.98	-	43.29	3.12	-	-	-	20.05	23.71	-	3.21	1.19			
pH	pH units	-		10.57	8.22	7.84	8.62	8.64	8.7	7.75	8.1	8.3	8.76	8.68	7.85	8.18	8.43	8.62	8.4	7.99	8.43	8.39	8.37			
General Description (Bulk Analysis)	--	-		-	Soil/Stone	Soil/Stone	Soil/Stone	-	Soil/Stone	Soil/Stone	-	soil/stones	-	soil/stones	soil/stones	-	soil/stones	soil stones	Soil Silt/ Stones	Soil/Stones/ Concrete	soil stones	soil stones	soil stones	soil/stones	soil/stones	soil/stones
Asbestos Fibres	--	-		-	NAD	NAD	NAD	-	NAD	Fibre Bundles	-	NAD	-	NAD	NAD	-	Fibre Bundles	Fibre Bundles	NAD	NAD	Fibre Bundles	NAD	NAD	NAD	NAD	Fibre Bundles
Asbestos Fibres (2)	--	-		-	-	-	-	-	-	-	-	-	-	-	-	-	Fibre Bundles	-	-	-	-	-	-	-	NAD	-
Asbestos ACM	--	-		-	NAD	NAD	NAD	-	NAD	NAD	-	NAD	-	NAD	NAD	-	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Type	--	-		-	NAD	NAD	NAD	-	NAD	Chrysotile	-	NAD	-	NAD	NAD	-	Chrysotile	Chrysotile	NAD	NAD	Chrysotile	NAD	NAD	NAD	NAD	Chrysotile
Asbestos Type (2)	--	-		-	-	-	-	-	-	-	-	-	-	-	-	-	Amosite	-	-	-	-	-	-	-	NAD	-
Asbestos Level Screen	%	-		-	NAD	NAD	NAD	-	NAD	<0.1	-	NAD	-	NAD	NAD	-	<0.1	<0.1	NAD	NAD	<0.1	NAD	NAD	NAD	NAD	less than 0.1%
Asbestos Gravimetric Quantification	mass %	-		-	NAD	NAD	NAD	-	NAD	<0.001	-	NAD	-	NAD	NAD	-	<0.001	<0.001	NAD	NAD	<0.001	NAD	NAD	-	-	<0.001
Asbestos PCOM Quantification (Fibres)	mass %	-		-	NAD	NAD	NAD	-	NAD	<0.001	-	NAD	-	NAD	NAD	-	<0.001	<0.001	NAD	NAD	<0.001	NAD	NAD	-	-	<0.001
Asbestos Gravimetric & PCOM Total	mass %	-		-	NAD	NAD	NAD	-	NAD	<0.001	-	NAD	-	NAD	NAD	-	<0.001	<0.001	NAD	NAD	<0.001	NAD	NAD	-	-	<0.001

Sample Location				TP11		TP13		TP14		TP15		TP16		TP17		TP18	
Sample Depth				0.00-1.50	1.50-2.70	0.00-1.50	1.50-2.70	0.00-1.50	1.50-3.00	0.00-1.50	1.50-3.00	0.00-1.50	1.50-1.90	0.00-1.50	1.50-1.90	0.00-1.50	1.50-2.70
Soil Type				Made Ground	Made Ground	Made Ground	Gravelly Clayey SAND	Gravel	SAND and CLAY	Made Ground	Sand and Clay	Made Ground	Sand	Made Ground	Sand	Made Ground	Sand and Clay
Lab Receipt Date																	
Determinand	Units	RWOHG GAC[2,3]	Source														
Antimony	mg/kg	550	CL:AIRE, 2010	1	<1	NDP	<1	1	<1	2	<1	6	2	3	2	3	1
Arsenic	mg/kg	40	LQM, 2014	24.7	3.6	NDP	6	11.3	6.1	14.3	15.1	22.2	13.1	21.5	16.5	49.1	11.1
Barium	mg/kg	1300	CL:AIRE, 2010	519	821	NDP	24	46	14	114	45	95	91	190	63	100	69
Cadmium	mg/kg	85	LQM, 2014	<0.1	<0.1	NDP	<0.1	0.2	<0.1	0.6	0.2	4.4	0.2	0.1	<0.1	<0.1	0.4
Chromium	mg/kg	-		138	138.5	NDP	141.9	56.4	44.7	48.1	37.3	96.1	148.1	104	130.2	110.6	114
Chromium III	mg/kg	910	LQM, 2014	138	138.5	NDP	141.9	56.4	44.7	48.1	37.3	96.1	148.1	104	130.2	110.6	114
Hexavalent Chromium	mg/kg	6	LQM, 2014	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Copper	mg/kg	7100	LQM, 2014	122	119	NDP	7	36	7	28	14	417	49	59	23	41	18
Total Cyanide	mg/kg	-		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lead[4]	mg/kg	130	DEFRA, 2013	57	14	NDP	17	26	15	53	213	446	126	179	70	120	18
Mercury[5]	mg/kg	56	LQM, 2014	<0.1	<0.1	NDP	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	mg/kg	670	CL:AIRE, 2010	11.3	12	NDP	8.8	1.3	0.6	1.7	1.3	8.7	9.5	6.5	8.5	7	5.6
Nickel	mg/kg	180	LQM, 2014	49.3	66.9	NDP	10.7	19.5	10.3	21.5	15.9	16.8	42.2	36.5	17.8	27.1	48.8
Selenium	mg/kg	430	LQM, 2014	<1	<1	NDP	<1	1	<1	1	<1	<1	<1	<1	<1	<1	<1
Total Sulphate as SO4	mg/kg	-		1137	247	NDP	622	355	1030	397	1946	923	801	523	570	417	362
Sulphate as SO4 (2:1 Ext)	g/l	-															
Elemental Sulphur	mg/kg	-		6	8	3	29	10	24	13	1243	148	331	26	36	21	98
Sulphide	mg/kg	-		<10	<10	<10	<10	<10	<10	<10	42	<10	<10	<10	<10	<10	<10
Water Soluble Boron	mg/kg	11000	LQM, 2014	0.9	0.7	NDP	0.9	0.4	0.9	0.5	4	1	1.2	0.9	0.7	0.7	1.6
Ammoniacal Nitrogen as N	mg/kg	-		<0.3	<0.3	3.3	7.3	0.8	1.2	0.3	0.4	<0.3	<0.3	0.6	0.5	0.5	1.4
Zinc	mg/kg	40000	LQM, 2014	36	21	NDP	29	127	33	149	64	341	126	231	64	122	70
Naphthalene	mg/kg	2.3	LQM, 2014	0.11	<0.04	0.06	<0.04	<0.04	<0.04	0.11	0.05	7.04	25.65	0.15	0.05	0.08	<0.04
Acenaphthylene	mg/kg	2900	LQM, 2014	0.07	<0.03	0.1	<0.03	<0.03	<0.03	0.04	0.06	0.26	0.68	0.18	0.04	<0.03	<0.03
Acenaphthene	mg/kg	3000	LQM, 2014	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	<0.05	0.19	<0.50	0.37	<0.05	<0.05	<0.05
Fluorene	mg/kg	2800	LQM, 2014	0.16	<0.04	<0.04	<0.04	<0.04	<0.04	0.11	0.08	0.74	2.25	0.25	<0.04	<0.04	<0.04
Phenanthrene	mg/kg	1300	LQM, 2014	1.73	0.12	0.2	0.17	0.06	0.11	0.81	0.43	1.22	3.33	3.26	0.27	0.22	<0.03
Anthracene	mg/kg	31000	LQM, 2014	0.42	<0.04	0.1	0.05	0.04	0.05	0.26	0.23	0.19	<0.40	0.69	0.06	0.07	<0.04
Fluoranthene	mg/kg	1500	LQM, 2014	1.47	0.07	0.68	0.17	0.19	0.23	0.79	0.94	0.55	0.48	4.97	0.57	0.48	<0.03
Pyrene	mg/kg	3700	LQM, 2014	1.2	0.07	0.64	0.15	0.23	0.21	0.84	0.77	0.72	1	4.68	0.54	0.42	<0.03
Benzo(a)anthracene	mg/kg	11	LQM, 2014	0.67	0.09	0.51	0.1	0.15	0.2	0.46	0.57	0.23	<0.60	2.51	0.25	0.37	<0.06
Chrysene	mg/kg	30	LQM, 2014	0.78	0.07	0.53	0.09	0.13	0.14	0.45	0.63	0.27	0.26	3.4	0.3	0.18	<0.02
Benzo(bk)fluoranthene	mg/kg	-		1.01	<0.07	0.72	0.13	0.22	0.21	0.74	1.04	0.47	<0.70	5.47	0.72	0.73	<0.07
Benzo(a)pyrene	mg/kg	3.2	LQM, 2014	0.51	<0.04	0.45	0.08	0.11	0.14	0.32	0.59	0.21	<0.40	3.2	0.39	0.37	<0.04
Indeno(123cd)pyrene	mg/kg	45	LQM, 2014	0.31	<0.04	0.25	<0.04	0.08	0.07	0.25	0.36	0.18	<0.40	2.32	0.27	0.26	<0.04
Dibenzo(ah)anthracene	mg/kg	0.31	LQM, 2014	0.09	<0.04	0.06	<0.04	<0.04	<0.04	0.06	0.09	<0.04	<0.40	0.51	0.08	0.08	<0.04
Benzo(ghi)perylene	mg/kg	360	LQM, 2014	0.28	<0.04	0.2	<0.04	0.09	0.06	0.25	0.25	0.18	<0.40	2.44	0.3	0.25	<0.04
Coronene	mg/kg	-		0.06	<0.04	<0.04	<0.04	<0.04	<0.04	0.06	0.05	<0.04	<0.40	0.44	0.07	0.06	<0.04
PAH 6 Total #	mg/kg	-		3.58	<0.22	2.3	0.38	0.69	0.71	2.35	3.18	1.59	<2.20	18.4	2.25	2.09	<0.22
PAH 17 Total	mg/kg	-		8.99	<0.64	4.5	0.94	1.3	1.42	5.66	6.14	12.45	33.65	34.84	3.91	3.57	<0.64
Benzo(b)fluoranthene	mg/kg	3.9	LQM, 2014	0.73	<0.05	0.52	0.09	0.16	0.15	0.53	0.75	0.34	<0.50	3.94	0.52	0.53	<0.05
Benzo(k)fluoranthene	mg/kg	110	LQM, 2014	0.28	<0.02	0.2	0.04	0.06	0.06	0.21	0.29	0.13	<0.20	1.53	0.2	0.2	<0.02
Benzo(j)fluoranthene	mg/kg	-		<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	1	<1	<1	<1
Mineral Oil (C10 C40)	mg/kg	-		67	<30	37	<30	281	<30	1161	<30	1726	7473	65	<30	<30	<30
>C5 C6	mg/kg	42	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.2	<0.1	<0.1	<0.1	<0.1
>C6 C8	mg/kg	100	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.9	178.1	<0.1	<0.1	<0.1	<0.1
>C8 C10	mg/kg	27	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	12.9	320.2	<0.1	<0.1	<0.1	<0.1
>C10 C12	mg/kg	130	LQM, 2014	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	8.1	<0.2	299.5	1519.9	<0.2	<0.2	<0.2	<0.2
>C12 C16	mg/kg	1100	LQM, 2014	<4	<4	<4	<4	29	<4	12	<4	603	2683	<4	<4	<4	<4
>C16 C21	mg/kg	-		<7	<7	<7	<7	17	<7	23	<7	630	2565	<7	<7	<7	<7
>C21 C35	mg/kg	-		67	24	37	<7	235	<7	1043	<7	193	705	65	<7	<7	<7
>C16 C35	mg/kg	65000	LQM, 2014	74	31	44	<14	252	<14	1066	<14	823	3270	72	<14	<14	<14
>C35 C40	mg/kg	65000	LQM, 2014	<7	<7	<7	<7	<7	<7	75	<7	<7	<7	<7	<7	<7	<7
Total aliphatics (C5 to 40)	mg/kg	-		67	<26	37	<26	281	<26	1162	<26	1739	7982	65	<26	<26	<26
>C5 EC7	mg/kg	370	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1
>EC7 EC8	mg/kg	860	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1
>EC8 EC10	mg/kg	47	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	3.2	92.1	<0.1	<0.1	<0.1	<0.1
>EC10 EC12	mg/kg	250	LQM, 2014	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	6.5	<0.2	335.8	1324.8	<0.2	<0.2	<0.2	<0.2
>EC12 EC16	mg/kg	1800	LQM, 2014	<4	<4	<4	<4	<4	<4	13	<4	345	1491	4	<4	<4	<4
>EC16 EC21	mg/kg	1900	LQM, 2014	<7	<7	<7	<7	<7	<7	28	24	345	1249	45	9	11	<7
>EC21 EC35	mg/kg	1900	LQM, 2014	51	<7	93	<7	82	<7	435	84	202	325	450	74	59	<7
>EC35 EC40[6]	mg/kg	1900	LQM, 2014	<7	<7	27	<7	<7	<7	38	<7	28	<7	44	<7	<7	<7
Total aromatics (C5 to 40)	mg/kg	-		51	<26	120	<26	82	<26	521	108	1259	4482	543	83	70	<26
Total aliphatics and aromatics(C5 to 40)	mg/kg	-		118	<52	157	<52	363	<52	1683	108	2998	12464	608	83	70	<52
MTBE	ug/kg	73000	CL:AIRE, 2010	<5	<5	<5	<5	<5	<5	<5	<5	<5	5100	<5	<5	<5	<5
Benzene	ug/kg	380	LQM, 2014	<5	<5	<5	<5	<5	<5	<5	<5	19	<50	<5	<5	<5	<5
Toluene	ug/kg	880000	LQM, 2014	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
Ethylbenzene	ug/kg	83000	LQM, 2014	12	<5	<5	<5	9	11	31	<5	123	47207	22	7	9	<5
m/p Xylene	ug/kg	79000	LQM, 2014	19	<5	<5	<5	13	19	45	<5	3019	40552	20	16	<5	<5
o Xylene	ug/kg	88000	LQM, 2014	<5	<5	<5	<5	<5	<5	46	<5	115	4296	<5	<5	<5	<5
PCB 28	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<25	<25	<5	<5	<5	<5
PCB 52	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<25	<25	<5	<5	<5	<5
PCB 101	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<25	<25	<5	<5	<5	<5
PCB 118	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<25	<25	<5	<5	<5	<5
PCB 138	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<25	<25	<5	<5	<5	<5
PCB 153	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<25	<25	<5	<5	<5	<5
PCB 180	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<25	<25	<5	<5	<5	<5
Total 7 PCBs[7]	ug/kg	8	EA, 2009	<35	<35	<35	<35	<35	<35	<35	<35	<175	<175	<35	<35	<35	<35
Phenol	mg/kg	750	LQM, 2014	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Natural Moisture Content	%			11.2	44.1	11.8	28.4	7.7	23.5	10.3	25.8	11.5	25.5	11.9	16.7	13.4	20.9
Moisture Content (% Wet Weight)	%			10.1	30.6	10.5	22.1	7.1	19.1	9.3	20.5	10.3	20.3	10.7	14.3	11.8	17.3
Total Organic Carbon	%			22.09	31.39	NDP	2.9	0.41	0.53	1.02	2.46	1.55	2.06	1.55	0.98	0.95	0.47
SOM (Calculated)	%																
pH	pH units	-		9.24	8.38	8.72	8.62	8.74	8.56	8.69	8.52	8.24	8.52	8.66	8.83	8.75	8.29
General Description (Bulk Analysis)	--	-		Soil	Soil	Soil	Soil/Stone	soil/stones	soil/stones	soil/stones	soil/stones	Soil/Stones	Soil/Stones	Soil/Stones	Soil/Stone	soil.stones	soil.stones
Asbestos Fibres	--	-		NAD	NAD	Fibre Bundles	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Fibres (2)	--	-															
Asbestos ACM	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Type	--	-		NAD	NAD	Chrysotile	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Type (2)	--	-															
Asbestos Level Screen	%	-		NAD	NAD	less than 0.1%	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Gravimetric Quantification	mass %	-		-	-	<0.001	-	-	-	-	-	-	-	-	-	-	-
Asbestos PCOM Quantification (Fibres)	mass %	-		-	-	<0.001	-	-	-	-	-	-	-	-	-	-	-
Asbestos Gravimetric & PCOM Total	mass %	-		-	-	<0.001	-	-	-	-	-	-	-	-	-	-	-

Soil Screening Notes:

nnn Indicate where the Residential GAC is exceeded/ asbestos fibres encountered

Numbers in **BOLD** text show where results are above the LOD

[1] 'LOD' = Laboratory limit of detection

[2] 'GAC' = 'Generic Assessment Criteria'; Residential GACs without home grown produce

[3] For some PAH and TPH bands, the GAC exceeds the contaminant's solubility or vapour saturation limit.

[4] Most conservative GAC value applied from a range of 130 to 330 mg/kg.

[5] GAC value for inorganic mercury was applied, as it is more likely to be present on site than the other forms.

[6] Screening values for this band are not available; GAC for band >35-44 has been applied

[7] GAC value is for a sum of PCDDs, PCDFs and dioxin-like PCBs and may not be appropriate for direct comparison against the sum of these 7 PCB cogeners

- = No available GAC or individual constituents already assessed

APPENDIX E

Laboratory Certificates

Exova Jones Environmental

Registered Office: Exova Environmental UK Limited, 10 Lower Grosvenor Place, London, SW1W 0EN. Reg No. 11371415

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Deeside
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Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

Enviroguide
3D Core C
Block 71
The Plaza
Park West
Ireland
D12F 9TN

Attention :	Claire Clifford
Date :	25th April, 2019
Your reference :	CLAREMONT
Our reference :	Test Report 19/6647 Batch 1
Location :	Claremont Howth
Date samples received :	24th April, 2019
Status :	Final report
Issue :	1

Two samples were received for analysis on 24th April, 2019 of which two were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.
Where Waste Acceptance Criteria Suite (EC Decision of 19 December 2002 (2003/33/EC)) has been requested, all analyses have been performed using the relevant EN methods where they exist.

Compiled By:

Paul Boden BSc
Senior Project Manager

Client Name: Enviroguide
Reference: CLAREMONT
Location: Claremont Howth
Contact: Claire Clifford
JE Job No.: 19/6647

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-3	4-6									LOD/LOR	Units	Method No.
Sample ID	SW3	SW4											
Depth													
COC No / misc													
Containers	H P G	H P G											
Sample Date	23/04/2019	23/04/2019											
Sample Type	Surface Water	Surface Water											
Batch Number	1	1											
Date of Receipt	24/04/2019	24/04/2019											
Dissolved Antimony #	<2	<2									<2	ug/l	TM30/PM14
Dissolved Arsenic #	<2.5	<2.5									<2.5	ug/l	TM30/PM14
Dissolved Barium #	4	<3									<3	ug/l	TM30/PM14
Dissolved Cadmium #	<0.5	<0.5									<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	<1.5	<1.5									<1.5	ug/l	TM30/PM14
Dissolved Copper #	<7	<7									<7	ug/l	TM30/PM14
Dissolved Lead #	<5	<5									<5	ug/l	TM30/PM14
Dissolved Mercury #	<1	<1									<1	ug/l	TM30/PM14
Dissolved Molybdenum #	7	6									<2	ug/l	TM30/PM14
Dissolved Nickel #	<2	<2									<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3									<3	ug/l	TM30/PM14
Dissolved Zinc #	<3	<3									<3	ug/l	TM30/PM14
Total Antimony	<2	<2									<2	ug/l	TM30/PM14
Total Arsenic	<2.5	<2.5									<2.5	ug/l	TM30/PM14
Total Barium	<3	<3									<3	ug/l	TM30/PM14
Total Cadmium	<0.5	<0.5									<0.5	ug/l	TM30/PM14
Total Chromium	<1.5	<1.5									<1.5	ug/l	TM30/PM14
Total Copper	<7	<7									<7	ug/l	TM30/PM14
Total Lead	<5	<5									<5	ug/l	TM30/PM14
Total Mercury	<1	<1									<1	ug/l	TM30/PM14
Total Molybdenum	7	6									<2	ug/l	TM30/PM14
Total Nickel	<2	<2									<2	ug/l	TM30/PM14
Total Selenium	<3	<3									<3	ug/l	TM30/PM14
Total Zinc	4	<3									<3	ug/l	TM30/PM14
Ammoniacal Nitrogen as N #	0.69	0.71									<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as NH4 #	0.89	0.92									<0.03	mg/l	TM38/PM0
Hexavalent Chromium	<6	<6									<6	ug/l	TM38/PM0
Total Dissolved Chromium III	<6	<6									<6	ug/l	TM0/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Enviroguide
Reference: CLAREMONT
Location: Claremont Howth
Contact: Claire Clifford

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 19/6647						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 19/6647

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to an Exova Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 19/6647

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM0	Not available	PM0	No preparation is required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	PM0	No preparation is required.				
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	PM0	No preparation is required.	Yes			

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Attention :	Ruth Treacy
Date :	20th September, 2019
Your reference :	CMT
Our reference :	Test Report 19/13288 Batch 1 Schedule C
Location :	
Date samples received :	16th August, 2019
Status :	Final report
Issue :	1

Twenty eight samples were received for analysis on 16th August, 2019 of which three were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:

Paul Boden BSc
Senior Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy
EMT Job No: 19/13288

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	73-75	76-78	82-84									
Sample ID	TP12	TP12	TP19									
Depth	0.00-1.50	1.50-3.00	0.00-0.70									
COC No / misc												
Containers	V J T	V J T	V J T									
Sample Date	14/08/2019	14/08/2019	14/08/2019									
Sample Type	Soil	Soil	Soil									
Batch Number	1	1	1									
Date of Receipt	16/08/2019	16/08/2019	16/08/2019									

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
Total Organic Carbon	-	-	16.53								<0.02	%	TM21/PM89
Loss on Ignition #	9.4	7.7	-								<1.0	%	TM22/PM0
Loss on Ignition	-	-	9.2								<1.0	%	TM22/PM0

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Golder Associates Ltd

Reference: CMT

Location:

Contact: Ruth Treacy

Matrix : Solid

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
19/13288	1	TP12	0.00-1.50	73-75	LOI	Sample holding time exceeded
19/13288	1	TP12	1.50-3.00	76-78	LOI	Sample holding time exceeded

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

Please include all sections of this report if it is reproduced

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 19/13288

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher, this result is not accredited.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

EMT Job No: 19/13288

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM89	Preparation of positive asbestos samples for Eltra analysis			AD	Yes
TM22	Modified BS1377-3:1990 Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (35C-440C). On request modified ASTM D2974-00 LOI (105C-440C)	PM0	No preparation is required.			AD	Yes
TM22	Modified BS1377-3:1990 Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (35C-440C). On request modified ASTM D2974-00 LOI (105C-440C)	PM0	No preparation is required.	Yes		AD	Yes

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Attention :	Ruth Treacy
Date :	20th September, 2019
Your reference :	CMT
Our reference :	Test Report 19/13464 Batch 1 Schedule C
Location :	
Date samples received :	21st August, 2019
Status :	Final report
Issue :	1

Fifteen samples were received for analysis on 21st August, 2019 of which four were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:

Paul Boden BSc
Senior Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Golder Associates Ltd
Reference: CMT
Location:
Contact: Ruth Treacy
EMT Job No: 19/13464

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-3	4-6	7-9	44-46							LOD/LOR	Units	Method No.
Sample ID	TP11	TP11	TP13	TP20									
Depth	0.00-1.50	1.50-2.70	0.00-1.50	0.00-0.75									
COC No / misc													
Containers	V J T	V J T	V J T	V J T									
Sample Date	16/08/2019	16/08/2019	16/08/2019	16/08/2019									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	21/08/2019	21/08/2019	21/08/2019	21/08/2019									
Total Organic Carbon	-	-	0.87	-							<0.02	%	TM21/PM89
Loss on Ignition #	6.9	3.8	-	5.0							<1.0	%	TM22/PM0
Loss on Ignition	-	-	1.8	-							<1.0	%	TM22/PM0

Please see attached notes for all abbreviations and acronyms

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Golder Associates Ltd

Reference: CMT

Location:

Contact: Ruth Treacy

Matrix : Solid

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
19/13464	1	TP11	0.00-1.50	1-3	LOI	Sample holding time exceeded
19/13464	1	TP11	1.50-2.70	4-6	LOI	Sample holding time exceeded
19/13464	1	TP20	0.00-0.75	44-46	LOI	Sample holding time exceeded

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 19/13464

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher, this result is not accredited.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

EMT Job No: 19/13464

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM89	Preparation of positive asbestos samples for Eltra analysis			AD	Yes
TM22	Modified BS1377-3:1990 Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (35C-440C). On request modified ASTM D2974-00 LOI (105C-440C)	PM0	No preparation is required.			AD	Yes
TM22	Modified BS1377-3:1990 Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (35C-440C). On request modified ASTM D2974-00 LOI (105C-440C)	PM0	No preparation is required.	Yes		AD	Yes

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Golder Associates Ltd
Town Centre House
Dublin Road
Naas
Co Kildare
Ireland

Attention :	Ruth Treacy
Date :	11th September, 2019
Your reference :	19128243
Our reference :	Test Report 19/14327 Batch 1
Location :	Howth - CMT
Date samples received :	5th September, 2019
Status :	Final report
Issue :	1

Seven samples were received for analysis on 5th September, 2019 of which seven were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:

Simon Gomery BSc
Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Golder Associates Ltd
Reference: 19128243
Location: Howth - CMT
Contact: Ruth Treacy
EMT Job No: 19/14327

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	1-7	8-15	16-23	24-31	32-38	39-45	46-52				LOD/LOR	Units	Method No.
Sample ID	SAC	SW1	BH9	BH3	BH5	BH8	BH6						
Depth			2.30-3.18										
COC No / misc													
Containers	V H P G	V H HN P G	V H HN P G	V H HN P G	V H P G	V H P G	V H P G						
Sample Date	04/09/2019	03/09/2019	03/09/2019	04/09/2019	04/09/2019	04/09/2019	04/09/2019						
Sample Type	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water						
Batch Number	1	1	1	1	1	1	1						
Date of Receipt	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019						
Dissolved Arsenic #	<2.5	8.7	10.5	6.1	13.9	<2.5	<2.5				<2.5	ug/l	TM30/PM14
Dissolved Barium #	5	19	108	224	55	52	<3				<3	ug/l	TM30/PM14
Dissolved Beryllium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM30/PM14
Dissolved Boron	3265	25	185	188	688	99	65				<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5				<1.5	ug/l	TM30/PM14
Dissolved Copper #	<7	<7	<7	<7	<7	<7	<7				<7	ug/l	TM30/PM14
Dissolved Lead #	<5	<5	<5	<5	<5	<5	<5				<5	ug/l	TM30/PM14
Dissolved Mercury #	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM30/PM14
Dissolved Nickel #	<2	4	3	3	<2	31	<2				<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM30/PM14
Dissolved Vanadium #	<1.5	<1.5	3.6	2.8	2.7	4.1	<1.5				<1.5	ug/l	TM30/PM14
Dissolved Zinc #	<3	<3	4	5	<3	17	<3				<3	ug/l	TM30/PM14
Total Hardness Dissolved (as CaCO3)	7329 AA	221	453	467	324	371	609				<1	mg/l	TM30/PM14
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				<0.1	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM15/PM10
Toluene #	<5	<5	<5	<5	<5	<5	<5				<5	ug/l	TM15/PM10
Ethylbenzene #	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
m/p-Xylene #	<2	<2	<2	6	<2	<2	<2				<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<1	1	<1	<1	<1				<1	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	82	92	91	90	96	90	90				<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	92	98	98	96	101	97	99				<0	%	TM15/PM10
TPH CWG													
Aliphatics													
>C5-C6 #	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM36/PM12
>C6-C8 #	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM36/PM12
>C8-C10 #	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM36/PM12
>C10-C12 #	<5	<5	<5	<5	<5	<5	<5				<5	ug/l	TM5/PM16/PM30
>C12-C16 #	<10	<10	70	<10	<10	<10	<10				<10	ug/l	TM5/PM16/PM30
>C16-C21 #	<10	<10	640	<10	<10	<10	<10				<10	ug/l	TM5/PM16/PM30
>C21-C35 #	<10	<10	1540	<10	<10	<10	<10				<10	ug/l	TM5/PM16/PM30
Total aliphatics C5-35 #	<10	<10	2250	<10	<10	<10	<10				<10	ug/l	TM5/TM36/PM12/PM16/PM30

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Element Materials Technology

Client Name: Golder Associates Ltd
Reference: 19128243
Location: Howth - CMT
Contact: Ruth Treacy
EMT Job No: 19/14327

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

EMT Sample No.	1-7	8-15	16-23	24-31	32-38	39-45	46-52				LOD/LOR	Units	Method No.
Sample ID	SAC	SW1	BH9	BH3	BH5	BH8	BH6						
Depth			2.30-3.18										
COC No / misc													
Containers	V H P G	V H HN P G	V H HN P G	V H HN P G	V H P G	V H P G	V H P G						
Sample Date	04/09/2019	03/09/2019	03/09/2019	04/09/2019	04/09/2019	04/09/2019	04/09/2019						
Sample Type	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water						
Batch Number	1	1	1	1	1	1	1						
Date of Receipt	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019						
TPH CWG													
Aromatics													
>C5-EC7 #	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM36/PM12
>EC7-EC8 #	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM36/PM12
>EC8-EC10 #	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM36/PM12
>EC10-EC12 #	<5	<5	<5	<5	<5	<5	<5				<5	ug/l	TM5/PM16/PM30
>EC12-EC16 #	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM5/PM16/PM30
>EC16-EC21 #	<10	<10	250	<10	<10	<10	<10				<10	ug/l	TM5/PM16/PM30
>EC21-EC35 #	<10	<10	2930	<10	<10	<10	<10				<10	ug/l	TM5/PM16/PM30
Total aromatics C5-35 #	<10	<10	3180	<10	<10	<10	<10				<10	ug/l	TM5/TM36/PM12/PM16/PM30
Total aliphatics and aromatics(C5-35) #	<10	<10	5430	<10	<10	<10	<10				<10	ug/l	TM5/TM36/PM12/PM16/PM30
PCB 28	<0.1	<0.5 AA	<1.0 AB	<0.1	<0.1	<0.1	<0.1				<0.1	ug/l	TM17/PM30
PCB 52	<0.1	<0.5 AA	<1.0 AB	<0.1	<0.1	<0.1	<0.1				<0.1	ug/l	TM17/PM30
PCB 101	<0.1	<0.5 AA	<1.0 AB	<0.1	<0.1	<0.1	<0.1				<0.1	ug/l	TM17/PM30
PCB 118	<0.1	<0.5 AA	<1.0 AB	<0.1	<0.1	<0.1	<0.1				<0.1	ug/l	TM17/PM30
PCB 138	<0.1	<0.5 AA	<1.0 AB	<0.1	<0.1	<0.1	<0.1				<0.1	ug/l	TM17/PM30
PCB 153	<0.1	<0.5 AA	<1.0 AB	<0.1	<0.1	<0.1	<0.1				<0.1	ug/l	TM17/PM30
PCB 180	<0.1	<0.5 AA	<1.0 AB	<0.1	<0.1	<0.1	<0.1				<0.1	ug/l	TM17/PM30
Total 7 PCBs	<0.7	<3.5 AA	<7.0 AB	<0.7	<0.7	<0.7	<0.7				<0.7	ug/l	TM17/PM30
Fluoride	1.2	<0.3	<0.3	<0.3	<0.3	0.3	<0.3				<0.3	mg/l	TM173/PM0
Sulphate as SO4 #	2614.6	12.2	133.0	26.9	20.9	58.5	98.2				<0.5	mg/l	TM38/PM0
Chloride #	18993.0	52.8	24.0	124.1	39.7	41.7	457.0				<0.3	mg/l	TM38/PM0
Nitrate as NO3 #	<0.2	0.3	<0.2	<0.2	<0.2	0.6	5.0				<0.2	mg/l	TM38/PM0
Nitrite as NO2 #	<0.02	<0.02	<0.02	<0.02	<0.02	0.11	0.49				<0.02	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	0.05	0.03	1.29	3.96	11.32	0.82	0.04				<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as NH3 #	0.07	0.04	1.57	4.81	13.76	0.99	0.05				<0.03	mg/l	TM38/PM0
Hexavalent Chromium	<6	<6	<6	<6	<6	<6	<6				<6	ug/l	TM38/PM0
Total Dissolved Chromium III	<6	<6	<6	<6	<6	<6	<6				<6	ug/l	TM0/PM0
Dissolved Organic Carbon #	<2	4	6	<2	9	5	<2				<2	mg/l	TM60/PM0
pH #	8.01	7.97	7.46	7.20	7.69	7.66	7.80				<0.01	pH units	TM73/PM0
Total Organic Carbon #	<2	5	5	<2	11	<2	<2				<2	mg/l	TM60/PM0

Please see attached notes for all abbreviations and acronyms

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Client Name: Golder Associates Ltd
Reference: 19128243
Location: Howth - CMT
Contact: Ruth Treacy
EMT Job No: 19/14327

SVOC Report : **Liquid**

EMT Sample No.	1-7	8-15	16-23	24-31	32-38	39-45	46-52				LOD/LOR	Units	Method No.
Sample ID	SAC	SW1	BH9	BH3	BH5	BH8	BH6						
Depth			2.30-3.18										
COC No / misc													
Containers	V H P G	V H HN P G	V H HN P G	V H HN P G	V H P G	V H P G	V H P G						
Sample Date	04/09/2019	03/09/2019	03/09/2019	04/09/2019	04/09/2019	04/09/2019	04/09/2019						
Sample Type	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water						
Batch Number	1	1	1	1	1	1	1						
Date of Receipt	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019						
SVOC MS													
Phenols													
2-Chlorophenol #	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
2-Methylphenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
2-Nitrophenol	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
2,4-Dichlorophenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
2,4-Dimethylphenol	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
2,4,5-Trichlorophenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
2,4,6-Trichlorophenol	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
4-Chloro-3-methylphenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
4-Methylphenol	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
4-Nitrophenol	<10	<10	<10	<10	<10	<10	<10				<10	ug/l	TM16/PM30
Pentachlorophenol	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Phenol	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
PAHs													
2-Chloronaphthalene #	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
2-Methylnaphthalene #	<1	<1	1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Naphthalene #	<1	<1	3	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Acenaphthylene #	<0.5	<0.5	4.4	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Acenaphthene #	<1	<1	2	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Fluorene #	<0.5	<0.5	2.4	<0.5	0.7	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Phenanthrene #	<0.5	<0.5	11.6	<0.5	3.0	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Anthracene #	<0.5	<0.5	5.7	<0.5	0.8	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Fluoranthene #	<0.5	<0.5	23.8	<0.5	2.8	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Pyrene #	<0.5	<0.5	21.5	<0.5	2.0	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Benzo(a)anthracene #	<0.5	<0.5	15.0	<0.5	1.2	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Chrysene #	<0.5	<0.5	15.6	<0.5	1.0	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Benzo(bk)fluoranthene #	<1	<1	32	<1	1	<1	<1				<1	ug/l	TM16/PM30
Benzo(a)pyrene	<1	<1	24	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Indeno(123cd)pyrene	<1	<1	18	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Dibenzo(ah)anthracene #	<0.5	<0.5	6.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Benzo(ghi)perylene #	<0.5	<0.5	25.8	<0.5	0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Phthalates													
Bis(2-ethylhexyl) phthalate	<5	<5	<5	<5	<5	<5	<5				<5	ug/l	TM16/PM30
Butylbenzyl phthalate	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Di-n-butyl phthalate #	<1.5	1.8	<1.5	<1.5	<1.5	<1.5	<1.5				<1.5	ug/l	TM16/PM30
Di-n-Octyl phthalate	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Diethyl phthalate #	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Dimethyl phthalate	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30

Please see attached notes for all abbreviations and acronyms

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All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Golder Associates Ltd
Reference: 19128243
Location: Howth - CMT
Contact: Ruth Treacy
EMT Job No: 19/14327

SVOC Report : **Liquid**

EMT Sample No.	1-7	8-15	16-23	24-31	32-38	39-45	46-52				LOD/LOR	Units	Method No.
Sample ID	SAC	SW1	BH9	BH3	BH5	BH8	BH6						
Depth			2.30-3.18										
COC No / misc													
Containers	V H P G	V H HN P G	V H HN P G	V H HN P G	V H P G	V H P G	V H P G						
Sample Date	04/09/2019	03/09/2019	03/09/2019	04/09/2019	04/09/2019	04/09/2019	04/09/2019						
Sample Type	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water						
Batch Number	1	1	1	1	1	1	1						
Date of Receipt	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019						
SVOC MS													
Other SVOCs													
1,2-Dichlorobenzene #	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
1,2,4-Trichlorobenzene #	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
1,3-Dichlorobenzene #	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
1,4-Dichlorobenzene #	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
2-Nitroaniline	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
2,4-Dinitrotoluene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
2,6-Dinitrotoluene	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
3-Nitroaniline	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
4-Bromophenylphenylether #	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
4-Chloroaniline	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
4-Chlorophenylphenylether #	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
4-Nitroaniline	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Azobenzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Bis(2-chloroethoxy)methane #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Bis(2-chloroethyl)ether #	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Carbazole #	<0.5	<0.5	1.3	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Dibenzofuran #	<0.5	<0.5	1.3	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Hexachlorobenzene #	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Hexachlorobutadiene #	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Hexachlorocyclopentadiene	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Hexachloroethane #	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Isophorone #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
N-nitrosodi-n-propylamine #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM16/PM30
Nitrobenzene #	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM16/PM30
Surrogate Recovery 2-Fluorobiphenyl	115	109	63	110	107	125	119				<0	%	TM16/PM30
Surrogate Recovery p-Terphenyl-d14	116	115	83 SV	117	115	129	126				<0	%	TM16/PM30

Please see attached notes for all abbreviations and acronyms

Please include all sections of this report if it is reproduced

All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Golder Associates Ltd
Reference: 19128243
Location: Howth - CMT
Contact: Ruth Treacy
EMT Job No: 19/14327

VOC Report : **Liquid**

EMT Sample No.	1-7	8-15	16-23	24-31	32-38	39-45	46-52				LOD/LOR	Units	Method No.
Sample ID	SAC	SW1	BH9	BH3	BH5	BH8	BH6						
Depth			2.30-3.18										
COC No / misc													
Containers	V H P G	V H HN P G	V H HN P G	V H HN P G	V H P G	V H P G	V H P G						
Sample Date	04/09/2019	03/09/2019	03/09/2019	04/09/2019	04/09/2019	04/09/2019	04/09/2019						
Sample Type	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water						
Batch Number	1	1	1	1	1	1	1						
Date of Receipt	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019	05/09/2019						
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<5	<5	<5	<5	<5	<5	<5				<5	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2	<2	10	<2	4				<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Toluene #	<5	<5	<5	<5	<5	<5	<5				<5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Ethylbenzene #	<1	<1	<1	<1	<1	<1	<1				<1	ug/l	TM15/PM10
m/p-Xylene #	<2	<2	<2	6	<2	<2	<2				<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<1	1	<1	<1	<1				<1	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4				<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	8	<3	<3	<3				<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2				<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3				<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	82	92	91	90	96	90	90				<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	92	98	98	96	101	97	99				<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Golder Associates Ltd
Reference: 19128243
Location: Howth - CMT
Contact: Ruth Treacy

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
No deviating sample report results for job 19/14327						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 19/14327

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher, this result is not accredited.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution

AB	x10 Dilution

EMT Job No: 19/14327

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM0	Not available	PM0	No preparation is required.				
TM5	Modified 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16/PM30	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE/Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16/PM30	please refer to PM16/PM30 and PM12 for method details	Yes			
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes			

EMT Job No: 19/14327

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results can be confirmed using GCMS.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	PM0	No preparation is required.				
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	PM0	No preparation is required.	Yes			
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060, APHA Standard Methods for Examination of Water and Wastewater 5310B, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.				

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Golder Associates Ltd
Town Centre House
Dublin Road
Naas
Co Kildare
Ireland

Attention :	Ruth Treacy
Date :	16th September, 2019
Your reference :	19128243
Our reference :	Test Report 19/14572 Batch 1
Location :	Claremont Howth
Date samples received :	10th September, 2019
Status :	Final report
Issue :	1

Eight samples were received for analysis on 10th September, 2019 of which eight were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:

Paul Boden BSc
Senior Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Golder Associates Ltd
Reference: 19128243
Location: Claremont Howth
Contact: Ruth Treacy
EMT Job No: 19/14572

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	1-8	9-16	17-24	25-32	33-40	41-48	49-56	57-64			LOD/LOR	Units	Method No.
Sample ID	SAC	SW1	SW2	BH03	BH05	BH06	BH08	BH09					
Depth													
COC No / misc													
Containers	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G					
Sample Date	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019					
Sample Type	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	10/09/2019	10/09/2019	10/09/2019	10/09/2019	10/09/2019	10/09/2019	10/09/2019	10/09/2019					
Dissolved Arsenic #	<2.5	10.7	<2.5	7.1	13.9	<2.5	4.7	7.2			<2.5	ug/l	TM30/PM14
Dissolved Barium #	9	25	33	170	82	<3	39	111			<3	ug/l	TM30/PM14
Dissolved Beryllium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM30/PM14
Dissolved Boron	2569	37	35	132	324	55	120	187			<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	3.2	<1.5	<1.5	<1.5	<1.5	5.0	<1.5	<1.5			<1.5	ug/l	TM30/PM14
Dissolved Copper #	<7	<7	<7	15	<7	<7	<7	<7			<7	ug/l	TM30/PM14
Dissolved Lead #	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/l	TM30/PM14
Dissolved Mercury #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM30/PM14
Dissolved Nickel #	<2	<2	<2	4	<2	<2	29	3			<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM30/PM14
Dissolved Vanadium #	5.0	1.8	<1.5	11.4	4.9	11.1	6.1	2.1			<1.5	ug/l	TM30/PM14
Dissolved Zinc #	<3	<3	27	3	<3	<3	11	4			<3	ug/l	TM30/PM14
Total Hardness Dissolved (as CaCO3)	6872	199	194	451	462	591	357	417			<1	mg/l	TM30/PM14
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM15/PM10
Toluene #	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/l	TM15/PM10
Ethylbenzene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
m/p-Xylene #	<2	<2	<2	3	<2	<2	<2	<2			<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	109	105	105	104	105	105	105	103			<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	104	102	103	102	102	104	104	104			<0	%	TM15/PM10
TPH CWG													
Aliphatics													
>C5-C6 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM36/PM12
>C6-C8 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM36/PM12
>C8-C10 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM36/PM12
>C10-C12 #	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/l	TM5/PM16/PM30
>C12-C16 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM5/PM16/PM30
>C16-C21 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM5/PM16/PM30
>C21-C35 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM5/PM16/PM30
Total aliphatics C5-35 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM5/TM36/PM12/PM16/PM30

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Element Materials Technology

Client Name: Golder Associates Ltd
Reference: 19128243
Location: Claremont Howth
Contact: Ruth Treacy
EMT Job No: 19/14572

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

EMT Sample No.	1-8	9-16	17-24	25-32	33-40	41-48	49-56	57-64			LOD/LOR	Units	Method No.
Sample ID	SAC	SW1	SW2	BH03	BH05	BH06	BH08	BH09					
Depth													
COC No / misc													
Containers	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G					
Sample Date	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019					
Sample Type	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	10/09/2019	10/09/2019	10/09/2019	10/09/2019	10/09/2019	10/09/2019	10/09/2019	10/09/2019					
TPH CWG													
Aromatics													
>C5-EC7 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM36/PM12
>EC7-EC8 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM36/PM12
>EC8-EC10 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM36/PM12
>EC10-EC12 #	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/l	TM5/PM16/PM30
>EC12-EC16 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM5/PM16/PM30
>EC16-EC21 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM5/PM16/PM30
>EC21-EC35 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM5/PM16/PM30
Total aromatics C5-35 #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM5/TM36/PM12/PM16/PM30
Total aliphatics and aromatics(C5-35) #	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM5/TM36/PM12/PM16/PM30
PCB 28	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	ug/l	TM17/PM30
PCB 52	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	ug/l	TM17/PM30
PCB 101	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	ug/l	TM17/PM30
PCB 118	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	ug/l	TM17/PM30
PCB 138	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	ug/l	TM17/PM30
PCB 153	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	ug/l	TM17/PM30
PCB 180	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	ug/l	TM17/PM30
Total 7 PCBs	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7			<0.7	ug/l	TM17/PM30
Fluoride	1.2	<0.3	<0.3	<0.3	<0.3	0.4	0.4	<0.3			<0.3	mg/l	TM173/PM0
Sulphate as SO4 #	3029.7	14.5	27.3	24.2	77.3	107.3	60.2	127.2			<0.5	mg/l	TM38/PM0
Chloride #	19154.4	60.1	43.7	113.7	211.0	479.3	42.4	36.5			<0.3	mg/l	TM38/PM0
Nitrate as NO3 #	<0.2	0.7	2.6	<0.2	0.7	6.2	1.2	0.4			<0.2	mg/l	TM38/PM0
Nitrite as NO2 #	<0.02	<0.02	<0.02	<0.02	0.03	0.06	0.54	<0.02			<0.02	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	0.05	0.04	0.34	3.22	4.22	0.04	0.89	1.27			<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as NH3 #	0.07	0.05	0.42	3.92	5.13	0.05	1.08	1.54			<0.03	mg/l	TM38/PM0
Hexavalent Chromium	<6	<6	<6	<6	<6	<6	<6	<6			<6	ug/l	TM38/PM0
Total Dissolved Chromium III	<6	<6	<6	<6	<6	<6	<6	<6			<6	ug/l	TM0/PM0
Dissolved Organic Carbon #	<2	6	3	<2	<2	<2	3	4			<2	mg/l	TM60/PM0
pH #	8.58	8.15	7.61	6.96	7.54	7.62	7.63	7.46			<0.01	pH units	TM73/PM0
Total Organic Carbon #	2	7	3	2	<2	<2	3	7			<2	mg/l	TM60/PM0

Please see attached notes for all abbreviations and acronyms

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Client Name: Golder Associates Ltd
Reference: 19128243
Location: Claremont Howth
Contact: Ruth Treacy
EMT Job No: 19/14572

SVOC Report : **Liquid**

EMT Sample No.	1-8	9-16	17-24	25-32	33-40	41-48	49-56	57-64			LOD/LOR	Units	Method No.
Sample ID	SAC	SW1	SW2	BH03	BH05	BH06	BH08	BH09					
Depth													
COC No / misc													
Containers	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G					
Sample Date	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019					
Sample Type	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	10/09/2019	10/09/2019	10/09/2019	10/09/2019	10/09/2019	10/09/2019	10/09/2019	10/09/2019					
SVOC MS													
Phenols													
2-Chlorophenol #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
2-Methylphenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
2-Nitrophenol	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
2,4-Dichlorophenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
2,4-Dimethylphenol	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
2,4,5-Trichlorophenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
2,4,6-Trichlorophenol	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
4-Chloro-3-methylphenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
4-Methylphenol	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
4-Nitrophenol	<10	<10	<10	<10	<10	<10	<10	<10			<10	ug/l	TM16/PM30
Pentachlorophenol	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Phenol	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
PAHs													
2-Chloronaphthalene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
2-Methylnaphthalene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Naphthalene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Acenaphthylene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Acenaphthene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Fluorene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Phenanthrene #	<0.5	0.5	<0.5	<0.5	1.3	<0.5	0.6	0.7			<0.5	ug/l	TM16/PM30
Anthracene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Fluoranthene #	<0.5	1.1	<0.5	<0.5	0.6	<0.5	1.5	1.0			<0.5	ug/l	TM16/PM30
Pyrene #	<0.5	1.0	<0.5	<0.5	<0.5	<0.5	1.4	0.9			<0.5	ug/l	TM16/PM30
Benzo(a)anthracene #	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	1.0	0.9			<0.5	ug/l	TM16/PM30
Chrysene #	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	0.8	0.6			<0.5	ug/l	TM16/PM30
Benzo(bk)fluoranthene #	<1	<1	<1	<1	<1	<1	1	1			<1	ug/l	TM16/PM30
Benzo(a)pyrene	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Indeno(123cd)pyrene	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Dibenzo(ah)anthracene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Benzo(ghi)perylene #	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	0.8			<0.5	ug/l	TM16/PM30
Phthalates													
Bis(2-ethylhexyl) phthalate	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/l	TM16/PM30
Butylbenzyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Di-n-butyl phthalate #	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5			<1.5	ug/l	TM16/PM30
Di-n-Octyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Diethyl phthalate #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Dimethyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30

Please see attached notes for all abbreviations and acronyms

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Client Name: Golder Associates Ltd
Reference: 19128243
Location: Claremont Howth
Contact: Ruth Treacy
EMT Job No: 19/14572

SVOC Report : **Liquid**

EMT Sample No.	1-8	9-16	17-24	25-32	33-40	41-48	49-56	57-64			LOD/LOR	Units	Method No.
Sample ID	SAC	SW1	SW2	BH03	BH05	BH06	BH08	BH09					
Depth													
COC No / misc													
Containers	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G					
Sample Date	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019					
Sample Type	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	10/09/2019	10/09/2019	10/09/2019	10/09/2019	10/09/2019	10/09/2019	10/09/2019	10/09/2019					
SVOC MS													
Other SVOCs													
1,2-Dichlorobenzene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
1,2,4-Trichlorobenzene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
1,3-Dichlorobenzene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
1,4-Dichlorobenzene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
2-Nitroaniline	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
2,4-Dinitrotoluene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
2,6-Dinitrotoluene	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
3-Nitroaniline	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
4-Bromophenylphenylether #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
4-Chloroaniline	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
4-Chlorophenylphenylether #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
4-Nitroaniline	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Azobenzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Bis(2-chloroethoxy)methane #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Bis(2-chloroethyl)ether #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Carbazole #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Dibenzofuran #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Hexachlorobenzene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Hexachlorobutadiene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Hexachlorocyclopentadiene	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Hexachloroethane #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Isophorone #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
N-nitrosodi-n-propylamine #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM16/PM30
Nitrobenzene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM16/PM30
Surrogate Recovery 2-Fluorobiphenyl	104	77	90	87	102	93	66 SV	86			<0	%	TM16/PM30
Surrogate Recovery p-Terphenyl-d14	99	81	92	91	105	92	69 SV	87			<0	%	TM16/PM30

Please see attached notes for all abbreviations and acronyms

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Client Name: Golder Associates Ltd
Reference: 19128243
Location: Claremont Howth
Contact: Ruth Treacy
EMT Job No: 19/14572

VOC Report : **Liquid**

EMT Sample No.	1-8	9-16	17-24	25-32	33-40	41-48	49-56	57-64					
Sample ID	SAC	SW1	SW2	BH03	BH05	BH06	BH08	BH09					
Depth											Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G					
Sample Date	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019	09/09/2019					
Sample Type	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water	Surface Water					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	10/09/2019	10/09/2019	10/09/2019	10/09/2019	10/09/2019	10/09/2019	10/09/2019	10/09/2019					
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1			<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Chloroform #	<2	<2	5	<2	5	<2	<2	<2			<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	<3	<3	<3	8	<3	<3	<3			<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Toluene #	<5	<5	<5	<5	<5	<5	<5	<5			<5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Ethylbenzene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
m/p-Xylene #	<2	<2	<2	3	<2	<2	<2	<2			<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<1	<1	<1	<1	<1	<1			<1	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4			<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2			<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3			<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	109	105	105	104	105	105	105	103			<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	104	102	103	102	102	104	104	104			<0	%	TM15/PM10

Client Name: Golder Associates Ltd
Reference: 19128243
Location: Claremont Howth
Contact: Ruth Treacy

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
No deviating sample report results for job 19/14572						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 19/14572

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher, this result is not accredited.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

EMT Job No: 19/14572

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM0	Not available	PM0	No preparation is required.				
TM5	Modified 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16/PM30	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE/Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16/PM30	please refer to PM16/PM30 and PM12 for method details	Yes			
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes			

EMT Job No: 19/14572

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results can be confirmed using GCMS.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	PM0	No preparation is required.				
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	PM0	No preparation is required.	Yes			
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060, APHA Standard Methods for Examination of Water and Wastewater 5310B, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.				

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Golder Associates Ltd
Town Centre House
Dublin Road
Naas
Co Kildare
Ireland

Attention :	Ruth Treacy
Date :	23rd September, 2019
Your reference :	19128243
Our reference :	Test Report 19/15004 Batch 1
Location :	Claremont Howth
Date samples received :	16th September, 2019
Status :	Final report
Issue :	1

Nine samples were received for analysis on 16th September, 2019 of which nine were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:

Paul Boden BSc
Senior Project Manager

Please include all sections of this report if it is reproduced

Client Name: Golder Associates Ltd
Reference: 19128243
Location: Claremont Howth
Contact: Ruth Treacy
EMT Job No: 19/15004

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

EMT Sample No.	1-8	9-16	17-24	25-32	33-40	41-48	49-56	57-64	65-72		LOD/LOR	Units	Method No.
Sample ID	SW1	SW2	SAC	BH06	BH03	BH02	BH05	BH08	BH09				
Depth													
COC No / misc													
Containers	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G				
Sample Date	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019				
Sample Type	Surface Water	Surface Water	Surface Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019				
Dissolved Arsenic #	7.1	<2.5	<2.5	4.0	12.0	6.5	18.9	4.8	11.6		<2.5	ug/l	TM30/PM14
Dissolved Barium #	21	41	11	<3	187	33	38	30	92		<3	ug/l	TM30/PM14
Dissolved Beryllium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM30/PM14
Dissolved Boron	29	33	3090	65	160	91	380	57	138		<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	4.7	<1.5	<1.5	4.3	<1.5	<1.5	<1.5	5.0	<1.5		<1.5	ug/l	TM30/PM14
Dissolved Copper #	<7	<7	<7	<7	<7	<7	<7	<7	<7		<7	ug/l	TM30/PM14
Dissolved Lead #	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM30/PM14
Dissolved Mercury #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM30/PM14
Dissolved Nickel #	<2	<2	<2	<2	<2	27	<2	<2	<2		<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM30/PM14
Dissolved Vanadium #	<1.5	<1.5	<1.5	<1.5	<1.5	2.8	<1.5	<1.5	<1.5		<1.5	ug/l	TM30/PM14
Dissolved Zinc #	<3	16	<3	<3	<3	8	<3	17	<3		<3	ug/l	TM30/PM14
Total Hardness Dissolved (as CaCO3)	217	282	5201 AA	597	435	346	456	452	377		<1	mg/l	TM30/PM14
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM15/PM10
Toluene #	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM15/PM10
Ethylbenzene #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM15/PM10
m/p-Xylene #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	101	100	105	104	107	105	107	105	105		<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	100	98	98	103	103	100	103	102	102		<0	%	TM15/PM10
TPH CWG													
Aliphatics													
>C5-C6 #	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM36/PM12
>C6-C8 #	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM36/PM12
>C8-C10 #	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM36/PM12
>C10-C12 #	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM5/PM16/PM30
>C12-C16 #	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM5/PM16/PM30
>C16-C21 #	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM5/PM16/PM30
>C21-C35 #	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM5/PM16/PM30
Total aliphatics C5-35 #	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM5/TM36/PM12/PM16/PM30

Please see attached notes for all abbreviations and acronyms

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All solid results are expressed on a dry weight basis unless stated otherwise.

Element Materials Technology

Client Name: Golder Associates Ltd
Reference: 19128243
Location: Claremont Howth
Contact: Ruth Treacy
EMT Job No: 19/15004

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, HN=$HN0_3$

EMT Sample No.	1-8	9-16	17-24	25-32	33-40	41-48	49-56	57-64	65-72		LOD/LOR	Units	Method No.
Sample ID	SW1	SW2	SAC	BH06	BH03	BH02	BH05	BH08	BH09				
Depth										Please see attached notes for all abbreviations and acronyms			
COC No / misc													
Containers	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G				
Sample Date	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019				
Sample Type	Surface Water	Surface Water	Surface Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019				
TPH CWG													
Aromatics													
>C5-EC7 #	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM36/PM12
>EC7-EC8 #	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM36/PM12
>EC8-EC10 #	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM36/PM12
>EC10-EC12 #	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM5/PM16/PM30
>EC12-EC16 #	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM5/PM16/PM30
>EC16-EC21 #	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM5/PM16/PM30
>EC21-EC35 #	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM5/PM16/PM30
Total aromatics C5-35 #	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM5/TM36/PM12/PM16/PM30
Total aliphatics and aromatics(C5-35) #	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM5/TM36/PM12/PM16/PM30
PCB 28	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	ug/l	TM17/PM30
PCB 52	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	ug/l	TM17/PM30
PCB 101	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	ug/l	TM17/PM30
PCB 118	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	ug/l	TM17/PM30
PCB 138	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	ug/l	TM17/PM30
PCB 153	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	ug/l	TM17/PM30
PCB 180	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	ug/l	TM17/PM30
Total 7 PCBs	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7		<0.7	ug/l	TM17/PM30
Fluoride	<0.3	0.4	1.3	<0.3	0.3	0.4	<0.3	<0.3	<0.3		<0.3	mg/l	TM173/PM0
Sulphate as SO4 #	9.2	48.9	2339.4	96.2	24.4	59.2	76.5	71.7	46.9		<0.5	mg/l	TM38/PM0
Chloride #	53.7	49.1	17433.7 AB	473.3	112.4	40.7	192.1	46.5	46.5		<0.3	mg/l	TM38/PM0
Nitrate as NO3 #	<0.2	11.0	<0.2	6.4	0.5	2.7	0.7	11.4	0.6		<0.2	mg/l	TM38/PM0
Nitrite as NO2 #	2.46	0.11	<0.02	0.06	<0.02	0.69	0.12	0.07	<0.02		<0.02	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	0.08	0.30	0.09	<0.03	3.07	0.70	4.43	0.09	1.38		<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as NH3 #	0.09	0.36	0.11	<0.03	3.74	0.85	5.39	0.11	1.68		<0.03	mg/l	TM38/PM0
Hexavalent Chromium	<6	<6	<6	<6	<6	<6	<6	<6	<6		<6	ug/l	TM38/PM0
Total Dissolved Chromium III	<6	<6	<6	<6	<6	<6	<6	<6	<6		<6	ug/l	TM0/PM0
Dissolved Organic Carbon #	5	<2	<2	<2	4	5	5	<2	4		<2	mg/l	TM60/PM0
pH #	7.95	7.69	8.21	7.55	7.00	7.64	7.55	7.47	7.46		<0.01	pH units	TM73/PM0
Total Organic Carbon #	5	<2	3	<2	7	4	9	2	6		<2	mg/l	TM60/PM0

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Client Name: Golder Associates Ltd
Reference: 19128243
Location: Claremont Howth
Contact: Ruth Treacy
EMT Job No: 19/15004

SVOC Report : **Liquid**

EMT Sample No.	1-8	9-16	17-24	25-32	33-40	41-48	49-56	57-64	65-72		LOD/LOR	Units	Method No.
Sample ID	SW1	SW2	SAC	BH06	BH03	BH02	BH05	BH08	BH09				
Depth										Please see attached notes for all abbreviations and acronyms			
COC No / misc													
Containers	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G				
Sample Date	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019				
Sample Type	Surface Water	Surface Water	Surface Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019				
SVOC MS													
Phenols													
2-Chlorophenol #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
2-Methylphenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM16/PM30
2-Nitrophenol	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM16/PM30
2,4-Dichlorophenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM16/PM30
2,4-Dimethylphenol	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
2,4,5-Trichlorophenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM16/PM30
2,4,6-Trichlorophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
4-Chloro-3-methylphenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM16/PM30
4-Methylphenol	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
4-Nitrophenol	<10	<10	<10	<10	<10	<10	<10	<10	<10		<10	ug/l	TM16/PM30
Pentachlorophenol	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
Phenol	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
PAHs													
2-Chloronaphthalene #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
2-Methylnaphthalene #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
Naphthalene #	<1	<1	<1	<1	1	<1	<1	<1	1		<1	ug/l	TM16/PM30
Acenaphthylene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.0		<0.5	ug/l	TM16/PM30
Acenaphthene #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
Fluorene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM16/PM30
Phenanthrene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	3.0		<0.5	ug/l	TM16/PM30
Anthracene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2		<0.5	ug/l	TM16/PM30
Fluoranthene #	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	1.6	0.8	5.8		<0.5	ug/l	TM16/PM30
Pyrene #	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	1.2	0.6	5.0		<0.5	ug/l	TM16/PM30
Benzo(a)anthracene #	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	0.9	0.7	5.5		<0.5	ug/l	TM16/PM30
Chrysene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	0.5	4.2		<0.5	ug/l	TM16/PM30
Benzo(bk)fluoranthene #	<1	<1	<1	<1	<1	<1	<1	<1	9		<1	ug/l	TM16/PM30
Benzo(a)pyrene	<1	<1	<1	<1	<1	<1	<1	<1	5		<1	ug/l	TM16/PM30
Indeno(123cd)pyrene	<1	<1	<1	<1	<1	<1	<1	<1	4		<1	ug/l	TM16/PM30
Dibenzo(ah)anthracene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.0		<0.5	ug/l	TM16/PM30
Benzo(ghi)perylene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.4		<0.5	ug/l	TM16/PM30
Phthalates													
Bis(2-ethylhexyl) phthalate	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM16/PM30
Butylbenzyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
Di-n-butyl phthalate #	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5		<1.5	ug/l	TM16/PM30
Di-n-Octyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
Diethyl phthalate #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
Dimethyl phthalate	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30

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Client Name: Golder Associates Ltd
Reference: 19128243
Location: Claremont Howth
Contact: Ruth Treacy
EMT Job No: 19/15004

SVOC Report : **Liquid**

EMT Sample No.	1-8	9-16	17-24	25-32	33-40	41-48	49-56	57-64	65-72				
Sample ID	SW1	SW2	SAC	BH06	BH03	BH02	BH05	BH08	BH09				
Depth										Please see attached notes for all abbreviations and acronyms			
COC No / misc													
Containers	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G				
Sample Date	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019				
Sample Type	Surface Water	Surface Water	Surface Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019		LOD/LOR	Units	Method No.
SVOC MS													
Other SVOCs													
1,2-Dichlorobenzene #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
1,2,4-Trichlorobenzene #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
1,3-Dichlorobenzene #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
1,4-Dichlorobenzene #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
2-Nitroaniline	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
2,4-Dinitrotoluene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM16/PM30
2,6-Dinitrotoluene	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
3-Nitroaniline	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
4-Bromophenylphenylether #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
4-Chloroaniline	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
4-Chlorophenylphenylether #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
4-Nitroaniline	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM16/PM30
Azobenzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM16/PM30
Bis(2-chloroethoxy)methane #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM16/PM30
Bis(2-chloroethyl)ether #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
Carbazole #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM16/PM30
Dibenzofuran #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM16/PM30
Hexachlorobenzene #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
Hexachlorobutadiene #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
Hexachlorocyclopentadiene	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
Hexachloroethane #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
Isophorone #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM16/PM30
N-nitrosodi-n-propylamine #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM16/PM30
Nitrobenzene #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM16/PM30
Surrogate Recovery 2-Fluorobiphenyl	91	115	110	111	107	89	101	114	115		<0	%	TM16/PM30
Surrogate Recovery p-Terphenyl-d14	113	109	108	106	102	90	99	113	114		<0	%	TM16/PM30

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Client Name: Golder Associates Ltd
Reference: 19128243
Location: Claremont Howth
Contact: Ruth Treacy
EMT Job No: 19/15004

VOC Report : **Liquid**

EMT Sample No.	1-8	9-16	17-24	25-32	33-40	41-48	49-56	57-64	65-72				
Sample ID	SW1	SW2	SAC	BH06	BH03	BH02	BH05	BH08	BH09				
Depth										Please see attached notes for all abbreviations and acronyms			
COC No / misc													
Containers	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G	V H HN P G				
Sample Date	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019	13/09/2019				
Sample Type	Surface Water	Surface Water	Surface Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019	16/09/2019				
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2		<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Chloroform #	<2	8	<2	<2	<2	<2	3	4	<2		<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	<3	<3	<3	<3	<3	8	<3	<3		<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Toluene #	<5	<5	<5	<5	<5	<5	<5	<5	<5		<5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Ethylbenzene #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM15/PM10
m/p-Xylene #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	ug/l	TM15/PM10
Styrene	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4	<4	<4	<4	<4	<4	<4		<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3	<3	3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2	<2	<2	<2	<2	<2	<2		<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3	<3	<3	<3	<3	<3	<3		<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	101	100	105	104	107	105	107	105	105		<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	100	98	98	103	103	100	103	102	102		<0	%	TM15/PM10

Client Name: Golder Associates Ltd
Reference: 19128243
Location: Claremont Howth
Contact: Ruth Treacy

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
No deviating sample report results for job 19/15004						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 19/15004

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher, this result is not accredited.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x10 Dilution

AB	x20 Dilution

EMT Job No: 19/15004

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM0	Not available	PM0	No preparation is required.				
TM5	Modified 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16/PM30	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE/Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16/PM30	please refer to PM16/PM30 and PM12 for method details	Yes			
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes			

EMT Job No: 19/15004

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results can be confirmed using GCMS.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	PM0	No preparation is required.				
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	PM0	No preparation is required.	Yes			
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060, APHA Standard Methods for Examination of Water and Wastewater 5310B, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.				

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Golder Associates Ltd
Town Centre House
Dublin Road
Naas
Co Kildare
Ireland

Attention :	Ruth Treacy
Date :	27th September, 2019
Your reference :	19128243
Our reference :	Test Report 19/15459 Batch 1
Location :	Claremont Howth
Date samples received :	23rd September, 2019
Status :	Final report
Issue :	1

Two samples were received for analysis on 23rd September, 2019 of which two were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:

Simon Gomery BSc
Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology Environmental UK Limited
Registered in England and Wales
Registered Office: 10 Lower Grosvenor Place, London, SW1W 0EN
Company Registration No: 11371415

Client Name: Golder Associates Ltd
Reference: 19128243
Location: Claremont Howth
Contact: Ruth Treacy
EMT Job No: 19/15459

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	1-9	10-18									LOD/LOR	Units	Method No.
Sample ID	BH02	BH02											
Depth													
COC No / misc													
Containers	V H HN P G	V H HN P G											
Sample Date	17/09/2019	20/09/2019											
Sample Type	Ground Water	Ground Water											
Batch Number	1	1											
Date of Receipt	23/09/2019	23/09/2019											
Dissolved Arsenic #	7.4	8.6									<2.5	ug/l	TM30/PM14
Dissolved Barium #	50	47									<3	ug/l	TM30/PM14
Dissolved Beryllium	<0.5	<0.5									<0.5	ug/l	TM30/PM14
Dissolved Boron	57	63									<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.5	<0.5									<0.5	ug/l	TM30/PM14
Total Dissolved Chromium #	<1.5	<1.5									<1.5	ug/l	TM30/PM14
Dissolved Copper #	<7	<7									<7	ug/l	TM30/PM14
Dissolved Lead #	<5	<5									<5	ug/l	TM30/PM14
Dissolved Mercury #	<1	<1									<1	ug/l	TM30/PM14
Dissolved Nickel #	3	4									<2	ug/l	TM30/PM14
Dissolved Selenium #	<3	<3									<3	ug/l	TM30/PM14
Dissolved Vanadium #	<1.5	<1.5									<1.5	ug/l	TM30/PM14
Dissolved Zinc #	38	52									<3	ug/l	TM30/PM14
Total Hardness Dissolved (as CaCO3)	396	397									<1	mg/l	TM30/PM14
Methyl Tertiary Butyl Ether #	<0.1	<0.1									<0.1	ug/l	TM15/PM10
Benzene #	<0.5	<0.5									<0.5	ug/l	TM15/PM10
Toluene #	<5	<5									<5	ug/l	TM15/PM10
Ethylbenzene #	<1	<1									<1	ug/l	TM15/PM10
m/p-Xylene #	<2	<2									<2	ug/l	TM15/PM10
o-Xylene #	<1	<1									<1	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	119	120									<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	113	114									<0	%	TM15/PM10
Pesticides													
Organochlorine Pesticides													
Aldrin	<0.01	<0.01									<0.01	ug/l	TM149/PM30
Alpha-HCH (BHC)	<0.01	<0.01									<0.01	ug/l	TM149/PM30
Beta-HCH (BHC)	<0.01	<0.01									<0.01	ug/l	TM149/PM30
Delta-HCH (BHC)	<0.01	<0.01									<0.01	ug/l	TM149/PM30
Dieldrin	<0.01	<0.01									<0.01	ug/l	TM149/PM30
Endosulphan I	<0.01	<0.01									<0.01	ug/l	TM149/PM30
Endosulphan II	<0.01	<0.01									<0.01	ug/l	TM149/PM30
Endosulphan sulphate	<0.01	<0.01									<0.01	ug/l	TM149/PM30
Endrin	<0.01	<0.01									<0.01	ug/l	TM149/PM30
Gamma-HCH (BHC)	<0.01	<0.01									<0.01	ug/l	TM149/PM30
Heptachlor	<0.01	<0.01									<0.01	ug/l	TM149/PM30
Heptachlor Epoxide	<0.01	<0.01									<0.01	ug/l	TM149/PM30
o,p'-Methoxychlor	<0.01	<0.01									<0.01	ug/l	TM149/PM30
p,p'-DDE	<0.01	0.02									<0.01	ug/l	TM149/PM30
p,p'-DDT	0.02	0.02									<0.01	ug/l	TM149/PM30
p,p'-Methoxychlor	<0.01	<0.01									<0.01	ug/l	TM149/PM30
p,p'-TDE	0.04	0.05									<0.01	ug/l	TM149/PM30

Element Materials Technology

Client Name: Golder Associates Ltd
Reference: 19128243
Location: Claremont Howth
Contact: Ruth Treacy
EMT Job No: 19/15459

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

EMT Sample No.	1-9	10-18									LOD/LOR	Units	Method No.
Sample ID	BH02	BH02											
Depth													
COC No / misc													
Containers	V H HN P G	V H HN P G											
Sample Date	17/09/2019	20/09/2019											
Sample Type	Ground Water	Ground Water											
Batch Number	1	1											
Date of Receipt	23/09/2019	23/09/2019											
Pesticides													
Organophosphorus Pesticides													
Azinphos methyl	<0.01	<0.01									<0.01	ug/l	TM149/PM30
Diazinon	<0.01	<0.01									<0.01	ug/l	TM149/PM30
Dichlorvos	<0.01	<0.01									<0.01	ug/l	TM149/PM30
Disulfoton	<0.01	<0.01									<0.01	ug/l	TM149/PM30
Ethion	<0.01	<0.01									<0.01	ug/l	TM149/PM30
Ethyl Parathion (Parathion)	<0.01	<0.01									<0.01	ug/l	TM149/PM30
Fenitrothion	<0.01	<0.01									<0.01	ug/l	TM149/PM30
Malathion	<0.01	<0.01									<0.01	ug/l	TM149/PM30
Methyl Parathion	<0.01	<0.01									<0.01	ug/l	TM149/PM30
Mevinphos	<0.01	<0.01									<0.01	ug/l	TM149/PM30
Acid Herbicides													
Benazolin	<0.1	<0.1									<0.1	ug/l	TM42/PM30
Bentazone	<0.1	<0.1									<0.1	ug/l	TM42/PM30
Bromoxynil	<0.1	<0.1									<0.1	ug/l	TM42/PM30
Clopyralid	<0.1	<0.1									<0.1	ug/l	TM42/PM30
4-CPA	<0.1	<0.1									<0.1	ug/l	TM42/PM30
2,4-D	<0.1	<0.1									<0.1	ug/l	TM42/PM30
2,4-DB	<0.1	<0.1									<0.1	ug/l	TM42/PM30
Dicamba	<0.1	<0.1									<0.1	ug/l	TM42/PM30
Dichloroprop	<0.1	<0.1									<0.1	ug/l	TM42/PM30
Diclofop	<0.1	<0.1									<0.1	ug/l	TM42/PM30
Fenoprop	<0.1	<0.1									<0.1	ug/l	TM42/PM30
Flamprop	<0.1	<0.1									<0.1	ug/l	TM42/PM30
Flamprop-isopropyl	<0.1	<0.1									<0.1	ug/l	TM42/PM30
Ioxynil	<0.1	<0.1									<0.1	ug/l	TM42/PM30
MCPA	<0.1	<0.1									<0.1	ug/l	TM42/PM30
MCPB	<0.1	<0.1									<0.1	ug/l	TM42/PM30
Mecoprop	<0.1	<0.1									<0.1	ug/l	TM42/PM30
Picloram	<0.1	<0.1									<0.1	ug/l	TM42/PM30
Pentachlorophenol	<0.1	<0.1									<0.1	ug/l	TM42/PM30
2,4,5-T	<0.1	<0.1									<0.1	ug/l	TM42/PM30
2,3,6-TBA	<0.1	<0.1									<0.1	ug/l	TM42/PM30
Triclopyr	<0.1	<0.1									<0.1	ug/l	TM42/PM30

Please see attached notes for all abbreviations and acronyms

Element Materials Technology

Client Name: Golder Associates Ltd
Reference: 19128243
Location: Claremont Howth
Contact: Ruth Treacy
EMT Job No: 19/15459

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	1-9	10-18									LOD/LOR	Units	Method No.
Sample ID	BH02	BH02											
Depth													
COC No / misc													
Containers	V H HN P G	V H HN P G											
Sample Date	17/09/2019	20/09/2019											
Sample Type	Ground Water	Ground Water											
Batch Number	1	1											
Date of Receipt	23/09/2019	23/09/2019											
TPH CWG													
Aliphatics													
>C5-C6 #	<10	<10									<10	ug/l	TM36/PM12
>C6-C8 #	<10	<10									<10	ug/l	TM36/PM12
>C8-C10 #	<10	<10									<10	ug/l	TM36/PM12
>C10-C12 #	<5	<5									<5	ug/l	TM5/PM16/PM30
>C12-C16 #	<10	<10									<10	ug/l	TM5/PM16/PM30
>C16-C21 #	<10	<10									<10	ug/l	TM5/PM16/PM30
>C21-C35 #	<10	<10									<10	ug/l	TM5/PM16/PM30
Total aliphatics C5-35 #	<10	<10									<10	ug/l	TM5/TM36/PM12/PM16/PM30
Aromatics													
>C5-EC7 #	<10	<10									<10	ug/l	TM36/PM12
>EC7-EC8 #	<10	<10									<10	ug/l	TM36/PM12
>EC8-EC10 #	<10	<10									<10	ug/l	TM36/PM12
>EC10-EC12 #	<5	<5									<5	ug/l	TM5/PM16/PM30
>EC12-EC16 #	<10	<10									<10	ug/l	TM5/PM16/PM30
>EC16-EC21 #	<10	<10									<10	ug/l	TM5/PM16/PM30
>EC21-EC35 #	<10	<10									<10	ug/l	TM5/PM16/PM30
Total aromatics C5-35 #	<10	<10									<10	ug/l	TM5/TM36/PM12/PM16/PM30
Total aliphatics and aromatics(C5-35) #	<10	<10									<10	ug/l	TM5/TM36/PM12/PM16/PM30
PCB 28	<0.1	<0.1									<0.1	ug/l	TM17/PM30
PCB 52	<0.1	<0.1									<0.1	ug/l	TM17/PM30
PCB 101	<0.1	<0.1									<0.1	ug/l	TM17/PM30
PCB 118	<0.1	<0.1									<0.1	ug/l	TM17/PM30
PCB 138	<0.1	<0.1									<0.1	ug/l	TM17/PM30
PCB 153	<0.1	<0.1									<0.1	ug/l	TM17/PM30
PCB 180	<0.1	<0.1									<0.1	ug/l	TM17/PM30
Total 7 PCBs	<0.7	<0.7									<0.7	ug/l	TM17/PM30
Fluoride	<0.3	<0.3									<0.3	mg/l	TM173/PM0
Sulphate as SO4 #	62.5	61.8									<0.5	mg/l	TM38/PM0
Chloride #	39.2	38.0									<0.3	mg/l	TM38/PM0
Nitrate as NO3 #	6.2	5.8									<0.2	mg/l	TM38/PM0
Nitrite as NO2 #	0.06	0.10									<0.02	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	0.06	0.16									<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as NH3 #	0.08	0.19									<0.03	mg/l	TM38/PM0
Hexavalent Chromium	<6	<6									<6	ug/l	TM38/PM0
Total Dissolved Chromium III	<6	<6									<6	ug/l	TM0/PM0
Dissolved Organic Carbon #	<2	<2									<2	mg/l	TM60/PM0
pH #	7.52	7.57									<0.01	pH units	TM73/PM0

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Element Materials Technology

Client Name: Golder Associates Ltd
Reference: 19128243
Location: Claremont Howth
Contact: Ruth Treacy
EMT Job No: 19/15459

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

EMT Sample No.	1-9	10-18									LOD/LOR	Units	Method No.
Sample ID	BH02	BH02											
Depth													
COC No / misc													
Containers	V H HN P G	V H HN P G											
Sample Date	17/09/2019	20/09/2019											
Sample Type	Ground Water	Ground Water											
Batch Number	1	1											
Date of Receipt	23/09/2019	23/09/2019											
Total Organic Carbon #	<2	4									<2	mg/l	TM60/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Golder Associates Ltd
Reference: 19128243
Location: Claremont Howth
Contact: Ruth Treacy
EMT Job No: 19/15459

SVOC Report : **Liquid**

EMT Sample No.	1-9	10-18											
Sample ID	BH02	BH02											
Depth													
COC No / misc													
Containers	V H HN P G	V H HN P G											
Sample Date	17/09/2019	20/09/2019											
Sample Type	Ground Water	Ground Water											
Batch Number	1	1											
Date of Receipt	23/09/2019	23/09/2019											
SVOC MS													
Phenols													
2-Chlorophenol #	<1	<1										<1	ug/l	TM16/PM30
2-Methylphenol #	<0.5	<0.5										<0.5	ug/l	TM16/PM30
2-Nitrophenol	<0.5	<0.5										<0.5	ug/l	TM16/PM30
2,4-Dichlorophenol #	<0.5	<0.5										<0.5	ug/l	TM16/PM30
2,4-Dimethylphenol	<1	<1										<1	ug/l	TM16/PM30
2,4,5-Trichlorophenol #	<0.5	<0.5										<0.5	ug/l	TM16/PM30
2,4,6-Trichlorophenol	<1	<1										<1	ug/l	TM16/PM30
4-Chloro-3-methylphenol #	<0.5	<0.5										<0.5	ug/l	TM16/PM30
4-Methylphenol	<1	<1										<1	ug/l	TM16/PM30
4-Nitrophenol	<10	<10										<10	ug/l	TM16/PM30
Pentachlorophenol	<1	<1										<1	ug/l	TM16/PM30
Phenol	<1	<1										<1	ug/l	TM16/PM30
PAHs													
2-Chloronaphthalene #	<1	<1										<1	ug/l	TM16/PM30
2-Methylnaphthalene #	<1	<1										<1	ug/l	TM16/PM30
Naphthalene #	<1	<1										<1	ug/l	TM16/PM30
Acenaphthylene #	<0.5	<0.5										<0.5	ug/l	TM16/PM30
Acenaphthene #	<1	<1										<1	ug/l	TM16/PM30
Fluorene #	<0.5	<0.5										<0.5	ug/l	TM16/PM30
Phenanthrene #	<0.5	<0.5										<0.5	ug/l	TM16/PM30
Anthracene #	<0.5	<0.5										<0.5	ug/l	TM16/PM30
Fluoranthene #	<0.5	<0.5										<0.5	ug/l	TM16/PM30
Pyrene #	<0.5	<0.5										<0.5	ug/l	TM16/PM30
Benzo(a)anthracene #	<0.5	<0.5										<0.5	ug/l	TM16/PM30
Chrysene #	<0.5	<0.5										<0.5	ug/l	TM16/PM30
Benzo(bk)fluoranthene #	<1	<1										<1	ug/l	TM16/PM30
Benzo(a)pyrene	<1	<1										<1	ug/l	TM16/PM30
Indeno(123cd)pyrene	<1	<1										<1	ug/l	TM16/PM30
Dibenzo(ah)anthracene #	<0.5	<0.5										<0.5	ug/l	TM16/PM30
Benzo(ghi)perylene #	<0.5	<0.5										<0.5	ug/l	TM16/PM30
Phthalates													
Bis(2-ethylhexyl) phthalate	<5	<5										<5	ug/l	TM16/PM30
Butylbenzyl phthalate	<1	<1										<1	ug/l	TM16/PM30
Di-n-butyl phthalate #	<1.5	<1.5										<1.5	ug/l	TM16/PM30
Di-n-Octyl phthalate	<1	<1										<1	ug/l	TM16/PM30
Diethyl phthalate #	<1	<1										<1	ug/l	TM16/PM30
Dimethyl phthalate	<1	<1										<1	ug/l	TM16/PM30

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Client Name: Golder Associates Ltd
Reference: 19128243
Location: Claremont Howth
Contact: Ruth Treacy
EMT Job No: 19/15459

SVOC Report : **Liquid**

EMT Sample No.	1-9	10-18									LOD/LOR	Units	Method No.
Sample ID	BH02	BH02											
Depth													
COC No / misc													
Containers	V H HN P G	V H HN P G											
Sample Date	17/09/2019	20/09/2019											
Sample Type	Ground Water	Ground Water											
Batch Number	1	1											
Date of Receipt	23/09/2019	23/09/2019											
SVOC MS													
Other SVOCs													
1,2-Dichlorobenzene #	<1	<1									<1	ug/l	TM16/PM30
1,2,4-Trichlorobenzene #	<1	<1									<1	ug/l	TM16/PM30
1,3-Dichlorobenzene #	<1	<1									<1	ug/l	TM16/PM30
1,4-Dichlorobenzene #	<1	<1									<1	ug/l	TM16/PM30
2-Nitroaniline	<1	<1									<1	ug/l	TM16/PM30
2,4-Dinitrotoluene #	<0.5	<0.5									<0.5	ug/l	TM16/PM30
2,6-Dinitrotoluene	<1	<1									<1	ug/l	TM16/PM30
3-Nitroaniline	<1	<1									<1	ug/l	TM16/PM30
4-Bromophenylphenylether #	<1	<1									<1	ug/l	TM16/PM30
4-Chloroaniline	<1	<1									<1	ug/l	TM16/PM30
4-Chlorophenylphenylether #	<1	<1									<1	ug/l	TM16/PM30
4-Nitroaniline	<0.5	<0.5									<0.5	ug/l	TM16/PM30
Azobenzene #	<0.5	<0.5									<0.5	ug/l	TM16/PM30
Bis(2-chloroethoxy)methane #	<0.5	<0.5									<0.5	ug/l	TM16/PM30
Bis(2-chloroethyl)ether #	<1	<1									<1	ug/l	TM16/PM30
Carbazole #	<0.5	<0.5									<0.5	ug/l	TM16/PM30
Dibenzofuran #	<0.5	<0.5									<0.5	ug/l	TM16/PM30
Hexachlorobenzene #	<1	<1									<1	ug/l	TM16/PM30
Hexachlorobutadiene #	<1	<1									<1	ug/l	TM16/PM30
Hexachlorocyclopentadiene	<1	<1									<1	ug/l	TM16/PM30
Hexachloroethane #	<1	<1									<1	ug/l	TM16/PM30
Isophorone #	<0.5	<0.5									<0.5	ug/l	TM16/PM30
N-nitrosodi-n-propylamine #	<0.5	<0.5									<0.5	ug/l	TM16/PM30
Nitrobenzene #	<1	<1									<1	ug/l	TM16/PM30
Surrogate Recovery 2-Fluorobiphenyl	93	128									<0	%	TM16/PM30
Surrogate Recovery p-Terphenyl-d14	93	125									<0	%	TM16/PM30

Please see attached notes for all abbreviations and acronyms

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Client Name: Golder Associates Ltd
Reference: 19128243
Location: Claremont Howth
Contact: Ruth Treacy
EMT Job No: 19/15459

VOC Report : **Liquid**

EMT Sample No.	1-9	10-18									LOD/LOR	Units	Method No.
Sample ID	BH02	BH02											
Depth													
COC No / misc													
Containers	V H HN P G	V H HN P G											
Sample Date	17/09/2019	20/09/2019											
Sample Type	Ground Water	Ground Water											
Batch Number	1	1											
Date of Receipt	23/09/2019	23/09/2019											
VOC MS													
Dichlorodifluoromethane	<2	<2									<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1									<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3									<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1									<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1									<1	ug/l	TM15/PM10
Chloroethane #	<3	<3									<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3									<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3									<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<5	<5									<5	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3									<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3									<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3									<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1									<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2									<2	ug/l	TM15/PM10
Chloroform #	<2	<2									<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2									<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3									<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2									<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2									<2	ug/l	TM15/PM10
Benzene #	<0.5	<0.5									<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	<3									<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2									<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3									<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2									<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2									<2	ug/l	TM15/PM10
Toluene #	<5	<5									<5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2									<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2									<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3									<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2									<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2									<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2									<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2									<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2									<2	ug/l	TM15/PM10
Ethylbenzene #	<1	<1									<1	ug/l	TM15/PM10
m/p-Xylene #	<2	<2									<2	ug/l	TM15/PM10
o-Xylene #	<1	<1									<1	ug/l	TM15/PM10
Styrene	<2	<2									<2	ug/l	TM15/PM10
Bromoform #	<2	<2									<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3									<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4									<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2									<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3									<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3									<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3									<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3									<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3									<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3									<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3									<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3									<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3									<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3									<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3									<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3									<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3									<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2									<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3									<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3									<3	ug/l	TM15/PM10
Naphthalene	<2	<2									<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3									<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	119	120									<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	113	114									<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

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All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Golder Associates Ltd
Reference: 19128243
Location: Claremont Howth
Contact: Ruth Treacy

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
No deviating sample report results for job 19/15459						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 19/15459

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher, this result is not accredited.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

EMT Job No: 19/15459

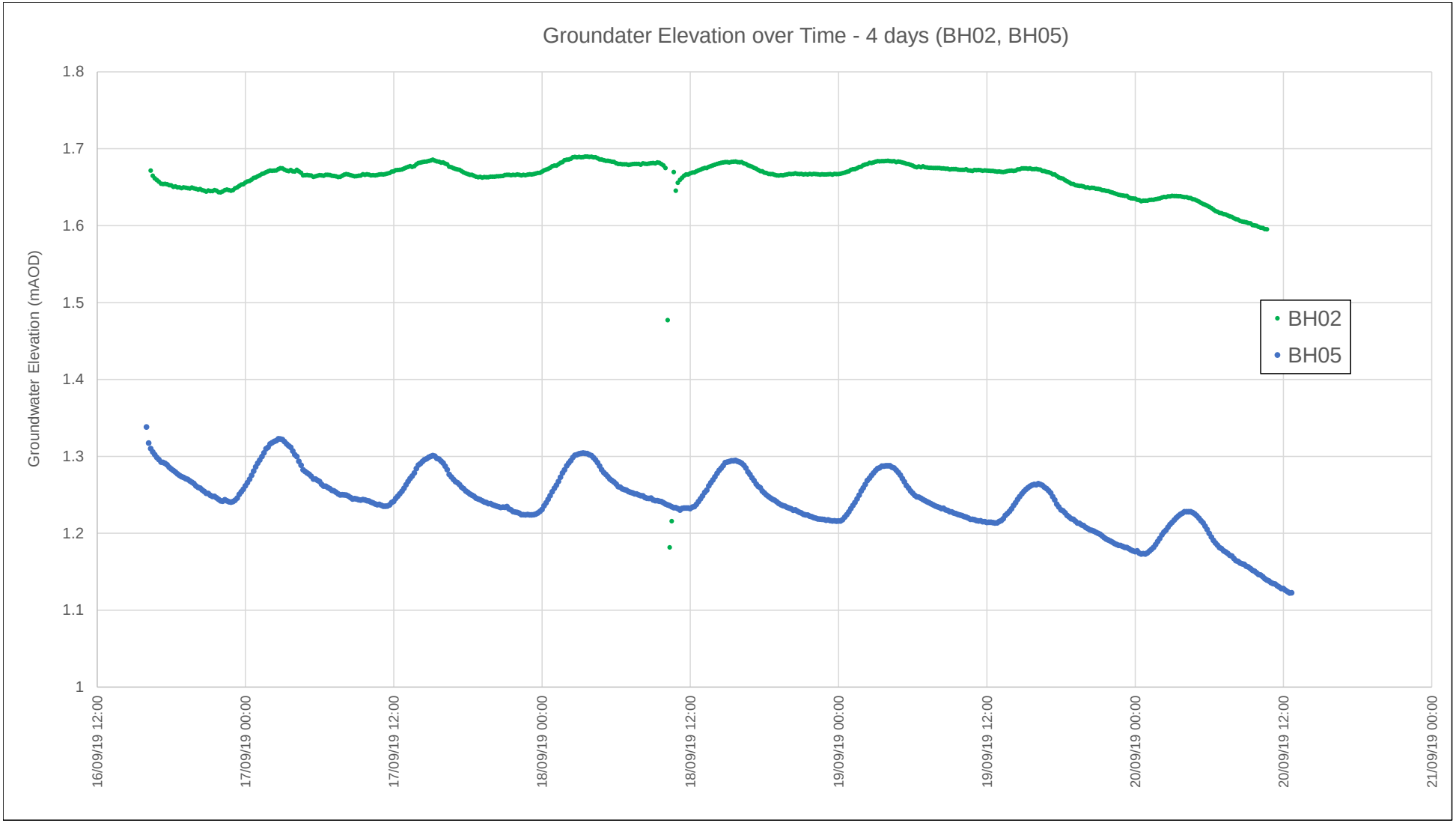
Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM0	Not available	PM0	No preparation is required.				
TM5	Modified 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16/PM30	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE/Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	please refer to TM5 and TM36 for method details	PM12/PM16/PM30	please refer to PM16/PM30 and PM12 for method details	Yes			
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes			

EMT Job No: 19/15459

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results can be confirmed using GCMS.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	PM0	No preparation is required.				
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	PM0	No preparation is required.	Yes			
TM42	Modified US EPA method 8270. Pesticides and herbicides by GC-MS	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060, APHA Standard Methods for Examination of Water and Wastewater 5310B, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM149	Determination of Pesticides by Large Volume Injection on GC Triple Quad MS, based upon USEPA method 8270	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.				

APPENDIX F

Groundwater and Surface Water Monitoring Data


Groundater Elevation over Time - 4 days (BH02, BH05)
Groundwater Elevation (mAOD)
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
16/09/19 12:00
17/09/19 00:00
17/09/19 12:00
18/09/19 00:00
18/09/19 12:00
19/09/19 00:00
19/09/19 12:00
20/09/19 00:00
20/09/19 12:00
21/09/19 00:00
BH02
BH05

GOLDER

SLUG TEST FORM GAP FORM NO. 52

GOLDER

Rising Head Test / Falling Head Test

PROJECT INFORMATION

Project Number / Task: 19128243
Client: ATLAS
Site Location: HOWTH

Date: 25/9/19
By: C.F

GROUNDWATER WELL DATA

WELL ID: BH02

Information from site:		*Information from drillers log*	
Well Depth (m)	8.41m	Screen (from - to)	3.2 - 7 6.2m
Stick-up length (m)	0.28m	Gravel pack (from - to)	2.7 - 6.2m (precise point of reference)
Pipe diameter (m)	50mm	Drilled diameter (m)	8 (precise point of reference)
Initial WL (m TOC)	2.57	Aquifer thickness (from - to)	— (m below GL)
Well location (GPS) Referential:	E: N: See Log	Type of formation (clay/sand/...)	Rock
		Confined / unconfined ?	In Conf.

SLUG TEST

☐ Rising Head Test (removal of water volume - pumping/bailing)

☐ Falling Head Test (insertion of air/solid slug)

Volume of slug injected /removed			Initial displacement = initial WL - WL at start of test		
Time (hh:mm:ss) start of test			Time (date & hh:mm:ss) end of test		
Manual WL at start of test*(m TOC)			Manual WL at end of test (m TOC)		

*If slug added, maximum water level created by insertion of slug

If slug removed, minimum water level created from removal of slug

Type of data record (select as appropriate)

☑ Manual — Time in seconds or minutes (or real time)

S	10	20	30	40	50	60	70	80	90 / 100
Time (t)									
Depth to Water (m TOC)	2.57	2.52	2.54	2.54	2.52	2.54	2.55	2.55	2.53

If logger used, manual data SHOULD be taken to validate logger data

☐ **Data Logger** Type: _____ Logger name/Serial N0 : _____

Rated Depth Range (m head): _____

Installation Depth / WL reading before start of test (m TOC) (precise): _____

File/ test name : _____

Data downloaded and checked: YES / NO

If Yes, Name of exported file: _____

☐ Vented
☐ Unvented
☐ Barologger used

OBSERVATIONS

Weather Conditions:

Temperature: 17°C
Precipitation : N/A
Wind: light
Moon (Tide):

☐ Still ☑ Light Strong ☐ Gusty

☐ high tide: _____ ☐ low tide: _____

Notes: _____

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SLUG TEST FORM GAP FORM NO. 52

GOLDER

Rising Head Test / Falling Head Test

PROJECT INFORMATION

Project Number / Task: 19128243
Client: ATLAS
Site Location: ITOWTH

Date: 20/9/19
By: CF

GROUNDWATER WELL DATA

WELL ID: BH02 Continued

Information from site:		*Information from drillers log*	
Well Depth (m)		Screen (from - to)	
Stick-up length (m)		Gravel pack (from - to)	(precise point of reference)
Pipe diameter (m)		Drilled diameter (m)	(precise point of reference)
Initial WL (m TOC)		Aquifer thickness (from - to)	(m below GL)
Well location (GPS)	E:	Type of formation (clay/sand/...)	
Referential:	N:	Confined / unconfined ?	

SLUG TEST

☑ Rising Head Test (removal of water volume - pumping/bailing)

☐ Falling Head Test (insertion of air/solid slug)

Volume of slug injected /removed			Initial displacement = initial WL - WL at start of test		
Time (hh:mm:ss) start of test		10:00 am	Time (date & hh:mm:ss) end of test		
Manual WL at start of test*(m TOC)		2.57	Manual WL at end of test (m TOC)		

*If slug added, maximum water level created by insertion of slug

If slug removed, minimum water level created from removal of slug

Type of data record (select as appropriate)

☐ **Manual** Time in seconds or minutes (or real time)

(5)

	1	2	3	4	5	6	7	8	10
Time (t)	100	120	130	140					
Depth to Water (m TOC)	2.56	2.56	2.57	2.57					

If logger used, manual data SHOULD be taken to validate logger data

☐ **Data Logger** n/a

Type: _____ Logger name/Serial N0 : _____

Rated Depth Range (m head): _____

Installation Depth / WL reading before start of test (m TOC) (precise): _____

File/ test name : _____

Data downloaded and checked: YES / NO

If Yes, Name of exported file: _____

☐ Vented
☐ Unvented
☐ Barologger used

OBSERVATIONS

Weather Conditions:

Temperature: _____
Precipitation : _____
Wind: ☐ Still ☐ Light Strong ☐ Gusty
Moon (Tide): ☐ high tide: _____ ☐ low tide: _____

Notes: _____

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SLUG TEST FORM GAP FORM NO. 52

GOLDER

Rising Head Test / Falling Head Test

PROJECT INFORMATION

Project Number / Task: _____ **Date:** _____
Client: _____ **By:** _____
Site Location: _____

GROUNDWATER WELL DATA

WELL ID: BH02 Cont.

Information from site:		*Information from drillers log*	
Well Depth (m)		Screen (from - to)	
Stick-up length (m)		Gravel pack (from - to)	(precise point of reference)
Pipe diameter (m)		Drilled diameter (m)	(precise point of reference)
Initial WL (m TOC)		Aquifer thickness (from - to)	(m below GL)
Well location (GPS)	E:	Type of formation (clay/sand/...)	
Referential:	N:	Confined / unconfined ?	

SLUG TEST

☐ Rising Head Test
(removal of water volume - pumping/bailing)

☐ Falling Head Test
(insertion of air/solid slug)

Volume of slug injected /removed			Initial displacement = initial WL - WL at start of test		
Time (hh:mm:ss) start of test			Time (date & hh:mm:ss) end of test		
Manual WL at start of test*(m TOC)			Manual WL at end of test (m TOC)		

*If slug added, maximum water level created by insertion of slug
If slug removed, minimum water level created from removal of slug

Type of data record (select as appropriate)

Slug Out

☑ **Manual** Time in seconds or minutes (or real time)

	1	2	3	4	5	6	7	8	10	
Time (t)	10	20	30	40	50	60	70	80	90	100
Depth to Water (m TOC)	2.76	2.76	2.74	2.72	2.72	2.72	2.71	2.70	2.72	2.72

If logger used, manual data SHOULD be taken to validate logger data

☐ **Data Logger** Type: _____ **Logger name/Serial N0 :** _____
Rated Depth Range (m head): _____
Installation Depth / WL reading before start of test (m TOC) (precise): _____
File/ test name : _____
Data downloaded and checked: YES / NO
If Yes, Name of exported file: _____

☐ Vented
☐ Unvented
☐ Barologger used

OBSERVATIONS

Weather Conditions:
Temperature: _____
Precipitation : _____
Wind: ☐ Still ☐ Light Strong ☐ Gusty
Moon (Tide): ☐ high tide: _____ ☐ low tide: _____

Notes: _____

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SLUG TEST FORM GAP FORM NO. 52

GOLDER

Rising Head Test / Falling Head Test

PROJECT INFORMATION

Project Number / Task: _____ **Date:** _____
Client: _____ **By:** _____
Site Location: _____

GROUNDWATER WELL DATA

WELL ID: BH02 Cont 4/5

Information from site:		*Information from drillers log*	
Well Depth (m)		Screen (from - to)	
Stick-up length (m)		Gravel pack (from - to)	(precise point of reference)
Pipe diameter (m)		Drilled diameter (m)	(precise point of reference)
Initial WL (m TOC)		Aquifer thickness (from - to)	(m below GL)
Well location (GPS)	E:	Type of formation (clay/sand/...)	
Referential:	N:	Confined / unconfined ?	

SLUG TEST

☐ Rising Head Test (removal of water volume - pumping/bailing)

☐ Falling Head Test (insertion of air/solid slug)

Volume of slug injected /removed			Initial displacement = initial WL - WL at start of test		
Time (hh:mm:ss) start of test			Time (date & hh:mm:ss) end of test		
Manual WL at start of test*(m TOC)			Manual WL at end of test (m TOC)		

*If slug added, maximum water level created by insertion of slug

If slug removed, minimum water level created from removal of slug

Type of data record (select as appropriate)

☑ Manual — Time in seconds or minutes (or real time)

Slug Out

	1	2	3	4	5	6	7	8	10
Time (t)	11s	12s	13s	14s	15s	16s	17s	18s	4min 5min
Depth to Water (m TOC)	2.69	2.65	2.68	2.68	2.67	2.67	2.67	2.66	2.66 2.66

If logger used, manual data SHOULD be taken to validate logger data

☐ **Data Logger** Type: _____ Logger name/Serial N0 : _____

Rated Depth Range (m head): _____

Installation Depth / WL reading before start of test (m TOC) (precise): _____

File/ test name : _____

Data downloaded and checked: YES / NO

If Yes, Name of exported file: _____

☐ Vented ☐ Unvented ☐ Barologger used

OBSERVATIONS

Weather Conditions: Temperature: _____

Precipitation : _____

Wind: ☐ Still ☐ Light Strong ☐ Gusty

Moon (Tide): ☐ high tide: _____ ☐ low tide: _____

Notes: _____

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SLUG TEST FORM GAP FORM NO. 52

GOLDER

Rising Head Test / Falling Head Test

PROJECT INFORMATION

Project Number / Task: _____ **Date:** _____
Client: _____ **By:** _____
Site Location: _____

GROUNDWATER WELL DATA

WELL ID: BH2 Cont 5/5.

Information from site:		*Information from drillers log*	
Well Depth (m)		Screen (from - to)	
Stick-up length (m)		Gravel pack (from - to)	(precise point of reference)
Pipe diameter (m)		Drilled diameter (m)	(precise point of reference)
Initial WL (m TOC)		Aquifer thickness (from - to)	(m below GL)
Well location (GPS)	E:	Type of formation (clay/sand/...)	
Referential:	N:	Confined / unconfined ?	

SLUG TEST

☐ Rising Head Test (removal of water volume - pumping/baiing)

☐ Falling Head Test (insertion of air/solid slug)

Volume of slug injected /removed			Initial displacement = initial WL - WL at start of test		
Time (hh:mm:ss) start of test			Time (date & hh:mm:ss) end of test		
Manual WL at start of test*(m TOC)			Manual WL at end of test (m TOC)		

*If slug added, maximum water level created by insertion of slug

If slug removed, minimum water level created from removal of slug

Type of data record (select as appropriate)

☑ **Manual** Time in seconds or minutes (or real time)

Slug Out

	1	2	3	4	5	6	7	8	10
Time (t)	1 min	2 min	6 min	8	10	11	12	13	14
Depth to Water (m TOC)	2.65	2.64	2.64	2.64	2.64	2.64	2.64	2.64	2.64

If logger used, manual data SHOULD be taken to validate logger data

☐ **Data Logger** Type: _____ Logger name/Serial N0 : _____

Rated Depth Range (m head): _____

Installation Depth / WL reading before start of test (m TOC) (precise): _____

File/ test name : _____

Data downloaded and checked: YES / NO

If Yes, Name of exported file: _____

☐ Vented
☐ Unvented
☐ Barologger used

OBSERVATIONS

Weather Conditions:

Temperature: _____

Precipitation : _____

Wind: ☐ Still ☐ Light Strong ☐ Gusty

Moon (Tide): ☐ high tide: _____ ☐ low tide: _____

Notes: _____

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SLUG TEST FORM GAP FORM NO. 52

GOLDER

Rising Head Test / Falling Head Test

PROJECT INFORMATION

Project Number / Task: 19126243
Client: ATLAS GP
Site Location: HOWTH

Date: 20-9-19
By: CE.

GROUNDWATER WELL DATA

WELL ID: BH05

Information from site:		*Information from drillers log*	
Well Depth (m)	8.02 m	Screen (from - to)	5.2 - 8.2
Stick-up length (m)	0.29	Gravel pack (from - to)	3.0 - 8.2 (precise point of reference)
Pipe diameter (m)	50 mm	Drilled diameter (m)	6" (precise point of reference)
Initial WL (m TOC)	3.40 m	Aquifer thickness (from - to)	- (m below GL)
Well location (GPS) Referential:	E: N: See log	Type of formation (clay/sand/...)	Limestone
		Confined / unconfined ?	-

SLUG TEST

☑ Rising Head Test (removal of water volume - pumping/bailing)

☐ Falling Head Test (insertion of air/solid slug)

Volume of slug injected /removed			Initial displacement = initial WL - WL at start of test		
Time (hh:mm:ss) start of test		12.50.	Time (date & hh:mm:ss) end of test		
Manual WL at start of test*(m TOC)		3.4	Manual WL at end of test (m TOC)		

*If slug added, maximum water level created by insertion of slug

If slug removed, minimum water level created from removal of slug

Type of data record (select as appropriate)

☐ **Manual** Time in seconds or minutes (or real time)

	1	2	3	4	5	6	7	8	10
Time (t) s	10	20	30	40	50	60	70	80	90
Depth to Water (m TOC)	3.07	3.14	3.17	3.18	3.20	3.21	3.22	3.23	3.23

If logger used, manual data SHOULD be taken to validate logger data

☐ **Data Logger** Type: _____ Logger name/Serial N0 : _____

Rated Depth Range (m head): _____

Installation Depth / WL reading before start of test (m TOC) (precise): _____

File/ test name : _____

Data downloaded and checked: YES / NO

If Yes, Name of exported file: _____

☐ Vented
☐ Unvented
☐ Barologger used

OBSERVATIONS

Weather Conditions:

Temperature: Dry
Precipitation : Nil
Wind: ☐ Still ☑ Light Strong ☐ Gusty
Moon (Tide): ☐ high tide: _____ ☐ low tide: _____

Notes: _____

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SLUG TEST FORM GAP FORM NO. 52

GOLDER

Rising Head Test / Falling Head Test

PROJECT INFORMATION

Project Number / Task: 19128243
Client: ATLAS GP
Site Location: HOLTON

Date: 20-9-17
By: [illegible]

GROUNDWATER WELL DATA

WELL ID: BH05 Continued

Information from site:		*Information from drillers log*	
Well Depth (m)		Screen (from - to)	
Stick-up length (m)		Gravel pack (from - to)	(precise point of reference)
Pipe diameter (m)		Drilled diameter (m)	(precise point of reference)
Initial WL (m TOC)		Aquifer thickness (from - to)	(m below GL)
Well location (GPS)	E:	Type of formation (clay/sand/...)	
Referential:	N:	Confined / unconfined ?	

SLUG TEST

☐ Rising Head Test (removal of water volume - pumping/bailing)

☐ Falling Head Test (insertion of air/solid slug)

Volume of slug injected /removed			Initial displacement = initial WL - WL at start of test		
Time (hh:mm:ss) start of test			Time (date & hh:mm:ss) end of test		
Manual WL at start of test*(m TOC)			Manual WL at end of test (m TOC)		

*If slug added, maximum water level created by insertion of slug

If slug removed, minimum water level created from removal of slug

Type of data record (select as appropriate)

☐ **Manual** Time in seconds or minutes (or real time)

	1	2	3	4	5	6	7	8	10
Time (t)	100	110	120	3min	4min	5min	6m	7m	8m
Depth to Water (m TOC)	3.23	3.24	3.24	3.26	3.27	3.28	3.28	3.28	3.29

If logger used, manual data SHOULD be taken to validate logger data

☐ **Data Logger** Type: _____ Logger name/Serial N0 : _____

Rated Depth Range (m head): _____

Installation Depth / WL reading before start of test (m TOC) (precise): _____

File/ test name : _____

Data downloaded and checked: YES / NO

If Yes, Name of exported file: _____

☐ Vented
☐ Unvented
☐ Barologger used

OBSERVATIONS

Weather Conditions:

Temperature: 13°
Precipitation : Dry
Wind: ☐ Still ☐ Light ☐ Strong ☐ Gusty
Moon (Tide): ☐ high tide: _____ ☐ low tide: _____

Notes: _____

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RL0
GAP FORM NO. 52
FEBRUARY 2018

SLUG TEST FORM GAP FORM NO. 52

GOLDER

Rising Head Test / Falling Head Test

PROJECT INFORMATION

Project Number / Task: 19128243
Client:
Site Location:

Date: 20-9-19
By: CF

GROUNDWATER WELL DATA

WELL ID: BH05 Cont

Information from site:		*Information from drillers log*	
Well Depth (m)		Screen (from - to)	
Stick-up length (m)		Gravel pack (from - to)	(precise point of reference)
Pipe diameter (m)		Drilled diameter (m)	(precise point of reference)
Initial WL (m TOC)		Aquifer thickness (from - to)	(m below GL)
Well location (GPS)	E:	Type of formation (clay/sand/...)	
Referential:	N:	Confined / unconfined ?	

SLUG TEST

☑ Rising Head Test (removal of water volume - pumping/bailing)

☐ Falling Head Test (insertion of air/solid slug)

Volume of slug injected /removed			Initial displacement = initial WL - WL at start of test		
Time (hh:mm:ss) start of test			Time (date & hh:mm:ss) end of test		
Manual WL at start of test*(m TOC)			Manual WL at end of test (m TOC)		

*If slug added, maximum water level created by insertion of slug

If slug removed, minimum water level created from removal of slug

Type of data record (select as appropriate)

☐ **Manual** Time in seconds or minutes (or real time)

	1	2	3	4	5	6	7	8	9	10	18
Time (t)	9mn	10	11	12	13	14	15	16	17		
Depth to Water (m TOC)	3.29	3.29	3.30	3.30	3.30	3.30	3.31	3.31	3.31		3.32

If logger used, manual data SHOULD be taken to validate logger data

☐ **Data Logger** Type: _____ Logger name/Serial N0 : _____

Rated Depth Range (m head): _____

Installation Depth / WL reading before start of test (m TOC) (precise): _____

File/ test name : _____

Data downloaded and checked: YES / NO

If Yes, Name of exported file: _____

☐ Vented
☐ Unvented
☐ Barologger used

OBSERVATIONS

Weather Conditions:

Temperature: _____
Precipitation : _____
Wind: ☐ Still ☐ Light Strong ☐ Gusty
Moon (Tide): ☐ high tide: _____ ☐ low tide: _____

Notes: _____

3/3

SLUG TEST FORM GAP FORM NO. 52

GOLDER

Rising Head Test / Falling Head Test

PROJECT INFORMATION

Project Number / Task: 19128243
Client: ATLAS GP
Site Location: HOWITH

Date: 29-9-19
By: EE

GROUNDWATER WELL DATA

WELL ID: BH06

Information from site:		*Information from drillers log*	
Well Depth (m)	5.20m	Screen (from - to)	5.0 - 3.0m
Stick-up length (m)	0.29.	Gravel pack (from - to) (precise point of reference)	4 - 8.0.
Pipe diameter (m)	50mm	Drilled diameter (m) (precise point of reference)	6"
Initial WL (m TOC)	2.82	Aquifer thickness (from - to) (m below GL)	—
Well location (GPS) E:		Type of formation (clay/sand/...)	limestone
Referential: N:	see log	Confined / unconfined ?	—

SLUG TEST

☑ Rising Head Test (removal of water volume - pumping/baiting)

☐ Falling Head Test (insertion of air/solid slug)

Volume of slug injected /removed			Initial displacement = initial WL - WL at start of test		
Time (hh:mm:ss) start of test		13 30.	Time (date & hh:mm:ss) end of test		
Manual WL at start of test*(m TOC)		2.82	Manual WL at end of test (m TOC)		

*If slug added, maximum water level created by insertion of slug

If slug removed, minimum water level created from removal of slug

Type of data record (select as appropriate)

☑ Manual — Time in seconds or minutes (or real time)

Slug IN

	1	2	3	4	5	6	7	8	10
Time (t)	10	20	30	40	50	60	70	80	90
Depth to Water (m TOC)	2.54	2.64	2.71	2.75	2.77	2.78	2.79	2.81	2.81

If logger used, manual data SHOULD be taken to validate logger data

☐ **Data Logger** Type: _____ Logger name/Serial N0 : _____

Rated Depth Range (m head): _____

Installation Depth / WL reading before start of test (m TOC) (precise): _____

File/ test name : _____

Data downloaded and checked: YES / NO

If Yes, Name of exported file: _____

☐ Vented
☐ Unvented
☐ Barologger used

OBSERVATIONS

Weather Conditions:

Temperature: _____
Precipitation : _____
Wind: ☐ Still ☐ Light Strong ☐ Gusty
Moon (Tide): ☐ high tide: _____ ☐ low tide: _____

Notes: _____

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SLUG TEST FORM GAP FORM NO. 52

GOLDER

Rising Head Test / Falling Head Test

PROJECT INFORMATION

Project Number / Task: _____ **Date:** _____
Client: _____ **By:** _____
Site Location: _____

GROUNDWATER WELL DATA

WELL ID: BHD6

Information from site:		*Information from drillers log*	
Well Depth (m)		Screen (from - to)	
Stick-up length (m)		Gravel pack (from - to)	(precise point of reference)
Pipe diameter (m)		Drilled diameter (m)	(precise point of reference)
Initial WL (m TOC)		Aquifer thickness (from - to)	(m below GL)
Well location (GPS)	E:	Type of formation (clay/sand/...)	
Referential:	N:	Confined / unconfined ?	

SLUG TEST

☐ Rising Head Test (removal of water volume - pumping/bailing)

☐ Falling Head Test (insertion of air/solid slug)

Volume of slug injected /removed			Initial displacement = initial WL - WL at start of test		
Time (hh:mm:ss) start of test			Time (date & hh:mm:ss) end of test		
Manual WL at start of test*(m TOC)			Manual WL at end of test (m TOC)		

*If slug added, maximum water level created by insertion of slug

If slug removed, minimum water level created from removal of slug

Type of data record (select as appropriate)

☐ **Manual** Time in seconds or minutes (or real time)

	1	2	3	4	5	6	7	8	10
Time (t)	120	110	120						
Depth to Water (m TOC)	2.81	2.81	2.52						

Slug 1/2

If logger used, manual data SHOULD be taken to validate logger data

☐ **Data Logger** Type: _____ Logger name/Serial N0 : _____

Rated Depth Range (m head):_____

Installation Depth / WL reading before start of test (m TOC) (precise):_____

File/ test name : _____

Data downloaded and checked: YES / NO

If Yes, Name of exported file: _____

☐ Vented
☐ Unvented
☐ Barologger used

OBSERVATIONS

Weather Conditions:

Temperature: 17°C

Precipitation : Dry

Wind: ☐ Still ☐ Light Strong ☐ Gusty

Moon (Tide): ☐ high tide: _____ ☐ low tide: _____

Notes: _____

2/3

SLUG TEST FORM GAP FORM NO. 52

GOLDER

Rising Head Test / Falling Head Test

PROJECT INFORMATION

Project Number / Task: _____ **Date:** _____
Client: _____ **By:** _____
Site Location: _____

GROUNDWATER WELL DATA

WELL ID: BH 6

Information from site:		*Information from drillers log*	
Well Depth (m)		Screen (from - to)	
Stick-up length (m)		Gravel pack (from - to)	(precise point of reference)
Pipe diameter (m)		Drilled diameter (m)	(precise point of reference)
Initial WL (m TOC)		Aquifer thickness (from - to)	(m below GL)
Well location (GPS)	E:	Type of formation (clay/sand/...)	
Referential:	N:	Confined / unconfined ?	

SLUG TEST

☐ Rising Head Test (removal of water volume - pumping/baiking)

☐ Falling Head Test (insertion of air/solid slug)

Volume of slug injected /removed			Initial displacement = initial WL - WL at start of test		
Time (hh:mm:ss) start of test			Time (date & hh:mm:ss) end of test		
Manual WL at start of test*(m TOC)			Manual WL at end of test (m TOC)		

*If slug added, maximum water level created by insertion of slug

If slug removed, minimum water level created from removal of slug

Type of data record (select as appropriate)

☐ **Manual** Time in seconds or minutes (or real time)

Slug out

	1	2	3	4	5	6	7	8	10	60	If logger used, manual data SHOULD be taken to validate logger data	110
Time (t)	10	20	30	40	50	60	70	80	90			
Depth to Water (m TOC)	2.95	2.92	2.90	2.88	2.85	2.85	2.84	2.84	2.83	2.83		2.82

☐ **Data Logger** Type: _____ Logger name/Serial N0 : _____

Rated Depth Range (m head): _____

Installation Depth / WL reading before start of test (m TOC) (precise): _____

File/ test name : _____

Data downloaded and checked: YES / NO

If Yes, Name of exported file: _____

☐ Vented
☐ Unvented
☐ Barologger used

OBSERVATIONS

Weather Conditions:

Temperature: Dry Hot

Precipitation :

Wind: ☐ Still ☑ Light ☐ Strong ☐ Gusty

Moon (Tide): ☐ high tide: _____ ☐ low tide: _____

Notes: _____

3/3

Claremont - Ground/Surface Water Water Field Monitoring Data

Borehole ID	Date	Corrected GW level (mbgl)	Dissolved Oxygen (%)	Dissolved Oxygen (ppm)	Temperature (°C)	pH	ORP (mV)	Specific Conductivity (µS/cm)	Actual Conductivity (µS/cm)	NAPL	Turbidity	Colour	Odour
BH02	**4-Sep-2019**	**BLOCKED**											
BH03	**4-Sep-2019**	2.13	33.7	3.17		6.59	-126.8	1667.6	1395.5	None	Turbid	Light brown	None
BH05	**4-Sep-2019**	2.92	31.4	3.06	15.74	7.3	-75.5	1229.8	1006.7	None	Turbid	Light brown	None
BH06	**4-Sep-2019**	2.42	42.87	4.25	16.17	7.25	71.7	2888	2368	None	Turbid	Light brown	Slight hydrocarbon
BH08	**4-Sep-2019**	2.82	40.6	4.39	18.25	7.38	27.3	1177	967.19	None	Very turbid	Light Brown	None
SW1	**3-Sep-2019**	NA	-	9.86	16.15	7.53	104.4	-	503	None	Slightly turbid	clear	None
SAC	**4-Sep-2019**	NA	-	6.82	17.9	7.68	88.6	-	57540	None	Slightly turbid	clear	Salty
BH03	**9-Sep-2019**	2.12	33.25	3.25	17.43	6.7	-144.7	-	1354	None	Turbid	Light brown	None
BH05	**9-Sep-2019**	3.19	38.07	3.86	15.74	7.5	-23.8	-	1581.4	None	Turbid	Light brown	None
BH06	**9-Sep-2019**	2.49	43.98	4.38	15.07	7.16	60.2	-	2464	None	Turbid	Light brown	Slight hydrocarbon
BH08	**9-Sep-2019**	2.9	39.61	3.99	16.82	7.62	25.4	-	951	None	Very turbid	Light Brown	None
BH09	**9-Sep-2019**	1.95	-	5.55	15.7	7.21	15.3	-	1855	None	Very turbid	Dark	None
BH02	**13-Sep-2019**	2.32	38.77	3.96	17.6	7.45	-4.4	1179	1015	None	Very turbid	light brown	None
BH03	**13-Sep-2019**	2.12	36.52	3.68	17.17	6.76	-125	1589	1315	none	Very turbid	Brown	Slight chemical
BH05	**13-Sep-2019**	3.15	38.19	3.65	17.82	7.26	22.5	2044	1789.9	None	Very turbid	Grey	None
BH06	**13-Sep-2019**	2.51	48.9	4.82	17.1	7.08	-78.6	3055	2590	None	Turbid	Grey	Slight Hydrocarbon
BH08	**13-Sep-2019**	2.94	60.67	5.95	17.6	7.23	46.9	1287	1101	None	Very turbid	Light brown	None
BH09	**13-Sep-2019**	2.13	73	7.2	17.35	7.29	54	1073	915	none	Very turbid	Dark Grey	none
SW1	**13-Sep-2019**	N/A	93.85	9.19	17.4	7.9	161	723	617	None	Very turbid	Grey	None
SW2	**13-Sep-2019**	N/A	68.15	6.66	17.16	7.43	45.9	1974	1678	None	Very turbid	Clear	None
SAC	**13-Sep-2019**	N/A	181.63	13.83	18.5	7.78	74.3	56892	49900	None	None	Clear	Salty
BH02	**18-Sep-2019**	2.31	37.2	3.6	14.04	6.93	58.7	1458	1037	None	Turbid	Light brown	None
BH02	**20-Sep-2019**	2.24	45.8	4.66	15.3	6.93	67.8	-	942	None	Very turbid	Light brown	None

APPENDIX G

Ground Gas Monitoring Data

Ground Gas Monitoring Results - Round 1

Borehole ID	Date	Methane (% v/v)		Carbon dioxide (% v/v)		Oxygen (% v/v)		Hydrogen sulphide (ppm)		Carbon monoxide (ppm)		Atmospheric Pressure (mb)	Relative Pressure (mb)	Flow rate (l/h)	GSV - Methane (l/hr)	GSV - Carbon Dioxide (l/hr)
		Peak	Stable	Peak	Stable	Peak	Stable	Peak	Stable	Peak	Stable					
BH01	11/09/2019	0.0	0.0	10.3	10.3	9.3	9.3	0	0	0	0	1021	-0.68	0.1	0.0000	0.0103
BH02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03	11/09/2019	0.0	0.0	1.1	1.1	19.4	19.4	0	0	0	0	1021	-0.81	-0.3	0.0000	-0.0033
BH04	11/09/2019	0.0	0.0	0.1	0.1	20.2	20.2	0	0	0	0	1021	1.77	0.1	0.0000	0.0001
BH05	11/09/2019	0.2	0.1	0.5	0.1	20.2	20.2	0	0	4	4	1021	-0.93	0.2	0.0004	0.0010
BH06	11/09/2019	0.0	0.0	0.0	0.0	20.2	20.2	0	0	0	0	1021	-0.74	0	0.0000	0.0000
BH07	11/09/2019	0.0	0.0	0.5	0.0	19.3	19.3	0	0	0	0	1020	1.04	0	0.0000	0.0000
BH08	11/09/2019	0.0	0.0	4.2	4.2	15.1	15.1	0	0	2	2	1021	2.86	-0.3	0.0000	-0.0126
BH09	11/09/2019	0.0	0.0	2.2	2.2	18.3	18.3	0	0	0	0	1022	6.86	0.3	0.0000	0.0066

Notes: Gas Screening Value (GSV) calaculated as per CIRIA C665, 2007 (assumes Situation A - housing with basement risk assessment approach)

Ground Gas Monitoring Results - Round 2

Borehole ID	Date	Methane (% v/v)		Carbon dioxide (% v/v)		Oxygen (% v/v)		Hydrogen sulphide (ppm)		Carbon monoxide (ppm)		Atmospheric Pressure (mb)	Relative Pressure (mb)	Flow rate (l/h)	GSV - Methane (l/hr)	GSV - Carbon Dioxide (l/hr)
		Peak	Stable	Peak	Stable	Peak	Stable	Peak	Stable	Peak	Stable					
BH01	18/09/2019	0.0	0.0	10.3	10.2	7.8	7.7	0	0	0	0	1036	-0.49	-1.30	0.0000	-0.1339
BH02	18/09/2019	0.1	0.0	0.8	0.7	19.4	19.4	0	0	0	0	1043	3.66	0.10	0.0001	0.0008
BH03	18/09/2019	0.1	0.1	6.0	1.0	19.8	19.8	0	0	0	0	1036	0.05	0.10	0.0001	0.0060
BH04	18/09/2019	0.0	0.0	0.4	0.4	19.4	19.4	0	0	0	0	1041	-1.60	0.20	0.0000	0.0008
BH05	18/09/2019	0.0	0.0	0.1	0.1	19.9	19.9	0	0	0	0	1041	0.01	1.00	0.0000	0.0010
BH06	18/09/2019	0.4	0.2	3.9	0.0	19.7	19.7	0	0	0	0	1030	1.28	1.00	0.0040	0.0390
BH07	18/09/2019	0.1	0.1	9.7	1.2	18.1	18.1	0	0	0	0	1036	0.91	0.20	0.0002	0.0194
BH08	18/09/2019	0.1	0.0	4.4	4.4	15.0	15.0	0	0	0	0	1036	0.03	0.10	0.0001	0.0044
BH09	18/09/2019	0.0	0.0	2.3	2.2	18.5	18.5	0	0	0	0	1041	4.98	0.10	0.0000	0.0023

Notes: Gas Screening Value (GSV) calaculated as per CIRIA C665, 2007 (assumes Situation A - housing with basement risk assessment approach)

Ground Gas Monitoring Results - Round 3

Borehole ID	Date	Methane (% v/v)		Carbon dioxide (% v/v)		Oxygen (% v/v)		Hydrogen sulphide (ppm)		Carbon monoxide (ppm)		Atmospheric Pressure (mb)	Relative Pressure (mb)	Flow rate (l/h)	GSV - Methane (l/hr)	GSV - Carbon Dioxide (l/hr)
		Peak	Stable	Peak	Stable	Peak	Stable	Peak	Stable	Peak	Stable					
BH01	20/09/2019	0.2	0.1	6.0	6.0	12.4	12.4	0	0	0	0	1031	0.01	0.10	0.0002	0.0060
BH02	20/09/2019	0.2	0.2	0.5	0.1	19.5	19.5	0	0	0	0	1033	0.03	0.10	0.0002	0.0005
BH03	20/09/2019	0.2	0.1	6.2	1.1	19.0	19.0	0	0	0	0	1031	0.01	0.10	0.0002	0.0062
BH04	20/09/2019	0.1	0.1	0.2	0.2	19.9	19.9	0	0	0	0	1031	0.04	0.10	0.0001	0.0002
BH05	20/09/2019	0.2	0.1	0.3	0.0	19.9	19.9	0	0	0	0	1031	-0.01	-0.10	-0.0002	-0.0003
BH06	20/09/2019	0.1	0.1	3.2	0.0	19.5	19.5	0	0	0	0	1028	1.09	0.10	0.0001	0.0032
BH07	20/09/2019	0.1	0.1	1.7	1.7	19.3	19.3	0	0	0	0	1028	-0.01	-0.1	-0.0001	-0.0017
BH08	20/09/2019	0.1	0.1	4.6	4.6	14.4	14.3	0	0	0	0	1028	-0.02	0.10	0.0001	0.0046
BH09	20/09/2019	0.2	0.1	6.3	2.5	17.5	17.5	0	0	0	0	1031	0.01	0.10	0.0002	0.0063

Notes: Gas Screening Value (GSV) calaculated as per CIRIA C665, 2007 (assumes Situation A - housing with basement risk assessment approach)

APPENDIX H

IGSL GI Report 2017

IGSL Limited

Roughan & O'Donovan
Consulting Engineers
&
Corcom Enterprises Ltd.

Mixed Use Development
Techrete Site
Howth
Co. Dublin

Ground Investigation Report

Report No. 19956

June 2017

Report

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DOCUMENT ISSUE REGISTER

Distribution	Report Status	Revision	Date of Issue	Author	Reviewer
Roughan & O'Donovan Consulting Engineers	Geotechnical Report	0	2nd June 2017	D. Green Chartered Engineer	B. Green Chartered Engineer

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FOREWORD

The following conditions and notes on the geotechnical site investigation procedures should be read in conjunction with this report.

Standards

The ground investigation works for this project (Techrete Site, Howth) have been carried out by IGSL in accordance with Eurocode 7 - Part 2: Ground Investigation & Testing (EN 1997-2:2007). This has been used together with complementary documents such as BS 5930 (1999), BS 1377 (Parts 1 to 9) and Engineers Ireland Specification & Related Documents for Ground Investigation in Ireland (2006). A new National Annex for use in the Republic of Ireland is currently in circulation for comment and will be adopted in the near future. In the mean time, the following Irish (IS) and European Standards or Norms are referenced:

- IS EN 1997-2 Eurocode 7: 2007 – Geotechnical Design – Part 2: Ground Investigation & Testing
- IS EN ISO 22475-1:2006 Geotechnical Investigation and Sampling – Sampling Methods & Groundwater Measurements
- IS EN ISO 14688-1:2002 Geotechnical Investigation and Testing – Identification and Classification of Soil, Part 1: Identification and Description
- IS EN ISO 14688-2:2004 Geotechnical Investigation and Testing – Identification and Classification of Soil, Part 2: Classification Principles
- IS EN ISO 14689-1:2004 Geotechnical Investigation and Testing - Identification & Classification of Rock, Part 1: Identification & Description

Reporting

Recommendations made and opinions expressed in this report are based on the strata observed in the exploratory holes, together with the results of in-situ and laboratory tests. No responsibility can be held by IGSL Ltd for ground conditions between exploratory hole locations.

The engineering logs provide ground profiles and configuration of strata relevant to the investigation depths achieved and caution should be taken when extrapolating between exploratory points. No liability is accepted for ground conditions extraneous to the investigation points.

This report has been prepared for Roughan & O'Donovan Consulting Engineers and the information should not be used without prior written permission. The recommendations developed in this report specifically relate to the proposed development. IGSL Ltd accepts no responsibility or liability for this document being used other than for the purposes for which it was intended.

Boring Procedures

Unless otherwise stated, 'shell and auger' or cable percussive boring technique has been employed as defined by Section 6.3 of IS EN ISO 22475-1:2006. The boring operations, sampling and in-situ testing complies with the recommendations of IS EN 1997-2:2007 and BS 1377:1990 and EN ISO 22476-3:2005. The shell and auger boring technique allows for continuous sampling in clay and silt above the water table and sand and gravel below the water table (Table 2 of IS EN ISO 22475-1:2006).

It is highlighted that some disturbance and variations is unavoidable in particular ground (e.g. blowing sands, gravel / cobble dominant glacial deposits etc). Attention is drawn to this condition, whenever it is suspected. Where cobbles and boulders are recorded, no conclusion should be drawn concerning the size, presence, lithological nature, or numbers per unit volume of ground.

Rotary Drilling Procedures
Rotary drilling methods have been used to recover bedrock samples in line with Section 3.5 of IS EN 1997-2:2007 and IS EN ISO 22475-1. Where cable percussive boreholes terminated prematurely on an obstruction within overburden, open hole drilling methods (odex or symmetrix) were utilized to advance the drillholes through the superficial deposits with coring in bedrock. The key objectives of the rock sampling were to obtain high core recovery (TCR), minimize sample disturbance and facilitate accurate identification of strength, weathering and discontinuity characteristics.

In-Situ Testing
Standard penetration tests were conducted strictly in accordance with Section 4.6 of IS EN 1997-2:2007. The SPT equipment (hammer energy test) has been calibrated in accordance with EN ISO 22476-3:2005 and the Energy Ratio (E_r). A calibration certificate is available upon request. The E_r is defined as the ratio of the actual energy E_{meas} (measured energy during calibration) delivered to the drive weight assembly into the drive rod below the anvil, to the theoretical energy (E_{theor}) as calculated from the drive weight assembly. The measured number of blows (N) reported on the engineering logs are uncorrected. In sands, the energy losses due to rod length and the effect of the overburden pressure should be taken into account (see IS EN ISO 22476-3:2005).

Groundwater
The depth of entry of any influx of groundwater is recorded during the course of boring operations. However, the normal rate of boring does not usually permit the recording of an equilibrium level for any one water strike. Where possible drilling is suspended for a period of twenty minutes to monitor the subsequent rise in water level. Groundwater conditions observed in the borings or pits are those appertaining to the period of investigation. It should be noted however, that groundwater levels are subject to diurnal, seasonal and climatic variations and can also be affected by drainage conditions, tidal variations etc.

Engineering Logging
Soil and rock identification has been based on the examination of the samples recovered and conforms with IS EN ISO 14688-1:2002 and IS EN ISO 14689-1:2004. Rock weathering classification conforms to IS EN ISO 14689-1:2003 while discontinuities (bedding planes, joints, cleavages, faults etc) are classified in accordance with 4.3.3 of IS EN ISO 14689-1:2003. Rock mechanical indices (TCR, SCR, RQD) are defined in accordance with IS EN ISO 22475-1:2006.

Retention of Samples
Samples shall be retained for a period of 60 days following approval of the final factual report, as detailed in the Scope of Works.

1.0 Introduction and Objectives

At the instruction of Roughan & O'Donovan Consulting Engineers (ROD), IGSL has undertaken a programme of geotechnical investigations at the former Techrete / Teeling Motors, Baltray Park site in Howth, County Dublin (refer to Figure 1). The site is located 1 kilometre west of Howth Harbour and approximately 14 kilometres north east of Dublin City Centre. The 11 acre site is bound to the north by the Dublin Area Rapid Transit (DART) commuter rail line and to the south by the R105 Regional Road serving the Howth Peninsula. A Fingal County Council water pumping plant also occupies part of the site.

The scheme will involve the demolition of a range of existing industrial and commercial buildings and the construction of five apartment blocks, as well 51 houses. Four additional houses will be provided for Traveller accommodation (Irish Times, July 27, 2016).

The site outline is shown in red in Figure 1. However, site investigation works were restricted to the area outlined in blue.

Figure 1 – Site Location

IGSL Limited were appointed by (ROD) Consulting Engineers to conduct a ground investigation at the site. Fieldworks were undertaken during the period March to May 2017.

The objectives of the investigations were as follows:

- Ascertain the soil and bedrock stratigraphy at the site
- Ascertain the depth to groundwater
- Investigate for the presence of subsoil contamination
- Determine suitable bearing strata for structural foundations
- Determine the aggressivity of the ground in terms of concrete attack

2.0 Scope of Works

The programme of exploratory works included the following:

- 26 no. cable percussive boreholes
- 26 no. rotary coreholes to confirm the presence and composition of the bedrock
- 9 no. mechanically excavated trial pits
- Groundwater monitoring at 8 nr. borehole locations
- Gas monitoring at 1 nr borehole location
- A programme of geotechnical and environmental laboratory testing to assist with soil classification

2.1 Cable Percussive Boreholes

Boreholes were constructed in 6 locations (BH02 to BH25, BH30 and BH31) using a Dando 2000 rig equipped with 200 mm casing.

Boring commenced after scanning (CAT & Jenny) to verify the presence or absence of service ducts. Disturbed bulk samples were recovered at 1m intervals or change of strata during boring and these are denoted 'B' on the engineering logs. Environmental disturbed samples were also taken from each borehole and are marked 'ENV' on the logs.

Standard Penetration Tests (SPT's) were performed in the boreholes and given the nature of the soils, a solid cone was used. It is noted that the SPT N-Values reported are the number of blows for 300mm increment penetration (e.g. BH.02 at 1.0m where N=4). These exclude the seating blow values, which represent the initial 150mm depth of penetration. Where partial penetration was achieved during testing, the number of blows is shown for the actual penetration depth achieved (e.g. BH.02 at 4.0m where N=50/75mm). In accordance with Eurocode 7, the SPT hammer has been calibrated and the energy ratio (Er) value is incorporated on the engineering logs. It is highlighted that the SPT N-Values reported on the engineering logs are uncorrected for energy ratio.

Descriptions of the soils encountered, in-situ tests undertaken and samples recovered are presented on the borehole records in Appendix 1. Details of groundwater strikes and hard strata boring (i.e. chiselling) are also presented on the aforementioned borehole records. A groundwater monitoring standpipe was installed in BH11 during the fieldworks. The standpipe consisted of 50mm diameter HDPE pipework with proprietary 1mm slots and incorporated a pea gravel filter pack and cement / bentonite grout seal.

2.2 Rotary Coreholes

Rotary drilling was conducted by a track-mounted Knebel HY79 rig. The drillholes are prefixed RC. Symmetrix drilling was utilized within the superficial deposits with conventional coring techniques used in the bedrock. The rotary coring produced 78mm diameter cores using air mist flush.

The cores were placed in 3m capacity timber boxes and logged by an IGSL engineering geologist. This included photography of the cores with a digital camera. Where rock core was

recovered, a graphic fracture log is also presented alongside the mechanical indices. This illustrates the fracture state of the rock cores and allows easy identification of highly fractured / non-intact zones and discontinuity spacings. It should be noted that no correction for dip of the joints has been made and that the spacings shown are successive joint / core intersections within the core.

Standard Penetration Tests (SPT's) were performed in most drillholes and given the nature of the soils, a solid cone was used. It is highlighted that the SPT N-Values reported on the engineering logs are uncorrected for energy ratio.

Groundwater monitoring standpipes were installed in RC16 & RC22. The standpipes consisted of 50mm diameter HDPE pipework with proprietary 1mm slots and incorporated a pea gravel filter pack and cement / bentonite grout seal.

The core log records are presented in Appendix 2 and present engineering geological descriptions, details of the bedding / discontinuities and mechanical indices (TCR, SCR and RQD's) for each core run. Core photographs are also presented in Appendix 2 and these illustrate the structure and fracture state of the bedrock.

2.3 Trial Pits

Trial pitting was performed at ten locations (TP102 to TP109 and TP115) using a JCB wheeled excavator. The trial pits were logged and sampled by an IGSL geotechnical engineer in accordance with BS 5930 (1999+A2:2010).

Pit sidewalls were assessed in terms of their short term stability and any instances of groundwater ingress were recorded. Large bulk soil samples were also recovered to provide specimens for laboratory testing.

The samples were placed in heavy duty polyethene bags and sealed before being transported to Naas for laboratory testing. For this project, environmental samples were obtained and placed in glass jars.

The trial pits were backfilled with the as-dug arisings and reinstated to the satisfaction of IGSL's site geotechnical engineer. The trial pit logs in Appendix 3 include descriptions of the soils encountered, groundwater conditions and stability of the pit sidewalls. Photographs of the open pits and excavated spoil are also presented in Appendix 3.

2.4 Groundwater and Gas Monitoring

Standpipes were installed in selected borehole / corehole locations in order to permit long term monitoring of groundwater levels.

Since the site is coastal, dataloggers were installed in three standpipes in order to monitor any tidal fluctuations. Gas valves were also fitted to one standpipe to permit direct measurement of gases generated in the ground.

The results of groundwater and gas monitoring, including both manual dips and datalogger plots are presented in Appendix 4 of this report.

2.5 As-Built Survey

On completion of fieldworks, the location (x,y) and elevation (z) of each exploratory location was determined by detailed survey using GPS Realtime Kinetic survey instrument.

The National Grid survey co-ordinates and ground levels related to Malin Head Datum are presented on the exploratory hole records and these were used to plot the as-built locations on the Site Plan in Appendix 8 of this report.

3.0 Laboratory Testing

Laboratory testing was performed on selected samples to assist in soil classification. Samples of the recovered bedrock were analysed in terms of their compressive strength.

Laboratory test results are segregated and presented as follows:

- Appendix 5 – Geotechnical Laboratory Testing of Soil
- Appendix 6 – Rock Strength Tests
- Appendix 7 – Environmental Test Reports (Exova Jones)

3.1 Codes and Standards

Testing was carried out in accordance with BS1377; British Standard Methods of Test for Soils for Civil Engineering Purposes; British Standards Institute:1990, TRL 447 and ISRM unless otherwise stated.

The following tests were undertaken for this project:

3.2 Moisture Content

The moisture contents of representative disturbed samples (sealed bags, tubs) were carried out in accordance with BS1377 Part 2:1990.

3.3 Atterberg Limits

The liquid limits were determined using the cone method as described in BS 1377 Pt.2:1990. In the majority of cases, the specimens for liquid and plastic limit determination were obtained at their natural state by removal of particles greater than 425 µm. This is the definitive method, as stated in BS1377: Part 2: 1990, Clause 4. Where this was considered impractical, specimens were air-dried and sieved, as recommended in BS 1377.

While BS 1377 suggests that the results should include the percentage of material passing the 425 micron sieve, this information can be misleading in the case of coarse soils such as the glacial till encountered on this site. In the laboratory the percentage can only be related to the sample presented for testing while the actual soil stratum may contain coarse gravel and cobbles which would not necessarily be contained in the sample. Inclusion of coarse soil in a small sample would also distort the proportions.

3.4 Particle Size Distributions

Particle size distribution tests were carried out to BS1377: Part 2: 1990, method 9.2 (Wet sieving). Hydrometer tests to BS1377: Part 2: 1990, Method 9.5 were conducted on some samples to establish the percentage of silt and clay present.

To obtain particle size distributions, wet sieving methods were used, as specified. Large cobble and boulder size material was excluded from all tests while, in some instances the maximum particle size was further limited to take into account the mass of the sample.

3.5 Sulphate and pH

Determination of pH values and Sulphate content of soil were conducted by a nominated accredited environmental laboratory, Exova Jones. Results are presented in reports prepared by this laboratory.

3.6 Triaxial Compression Tests

Unconsolidated undrained triaxial tests were conducted on high quality samples obtained from the Geobor coreholes to determine the undrained shear strength of the cohesive soils. Single stage tests were carried out on 100 mm diameter specimens in accordance with BS1377: Part 7:1990 (Clause 8). Results are reported as undrained shear strength (Cu) and the strain at failure.

3.7 Unconfined Compressive Strength (UCS)

UCS test specimens are prepared as right circular cylinders with a length to diameter ratio of 2.0 to 2.5 and the ends are saw cut and ground to eliminate irregularities. The load is applied through a hydraulic ram and the compressive strength is defined as the maximum load recorded immediately at the point of crushing (load at failure) divided by the cross-sectional area.

3.8 Point Load Tests on Rock Core Samples

The Point Load Index Test provides a rapid strength assessment from rock fragments or cores. The test specimen is compressed between two cones loaded from a hydraulic hand pump. The core fails due to the tensile forces over the diametral area between the points. The strength at failure is expressed as the point load index Is.

For purposes of comparison the Is values are corrected to give the equivalent strength for a 50 mm diameter specimen. The compressive strength of the rock (q_c) can be established using a correlation suggested by Goodman where UCS ≈ 18 to 24 x Is_{50}.

3.9 Environmental Testing

Environmental testing was scheduled on recovered soil and groundwater samples.

Soil samples underwent a Waste Acceptance Criteria (WAC) analyses in accordance with the RILTA Suite, which can be used to fully assess the waste disposal requirements of soils destined for landfill.

Included in the test suite are Heavy Metals, Speciated TPH, Mineral Oil, BTEX, PCB and Total Organic Carbon (TOC) carried out on dry soil samples. Also included are leachate analyses, whereby leachate is generated in accordance with CEN 10:1 specification and this is tested for the presence of recognised contaminants including Heavy Metals, Dissolved Organic Carbon (DOC) and Total Dissolved Solids (TDS). An Asbestos screen is also included in the RILTA suite.

Groundwater samples were analysed for the presence of typical contaminants including Heavy Metals and hydrocarbons.

4.0 Ground Conditions

4.1 General

The generalised soil stratification (as observed in the exploratory holes) can be approximated as follows:

- Made Ground (clay/gravel fill with extraneous matter)
- Loose silty sand (possible fill)
- Very soft to soft black sandy silt with shells and shell fragments
- Glacial Till (stiff / very stiff brown sandy gravelly CLAY)
- Limestone Bedrock

Table 1 summarises the depths to the various soil strata and bedrock horizon as encountered in the boreholes and coreholes.

Borehole / Corehole	Depth of Upper Made Ground (m BGL) (extraneous content listed in brackets)	Loose silty SAND (locally sandy gravel) (m BGL)	Very soft sandy SILT with shells (m BGL)	Stiff / very stiff sandy gravelly CLAY (glacial till) (m BGL)	Cored LIMESTONE (m BGL)
BH02 / RC02	0.7	0.7 – 3.9			4.6 – 10.0
BH03 / RC03	0.5	0.5 – 2.4	2.4 – 4.4		5.8 – 10.6
BH04 / RC04	1.3	1.3 – 4.1			10.2 – 15.7
BH05 / RC05	0.3	0.3 – 2.5	2.5 – 4.9		7.1 – 12.3 (symmetrix returns of sand / gravel 5.0 – 7.1m)
BH06 / RC06	1.2		1.5 – 4.6		5.5 – 11.0
BH07 / RC07	3.4 (rare brick / concrete)				4.0 – 8.9
BH08 / RC08	1.0	1.0 – 2.0	2.0 – 3.9		4.2 – 9.7
BH09 / RC09	1.5		1.5 – 3.8		4.2 – 9.7
BH10 / RC10	2.3				2.3 – 10.0
BH11 / RC11	1.5	1.5 – 2.4	2.4 – 4.3		4.5 – 12.9
BH12 / RC12	1.5	1.5 – 3.5			3.6 – 11.3
BH13 / RC13	2.9 (frequent waste material)				4.4 – 9.5
BH14 / RC14	2.1 (ash / clinker)		2.1 – 4.5		9.2 – 15.6 (symmetrix returns of clay 5.8 – 9.2 m.)
BH15 / RC15	2.1 (cinders, glass, timber, red brick)				4.5 – 11.5 (symmetrix returns of black silty cobbles 2.5 – 4.0m)
BH15 / RC16	2.6 (cinders, glass, red brick)				2.5 – 8.0
BH17 / RC17	3.0 (steel, timber, red brick)		3.0 – 4.1		5.5 – 11.3

Borehole / Corehole	Depth of Upper Made Ground (m BGL) (extraneous content listed in brackets)	Loose silty SAND (locally sandy gravel) (m BGL)	Very soft sandy SILT with shells (m BGL)	Stiff / very stiff sandy gravelly CLAY (glacial till) (m BGL)	Cored LIMESTONE (m BGL)
BH18 / RC18	3.2 (slate, timber, red brick)			3.2 – 4.7	4.7 – 9.1
BH19 / RC19	3.4 (slate, steel, timber, red brick)			3.4 – 6.6	6.6 – 8.3 (residual clay/gravel 8.3 – 13.0m)
BH20 / RC20	3.1 (cinders, timber, steel, red brick)				4.7 – 10.0 (symmetrix returns of gravelly clay 3.0 – 4.7m)
BH21 / RC21	3.7 (cinders, glass, timber, slate, red brick)			3.7 – 4.6	6.9 – 12.3 (symmetrix returns of gravelly clay / clayey boulders 4.6 – 6.9m)
BH22 / RC22	5.1 (cinders, paper, red brick, concrete)			5.1 – 5.7	8.5 – 14.0 (symmetrix returns of brown gravelly clay / silt 5.7 – 8.5m)
BH23 / RC23	3.3 (paper, timber, red brick)		3.1 – 3.3	3.3 – 4.2	7.3 – 12.4 (symmetrix returns of gravelly clay 4.5 – 7.3m)
BH24 / RC24	3.9 (steel, rubber, timber, paper, red brick)		3.9 – 4.3	4.3 – 5.2	15.3 – 20.6 (symmetrix returns of gravelly clay 5.9 – 15.3m)
BH25 / RC25	3.7 (cinders, paper, steel, red brick)	3.7 – 4.1		4.1 – 5.2	9.2 – 14.9 (symmetrix returns of gravelly clay 5.4 – 9.2m)
BH30 / RC30	2.6 (cinders, red brick, glass)				3.4 – 8.2
BH31 / RC31	2.7 (cinders, cutlery, steel, red brick, glass)		1.8 – 2.7		3.5 – 8.8

4.2 Superficial Deposits

4.2.1 Made Ground

The Made Ground soils were variable in composition and depth and contained a variety of extraneous matter. Typical composition was clay/gravel in a soft or loose condition with cobbles, occasional boulders and extraneous matter. Towards the eastern end of the site (BH1 to BH5), the clay/gravel fill was generally limited to the upper metre.

Moving westwards, the Made Ground increased in thickness and was found to contain an increasing amount of extraneous matter. Central to the site, the Made Ground was typically 1.5 to 2.5 metres in thickness and contained extraneous matter such as brick, concrete, glass, ash/clinker and timber. Trial pits TP102 to 104 permitted closer examination of the Made Ground soils. Thickest Made Ground deposits were located in TP104, where odorous rotting timber was present within clay fill to a depth of 2.9 m BGL.

Towards the western end of the site, the depth of Made Ground increased significantly, typically in excess of 3 metres and up to 5 metres thick at BH22. Extraneous matter was prevalent including cinders, slate, timber, rubber, paper, glass and steel present within the Made Ground. Trial pits TP105 to 109 and TP115 revealed Made Ground deposits to depths of up to 3.8 m BGL (TP109) at which depth groundwater ingress prevented further excavation.

4.2.2 Loose silty SAND (locally very sandy gravel)

Loose silty SAND was found to underlie the Made Ground in approximately the western half of the site (BH2 to BH5, BH8, BH11 and BH12). In some locations, the sand was very gravelly, possibly grading to very sandy gravel. Where present, the loose sand extended to depths of between 2.5 and 3.5 m BGL.

In-situ Standard Penetration Tests (SPT) revealed “N” values generally less than 10, with many results less than 5, indicating very loose to loose deposits. Particle Size Distribution (PSD) tests undertaken in the laboratory showed dominant sand fractions of typically 70 to 80%.

4.2.3 Very soft to soft sandy SILT

Deposits of black / brown sandy SILT were encountered predominately in the western half of the site and typically underlay the Made Ground deposits or loose silty sand. Where present, the silt deposits extended to depths of between 4 and 5 m BGL.

SPT “N” values were typically less than 5, indicating very soft and soft deposits. Shell fragments were also identified within the silt stratum, indicating marine deposition.

Laboratory testing revealed generally high moisture contents within the brown/black silt (typically containing shell fragments), ranging between 23 and 44%. Atterberg Limits tests classified the silts as non-plastic with liquid generally limits ranging between 25 and 35%.

Undrained triaxial tests on samples recovered from BH9 (2.5 m BGL) and BH17 (3.6 m BGL) measured undrained shear strengths, Cu, of 10 and 11 kPa respectively, thereby confirming the very soft condition of this stratum.

4.2.4 Glacial Till

Basal deposits of glacial till comprising stiff to hard brown slightly gravelly clay were uncovered within the eastern half of the site (BH18 to BH25). The till deposits typically underlay the Made Ground soils at depths of between 3 and 5 m BGL. SPT’s in this material generally failed to penetrate the full test depth of 450 mm, thus verifying its very stiff to hard condition.

Where present, the glacial till was penetrated to a maximum depth of 5.7 m BGL in the boreholes. However, subsequent "open hole" drilling methods recovered pulverised drill returns that had the appearance of glacial till to depths of up to 15 metres (RC24).

Moisture contents for the glacial till were relatively low, with most falling between 11 and 14%, while Atterberg Limits tests classified these soils as low plasticity clay (CL). The results of PSD tests showed that the till is relatively well graded and consistent across the site with fines (silt/clay) contents ranging between 31 and 42%.

4.3 Chemical Properties

Sulphate and pH analyses were undertaken on selected soil samples from the exploratory holes. Table 1 summarises the test results and the stratum from which each sample was extracted.

Location	Depth (m)	Sulphate (SO_4 g/l)	pH	Material Type
BH2	1.0	0.012	9.2	Silty SAND
BH3	1.0	0.011	9.1	Silty SAND
BH3	3.0	1.464	8.2	Black sandy SILT
BH4	2.0	0.080	10.3	Silty SAND
BH5	3.0	0.329	8.2	Black sandy SILT
BH6	4.0	0.356	8.0	Black sandy SILT
BH7	2.0	0.049	8.4	Made Ground (clayey gravel)
BH8	2.0	0.096	10.6	Black sandy SILT
BH9	2.0	1.019	7.8	Black sandy SILT
BH10	1.5	0.039	8.6	Made Ground (clayey sandy gravel)
BH11	3.0	0.626	8.1	Black sandy SILT
BH12	2.0	0.023	8.8	Silty SAND
BH14	3.0	0.057	8.6	Black sandy SILT
BH15	1.0	0.171	8.2	Made Ground (sandy gravelly clay)
BH16	1.0	0.146	8.2	Made Ground (sandy gravelly clay)
BH17	1.0	0.146	8.2	Made Ground (sandy gravelly clay)
BH18	4.0	0.060	8.7	Glacial till (brown gravelly clay)
BH19	2.0	0.100	8.1	Made Ground (sandy gravelly clay)
BH20	1.0	0.138	8.2	Made Ground (sandy gravelly clay)
BH21	1.0	0.176	8.2	Made Ground (sandy gravelly clay)
BH21	4.0	0.077	9.4	Glacial till (brown gravelly clay)
BH22	2.0	0.076	8.1	Made Ground (sandy gravelly clay)
BH22	5.0	0.268	8.3	Made Ground (sandy gravelly clay)
BH23	4.0	0.098	9.3	Glacial till (brown gravelly clay)
BH24	1.0	0.152	8.2	Made Ground (sandy gravelly clay)
BH24	5.0	0.036	8.9	Glacial till (brown gravelly clay)
BH25	2.0	0.105	8.1	Made Ground (sandy gravelly clay)
BH25	5.0	0.092	9.2	Glacial till (brown gravelly clay)
BH30	1.0	0.147	8.6	Made Ground (sandy gravelly clay)
BH31	1.0	0.037	8.4	Made Ground (sandy gravelly clay)
BH31	2.0	0.058	8.4	Made Ground (dark grey silt)
TP102	1.5	0.013	8.6	Possible Made Ground (sandy gravelly clay)
TP103	2.5	0.219	7.9	Black sandy SILT with shells

Table 1 – Summary of Sulphate and pH test results

4.4 Groundwater and Gas

4.4.1 Groundwater Strikes

Groundwater was observed during cable percussive drilling in all locations. Groundwater strikes were also identified during rotary drilling, although these can be difficult to accurately measure due to interference from the flush medium.

Where encountered, the depth to groundwater was measured and recorded. Drilling works were suspended for a period of 20 minutes and a second reading was taken. This was to determine the rise, if any, in groundwater level. An immediate rise in groundwater level would typically be expected in cases where low permeable clay (in which the water table is present but not evident) is penetrated to reveal granular soils or rock, thus permitting the groundwater to ingress and rise to its natural level.

Initial groundwater strikes were recorded in all boreholes at depths ranging between 2.1 and 4.6 m BGL. These are summarised on Table 2.

Location	Strike Depth (m BGL	Subsequent Rise (20 mins)	Flow Rate
BH02	2.20	No rise	Seepage
BH03	2.70	2.40	Slow
BH04	3.70	3.20	Seepage
BH05	3.90	3.00	Moderate
BH06	4.60	No rise	Seepage
BH07	3.20	2.50	Moderate
BH08	2.60	2.00	Moderate
BH08	4.00	3.50	Moderate
BH09	4.00	3.10	Moderate
BH11	3.00	2.70	Seepage
BH12	2.20	No rise	Seepage
BH14	2.10	No rise	Seepage
BH14	4.80	No rise	Seepage
BH15	2.30	1.65	Slow
BH16	2.50	2.00	Slow
BH17	3.40	2.80	Slow
BH18	3.00	2.40	Slow
BH20	3.30	2.60	Slow
BH21	3.40	2.90	Slow
BH22	3.50	2.80	Slow
BH23	3.20	2.90	Slow
BH24	3.80	3.10	Moderate
BH25	3.90	3.00	Moderate
BH30	3.30	2.60	Slow
BH31	2.50	2.00	Slow

Table 2 – Groundwater Strikes during cable percussive drilling

4.4.2 Groundwater and Gas Monitoring

The site was re-visited post-fieldwork in order to obtain groundwater and gas readings from the standpipes. A summary of the groundwater readings is presented on Table 3. The calculated elevations (mOD) of the water levels are also presented on Table 3.

Location	Water Depth 31/05/2017 (m BGL)	Water Level 31/05/2017 (m OD)	Shallowest Observed Level during Drilling (m OD)
BH9	2.76	1.41	1.07
BH15	2.17	1.69	2.21
BH16	2.26	1.62	2.38
BH17			
BH22	2.80	1.42	1.42
BH25	3.34	1.88	3.22
BH30	2.32		
BH31	2.25		

Table 3 – Summary of most recent groundwater depths in cable percussive boreholes

It is noted that the groundwater levels observed during drilling are in some locations higher than those obtained during subsequent groundwater monitoring. The apparent fall in water level in the month following the fieldwork period may be attributed to dissipation of water introduced during drilling.

Water levels would also be expected to fluctuate on this site due to tidal variations. Data loggers were installed in boreholes BH4, BH17 and BH25 in order to monitor groundwater levels during the period 25th May to 1st June. Groundwater levels at BH4 and BH17 remained in the range 1.5 to 1.6 mOD during the monitoring period. At BH25, the level fell from 2.1 to 1.9 m OD.

Daily fluctuations (presumed tidal) were recorded in boreholes BH4 and BH17, with the peak – trough variations of between 5 and 15 mm. Furthest from the coast, no obvious tidal fluctuations were evident in BH25.

Gas monitoring was undertaken at BH21. The results revealed Carbon Dioxide at a concentration of 5.4%. There was no significant measurement of Methane (CH_4).

4.5 Bedrock

4.5.1 Bedrock Levels

The depth to bedrock was relatively consistent, varying between approximately 23 and 24 metres BGL across the entire site. A summary of rock levels is presented in Table 4.

Location	Coring Commencement Depth (m BGL)	Coring Commencement Depth (m OD)
RC02	4.6	-0.91
RC03	5.8	-2.04
RC04	10.2	-6.36
RC05	7.1	-3.33
RC06	5.5	-1.21
RC07	4.0	-0.20
RC08	4.2	-0.25
RC09	4.2	-0.03
RC10	2.3	+1.63
RC11	4.5	-0.34
RC12	3.6	+0.27
RC13	4.4	-0.53
RC14	9.2	-5.31
RC15	4.5	-0.64
RC16	2.5	+1.38
RC17	5.5	-1.74
RC18	4.7	-0.95
RC19	6.6	-2.75
RC20	4.7	-0.84
RC21	6.9	-2.94
RC22	8.5	-4.28
RC23	7.3	-2.85
RC24	15.3	-10.87
RC25	9.2	-3.98

Table 4 – summary of bedrock levels

Figure 2 plots the geological cross-sections of the rotary coreholes. The rock levels between each borehole have been interpolated to illustrate the variation, although the interpolation between boreholes may not accurately reflect actual levels.

Of particular note are the three locations where the rock is significantly deeper than the general levels i.e. RC04, RC14 and RC24. At RC14 and RC24, the overlying overburden deposits were noted by the driller to consist of gravelly clay. SPTs undertaken in this material at RC24 were high, indicating very stiff deposits. At RC4, the overburden soils were interpreted as predominately granular deposits of clayey gravelly sand. SPT “N” values in these soils were also high (>30), indicating dense to very dense deposits.

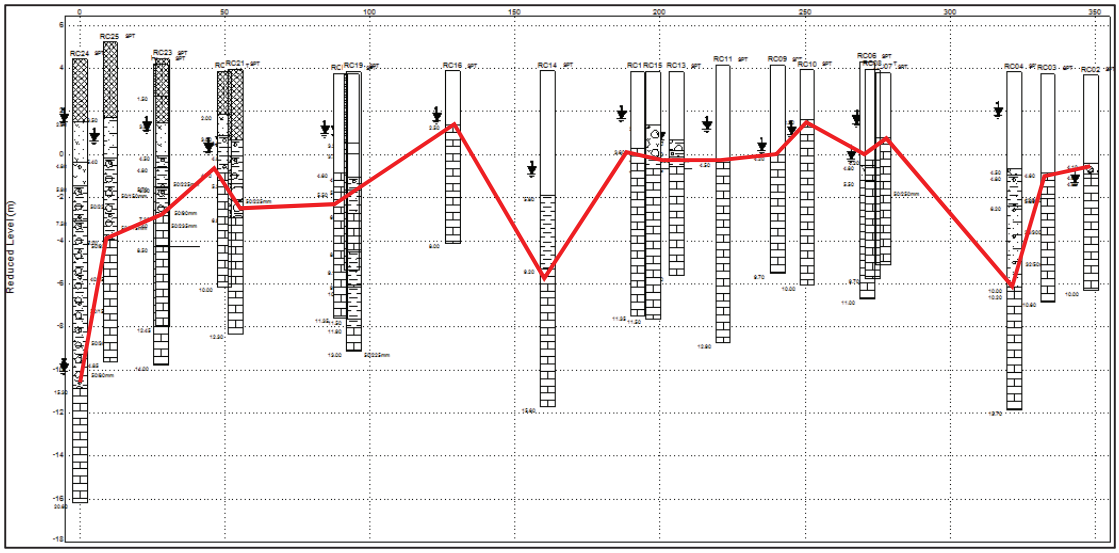


Figure 2 – Geological cross section showing bedrock levels

4.5.2 Bedrock Type, Strength and Condition

The bedrock was described as weak to medium strong heavily dolomotised LIMESTONE with much evidence of solution weathering.

Total core recovery was generally excellent (100%), although some core loss was reported within highly weathered zones.

The variations in rock quality are clearly demonstrated in Plates 1 and 2. Plate 2 shows the rock at RC7 to be weathered almost to a granular soil.

Plate 1 – Core recovery at RC9

Plate 2 – Core Recovery at RC7

UCS tests undertaken on intact rock core samples yielded results in the range 20 to 40 MPa, with some results less than 5 MPa within weathered zones. Point load tests yielded Is_{50} values typically in the range 0.5 to 2 MPa, indicating equivalent UCS values of the order of 10 to 40 MPa. The results of rock strength tests therefore confirmed the visual assessments of the limestone bedrock as weak to medium.

5.0 Discussion

The proposed development will consist of apartment blocks and residential housing. While much of the development will be constructed above ground, it is understood that the apartment blocks within the eastern portion of the site will incorporate a basement car park. The basement car park will entail a basement excavation of the order of 4 metres below ground level (allowing for foundation construction).

5.1 Structural Foundations

5.1.1 Eastern Apartment Blocks

The boreholes relevant to these structures are: BH2 to BH15, BH30, BH31 and associated coreholes RC2 to RC15, RC30 and RC31.

Finished floor levels for the apartment blocks range between 4.0 and 4.9 mOD. Allowing for a 4 metre excavation for the basement car parks, this implies a basement dig level of approximately 0 to +1 mOD.

With the exception of BH4, BH5 and BH14, the boreholes encountered obstructions at elevations of between -1 and +1 mOD which proved to be the weathered horizon of the limestone bedrock. It is therefore anticipated that foundations for the basement car parks will be constructed directly on the limestone bedrock.

At BH10, the limestone was encountered at a depth of 2.3 m BGL (1.6 m OD), implying that some localised rock excavation will be required in this area in order to reach basement dig level.

In two locations (RC04 and RC05), the rock horizon was significantly deeper (-6.4 and -3.3 mOD respectively), with the driller reporting deposits of gravelly sand between proposed basement level and the limestone. However, SPTs in the gravelly sand in RC04 were indicative of very dense deposits. The comparatively low SPT “N” value in these deposits at RC05 was likely due to the water strike at this depth causing “blowing” conditions.

In such locations where the bedrock is locally deeper, making excavations impractical, foundations may be placed on the very dense gravelly sand deposits. In view of the highly weathered condition of the dolomotised limestone, and the presence of localised granular zones, it is recommended that the overall design bearing pressure for the limestone is limited to 400 kPa. This will also limit the both the overall settlement and differential settlement between pads placed on weathered limestone and those placed on very dense granular deposits.

5.1.2 Central and Western Housing

The boreholes relevant to these structures are: BH16 to BH25, and associated coreholes RC16 to RC25.

The aforementioned boreholes encountered typically more than 3 metres of Made Ground, extending to a maximum depth of 5.1 m BGL at BH22. The Made Ground frequently contained extraneous matter including construction and demolition waste, ash and clinker.

Deposits of very soft sandy silt were found to underlie the Made Ground at boreholes BH17, 23 and 24.

At BH16 and BH20, the Made Ground was directly underlain by limestone bedrock at depths of 2.5 and 4.7 m BGL respectively. In the remaining boreholes, the limestone was overlain by very stiff to hard deposits of brown sandy gravelly clay, which had the appearance and composition of glacial till or "boulder clay".

With the exception of BH16, foundations for the proposed houses should be supported by the very stiff glacial till deposits. For direct construction, this implies founding depths in the range 3 to 5 m BGL. Excavations to this depth would almost certainly be deemed impractical (due to excessive groundwater ingress and trench instability) and uneconomical. Reference is made to trial pits TP106 to TP115 where groundwater was typically encountered within the upper 3 metres, notably leading to complete trench collapse at TP106.

Consideration must therefore be given to the use of piled foundations in order to transfer structural loads to the competent bearing strata.

The pile length and diameter will depend on the structural loads imposed. However, it is anticipated that piles would be formed through the Made Ground, soft silts and loose sands and founded within the very stiff to hard glacial tills or bedrock. The end bearing resistance provided by the glacial till (or bedrock where no glacial till is present) should facilitate an economical pile design.

It is noted that no positive contribution to skin friction should be assumed from the Made Ground or soft silt deposits. In fact, the effects of negative skin friction (or "down drag") within these soils should be considered at design stage.

While the use of driven piles could be considered, the piling contractor should satisfy themselves that the piles will penetrate the Made Ground and any coarse obstructions (boulders / concrete) contained therein. If a rock socket is deemed necessary, CFA or bored piles can be considered, assisted by heavy duty odex drilling in bedrock.

Particular note should be made of the condition of the dolomotised limestone bedrock. Weathering has reduced the limestone to a granular material with clay infill in places. It may therefore be prudent to model the highly weathered bedrock as a granular soil with a frictional (φ) parameter.

5.3 Temporary Ground Retention

The incorporation of a basement beneath the eastern apartment blocks will entail mass excavations within the site. Ground retention measures will be required at the perimeter of each basement excavation to maintain stability of the perimeter. Based on the groundwater levels recorded during the fieldwork period and in subsequent groundwater monitoring, the retention systems will also be required to prevent groundwater ingress.

The retention systems will likely comprise an embedded retaining wall, socketed into the limestone bedrock. The wall will be constructed before any excavation takes place.

While a secant or sheet pile retaining wall will limit water ingress through the retained soils, water ingress should be anticipated through the base of the excavation where granular soils (or highly weathered rock) are present at final dig level. Some dewatering measures (pumping) will likely be required in this case.

When choosing the appropriate wall type, consideration must be given to the method of installation. A secant piled wall is constructed using an auger to create the pile shaft and elevate the soil arisings to ground level. An Odex (diamond impregnated drill) system can assist in penetrating any obstructions present within the upper soils or to advance the pile shaft through particularly hard or dense deposits at depth.

By comparison, sheet piles are driven into place using a drop hammer. In stiff or dense soils, a vibration hammer can assist in achieving the required penetration. However, since penetration of the limestone bedrock will be required, sheet piles would be deemed unsuitable. For this reason, secant piles, with odex assisted drilling in bedrock, would be recommended as the preferred pile type.

The final retaining wall designs will depend not only on the required excavation depth and geometry but also on the tolerances assigned to the ground movement behind the wall. Since Apartment Block 4 is bounded to the south by the heavily trafficked Howth Road, the tolerance for ground movement in this location will be low, possibly of the order of 10 to 15 mm. Depending on the stiffness per metre run, temporary propping or anchoring may be required to prevent excessive movement at the top of the wall.

5.4 Potential for Ground Movement

The construction of a mass excavation will induce some ground movement within the retained soils around the perimeter of the excavation. This movement can be minimised by designing an appropriately robust (sufficiently large pile diameter) retaining wall. Movements can be further reduced by avoiding a pure cantilever design and instead incorporating props or tie-back anchors.

It is strongly advised that monitoring systems be installed prior to excavation works commencing. Monitoring points should be positioned around the perimeter of the excavation so that any deflections in the retaining wall are detected at an early stage.

As a minimum, survey points (stickers) should be established at the top and on the face of the retaining wall at various depths and at regular locations around the perimeter. These can then be checked regularly during construction using a survey instrument in order to detect any lateral movement.

5.5 Excavation of Existing Materials

The inclusion of a basement implies that mass excavation works will be required. The majority of excavated materials will comprise:

- Made Ground (clay / gravel with C and D waste)
- Loose silty sand
- Soft sandy silt with shells and some extraneous matter
- Limestone bedrock (possibly required to reach basement FFL in vicinity of BH10)

The Made Ground soils generally presented low resistance to excavation during the investigation.

The underlying soft sandy silt and loose sands will provide little resistance to excavation and should be removable using conventional wheeled or tracked excavators.

At BH10, the limestone bedrock was encountered at a reduced level of 1.63 mOD. Proposed basement dig levels of the order of 0 to +1 mOD for the nearby apartment blocks suggest that localised removal of limestone may be required. Due to its generally weak and fractured condition, it is anticipated that a combination of ripping and hydraulic breaking should be sufficient to efficiently remove the upper bedrock.

5.6 Equilibrium Groundwater Level

The most recent groundwater readings revealed groundwater levels in the boreholes ranging between 1.4 and 1.9 mOD. Continuous monitoring using data loggers at three locations showed that the groundwater levels remained within the range 1.5 to 2.1 mOD during a 7 day period.

The readings therefore suggest that a conservative groundwater level of the order of +2.0 mOD should be assumed for basement design purposes. Since this level is above the anticipated maximum basement dig level of c.0 mOD, this implies that buoyancy will need to be considered. Assuming a standing groundwater level of 2.0 m OD, this will result in an excavation that is c. 2.0 metres below the water table. The resulting hydrostatic pressure acting on the underside of the basement will be of the order of 20 kPa.

While the proposed multi-storey development will counteract the hydrostatic pressure in the long term, this pressure will need to be anticipated during construction. However, the relatively low hydrostatic pressure is unlikely to warrant ground anchors. Counteraction could instead be provided by the basement slab, which could be thickened in order to increase dead weight.

It is strongly recommended that additional readings be taken periodically at the standpipes, particularly during periods of wet weather.

5.7 Chemical Attack on Buried Concrete

An ACEC (Aggressive Chemical Environment for Concrete) Classification of AC-1 is applicable for Sulphate levels of up to 0.5 g/l SO_4, in conditions where the pH levels are greater than 5.5. Where Sulphate levels exceed 0.5 g/l SO_4, Class DS-2 applies with a minimum ACEC Classification of AC-2. Sulphate levels exceeding 1.6 g/l require Class DS-3 and an ACEC Classification of AC-3.

Tests undertaken on samples of the Made Ground and loose sand revealed Sulphate levels in the range 0.01 to 0.27 g/l with pH levels typically 8 to 9. Tests undertaken on samples of the glacial till revealed Sulphate levels of between 0.06 and 0.09 g/l with near neutral pH levels. Assuming mobile groundwater (tidal influence), these results imply a Design Sulphate Class of DS-1 in accordance with Table C1 of BRE Special Digest 1: 2005.

Sulphate levels of samples recovered from the brown / black silt deposits were in the range 0.06 to 1.46 g/l SO_4, with two samples yielding Sulphate levels in excess of 0.5 g/l. These results indicate that Sulphate Class DS-2 apply.

Sulphate and pH testing has shown that the samples of Made Ground, loose sands and glacial till comply with Design Sulphate Class DS-1 and ACEC Class AC-1 in accordance with BRE Special Digest 1:2005. However, the samples of the soft black silt were found to contain elevated Sulphates, with two samples categorised as Class DS-2.

It would therefore be prudent to adopt an ACEC concrete classification of AC-2 for concrete structures that will remain in contact with the soft silt soils.

5.8 Gas Contamination

As part of the ground investigation works, a gas monitoring standpipe was installed in borehole BH21. This location was revisited and gas measurements taken.

Carbon Dioxide was detected in BH21 at a level of 5.4%, although no significant Methane concentrations were detected.

The long term exposure limit for Carbon Dioxide is 0.5% (Ref: Construction of New Buildings on Gas Contaminated Land – BRE Publication). It is therefore obvious that Carbon Dioxide is present in a concentrations that is potentially harmful if these gases are permitted to enter an occupied building. Landfill gases can enter buildings through gaps around service pipes, cracks in walls below ground and floor slabs, construction joints and wall cavities.

Where Carbon Dioxide levels in the ground exceed 5% and Methane is not likely to exceed 1%, BRE specifies that special floor construction (i.e. gas proof membranes) be implemented to prevent gases from entering buildings.

Since the presence of elevated CO_2 has been highlighted at BH21, it would be recommended that additional gas valves be fitted to other standpipes within the site and monitored regularly.

5.9 Environmental Assessment

While a comprehensive programme of environmental testing was undertaken for this project, interpretation of the test data falls outside the scope of this report and should instead be carried out by environmental specialists.

6.0 References

1. BS 5930:1999 +A2:2010 Code of Practice for Site Investigations; British Standards Institute
2. Manual of Contract Documents for Highway Works, Volume 5, Section 3, Ground Investigation, Part 4: Specification
3. BRE Special Digest 1: 2005 – Concrete in aggressive ground
4. EN 1997-3; Eurocode 7: Geotechnical Design – Part 3: Design assisted by field testing; 1997
5. BS1377; British Standard Methods of Test for Soils for Civil Engineering Purposes; British Standards Institute;1990.
6. BRE Digest 365, September 1991, British Research Establishment
7. Manual of Contract Documents for Road Works, Volume 1: Specification for Road Works (March 2007)
8. Manual of Soil Laboratory Testing, Volume 3; K.H. Head
9. ISRM – Suggested Methods for Determining Point Load Strength
10. ISRM – Suggested Methods for Determining the Uniaxial Compressive Strength and Deformability of Rock Materials
11. TRL Report 447- Sulfate specification for structural backfills
12. CIRIA C580
13. Specification for Roadworks Series 600 – Specification for Roadworks

Appendix 1

Cable Percussive Boreholes

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH02**
		SHEET	Sheet 1 of 1
CO-ORDINATES	728,005.83 E 739,357.40 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	3.69	**BOREHOLE DEPTH (m)**	4.10
		DATE COMMENCED	06/04/2017
		DATE COMPLETED	06/04/2017
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
		BORED BY	J. O'Toole
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		PROCESSED BY	L. Daniels

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	Tarmac overlying fine to coarse subangular gravel. (MADE GROUND).		3.39	0.30						
	Very soft slightly sandy slightly gravelly black clay. (MADE GROUND).		2.99	0.70						
1	Loose yellow fine silty SAND.				AA67938	ENV B	1.20 1.20		N = 4 (0, 1, 1, 1, 1, 1)	
2			1.49	2.20	AA67939	ENV B	2.00 2.00		N = 1 (0, 0, 0, 0, 0, 1)	
	Loose black silty SAND. (Possibly very sandy silt)		0.69	3.00						
3	Loose brown fine to medium SAND with some fine gravel. Gravel is fine to medium subangular.		-0.21	3.90	AA67940	ENV B	3.00 3.00		N = 2 (0, 1, 1, 0, 1, 0)	
4	Obstruction		-0.41	4.10	AA67941	ENV B	3.80 3.80		N = 50/75 mm (1, 2, 50)	
	End of Borehole at 4.10 m									
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.7	3.8	0.75	
4	4.1	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.20	2.20	No	No	20	Seepage

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
06-04-17	3.80	3.80	2.95	

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH03**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,992.32 E 739,366.89 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	3.76	**BOREHOLE DEPTH (m)**	3.80
		DATE COMMENCED	06/04/2017
		DATE COMPLETED	06/04/2017
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
		BORED BY	E.Leahy
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	Concrete		3.56	0.20						
	MADE GROUND (Comprised of sandy claye ith cobbles and red brick fragments)		3.26	0.50						
1	Very soft to soft light brown/yellow fine SAND (Possibly fill)					B ENV	1.00 1.00		N = 5 (1, 1, 0, 1, 2, 2)	
2						B ENV	2.00 2.00		N = 10 (1, 3, 3, 2, 3, 2)	
			1.36	2.40						
3	Soft to firm grey/Black SILT with gravel and occasional cobbles					B ENV	3.00 3.00		N = 6 (1, 1, 1, 1, 2, 2)	
4						B ENV	4.00 4.00		N = 51/225 mm (1, 2, 7, 19, 25)	
			-0.64	4.40						
	Dense angular COBBLES and BOULDER		-0.84	4.60						
5	Obstruction End of Borehole at 3.80 m					B ENV	4.60 4.60		N = 25/75 mm (25, 25)	
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4.4	4.6	2	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.70	2.70	No	2.40	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
06-04-17	3.80	3.80	1.60	End of 1st day
07-04-17	4.60	Nil	2.90	End of BH

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH04**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,981.92 E 739,374.95 N	**RIG TYPE**	Dando 2000
GROUND LEVEL (m AOD)	3.84	**BOREHOLE DIAMETER (mm)**	200
		BOREHOLE DEPTH (m)	4.50
		DATE COMMENCED	05/04/2017
		DATE COMPLETED	06/04/2017
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		BORED BY	E.Leahy
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	Concrete (MADE GROUND)		3.64	0.20						
	Brown sandy gravelly CLAY with cobbles (MADE GROUND)		2.54	1.30	AA66866	ENV B	1.00 1.00		N = 14 (2, 3, 3, 4, 3, 4)	
1	Loose light brown/yellow slightly silty SAND									
2					AA66867	ENV B	2.00 2.00		N = 5 (1, 1, 1, 1, 1, 2)	
3					AA66868	ENV B	3.00 3.00		N = 11 (2, 2, 1, 3, 3, 4)	
			-0.26	4.10						
4	Grey angular COBBLES and boulders				AA66869	ENV B	4.00 4.00		N = 50/150 mm (5, 11, 19, 31)	
			-0.66	4.50	AA66870	B	4.30		N = 25/75 mm (25, 25)	
	Obstruction End of Borehole at 4.50 m									
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4.1	4.5	2	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.70	3.70	No	3.20	20	Seepage

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
06-04-17	4.50	Nil	3.00	End of BH

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH05**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,979.94 E 739,360.13 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	3.77	**BOREHOLE DEPTH (m)**	5.00
		DATE COMMENCED	06/04/2017
		DATE COMPLETED	06/04/2017
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		BORED BY	J. O'Toole
		PROCESSED BY	L. Daniels

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	Tarmacadam		3.72	0.05						
	fine to coarse grey subangular gravel. (MADE GROUND).		3.47	0.30						
	Loose yellow fine silty SAND.				AA67942	ENV B	1.20 1.20		N = 7 (1, 1, 2, 2, 2, 1)	
1										
					AA67943	ENV B	2.00 2.00		N = 6 (1, 1, 2, 2, 1, 1)	
2			1.27	2.50						
	Very soft black sandy SILT with occasional fine gravel				AA67944	ENV B	3.00 3.00		N = 4 (0, 1, 1, 1, 1, 1)	
3			0.07	3.70						
	Medium dense black sandy fine to coarse subangular GRAVEL.				AA67945	ENV B	4.00 4.00		N = 13 (2, 2, 3, 3, 4, 3)	
4			-0.53	4.30						
	Soft yellow brown laminated SILT									
			-1.13	4.90						
5	Obstruction		-1.23	5.00	AA67946	B	5.00		N = 50/75 mm (10, 50)	
	End of Borehole at 5.00 m									
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4.9	5	2	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.90	3.90	No	3.00	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
06-04-17	5.00	5.00	2.80	

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH06**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,935.99 E 739,406.75 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	4.29	**BOREHOLE DEPTH (m)**	4.80
		DATE COMMENCED	04/04/2017
		DATE COMPLETED	04/04/2017
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		BORED BY	J. O'Toole
		PROCESSED BY	L. Daniels

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	Tarmac overlying fine to coarse subangular gravel. (MADE GROUND).		3.99	0.30						
	Very loose black mottled brown clayey fine to coarse subangular to subrounded gravel. (MADE GROUND).		3.09	1.20	AA67923	ENV B	1.00 1.00		N = 3 (1, 1, 0, 1, 1, 1)	
1	Loose grey very sandy very silty medium to coarse subangular GRAVEL.		2.79	1.50						
	Soft grey gravelly very sandy SILT with frequent shell fragments.		1.59	2.70	AA67924	ENV B	2.00 2.00		N = 1 (0, 0, 1, 0, 0, 0)	
2	Soft black very sandy SILT.				AA67925	ENV B	3.00 3.00		N = 1 (0, 1, 0, 0, 1, 0)	
3					AA67926	ENV B	4.00 4.00		N = 1 (0, 0, 0, 1, 0, 0)	
4			-0.31	4.60						
	Obstruction		-0.51	4.80	AA67927	B	4.80		N = 50/75 mm (25, 50)	
5	End of Borehole at 4.80 m									
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4.6	4.8	2	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.60	4.60	No	No	20	Seepage

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
04-04-17	4.80	4.80	4.60	

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH07**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,935.48 E 739,370.87 N	**RIG TYPE**	Dando 2000
GROUND LEVEL (m AOD)	3.80	**BOREHOLE DIAMETER (mm)**	200
		BOREHOLE DEPTH (m)	3.40
		DATE COMMENCED	22/03/2017
		DATE COMPLETED	22/03/2017
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		BORED BY	P. Thomas
		PROCESSED BY	L. Daniels

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	Tarmac overlying fine to coarse subangular gravel. (MADE GROUND).		3.40	0.40						
1	Loose light brown very clayey fine to coarse subangular to subrounded gravel with rare brick and concrete fragments. (MADE GROUND).				AA61706	ENV B	1.00 1.00		N = 8 (1, 2, 2, 2, 2, 2)	
2					AA61707	ENV B	2.00 2.00		N = 10 (1, 2, 2, 3, 2, 3)	
3			0.40	3.40	AA61708	ENV B	3.00 3.00		N = 50/190 mm (3, 8, 17, 19, 14)	
4	Obstruction End of Borehole at 3.40 m									
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
2.7	2.9	0.5	
3.2	3.4	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.20	3.20	No	2.50	20	Moderate

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH08**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,935.16 E 739,390.58 N	**RIG TYPE**	Dando 2000
GROUND LEVEL (m AOD)	3.95	**BOREHOLE DIAMETER (mm)**	200
		BOREHOLE DEPTH (m)	4.20
		DATE COMMENCED	23/03/2017
		DATE COMPLETED	23/03/2017
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		BORED BY	P. Thomas
		PROCESSED BY	L. Daniels

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	Concrete reinforced with rebar. (MADE GROUND).		3.65	0.30						
	Loose black mottled brown fine to coarse subangular to subrounded gravel. (MADE GROUND).		2.95	1.00						
1	Loose grey very sandy very silty medium to coarse subangular GRAVEL.		1.95	2.00	AA61709	ENV B	1.00 1.00		N = 6 (1, 0, 1, 1, 2, 2)	
2	Soft to firm grey very sandy SILT. With occasional gravel		0.95	3.00	AA61710	ENV B	2.00 2.00		N = 8 (1, 1, 1, 2, 2, 3)	
3	Very soft black very sandy SILT.		0.05	3.90	AA61711	ENV B	3.00 3.00		N = 2 (1, 0, 0, 0, 1, 1)	
4	Dense angular COBBLES and boulders		-0.25	4.20	AA61712	ENV B	4.00 4.00		N = 50/175 mm (1, 12, 16, 19, 15)	
	Obstruction End of Borehole at 4.20 m									
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.60	2.60	3.00	2.00	20	Moderate
4.00	4.00	No	3.50	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH09**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,905.72 E 739,412.47 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	4.17	**BOREHOLE DEPTH (m)**	4.20
		DATE COMMENCED	22/03/2017
		DATE COMPLETED	22/03/2017
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		BORED BY	P. Thomas
		PROCESSED BY	L. Daniels

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	Tarmac overlying brown gravelly fine to coarse sand. Gravel is fine to coarse subrounded. (MADE GROUND).									
1					AA61701	ENV B	1.00 1.00		N = 3 (1, 0, 0, 1, 1, 1)	
			2.67	1.50						
2	Soft to very soft grey very sandy SILT with some gravel and frequent shell fragments.				AA61702	ENV B	2.00 2.00		N = 3 (1, 0, 1, 0, 1, 1)	
					AA61705	ENV U	2.50 2.50			
			1.17	3.00						
3	Soft to very soft grey very sandy SILT with occasional gravel and frequent shell fragments. (Possibly very silty sand)				AA61703	ENV B	3.00 3.00		N = 4 (1, 0, 0, 0, 1, 3)	
			0.37	3.80						
4	Dense COBBLES and boulders		-0.03	4.20	AA61704	ENV B	4.00 4.00		N = 50/120 mm (9, 16, 27, 23)	
	Obstruction End of Borehole at 4.20 m									
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4	4.2	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.00	4.00	No	3.10	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH10**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,909.55 E 739,375.09 N	**RIG TYPE**	Dando 2000
GROUND LEVEL (m AOD)	3.93	**BOREHOLE DIAMETER (mm)**	200
		BOREHOLE DEPTH (m)	2.30
		DATE COMMENCED	23/03/2017
		DATE COMPLETED	23/03/2017
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		BORED BY	P. Thomas
		PROCESSED BY	L. Daniels

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	Concrete reinforced with rebar. (MADE GROUND).		3.73	0.20						
	Medium dense light brown slightly clayey sandy fine to coarse subangular gravel with rare brick fragments. (MADE GROUND).		3.43	0.50						
1	Medium dense brown clayey very sandy fine to coarse subangular to subrounded gravel. (MADE GROUND).				AA61713	ENV B	1.00 1.00		N = 13 (1, 2, 2, 3, 3, 5)	
			2.23	1.70	AA61714	ENV B	1.50 1.50			
2	Firm brown sandy gravelly clay. Gravel is fine to coarse subangular with rare brick fragments. (MADE GROUND).		1.63	2.30	AA61715	ENV B	2.00 2.00		N = 50/125 mm (1, 0, 25, 25)	
	Obstruction End of Borehole at 2.30 m									
3										
4										
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
2	2.3	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH11**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,887.36 E 739,417.46 N	**RIG TYPE**	Dando 2000
GROUND LEVEL (m AOD)	4.16	**BOREHOLE DIAMETER (mm)**	200
		BOREHOLE DEPTH (m)	4.50
		DATE COMMENCED	27/03/2017
		DATE COMPLETED	27/03/2017
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		BORED BY	E.Leahy
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	Tarmacadam		4.11	0.05						
	Brown gravelly CLAY with cobbles and red brick fragments (MADE GROUND)		3.76	0.40						
	Black sandy GRAVEL (MADE GROUND)		3.36	0.80						
1	Brown gravelly CLAY with cobbles and red brick fragments (MADE GROUND)		2.66	1.50	AA61863	ENV B	1.00 1.00		N = 6 (2, 2, 1, 1, 2, 2)	
	Loose to medium dense grey/brown sandy GRAVEL		1.76	2.40	AA61864	ENV B	2.00 2.00		N = 11 (1, 1, 3, 3, 2, 3)	
2	Soft to very soft dark brown sandy SILT with some gravel and seashells throughout									
3					AA61865	ENV B	3.00 3.00		N = 2 (0, 0, 0, 1, 0, 1)	
					AA61866	B	3.60			
4			-0.14	4.30		ENV	4.00		N = 40/150 mm (1, 1, 15, 25)	
	Very dense arey angular COBBLES and boulders		-0.34	4.50	AA61867	B	4.30		N = 25/75 mm (25, 25)	
5	Obstruction End of Borehole at 4.50 m									
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4.3	4.5	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.00	3.00	No	2.70	20	Seepage

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
27-03-17	4.50	1.00	4.50	50mm SP

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
27-03-17	4.50	Nil	4.00	End of BH

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH12**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,855.08 E 739,403.28 N	**RIG TYPE**	Dando 2000
GROUND LEVEL (m AOD)	3.87	**BOREHOLE DIAMETER (mm)**	200
		BOREHOLE DEPTH (m)	3.60
		DATE COMMENCED	05/04/2017
		DATE COMPLETED	05/04/2017
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		BORED BY	J. O'Toole
		PROCESSED BY	L. Daniels

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	Concrete. (MADE GROUND).		3.67	0.20						
	Soft black sandy clayey fine to coarse subangular to subrounded gravel with frequent brick fragments. (MADE GROUND).				AA67934	ENV B	1.00 1.00		N = 3 (0, 1, 1, 0, 1, 1)	
1			2.37	1.50						
	Loose brown fine to medium very sandy very silty GRAVEL (Possibly silty SAND)				AA67935	ENV B	2.00 2.00		N = 1 (0, 0, 0, 0, 0, 1)	
2										
					AA67936	ENV B	3.00 3.00		N = 6 (1, 2, 2, 2, 1, 1)	
3			0.37	3.50						
	Possible weathered bedrock observed as brown sandy fine to coarse subangular to angular GRAVEL.		0.27	3.60	AA67937	ENV B	3.60 3.60		N = 50/150 mm (2, 7, 28, 22)	
4	Obstruction End of Borehole at 3.60 m									
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.5	3.6	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.20	2.20	No	No	20	Seepage

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
05-04-17	3.60	3.60	1.80	

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT Techcrete Howth

BOREHOLE NO. BH13
SHEET Sheet 1 of 1

CO-ORDINATES 727,864.20 E
739,376.82 N
GROUND LEVEL (m AOD) 3.87

RIG TYPE Dando 2000
BOREHOLE DIAMETER (mm) 200
BOREHOLE DEPTH (m) 3.20

DATE COMMENCED 24/03/2017
DATE COMPLETED 24/03/2017

CLIENT Corcom Enterprises Ltd.
ENGINEER Roughan & O'Donovan

SPT HAMMER REF. NO.
ENERGY RATIO (%)

BORED BY P. Thomas
PROCESSED BY L. Daniels

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	Concrete reinforced with rebar. (MADE GROUND).		3.67	0.20						
	Loose light brown slightly clayey sandy fine to coarse subangular gravel with rare brick fragments. (MADE GROUND).		3.27	0.60						
1	Loose black clayey fine to medium subangular gravel. (MADE GROUND).				AA61716	B	1.00		N = 6 (1, 1, 1, 1, 2, 2)	
			2.17	1.70						
2	Very soft brown waste material consisting of frequent ceramic, glass, concrete, steel and timber fragments. (MADE GROUND).				AA61717	B	2.00		N = 1 (1, 0, 0, 0, 1, 0)	
			0.97	2.90						
3	Angular COBBLES and BOULDER		0.67	3.20	AA61718	B	3.00		N = 50/145 mm (4, 10, 15, 35)	
	Obstruction End of Borehole at 3.20 m									
4										
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
2.9	3.2	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH14**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,828.56 E 739,431.46 N	**RIG TYPE**	Dando 2000
GROUND LEVEL (m AOD)	3.89	**BOREHOLE DIAMETER (mm)**	200
		BOREHOLE DEPTH (m)	5.80
		DATE COMMENCED	04/04/2017
		DATE COMPLETED	05/04/2017
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		BORED BY	J. O'Toole
		PROCESSED BY	L. Daniels

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	Tarmac overlying fine to coarse subangular gravel. (MADE GROUND).		3.59	0.30						
	Soft brown gravelly clay. (MADE GROUND).		2.99	0.90						
1	Loose black fine to medium subangular gravel. Has the appearance of ashy/burnt waste material. (MADE GROUND).				AA67928	ENV B	1.00 1.00		N = 4 (0, 1, 1, 1, 1, 1)	
2			1.79	2.10						
	Soft brown sandy SILT with some fine gravel				AA67929	ENV B	2.00 2.00		N = 3 (0, 0, 0, 1, 1, 1)	
3					AA67930	ENV B	3.00 3.00		N = 1 (0, 0, 0, 0, 0, 1)	
			-0.11	4.00						
4	Soft black sandy SILT				AA67931	ENV B	4.00 4.00		N = 4 (0, 0, 1, 0, 1, 2)	
			-0.61	4.50						
	Medium dense brown gravelly fine to coarse SAND with occasional cobbles (Possibly very sandy gravel)				AA67932	B	5.00		N = 34/100 mm (1, 10, 19, 15)	
5			-1.51	5.40						
	Firm yellow brown laminated SILT/CLAY.		-1.71	5.60						
	Obstruction		-1.91	5.80						
6	End of Borehole at 5.80 m				AA67933	B	5.80		N = 25 (5, 5, 5, 10, 5, 5)	
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
5.6	5.8	2	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.10	2.10	No	No	20	Seepage
4.80	4.80	No	No	20	Seepage

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
04-04-17	5.00	5.00	3.80	End of shift
05-04-17	5.00	5.00	4.80	Start of shift
05-04-17	5.80	5.80	1.80	

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH15**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,856.04 E 739,377.17 N	**RIG TYPE**	Dando 2000
GROUND LEVEL (m AOD)	3.86	**BOREHOLE DIAMETER (mm)**	200
		BOREHOLE DEPTH (m)	2.50
		DATE COMMENCED	28/03/2017
		DATE COMPLETED	28/03/2017
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		BORED BY	E.Leahy
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	Concrete		3.66	0.20						
	MADE GROUND (Comprised of lay fill with cobbles,cinders,glass,timber and red brick fragments)				AA61868	ENV B	1.00 1.00		N = 6 (1, 1, 1, 1, 2, 2)	
2			1.76	2.10		ENV	2.00		N = 30/225 mm (1, 2, 2, 3, 25)	
	Dense black fine GRAVEL		1.56	2.30	AA61869	B	2.00			
	Dense black angular COBBLES and some boulders		1.36	2.50	AA61870	B	2.30		N = 25/75 mm (25, 25)	
	Obstruction End of Borehole at 2.50 m									

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
2.3	2.5	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.30	2.30	No	1.65	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
28-03-17	2.50	Nil	1.70	End of BH

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT Techcrete Howth

BOREHOLE NO. **BH16**
SHEET Sheet 1 of 1

CO-ORDINATES 727,786.19 E
739,379.00 N
GROUND LEVEL (m AOD) 3.88

RIG TYPE Dando 2000
BOREHOLE DIAMETER (mm) 200
BOREHOLE DEPTH (m) 2.70

DATE COMMENCED 28/03/2017
DATE COMPLETED 28/03/2017

CLIENT Corcom Enterprises Ltd.
ENGINEER Roughan & O'Donovan

SPT HAMMER REF. NO.
ENERGY RATIO (%)

BORED BY E.Leahy
PROCESSED BY F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	Concrete		3.68	0.20						
	MADE GROUND (Comprised of sandy gravelly clay fill with cobbles,cinders,glass,red brick)				AA61871	ENV B	1.00 1.00		N = 5 (0, 0, 1, 1, 1, 2)	
2					AA61872	ENV B	2.00 2.00		N = 27 (1, 1, 3, 2, 6, 16)	
			1.28	2.60						
	Very dense angular COBBLES and some boulders		1.18	2.70	AA61873	B	2.60		N = 25/75 mm (25, 25)	
3	Obstruction End of Borehole at 2.70 m									
4										
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
2.6	2.7	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.50	2.50	No	2.00	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
28-03-17	2.70	Nil	1.50	End of BH

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH17**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,758.22 E 739,444.16 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	3.76	**BOREHOLE DEPTH (m)**	4.60
		DATE COMMENCED	29/03/2017
		DATE COMPLETED	29/03/2017
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
		BORED BY	E.Leahy
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	Concrete		3.56	0.20						
	MADE GROUND (Comprised of granular stone fill with cobbles)		3.41	0.35						
1	MADE GROUND (Comprised of sandy gravelly clay fill with steel , timber , red brick)				AA61874	ENV B	1.00 1.00		N = 11 (2, 2, 2, 3, 3, 3)	
2					AA61875	ENV B	2.00 2.00		N = 6 (1, 1, 1, 1, 1, 3)	
			0.76	3.00						
3	Very soft to soft grey SILT/CLAY with occasional gravel				AA61876	ENV B	3.00 3.00		N = 4 (1, 0, 0, 1, 1, 2)	
					AA61877	U	3.60			
4			-0.34	4.10		ENV	4.00		N = 25/75 mm (18, 25)	
	Dense grey silty GRAVEL		-0.54	4.30	AA61878	B	4.30			
	Very dense gngular COBBLES with gravel and boulders		-0.84	4.60						
5	Obstruction End of Borehole at 4.60 m									
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3	3.25	0.75	
4.4	4.7	2	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.40	3.40	No	2.80	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
29-03-17	4.60	Nil	2.00	End of BH

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH18**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,753.55 E 739,394.50 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	3.75	**BOREHOLE DEPTH (m)**	4.70
		DATE COMMENCED	30/03/2017
		DATE COMPLETED	30/03/2017
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
		BORED BY	E.Leahy
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	MADE GROUND (Comprised gravelly clay fill with cobbles)		3.40	0.35						
	MADE GROUND (Comprised ofgravelly clay fill with slate.timber,red brick)									
1					AA61883	ENV B	1.00 1.00		N = 9 (0, 0, 1, 1, 3, 4)	
2					AA61884	ENV B	2.00 2.00		N = 8 (3, 3, 2, 2, 2, 2)	
			0.75	3.00						
3	Dense dark grey silty GRAVEL (Possible Made Ground)		0.50	3.25	AA61885	ENV B	3.00 3.00		N = 40 (0, 1, 6, 9, 12, 13)	
	Hard brown slightly sandy gravelly CLAY with cobbles									
4					AA61886	ENV B	4.00 4.00		N = 25/75 mm (8, 21, 25)	
			-0.95	4.70					N = 25/75 mm (25, 25)	
5	Obstruction End of Borehole at 4.70 m									
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.25	4.5	2	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.00	3.00	No	2.40	20	Slow

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
30-03-17	3.00	Nil	1.85	End of BH

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH19**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,751.87 E 739,379.84 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	3.85	**BOREHOLE DEPTH (m)**	4.90
		DATE COMMENCED	29/03/2017
		DATE COMPLETED	30/03/2017
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
		BORED BY	E.Leahy
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	MADE GROUND (Comprised of gravelly clay fill with cobbles)		3.45	0.40						
	MADE GROUND (Comprised of clay fill with slate,steel,timber and red brick)				AA61879	ENV B	1.00 1.00		N = 8 (0, 1, 1, 1, 3, 3)	
1										
2					AA61880	ENV B	2.00 2.00		N = 9 (1, 1, 2, 2, 2, 3)	
			1.05	2.80						
	MADE GROUND (Comprised of grey sandy silt/clay fill with red brick)		0.85	3.00						
3	MADE GROUND (Comprised of dark grey sandy silty/clayey fill with red brick)		0.45	3.40	AA61881	ENV B	3.00 3.00		N = 8 (0, 0, 0, 0, 4, 4)	
	Very stiff brown sandy gravelly CLAY with cobbles									
4					AA61882	ENV B	4.00 4.00		N = 30 (6, 8, 6, 8, 7, 9)	
			-1.05	4.90					N = 25/60 mm (21, 25)	
5	Obstruction End of Borehole at 4.90 m									
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.4	3.8	0.75	
4.6	4.9	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
29-03-17	3.00	3.00	2.10	End of 1st Day
30-03-17	4.70	Nil	1.60	End of BH

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH20**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,714.11 E 739,424.04 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	3.86	**BOREHOLE DEPTH (m)**	3.50
		DATE COMMENCED	04/04/2017
		DATE COMPLETED	04/04/2017
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		BORED BY	E.Leahy
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	MADE GROUND (Comprised of sandy gravelly clay fill with cobbles and some boulders)		3.26	0.60						
1	MADE GROUND (Comprised of gravelly clay fill with cobbles,timber,cinders,steel,red brick)				AA66856	ENV B	1.00 1.00		N = 12 (1, 4, 3, 3, 3, 3)	
2					AA66857	ENV B	2.00 2.00		N = 3 (0, 0, 0, 1, 1, 1)	
3			0.76	3.10		ENV	3.00		N = 50/125 mm (1, 1, 17, 33)	
	Soft grey sandy SILT		0.56	3.30	AA66858	B	3.00			
	Dense angular COBBLES and BOULDER		0.36	3.50	AA66859	B	3.30		N = 25/75 mm (25, 25)	
	Obstruction End of Borehole at 3.50 m									
4										
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
0.3	0.5	1	
3.3	3.5	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.30	3.30	No	2.60	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
04-04-17	3.50	Nil	2.00	End of BH

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH21**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,711.01 E 739,383.61 N	**RIG TYPE**	Dando 2000
GROUND LEVEL (m AOD)	3.96	**BOREHOLE DIAMETER (mm)**	200
		BOREHOLE DEPTH (m)	4.60
		DATE COMMENCED	03/04/2017
		DATE COMPLETED	03/04/2017
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		BORED BY	E.Leahy
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	MADE GROUND (Comprised of clayey granular stone fill)		3.56	0.40						
	MADE GROUND (Comprised of gravelly clay fill with glass,timber,slate,cinders,red brick)				AA61897	ENV B	1.00 1.00		N = 6 (0, 1, 1, 2, 1, 2)	
1										
2					AA61898	ENV B	2.00 2.00		N = 11 (0, 1, 3, 3, 2, 3)	
3			0.66	3.30	AA61899	ENV B	3.00 3.00		N = 6 (0, 0, 0, 0, 2, 4)	
	MADE GROUND (Comprised of grey gravelly silty/clayey fill with red brick)		0.26	3.70						
	Hard brown sandy gravelly CLAY with cobbles				AA61900	ENV B	4.00 4.00		N = 62 (8, 12, 13, 15, 15, 19)	
4			-0.64	4.60					N = 25/60 mm (25, 25)	
	Obstruction End of Borehole at 4.60 m									
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4.2	4.6	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.40	3.40	No	2.90	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
03-04-17	4.60	Nil	3.40	End of BH

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH22**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,697.06 E 739,453.48 N	**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)	4.22	**BOREHOLE DEPTH (m)**	5.70
		DATE COMMENCED	05/04/2017
		DATE COMPLETED	05/04/2007
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
		BORED BY	E.Leahy
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	MADE GROUND (Comprised of sandy gravelly clay fill with cobbles)		3.82	0.40						
	MADE GROUND (Comprised of gravelly clay fill with cobbles,cinders,paper,red brick)				AA66860	ENV B	1.00 1.00		N = 7 (1, 1, 1, 1, 2, 3)	
1										
					AA66861	ENV B	2.00 2.00		N = 10 (2, 2, 2, 3, 2, 3)	
2										
					AA66862	ENV B	3.00 3.00		N = 7 (0, 0, 0, 1, 3, 3)	
3			0.82	3.40						
	MADE GROUND (Comprised of black gravelly silt fill with cobbles and red brick)				AA66863	ENV B	4.00 4.00		N = 16 (2, 4, 3, 4, 4, 5)	
4										
			-0.48	4.70						
	MADE GROUND (Comprised of brown sandy gravelly clay fill with concrete fragments)		-0.88	5.10						
5	Hard brown sandy gravelly CLAY with cobbles				AA66864	ENV B	5.00 5.00		N = 61 (8, 8, 12, 13, 16, 20)	
			-1.48	5.70						
	Obstruction End of Borehole at 5.70 m				AA66865	B	5.70		N = 25/75 mm (15, 25)	
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4.7	4.9	0.5	
5.1	5.7	2	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.50	3.50	No	2.80	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
05-04-17	5.70	Nil	3.10	End of BH

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT Techcrete Howth

BOREHOLE NO. **BH23**
SHEET Sheet 1 of 1

CO-ORDINATES 727,689.54 E
739,406.73 N
GROUND LEVEL (m AOD) 4.45

RIG TYPE Dando 2000
BOREHOLE DIAMETER (mm) 200
BOREHOLE DEPTH (m) 4.20

DATE COMMENCED 03/04/2017
DATE COMPLETED 04/04/2017

CLIENT Corcom Enterprises Ltd.
ENGINEER Roughan & O'Donovan

SPT HAMMER REF. NO.
ENERGY RATIO (%)

BORED BY E.Leahy
PROCESSED BY F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	MADE GROUND (Comprised of sandy gravelly clay fill with cobbles and boulders)		3.95	0.50						
1	MADE GROUND (Comprised of sandy stone fill with paper , timber and red brick)				AA66852	ENV B	1.00 1.00		N = 7 (2, 2, 1, 1, 1, 4)	
2					AA66853	ENV B	2.00 2.00		N = 5 (0, 1, 0, 1, 2, 2)	
3			1.35	3.10						
	Soft grey sandy SILT		1.15	3.30	AA66854	ENV B	3.00 3.00		N = 52 (1, 5, 9, 14, 14, 15)	
	Very stiff to hard brown slightly sandy gravelly CLAY with cobbles and occasional boulders									
4			0.25	4.20	AA66855	ENV B	4.00 4.00		N = 25/75 mm (8, 19, 25)	
	Obstruction End of Borehole at 4.20 m									
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
0.2	0.4	1	
3.7	4.2	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.20	3.20	3.50	2.90	20	Slow

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH24**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,667.52 E 739,447.21 N	**RIG TYPE**	Dando 2000
GROUND LEVEL (m AOD)	4.43	**BOREHOLE DIAMETER (mm)**	200
		BOREHOLE DEPTH (m)	5.20
		DATE COMMENCED	03/03/2017
		DATE COMPLETED	31/03/2017
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		BORED BY	E.Leahy
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	MADE GROUND (Comprised of gravelly clay fill with cobbles and steel fragments)		3.83	0.60						
1	MADE GROUND (Comprised of sandy gravelly clay fill with fragments of steel,rubber,timber, paper and red brick)				AA61887	ENV B	1.00 1.00		N = 14 (1, 4, 3, 3, 4, 4)	
2					AA61888	ENV B	2.00 2.00		N = 6 (0, 1, 1, 1, 2, 2)	
3					AA61889	ENV B	3.00 3.00		N = 10 (2, 1, 1, 3, 3, 3)	
4	Medium dense grey slightly gravelly silty SAND		0.53 0.13	3.90 4.30	AA61890	ENV B	4.00 4.00		N = 23 (0, 0, 1, 5, 8, 9)	
5	Stiff to very stiff brown sandy gravelly CLAY with occasional large cobbles		-0.77	5.20	AA61891	ENV B	5.00 5.00		N = 25/75 mm (19, 25)	
6	Obstruction End of Borehole at 5.20 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4.4	4.5	0.5	
4.9	5.1	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.80	3.80	No	3.10	20	Moderate

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
31-03-17	4.00	Nil	3.30	End of BH

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT Techcrete Howth

BOREHOLE NO. **BH25**
SHEET Sheet 1 of 1

CO-ORDINATES 727,667.30 E
739,383.90 N
GROUND LEVEL (m AOD) 5.22

RIG TYPE Dando 2000
BOREHOLE DIAMETER (mm) 200
BOREHOLE DEPTH (m) 5.40

DATE COMMENCED 31/03/2017
DATE COMPLETED 31/03/2017

CLIENT Corcom Enterprises Ltd.
ENGINEER Roughan & O'Donovan

SPT HAMMER REF. NO.
ENERGY RATIO (%)

BORED BY E.Leahy
PROCESSED BY F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	MADE GROUND (Comprised of sandy gravelly clay fill with cobbles)		4.72	0.50						
1	MADE GROUND (Comprised of gravelly clay fill with cobbles,cinders,paper and fragments of steel and red brick)				AA61892	ENV B	1.00 1.00		N = 11 (1, 3, 5, 2, 2, 2)	
2					AA61893	ENV B	2.00 2.00		N = 15 (1, 1, 4, 4, 3, 4)	
3			1.52	3.70	AA61894	ENV B	3.00 3.00		N = 6 (4, 3, 1, 2, 2, 1)	
4	Very dense grey slightly gravelly silty SAND		1.12	4.10	AA61895	ENV B	4.00 4.00		N = 64 (9, 10, 14, 16, 16, 18)	
5	Hard brown slightly sandy gravelly CLAY with occasional cobbles		0.02	5.20	AA61896	ENV B	5.00 5.00		N = 25/40 mm (15, 15, 25)	
6	Dense angular clayey COBBLES and BOULDERS		-0.18	5.40						
7	Obstruction End of Borehole at 5.40 m									
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4.3	4.6	0.75	
5.1	5.4	2	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.90	3.90	No	3.00	20	Moderate

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
31-03-17	5.00	Nil	2.00	End of BH

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH30**
		SHEET	Sheet 1 of 1
CO-ORDINATES		**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)		**BOREHOLE DEPTH (m)**	3.40
		DATE COMMENCED	10/04/2017
		DATE COMPLETED	10/04/2017
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		BORED BY	E.Leahy
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	Concrete			0.20						
	MADE GROUND (Comprised of clayey stone fill with cobbles)			0.40						
1	MADE GROUND (Comprised of clayey stone fill with cobbles,cinders,red brick fragments and glass fragments)				AA66879	ENV B	1.00 1.00		N = 8 (1, 2, 3, 2, 1, 2)	
2					AA66880	ENV B	2.00 2.00		N = 7 (0, 1, 1, 2, 2, 2)	
				2.60						
	Medium dense grey silty GRAVEL (Possibly made ground)					ENV	3.00		N = 43/135 mm (1, 13, 18, 25)	
3				3.20	AA66881	B	3.00			
	Dense angular COBBLES and BOULDER			3.40	AA66882	B	3.20		N = 25/75 mm (25, 25)	
	Obstruction End of Borehole at 3.40 m									
4										
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
3.2	3.4	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.30	3.20	No	2.60	20	Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
10-04-17	3.40	Nil	1.75	End of BH

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL BORING RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**BOREHOLE NO.**	**BH31**
		SHEET	Sheet 1 of 1
CO-ORDINATES		**RIG TYPE**	Dando 2000
		BOREHOLE DIAMETER (mm)	200
GROUND LEVEL (m AOD)		**BOREHOLE DEPTH (m)**	2.80
		DATE COMMENCED	10/04/2017
		DATE COMPLETED	10/04/2017
CLIENT	Corcom Enterprises Ltd.	**SPT HAMMER REF. NO.**	
		BORED BY	E.Leahy
ENGINEER	Roughan & O'Donovan	**ENERGY RATIO (%)**	
		PROCESSED BY	F.C

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Samples: Sample Type	Samples: Depth (m)	Samples: Recovery	Field Test Results	Standpipe Details
0	Concrete			0.20						
	MADE GROUND (Comprised of hardcore stone fill with cobbles)			0.40						
1	MADE GROUND (Comprised of sandy gravelly clay with cinders , cutlery,steel fragments and red brick fragments)			1.80	AA66876	ENV B	1.00 1.00		N = 7 (0, 0, 1, 1, 3, 2)	
2	MADE GROUND (Comprised of dark grey silt with glass fragments and occasional shells)			2.65	AA66877	ENV B	2.00 2.00		N = 16 (0, 0, 0, 1, 5, 10)	
	Dense angular COBBLES and BOULDER			2.80	AA66878	B ENV	2.65 2.80		N = 25/75 mm (25, 25)	
3	Obstruction End of Borehole at 2.80 m									
4										
5										
6										
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
2.65	2.8	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.50	2.50	No	2.00	20	Slow

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
10-04-17	2.80	Nil	2.10	End of BH

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS CAT scanned location and hand dug inspection pit for services.

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 19956.GPJ IGSL.GDT 6/6/17

Appendix 2

Rotary Corehole Records

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC02**
		SHEET	Sheet 1 of 1
CO-ORDINATES	728,005.83 E 739,357.40 N	**DATE DRILLED**	24/05/2017
GROUND LEVEL (mOD)	3.69	**DATE LOGGED**	25/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Geo 205		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								Hole opened by Shell & Auger - see BH02				
									4.10	-0.41		
								SYMMETRIX DRILLING: No recovery: observed by driller as returns of grey brown sandy cobbly GRAVEL	4.60	-0.91		
	4.80							SYMMETRIX DRILLING: No recovery: observed by driller as returns of probable ROCK	4.80	-1.11		
5		100	83	51				Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to very locally moderately weathered (with sandy honeycomb weathering at 5.25-5.51m, 8.11-8.20m, 9.27-9.32m, 9.38-9.50m & 9.67-10.00m).				
	5.60											
6		100	100	87		1140		Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, locally moderately iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular.				
	7.10											
7		100	82	62								
8	8.30											
		100	22	0								
	8.80											
9		100	72	47								
	10.00							End of Borehole at 10.00 m	10.00	-6.31		

REMARKS

Hole cased 0.00-3.60m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
5.00		N/S			Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
25-05-17				Water level recorded 5 mins after end of drilling.

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC03**
		SHEET	Sheet 1 of 2
CO-ORDINATES	727,992.32 E 739,366.89 N	**DATE DRILLED**	18/05/2017
GROUND LEVEL (mOD)	3.76	**DATE LOGGED**	18/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Geo 205		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								Hole opened by Shell & Auger - see BH03				
									4.60	-0.84		
5	5.80							SYMMETRIX DRILLING: No recovery: observed by driller as returns of probable ROCK	5.80	-2.04		
6	6.30	100	42	0				Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to very locally moderately weathered (with sandy honeycomb weathering at 5.90-6.04m, 6.15-6.62m, 7.90-8.06m 10.45-10.60m).				
		100	68	44								
7	7.10				560			Discontinuities are medium to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay/gravel-filled (at 8.40-9.40m & 10.35-10.45m), locally moderately iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular.				
		100	91	79								
8	8.50											
		100	7	0								
9	9.30											

REMARKS

Hole cased 0.00-5.80m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
18-05-17				Water level recorded 5 mins after end of drilling.

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC03**
		SHEET	Sheet 2 of 2
CO-ORDINATES	727,992.32 E 739,366.89 N	**DATE DRILLED**	18/05/2017
GROUND LEVEL (mOD)	3.76	**DATE LOGGED**	18/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Geo 205		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.60	100	65	55				End of Borehole at 10.60 m	10.60	-6.84		
11												
12												
13												
14												
15												
16												
17												
18												
19												

REMARKS

Hole cased 0.00-5.80m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC04**
		SHEET	Sheet 1 of 2
CO-ORDINATES	727,981.92 E 739,374.95 N	**DATE DRILLED**	19/05/2017
GROUND LEVEL (mOD)	3.84	**DATE LOGGED**	22/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Geo 205		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								Hole opened by Shell & Auger - see BH04				
1												
2												
3												
4									4.50	-0.66		
5								SYMMETRIX DRILLING: No recovery: observed by driller as returns of BOULDER	4.80	-0.96		
6								SYMMETRIX DRILLING: No recovery: observed by driller as returns of grey/brown silty sandy gravelly CLAY	6.20	-2.36		N = 42 (3, 4, 7, 9, 13, 13)
7								SYMMETRIX DRILLING: No recovery: observed by driller as returns of grey/brown silty clayey gravelly SAND				N = 38 (2, 2, 5, 6, 8, 19)
8												
9												N = 32/50 mm (25, 32)
									10.00	-6.16		

REMARKS

Hole cased 0.00-10.20m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.00		N/S			Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
22-05-17	10.20	1.00	10.20	50mm SP

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
22-05-17				Water level recorded 5 mins after end of drilling.

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC04**
		SHEET	Sheet 2 of 2
CO-ORDINATES	727,981.92 E 739,374.95 N	**DATE DRILLED**	19/05/2017
GROUND LEVEL (mOD)	3.84	**DATE LOGGED**	22/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Geo 205		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.20							SYMMETRIX DRILLING: No recovery: observed by driller as returns of probable ROCK	10.20	-6.36		
11		100	68	40				Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to locally moderately weathered (with sandy honeycomb weathering at 10.31-10.47m, 10.54-10.78m, 11.21-11.23m, 11.27-11.30m, 12.11-12.30m, 12.37-12.50m, 12.89-13.10m).				
	11.80											
12		100	43	43				Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-filled (at 12.50-12.68m), locally moderately iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular.				
	12.60											
		100	38	23								
13	13.20											
		100	76	63		760						
14												
	14.80											
15		100	100	90		570						
	15.70								15.70	-11.86		
16								End of Borehole at 15.70 m				
17												
18												
19												

REMARKS

Hole cased 0.00-10.20m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.00		N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
22-05-17	10.20	1.00	10.20	50mm SP

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC05**
		SHEET	Sheet 1 of 2
CO-ORDINATES	727,979.94 E 739,360.13 N	**DATE DRILLED**	23/05/2017
GROUND LEVEL (mOD)	3.77	**DATE LOGGED**	23/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Geo 205		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								Hole opened by Shell & Auger - see BH05				
5								SYMMETRIX DRILLING: No recovery: observed by driller as returns of BOULDER	5.00	-1.23		
								SYMMETRIX DRILLING: No recovery: observed by driller as returns of grey/brown silty gravelly SAND	5.30	-1.53		N = 7 (1, 0, 1, 2, 2, 2)
6									6.50	-2.73		
								SYMMETRIX DRILLING: No recovery: observed by driller as returns of grey brown sandy GRAVEL	6.80	-3.03		
7	7.10							SYMMETRIX DRILLING: No recovery: observed by driller as returns of probable ROCK	7.10	-3.33		
		100	43	33				Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to locally moderately weathered (with sandy honeycomb weathering at 9.23-9.51m, 9.73-10.55m & 11.48-11.70m).				
8	8.70											
9		100	57	28				Discontinuities are medium to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-filled (at 11.41-11.48m), locally moderately iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular.				
	10.00											

REMARKS

Hole cased 0.00-7.10m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.80		N/S			Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
23-05-17				Water level recorded 5 mins after end of drilling.

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC05**
		SHEET	Sheet 2 of 2
CO-ORDINATES	727,979.94 E 739,360.13 N	**DATE DRILLED**	23/05/2017
GROUND LEVEL (mOD)	3.77	**DATE LOGGED**	23/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Geo 205		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.20	100	45	0								
		100	69	38								
11	11.40											
		56	4	0								
12	12.30							End of Borehole at 12.30 m	12.30	-8.53		
13												
14												
15												
16												
17												
18												
19												

REMARKS

Hole cased 0.00-7.10m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
6.80		N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC06**
		SHEET	Sheet 1 of 2
CO-ORDINATES	727,935.99 E 739,406.75 N	**DATE DRILLED**	17/05/2017
GROUND LEVEL (mOD)	4.29	**DATE LOGGED**	18/05/2017
RIG TYPE	Knebel		
FLUSH	Air/Mist		
CLIENT	Corcom Enterprises Ltd.	**INCLINATION (deg)**	-90
ENGINEER	Roughan & O'Donovan	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL
		LOGGED BY	D.O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								Hole opened by Shell & Auger - see BH06				
1												
2												
3												
4	4.80								4.80	-0.51		
5	5.50	0	0	0				SYMMETRIX DRILLING: No recovery: observed by driller as returns of black silty SAND	5.50	-1.21		
6		100	95	89	840			Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly weathered. Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, locally slightly iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular.				
7	6.80	100	87	76	659.999999999999							
8	8.30				1120							
9		100	85	85								
	9.80											

REMARKS

Hole cased 0.00-5.50m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.50		N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
18-05-17				Water level recorded 5 mins after end of drilling.

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC06**
		SHEET	Sheet 2 of 2
CO-ORDINATES	727,935.99 E 739,406.75 N	**DATE DRILLED**	17/05/2017
GROUND LEVEL (mOD)	4.29	**DATE LOGGED**	18/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10												
	11.00	100	100	100	1540				11.00	-6.71		
11								End of Borehole at 11.00 m				
12												
13												
14												
15												
16												
17												
18												
19												

REMARKS

Hole cased 0.00-5.50m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.50		N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC07**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,935.48 E 739,370.87 N	**DATE DRILLED**	22/05/2017
GROUND LEVEL (mOD)	3.80	**DATE LOGGED**	22/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								Hole opened by Shell & Auger - see BH07				
1												
2												
3									3.00	0.80		
4	4.00	20	0	0				Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to very locally moderately weathered (with sandy honeycomb weathering at 5.69-5.77m, 5.97-6.08m, 6.40-6.71m, 6.94-7.80m, 8.33-8.51m & 8.60-8.90m). Discontinuities are medium to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay/gravel-filled (at 3.70-5.60m), locally moderately iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular.				
5	5.50	89	38	0								N = 50/250 mm (7, 7, 11, 13, 12, 14)
6	6.40	100	28	0								
7	7.20	100	13	0								
8	7.90	100	68	47								
9	8.90							End of Borehole at 8.90 m	8.90	-5.10		

REMARKS

Hole cased 0.00-3.00m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.00		N/S			Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
22-05-17				Water level recorded 5 mins after end of drilling.

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC08**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,935.16 E 739,390.58 N	**DATE DRILLED**	18/05/2017
GROUND LEVEL (mOD)	3.95	**DATE LOGGED**	18/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								Hole opened by Shell & Auger - see BH08				
4	4.20								4.20	-0.25		
5	5.50	100	65	39				Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to very locally moderately weathered (with sandy honeycomb weathering at 5.33-5.50m, 8.36-8.51m, 8.60-8.84m & 8.90-9.37m). Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, locally slightly iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular.				
6	7.00	100	97	97	580							
7		100	84	71								
8	8.50											
9	9.70	100	54	26					9.70	-5.75		
								End of Borehole at 9.70 m				

REMARKS

Hole cased 0.00-4.20m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.50		N/S			Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
18-05-17				Water level recorded 5 mins after end of drilling.

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC09**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,905.72 E 739,412.47 N	**DATE DRILLED**	17/05/2017
GROUND LEVEL (mOD)	4.17	**DATE LOGGED**	17/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								Hole opened by Shell & Auger - see BH09				
4	4.20								4.20	-0.03		
5	5.40	100	78	55				Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to very locally moderately weathered (with sandy honeycomb weathering at 4.20-4.44m). Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, locally slightly iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular.				
6	6.80	100	90	82								
7		100	100	100		1870						
8	8.40											
9	9.70	100	100	100					9.70	-5.53		
								End of Borehole at 9.70 m				

REMARKS

Hole cased 0.00-4.20m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.00		N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
17-05-17				Water level recorded 5 mins after end of drilling.

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC10**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,909.55 E 739,375.09 N	**DATE DRILLED**	22/05/2017
GROUND LEVEL (mOD)	3.93	**DATE LOGGED**	23/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								Hole opened by Shell & Auger - see BH10				
2	2.30								2.30	1.63		
3	3.50	100	91	75				Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to very locally moderately weathered (with sandy honeycomb weathering at 3.45-3.55m, 3.68-3.73m & 6.02-7.16m). Discontinuities are medium to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay/gravel-filled (at 7.96-7.30m), locally moderately iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular.				
4	4.30	100	81	74								
5	5.30	35	6	0								
6	5.80	100	64	56								
7	7.30	37	17	0								
8	8.80	100	57	49								
9	10.00	100	38	13					10.00	-6.07		

REMARKS

Hole cased 0.00-2.30m.

End of Borehole at 10.00 m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.00		N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
23-05-17				Water level recorded 5 mins after end of drilling.

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC11**
		SHEET	Sheet 1 of 2
CO-ORDINATES	727,887.36 E 739,417.46 N	**DATE DRILLED**	16/05/2017
GROUND LEVEL (mOD)	4.16	**DATE LOGGED**	16/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								Hole opened by Shell & Auger - see BH11				
4.50	4.50								4.50	-0.34		
5.40	5.40	67	8	0				Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to very locally moderately weathered (with sandy honeycomb weathering at 4.50-7.65m, 8.10-8.28m, 9.10-9.42m, 9.76-9.86m & 10.56-11.06m). Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, locally moderately iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular.				
7.00	7.00	22	6	0								
8.10	8.10	73	32	32								
9.10	9.10	100	72	41								
10.00	10.00	89	40	40								

REMARKS

Hole cased 0.00-4.50m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.00		N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
16-05-17				Water level recorded 5 mins after end of drilling.

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT Techcrete Howth

DRILLHOLE NO RC11
SHEET Sheet 2 of 2

CO-ORDINATES 727,887.36 E
739,417.46 N
GROUND LEVEL (mOD) 4.16

RIG TYPE Knebel
FLUSH Air/Mist
INCLINATION (deg) -90
CORE DIAMETER (mm) 78

DATE DRILLED 16/05/2017
DATE LOGGED 16/05/2017

CLIENT Corcom Enterprises Ltd.
ENGINEER Roughan & O'Donovan

DRILLED BY IGSL
LOGGED BY D.O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to very locally moderately weathered (with sandy honeycomb weathering at 4.50-7.65m, 8.10-8.28m, 9.10-9.42m, 9.76-9.86m & 10.56-11.06m).				
		100	54	27								
11	11.25							Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, locally moderately iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular. *(continued)*				
		100	70	22								
12	12.30											
		100	63	63								
	12.90								12.90	-8.74		
13								End of Borehole at 12.90 m				
14												
15												
16												
17												
18												
19												

REMARKS

Hole cased 0.00-4.50m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.00		N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC12**
		SHEET	Sheet 1 of 2
CO-ORDINATES	727,855.08 E 739,403.28 N	**DATE DRILLED**	23/05/2017
GROUND LEVEL (mOD)	3.87	**DATE LOGGED**	24/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								Hole opened by Shell & Auger - see BH12				
1												
2												
3	3.60								3.60	0.27		
4		100	77	55				Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to very locally moderately weathered (with sandy honeycomb weathering at 3.90-4.43m, 4.90-4.96m, 7.56-7.66m, 8.09-8.26m, 8.91-9.06m, 9.51-9.71m, 9.77-9.95m & 10.14-10.32m). Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, locally moderately iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular.				
5	5.10	100	70	41								
6	6.10	50	12	0	1050							
7	7.10	100	55	22								
8	8.20	100	72	56								
9	9.00	100	68	53								
	9.85											

REMARKS

Hole cased 0.00-3.60m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.20		N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
24-05-17				Water level recorded 5 mins after end of drilling.

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT Techcrete Howth

DRILLHOLE NO RC12
SHEET Sheet 2 of 2

CO-ORDINATES 727,855.08 E
739,403.28 N
GROUND LEVEL (mOD) 3.87

RIG TYPE Knebel
FLUSH Air/Mist
INCLINATION (deg) -90
CORE DIAMETER (mm) 78

DATE DRILLED 23/05/2017
DATE LOGGED 24/05/2017

CLIENT Corcom Enterprises Ltd.
ENGINEER Roughan & O'Donovan

DRILLED BY IGSL
LOGGED BY D.O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10												
		100	83	83								
11	11.35								11.35	-7.48		
								End of Borehole at 11.35 m				
12												
13												
14												
15												
16												
17												
18												
19												

REMARKS

Hole cased 0.00-3.60m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.20		N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC13**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,864.20 E 739,376.82 N	**DATE DRILLED**	24/05/2017
GROUND LEVEL (mOD)	3.87	**DATE LOGGED**	24/05/2017
RIG TYPE	Knebel		
FLUSH	Air/Mist		
CLIENT	Corcom Enterprises Ltd.	**INCLINATION (deg)**	-90
ENGINEER	Roughan & O'Donovan	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL
		LOGGED BY	D.O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								Hole opened by Shell & Auger - see BH13				
1												
2												
3	3.00								3.20	0.67		
	4.00	30	0	0				SYMMETRIX DRILLING: No recovery: observed by driller as returns of clayey COBBLES	3.70	0.17		
4								Retuns of black clayey GRAVEL	4.00	-0.13		
		86	32	14				Returns of firm, light brown CLAY	4.45	-0.58		
5	5.10							Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to locally moderately weathered (with sandy honeycomb weathering at 5.00-5.05m & 5.10-5.64m).				
	5.50	100	50	0								
6		100	85	65				Discontinuities are medium to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, locally moderately iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular.				
	6.50											
	6.80	100	53	37								
7		100	85	33								
8	8.30											
		100	84	55								
9	9.50								9.50	-5.63		
								End of Borehole at 9.50 m				

REMARKS

Hole cased 0.00-3.00m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.20		N/S			Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
24-05-17				Water level recorded 5 mins after end of drilling.

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC14**
		SHEET	Sheet 1 of 2
CO-ORDINATES	727,828.56 E 739,431.46 N	**DATE DRILLED**	15/05/2017
GROUND LEVEL (mOD)	3.89	**DATE LOGGED**	16/05/2017
RIG TYPE	Knebel		
FLUSH	Air/Mist		
CLIENT	Corcom Enterprises Ltd.	**INCLINATION (deg)**	-90
ENGINEER	Roughan & O'Donovan	**CORE DIAMETER (mm)**	78
		DRILLED BY	IGSL
		LOGGED BY	D.O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								Hole opened by Shell & Auger - see BH14				
1												
2												
3												
4												
5									5.80	-1.91		
6								SYMMETRIX DRILLING: No recovery: observed by driller as returns of yellow CLAY				
7												
8												
9	9.20	100	46	42					9.20	-5.31		

REMARKS

Hole cased 0.00-9.00m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.80		N/S			Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
16-05-17				Water level recorded 5 mins after end of drilling.

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC14**
		SHEET	Sheet 2 of 2
CO-ORDINATES	727,828.56 E 739,431.46 N	**DATE DRILLED**	15/05/2017
GROUND LEVEL (mOD)	3.89	**DATE LOGGED**	16/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.20							Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to locally moderately weathered (with sandy honeycomb weathering at 9.48-9.80m, 10.03-10.43m & 14.60-14.72m). Discontinuities are medium to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-filled (at 9.20-9.37m), locally moderately iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular. *(continued)*				
11	11.20	35	8	0								
12	12.25	100	74	61								
13	13.10	100	21	0								
14	14.60	100	90	85								
15	15.60	100	83	83					15.60	-11.71		
16								End of Borehole at 15.60 m				
17												
18												
19												

REMARKS

Hole cased 0.00-9.00m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.80		N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC15**
		SHEET	Sheet 1 of 2
CO-ORDINATES	727,856.04 E 739,377.17 N	**DATE DRILLED**	25/05/2017
GROUND LEVEL (mOD)	3.86	**DATE LOGGED**	25/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								Hole opened by Shell & Auger - see BH15				
1												
2									2.50	1.36		
3								SYMMETRIX DRILLING: No recovery: observed by driller as returns of black silty COBBLES	4.00	-0.14		
4	4.50							SYMMETRIX DRILLING: No recovery: observed by driller as returns of CLAY	4.50	-0.64		N = 50/225 mm (6, 6, 12, 14, 17, 7)
5		53	31	27				Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to locally moderately weathered (with sandy honeycomb weathering at 4.50-5.56m, 6.76-8.51m & 10.54-10.86m).				
6	6.00	100	82	72				Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-filled (at 6.00-6.05m & 6.47-6.51m), locally moderately iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular.				
7	7.00	33	0	0								
8	8.50	100	83	7								
9												
	10.00											

REMARKS

Hole cased 0.00-4.00m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.30		N/S			Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
25-05-17	4.50	1.00	4.50	50mm SP

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
25-05-17				Water level recorded 5 mins after end of drilling.

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC15**
		SHEET	Sheet 2 of 2
CO-ORDINATES	727,856.04 E 739,377.17 N	**DATE DRILLED**	25/05/2017
GROUND LEVEL (mOD)	3.86	**DATE LOGGED**	25/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10												
11	11.50	100	75	69				End of Borehole at 11.50 m	11.50	-7.64		
12												
13												
14												
15												
16												
17												
18												
19												

REMARKS

Hole cased 0.00-4.00m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.30		N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
25-05-17	4.50	1.00	4.50	50mm SP

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT Techcrete Howth

DRILLHOLE NO RC16
SHEET Sheet 1 of 1

CO-ORDINATES 727,786.19 E
739,379.00 N
GROUND LEVEL (mOD) 3.88

RIG TYPE Knebel
FLUSH Air/Mist
INCLINATION (deg) -90
CORE DIAMETER (mm) 78

DATE DRILLED 05/05/2017
DATE LOGGED 08/05/2017

CLIENT Corcom Enterprises Ltd.
ENGINEER Roughan & O'Donovan

DRILLED BY IGSL
LOGGED BY D.O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								Hole opened by Shell & Auger - see BH16				
1												
2	2.50								2.50	1.38		
3	3.55	100	61	17				Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to very locally moderately weathered (with sandy honeycomb weathering at 3.42-3.96m, 4.35-4.71m & 5.33-5.55m).				
	3.80	100	48	0								
4	4.35	100	80	80				Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, locally moderately iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular.				
5	5.25	100	72	50								
6	6.50	100	92	82	580							
7		100	100	100	710							
	8.00				550				8.00	-4.12		
8								End of Borehole at 8.00 m				
9												

REMARKS

Hole cased 0.00-2.50m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.30		N/S			Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
08-05-17	2.50	1.00	2.50	50mm SP

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
08-05-17				Water level recorded start last day of drilling.

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC17**
		SHEET	Sheet 1 of 2
CO-ORDINATES	727,758.22 E 739,444.16 N	**DATE DRILLED**	10/05/2017
GROUND LEVEL (mOD)	3.76	**DATE LOGGED**	10/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								Hole opened by Shell & Auger - see BH17				
									4.60	-0.84		
								SYMMETRIX DRILLING: No recovery: observed by driller as returns of probable ROCK				
	5.50								5.50	-1.74		
		41	24	9		1110		Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to locally moderately weathered (with sandy honeycomb weathering at 8.40-8.60m, 8.90-9.40m, 9.62-9.70m & 10.16-10.50m). Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, locally strongly iron-oxide stained (penetrative at 9.00-9.30m), commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular.				
	7.20											
		100	59	44								
	8.60											
		100	57	37								
	9.30											
		100	73	38								
	9.85											

REMARKS

Hole cased 0.00-7.00m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.80		N/S			Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
10-05-17	5.50	1.00	5.50	50mm SP

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
10-05-17				Water level recorded 5 mins after end of drilling.

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC17**
		SHEET	Sheet 2 of 2
CO-ORDINATES	727,758.22 E 739,444.16 N	**DATE DRILLED**	10/05/2017
GROUND LEVEL (mOD)	3.76	**DATE LOGGED**	10/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10												
		100	65	34								
11	11.35								11.35	-7.59		
								End of Borehole at 11.35 m				
12												
13												
14												
15												
16												
17												
18												
19												

REMARKS

Hole cased 0.00-7.00m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.80		N/S			Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
10-05-17	5.50	1.00	5.50	50mm SP

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC18**
		SHEET	Sheet 1 of 1
CO-ORDINATES	727,753.55 E 739,394.50 N	**DATE DRILLED**	05/05/2017
GROUND LEVEL (mOD)	3.75	**DATE LOGGED**	05/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery: observed by driller as returns of MADE GROUND consisting of silty sand				
1												
2												
3									3.20	0.55		
	3.70							SYMMETRIX DRILLING: No recovery: observed by driller as returns of hard brown cobbly CLAY	3.70	0.05		
4		100	74	34				Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to very locally moderately weathered (with sandy honeycomb weathering at 4.02-4.31m). Discontinuities are medium to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, locally moderately iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular.				
	4.50	100	83	45								
5	5.10											
		100	89	69								
6												
	6.60											
7		100	72	49								
8	8.10											
		100	96	96								
9	9.10								9.10	-5.35		
								End of Borehole at 9.10 m				

REMARKS

Hole cased 0.00-3.70m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.80		N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
05-05-17				Water level recorded 5 mins after end of drilling.

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC19**
		SHEET	Sheet 1 of 2
CO-ORDINATES	727,751.87 E 739,379.84 N	**DATE DRILLED**	27/04/2017
GROUND LEVEL (mOD)	3.85	**DATE LOGGED**	28/04/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								Hole opened by Shell & Auger - see BH19				
1												
2												
3												
4									4.90	-1.05		
5	5.50							SYMMETRIX DRILLING: No recovery: observed by driller as returns of brown gravelly CLAY	5.50	-1.65		
6		67	15	11				Stiff, orange/brown slightly sandy CLAY	6.60	-2.75		
7	7.00	83	74	64				Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to locally moderately weathered (with sandy honeycomb weathering at 6.60-6.74m, 6.97-7.11m). Discontinuities are medium to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, locally moderately iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80°.				
8	8.50	50	0	0					8.35	-4.50		
9	9.00	60	13	13				Stiff, orange/brown slightly sandy CLAY	9.90	-6.05		
	10.00											

REMARKS

Hole cased 0.00-4.90m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.80		N/S			Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
28-04-17				Water level recorded 5 mins after end of drilling.

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC19**
		SHEET	Sheet 2 of 2
CO-ORDINATES	727,751.87 E 739,379.84 N	**DATE DRILLED**	27/04/2017
GROUND LEVEL (mOD)	3.85	**DATE LOGGED**	28/04/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								Possible weathered rock - weathered cobble of dolomitised limestone	10.00	-6.15		
		0	0	0				SYMMETRIX DRILLING: No recovery: observed by driller as returns of brown CLAY				
11	11.50								11.50	-7.65		
	12.00	100	0	0				Returns of dark reddish brown CLAY	11.90	-8.05		
12		70	9	0				Highly weathered rock - recovered as clayey angular gravel and cobbles of limestone.				
	13.00								13.00	-9.15		
13								End of Borehole at 13.00 m				N = 50/225 mm (9, 11, 13, 14, 16, 7)
14												
15												
16												
17												
18												
19												

REMARKS

Hole cased 0.00-4.90m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.80		N/S			Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT Techcrete Howth

DRILLHOLE NO RC20
SHEET Sheet 1 of 1

CO-ORDINATES 727,714.11 E
739,424.04 N
GROUND LEVEL (mOD) 3.86

RIG TYPE Knebel
FLUSH Air/Mist
INCLINATION (deg) -90
CORE DIAMETER (mm) 78

DATE DRILLED 04/05/2017
DATE LOGGED 04/05/2017

CLIENT Corcom Enterprises Ltd.
ENGINEER Roughan & O'Donovan

DRILLED BY IGSL
LOGGED BY D.O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery: observed by driller as returns of MADE GROUND consisting of sand silt brick and gravel	2.00	1.86		
2								SYMMETRIX DRILLING: No recovery: observed by driller as returns of silty SAND	3.00	0.86		
3								SYMMETRIX DRILLING: No recovery: observed by driller as returns of gravelly CLAY	4.70	-0.84		
4.70												
5	5.35	100	46	20				Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to locally moderately weathered (with sandy honeycomb weathering at 4.70-4.91m, 5.08-5.35m, 5.44-5.49m, 5.90-6.03m & 9.63-9.76m). Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, locally moderately iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80°.				
6	6.30	100	77	41								
7	7.20	100	100	70								
8	8.55	100	100	92	690							
9	10.00	100	90	80	690.0000000000				10.00	-6.14		

REMARKS

Hole cased 0.00-4.70m.

End of Borehole at 10.00 m

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.70		N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
04-05-17				Water level recorded 5 mins after end of drilling.

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC21**
		SHEET	Sheet 1 of 2
CO-ORDINATES	727,711.01 E 739,383.61 N	**DATE DRILLED**	08/05/2017
GROUND LEVEL (mOD)	3.96	**DATE LOGGED**	09/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery: observed by driller as returns of MADE GROUND consisting of silty sand with soft black bands				
1												
2												
3									3.30	0.66		
								SYMMETRIX DRILLING: No recovery: observed by driller as returns of hard brown gravelly CLAY	4.00	-0.04		
4								SYMMETRIX DRILLING: No recovery: observed by driller as returns of grey gravelly CLAY with occasional cobbles				
5									5.30	-1.34		
								SYMMETRIX DRILLING: No recovery: observed by driller as returns of clayey BOULDERS				N = 50/225 mm (8, 9, 13, 14, 18, 5)
6	6.90								6.90	-2.94		
7		100	94	82	520			Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to very locally moderately weathered (with sandy honeycomb weathering at 7.00-7.10m).				
8	8.40							Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, locally moderately iron-oxide stained, commonly dolomite-veined. Dips are 50° & locally 80° & irregular.				
9		100	91	83								
	9.90											

REMARKS

Hole cased 0.00-6.30m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.50		N/S			Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
09-05-17	6.90	1.00	6.90	50mm SP

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
09-05-17				Water level recorded start last day of drilling.

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT Techcrete Howth

DRILLHOLE NO RC21
SHEET Sheet 2 of 2

CO-ORDINATES 727,711.01 E
739,383.61 N
GROUND LEVEL (mOD) 3.96

RIG TYPE Knebel
FLUSH Air/Mist
INCLINATION (deg) -90
CORE DIAMETER (mm) 78

DATE DRILLED 08/05/2017
DATE LOGGED 09/05/2017

CLIENT Corcom Enterprises Ltd.
ENGINEER Roughan & O'Donovan

DRILLED BY IGSL
LOGGED BY D.O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10						619.999999999999		Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to very locally moderately weathered (with sandy honeycomb weathering at 7.00-7.10m).				
11	11.40	100	94	79				Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, locally moderately iron-oxide stained, commonly dolomite-veined. Dips are 50° & locally 80° & irregular. *(continued)*				
12	12.30	100	100	78				End of Borehole at 12.30 m	12.30	-8.34		
13												
14												
15												
16												
17												
18												
19												

REMARKS

Hole cased 0.00-6.30m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.50		N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
09-05-17	6.90	1.00	6.90	50mm SP

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC22**
		SHEET	Sheet 1 of 2
CO-ORDINATES	727,697.06 E 739,453.48 N	**DATE DRILLED**	28/04/2017
GROUND LEVEL (mOD)	4.22	**DATE LOGGED**	02/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery: observed by driller as returns of MADE GROUND consisting of sandy gravel with comtaminant odour	1.50	2.72		
1								SYMMETRIX DRILLING: No recovery: observed by driller as returns of black silty SAND				
2												
3												
4									4.80	-0.58		
5								SYMMETRIX DRILLING: No recovery: observed by driller as returns of brown clayey GRAVEL	5.70	-1.48		
6								SYMMETRIX DRILLING: No recovery: observed by driller as returns of grey silty gravelly CLAY				
7									7.40	-3.18		
8	8.50							SYMMETRIX DRILLING: No recovery: observed by driller as returns of brown clayey SILT	8.50	-4.28		N = 50/235 mm (9, 12, 14, 14, 15, 7)
9		100	81	70								
	10.00											

REMARKS

Hole cased 0.00-8.50m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
02-05-17	8.50	1.00	8.50	50mm SP

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
02-05-17				Water level recorded start last day of drilling.

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT Techcrete Howth

DRILLHOLE NO RC22
SHEET Sheet 2 of 2

CO-ORDINATES 727,697.06 E
739,453.48 N
GROUND LEVEL (mOD) 4.22

RIG TYPE Knebel
FLUSH Air/Mist
INCLINATION (deg) -90
CORE DIAMETER (mm) 78

DATE DRILLED 28/04/2017
DATE LOGGED 02/05/2017

CLIENT Corcom Enterprises Ltd.
ENGINEER Roughan & O'Donovan

DRILLED BY IGSL
LOGGED BY D.O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to very locally moderately weathered (with sandy honeycomb weathering at 9.03-9.12m, 9.41-9.60m, 10.01-10.09m, 10.53-10.56m & 11.41-11.50m).				
11	11.50	100	85	62				Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-filled (at 10.01-10.09m), locally moderately iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular. *(continued)*				
12	12.45	100	97	97								
13	14.00	100	85	72					14.00	-9.78		
14								End of Borehole at 14.00 m				
15												
16												
17												
18												
19												

REMARKS

Hole cased 0.00-8.50m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike recorded

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
02-05-17	8.50	1.00	8.50	50mm SP

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC23**
		SHEET	Sheet 1 of 2
CO-ORDINATES	727,689.54 E 739,406.73 N	**DATE DRILLED**	02/05/2017
GROUND LEVEL (mOD)	4.45	**DATE LOGGED**	02/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery: observed by driller as returns of MADE GROUND consisting of sand and cobbles	3.00	1.45		
3								SYMMETRIX DRILLING: No recovery: observed by driller as returns of grey silty SAND	4.50	-0.05		
4								SYMMETRIX DRILLING: No recovery: observed by driller as returns of grey gravelly CLAY	6.00	-1.55		N = 50/225 mm (7, 9, 11, 14, 14, 11)
6	6.00	100	0	0				SYMMETRIX DRILLING: No recovery: observed by driller as returns of grey gravelly CLAY with occasional cobbles	7.30	-2.85		N = 50/90 mm (12, 12, 22, 28)
7	7.00 7.30	0	0	0								
7.80		100	74	66				Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to very locally moderately weathered (with sandy honeycomb weathering at 8.11-8.30m). Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, locally moderately iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal, 45° & locally 80°.				
8	8.50	100	71	61								
9		100	94	92								
9.80												

REMARKS

Hole cased 0.00-7.30m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.30		N/S			Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
02-02-17				Water level recorded 5 mins after end of drilling.

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC23**
		SHEET	Sheet 2 of 2
CO-ORDINATES	727,689.54 E 739,406.73 N	**DATE DRILLED**	02/05/2017
GROUND LEVEL (mOD)	4.45	**DATE LOGGED**	02/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to very locally moderately weathered (with sandy honeycomb weathering at 8.11-8.30m).				
11	11.30	100	95	87	580			Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, locally moderately iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal, 45° & locally 80°. *(continued)*				
12	12.45	100	100	88					12.45	-8.00		
								End of Borehole at 12.45 m				
13												
14												
15												
16												
17												
18												
19												

REMARKS

Hole cased 0.00-7.30m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.30		N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC24**
		SHEET	Sheet 1 of 3
CO-ORDINATES	727,667.52 E 739,447.21 N	**DATE DRILLED**	03/05/2017
GROUND LEVEL (mOD)	4.43	**DATE LOGGED**	04/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery: observed by driller as returns of MADE GROUND consisting of plastic timber & brick	2.90	1.53		
3								SYMMETRIX DRILLING: No recovery: observed by driller as returns of silty SAND	4.80	-0.37		
5								SYMMETRIX DRILLING: No recovery: observed by driller as returns of clayey gravelly SILT	5.90	-1.47		
6								SYMMETRIX DRILLING: No recovery: observed by driller as returns of grey gravelly CLAY with occasional cobbles	7.50	-3.07		N = 50/225 mm (8, 9, 14, 13, 16, 7)
7	7.50											
8	8.55	100	0	0				Hard, dark brown, slightly sandy gravelly CLAY with occasional cobbles. Sand is fine. Gravel is angular to subangular, fine to coarse of limestone. Cobbles are subrounded of limestone. Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, locally moderately iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular.				N = 50/95 mm (9, 16, 24, 26)
9		100	0	0								

REMARKS

Hole cased 0.00-7.50m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.90		N/S			Slow
14.50		N/S			Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
03-05-17				Water level recorded start last day of drilling.

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC24**
		SHEET	Sheet 2 of 3
CO-ORDINATES	727,667.52 E 739,447.21 N	**DATE DRILLED**	03/05/2017
GROUND LEVEL (mOD)	4.43	**DATE LOGGED**	04/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10	10.05	100	0	0				Hard, dark brown, slightly sandy gravelly CLAY with occasional cobbles. Sand is fine. Gravel is angular to subangular, fine to coarse of limestone. Cobbles are subrounded of limestone. Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, locally moderately iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular. *(continued)*				N = 40/150 mm (13, 12, 9, 21, 10)
11	11.55	100	0	0								N = 50/150 mm (7, 12, 22, 26, 2)
12	13.05	100	0	0								N = 50/30 mm (25, 50)
13	14.55	100	27	27					15.30	-10.87		N = 50/80 mm (22, 3, 35, 15)
14	15.60	100	70	40				Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to very locally moderately weathered (with sandy honeycomb weathering at 16.00-16.63m & 20.20-20.26m).				
15	15.90	100	27	16								
16	16.75	100	73	58								
17	17.75	100	43	19								
18	18.55	100	100	100								
19	19.35				680							

REMARKS

Hole cased 0.00-7.50m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.90		N/S			Slow
14.50		N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT Techcrete Howth

DRILLHOLE NO RC24
SHEET Sheet 3 of 3

CO-ORDINATES 727,667.52 E
739,447.21 N
GROUND LEVEL (mOD) 4.43

RIG TYPE Knebel
FLUSH Air/Mist
INCLINATION (deg) -90
CORE DIAMETER (mm) 78

DATE DRILLED 03/05/2017
DATE LOGGED 04/05/2017

CLIENT Corcom Enterprises Ltd.
ENGINEER Roughan & O'Donovan

DRILLED BY IGSL
LOGGED BY D.O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
20		100	78	65								
	20.60							End of Borehole at 20.60 m	20.60	-16.17		
21												
22												
23												
24												
25												
26												
27												
28												
29												

REMARKS

Hole cased 0.00-7.50m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.90		N/S			Slow
14.50		N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC25**
		SHEET	Sheet 1 of 2
CO-ORDINATES	727,667.30 E 739,383.90 N	**DATE DRILLED**	09/05/2017
GROUND LEVEL (mOD)	5.22	**DATE LOGGED**	09/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								SYMMETRIX DRILLING: No recovery: observed by driller as returns of MADE GROUND consisting of clay cobbles gravel brick and wood				
1												
2												
3									3.50	1.72		
4								SYMMETRIX DRILLING: No recovery: observed by driller as returns of clayey sand with cobbles				
5									5.40	-0.18		
6								SYMMETRIX DRILLING: No recovery: observed by driller as returns of grey gravelly CLAY with occasional cobbles				
7												N = 50/150 mm (8, 11, 24, 22, 4)
8												
9	9.20								9.20	-3.98		N = 50/115 mm (11, 12, 20, 30)
	9.65	100	100	100								

REMARKS

Hole cased 0.00-9.20m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.60		N/S			Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
09-05-17				Water level recorded 5 mins after end of drilling.

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC25**
		SHEET	Sheet 2 of 2
CO-ORDINATES	727,667.30 E 739,383.90 N	**DATE DRILLED**	09/05/2017
GROUND LEVEL (mOD)	5.22	**DATE LOGGED**	09/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
10								Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to very locally moderately weathered (with sandy honeycomb weathering at 9.70-9.80m, 10.01-10.36m, 11.50-11.80m & 12.00-12.45m).				
		100	57	57	580							
11	11.15							Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, dark brown penetrative iron-oxide stained (10.70-13.00m), locally dolomite-veined. Dips are 50° & locally 80° & irregular. *(continued)*				
		100	65	28								
12	12.45											
		100	100	94								
13	13.95											
		100	100	100								
14	14.85								14.85	-9.63		
15								End of Borehole at 14.85 m				
16												
17												
18												
19												

REMARKS

Hole cased 0.00-9.20m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
4.60		N/S			Slow

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT Techcrete Howth

DRILLHOLE NO RC30
SHEET Sheet 1 of 1

CO-ORDINATES

GROUND LEVEL (mOD)

RIG TYPE Knebel
FLUSH Air/Mist
INCLINATION (deg) -90
CORE DIAMETER (mm) 78

DATE DRILLED 16/05/2017
DATE LOGGED 16/05/2017

CLIENT Corcom Enterprises Ltd.
ENGINEER Roughan & O'Donovan

DRILLED BY IGSL
LOGGED BY D.O'Shea

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								Hole opened by Shell & Auger - see BH30				
3	3.40								3.40			
4		100	91	69	560			Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to locally moderately weathered (with sandy honeycomb weathering at 5.50-5.58m, 6.96-7.23m & 7.63-7.73m).				
5	5.00	100	99	84	660			Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, locally slightly iron-oxide stained, commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular.				
6	6.60				520							
7		100	73	73								
8	8.20								8.20			
9								End of Borehole at 8.20 m				

REMARKS

Hole cased 0.00-3.40m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
2.70		N/S			Slow

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type
16-05-17	8.20	1.00	3.40	50mm SP

GROUNDWATER DETAILS

Date	Hole Depth	Casing Depth	Depth to Water	Comments
16-05-17				Water level recorded 5 mins after end of drilling.

IGSL RC FI 10M 19956.GPJ IGSL.GDT 6/6/17

GEOTECHNICAL CORE LOG RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**DRILLHOLE NO**	**RC31**
		SHEET	Sheet 1 of 1
CO-ORDINATES		**DATE DRILLED**	17/05/2017
GROUND LEVEL (mOD)		**DATE LOGGED**	17/05/2017
CLIENT	Corcom Enterprises Ltd.	**DRILLED BY**	IGSL
ENGINEER	Roughan & O'Donovan	**LOGGED BY**	D.O'Shea
RIG TYPE	Knebel		
FLUSH	Air/Mist		
INCLINATION (deg)	-90		
CORE DIAMETER (mm)	78		

Downhole Depth (m)	Core Run Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture Spacing Log (mm) 0 250 500	Non-intact Zone	Legend	Description	Depth (m)	Elevation	Standpipe Details	SPT (N Value)
0								Hole opened by Shell & Auger - see BH31				
									2.70			
3	3.50							SYMMETRIX DRILLING: No recovery: observed by driller as returns of probable ROCK	3.50			
4		100	59	47				Medium strong to weak, thickly to thinly bedded, pale brownish grey, fine-grained, LIMESTONE (dolomitised with stromatactic structure and many solution holes), slightly to locally moderately weathered (with sandy honeycomb weathering at 6.93-7.03m, 7.10-7.25m & 7.27-7.46m).				
5	5.10							Discontinuities are widely to closely spaced, smooth, planar to undulose. Apertures are tight to locally moderately open, locally sandy clay-smeared, locally strongly iron-oxide stained (penetrative at 6.40-8.80m), commonly dolomite-veined. Dips are sub-horizontal & locally 80° & irregular.				
6		100	94	63								
	6.70											
7		100	56	27								
	7.70											
8		100	100	96								
	8.80								8.80			
9								End of Borehole at 8.80 m				

REMARKS

Hole cased 0.00-3.50m.

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
3.60		N/S			Slow

INSTALLATION DETAILS

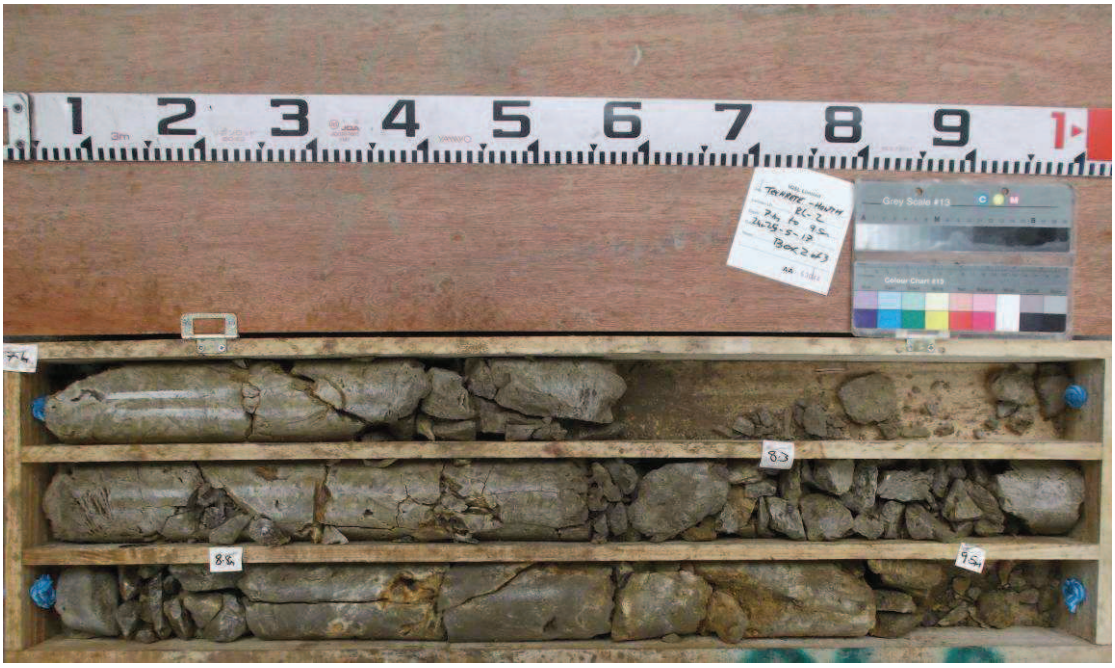
Date	Tip Depth	RZ Top	RZ Base	Type
17-05-17	3.50	1.00	3.50	50mm SP

GROUNDWATER DETAILS

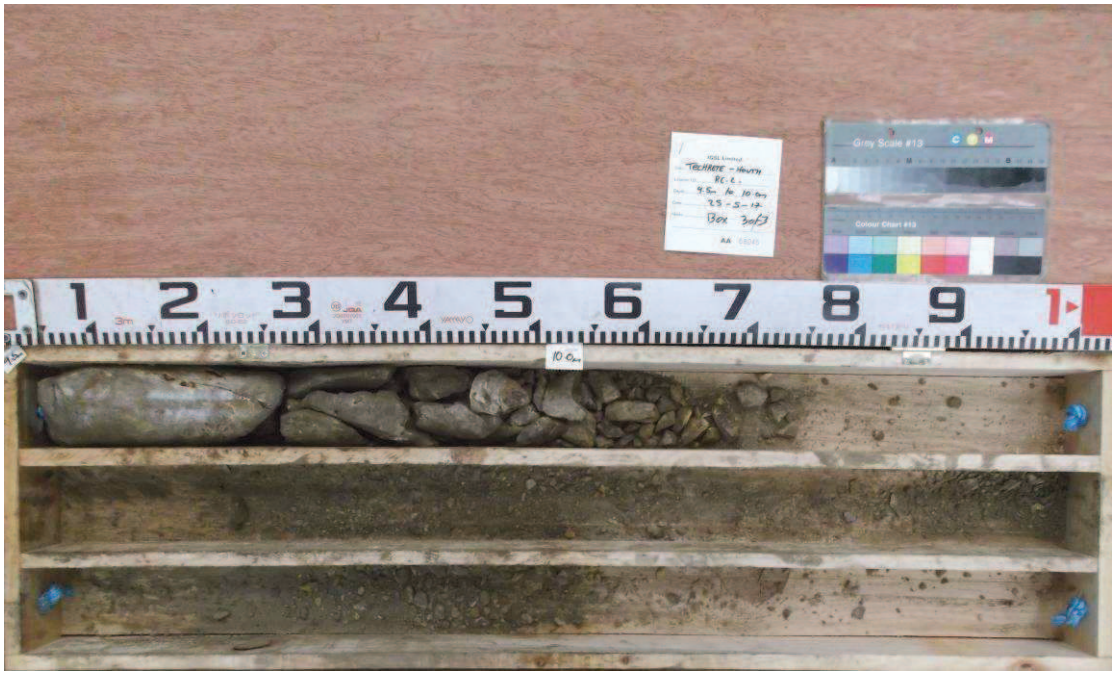
Date	Hole Depth	Casing Depth	Depth to Water	Comments
17-05-17				Water level recorded 5 mins after end of drilling.

RC02 Box 1 of 3

RC02 Box 2 of 3



RC02 Box 3 of 3



RC03 Box 1 of 2

RC03 Box 2 of 2

RC04 Box 1 of 3

RC04 Box 2 of 3

RC04 Box 3 of 3

RC05 Box 1 of 2

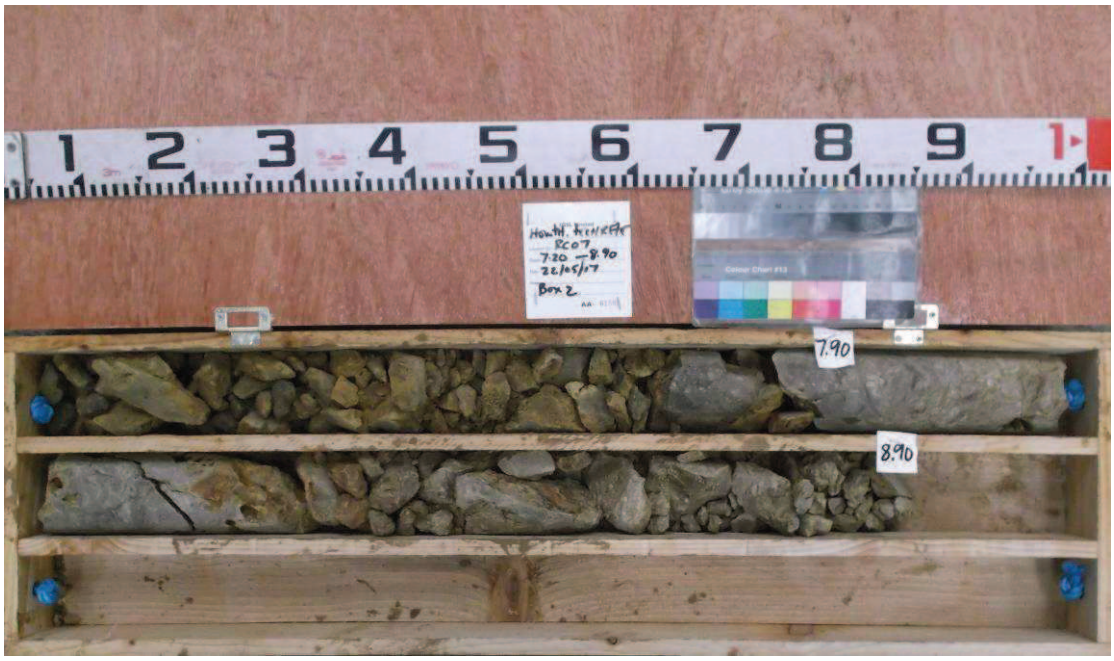
RC05 Box 2 of 2

RC06 Box 1 of 2

RC06 Box 2 of 2

RC07 Box 1 of 2

RC07 Box 2 of 2



RC08 Box 1 of 2

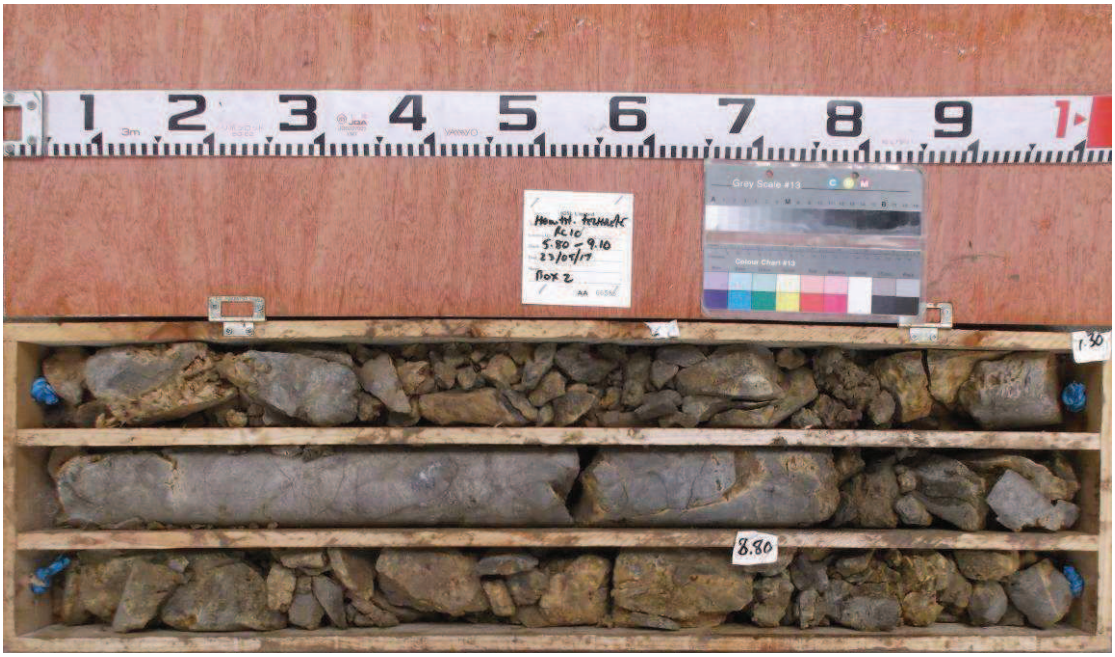
RC08 Box 2 of 2

RC09 Box 1 of 2

RC09 Box 2 of 2

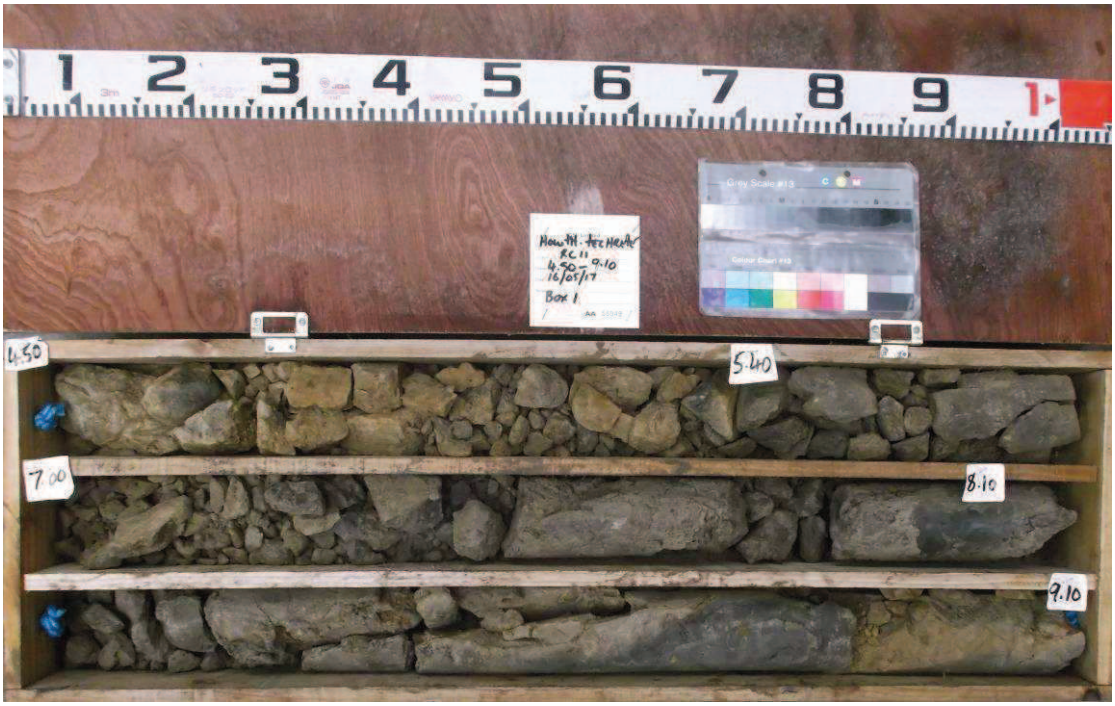
RC10 Box 1 of 3

RC10 Box 2 of 3



RC10 Box 3 of 3

RC11 Box 1 of 3

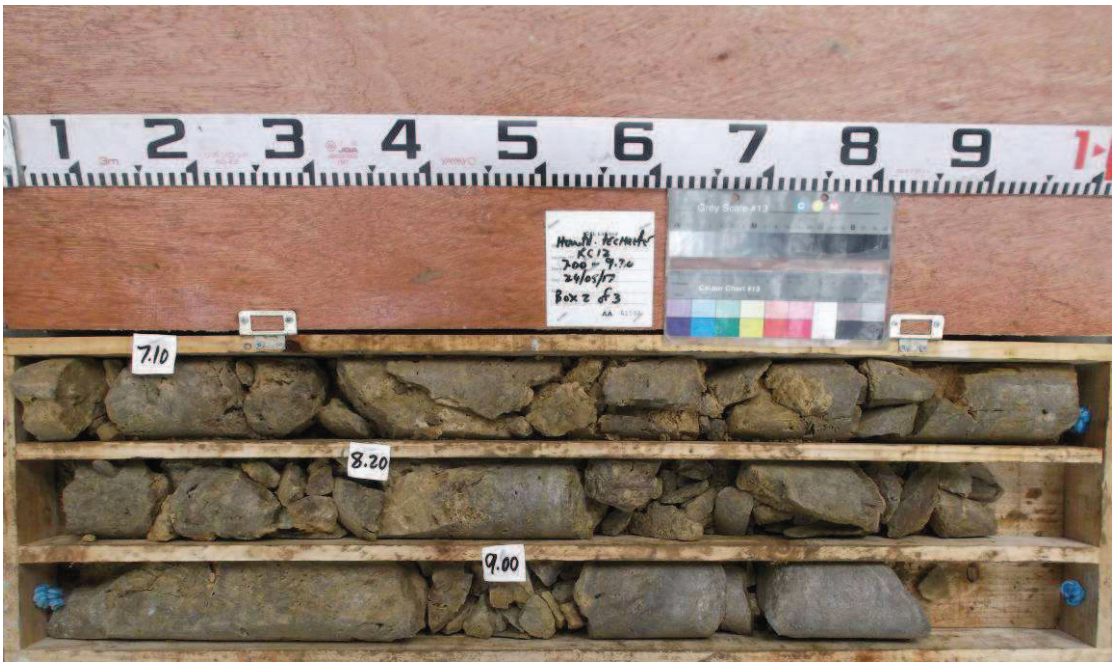


RC11 Box 2 of 3

RC11 Box 3 of 3

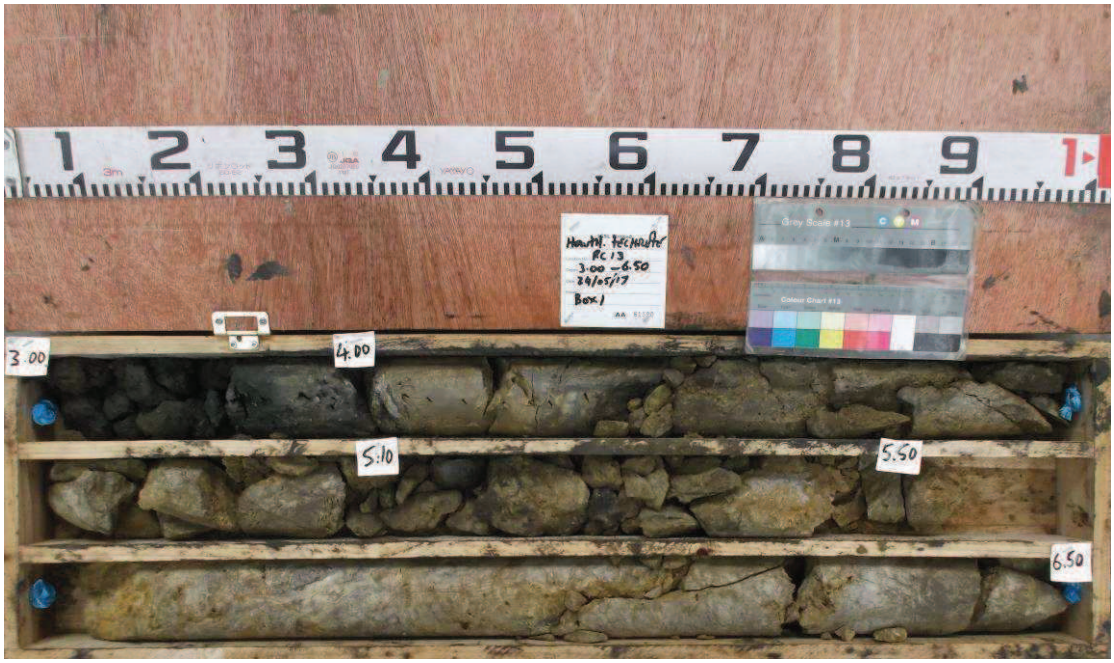
RC12 Box 1 of 3

RC12 Box 2 of 3



RC12 Box 3 of 3

RC13 Box 1 of 3



RC13 Box 2 of 3

RC13 Box 3 of 3

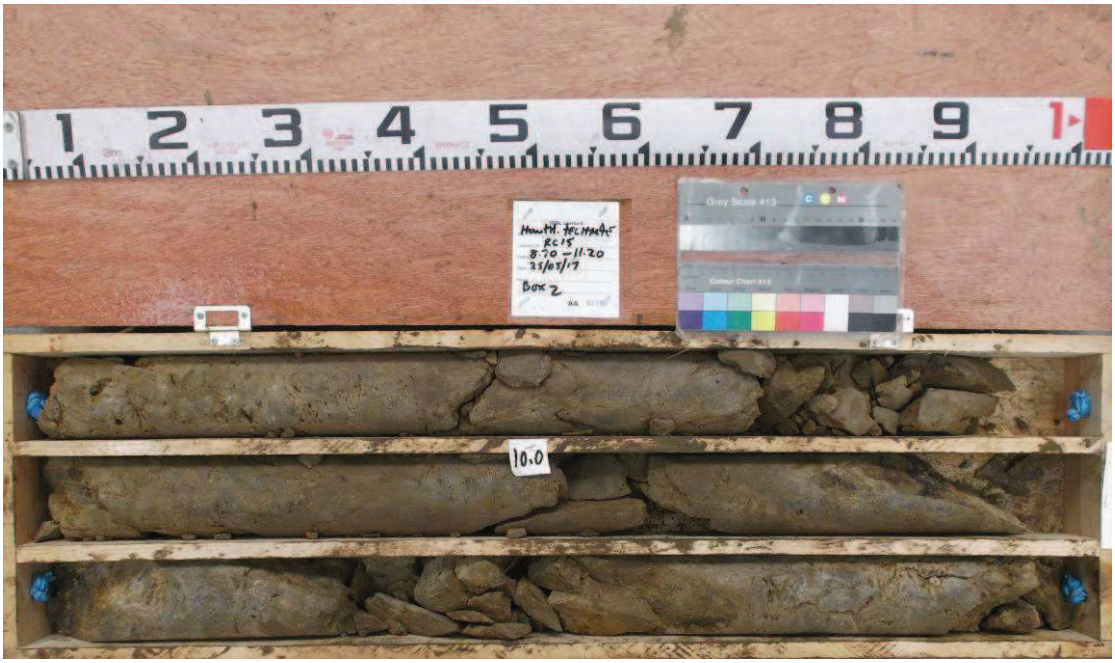
RC14 Box 1 of 3

RC14 Box 2 of 3

RC14 Box 3 of 3

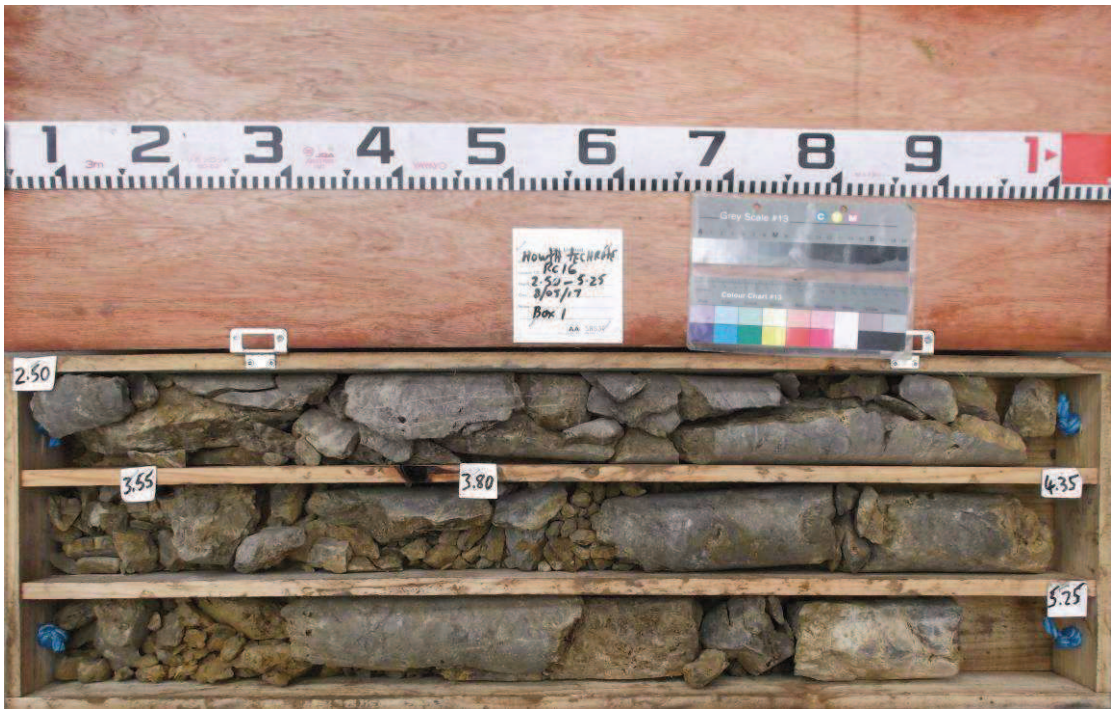
RC15 Box 1 of 3

RC15 Box 2 of 3



RC15 Box 3 of 3

RC16 Box 1 of 3



RC16 Box 2 of 3

RC16 Box 3 of 3

RC17 Box 1 of 2

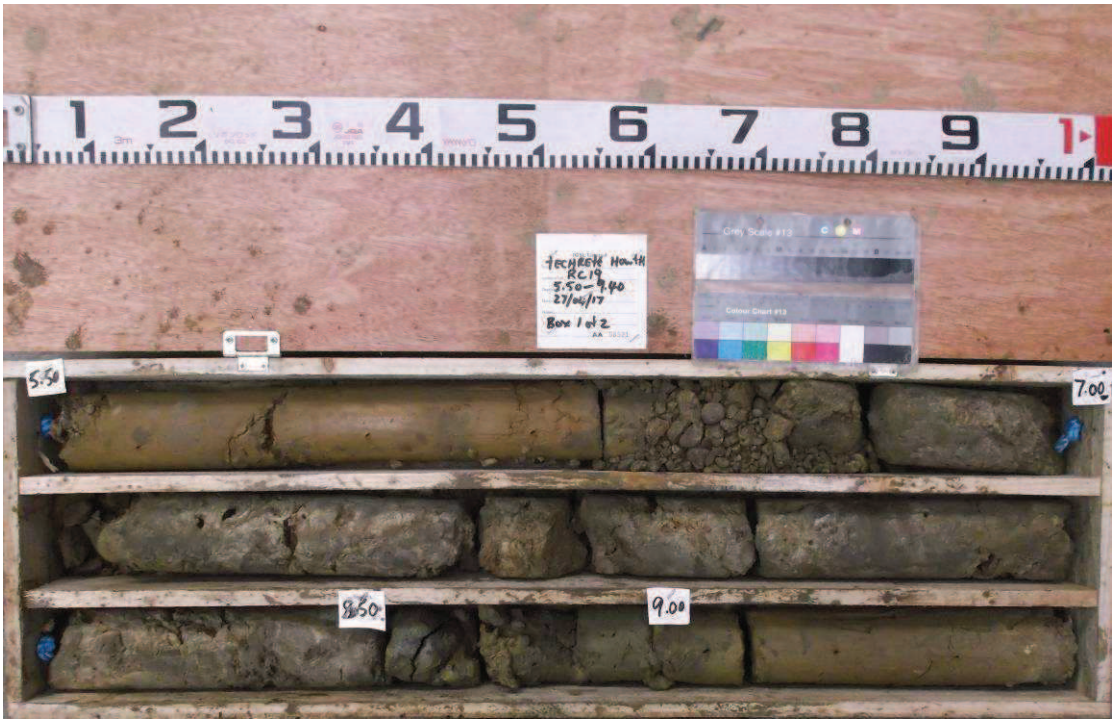
RC17 Box 2 of 2

RC18 Box 1 of 3

RC18 Box 2 of 3

RC18 Box 3 of 3

RC19 Box 1 of 2



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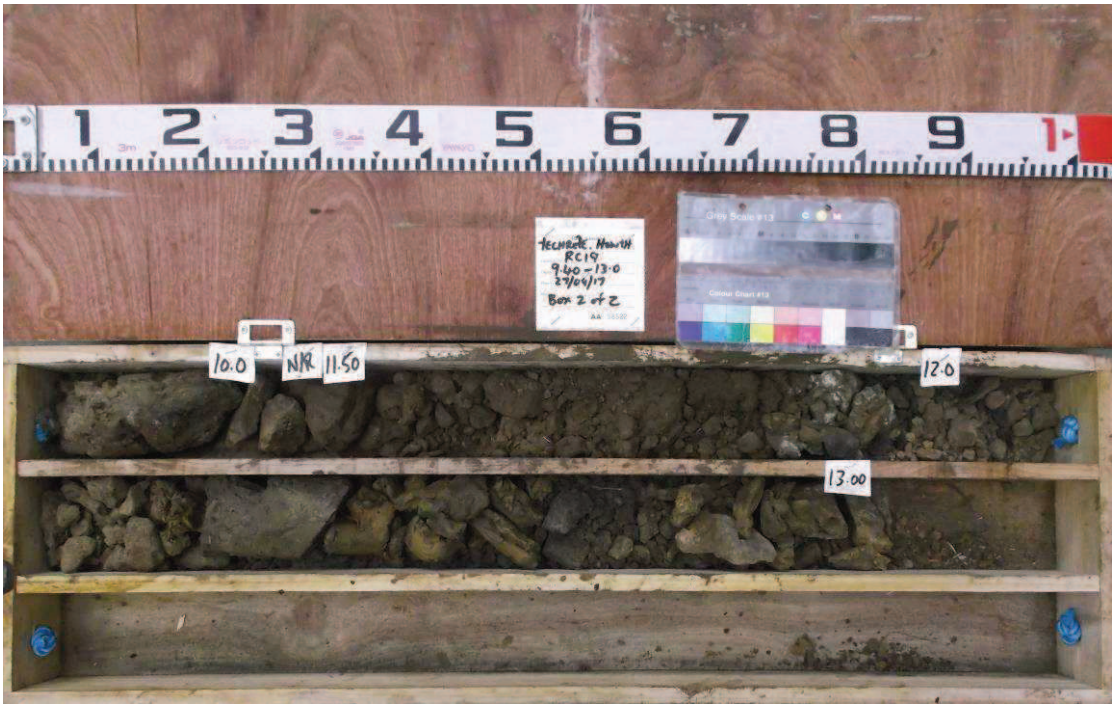


RC20 Box 1 of 2

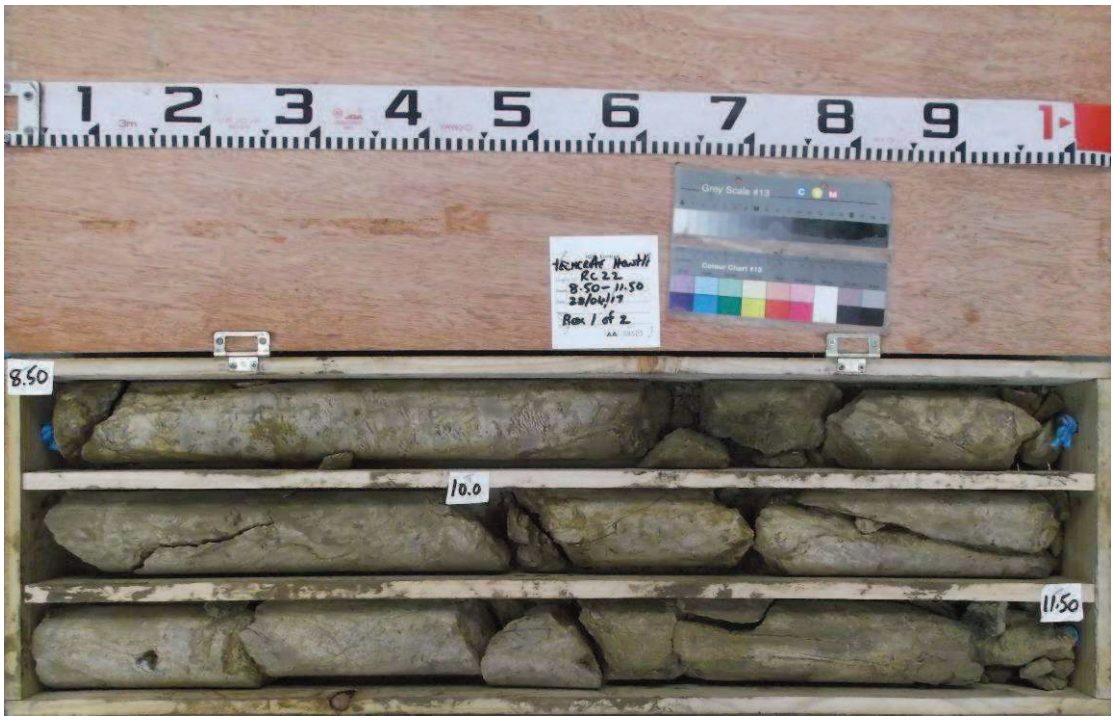
RC20 Box 2 of 2

RC21 Box 1 of 3

RC21 Box 2 of 3

RC21 Box 3 of 3

RC22 Box 1 of 2



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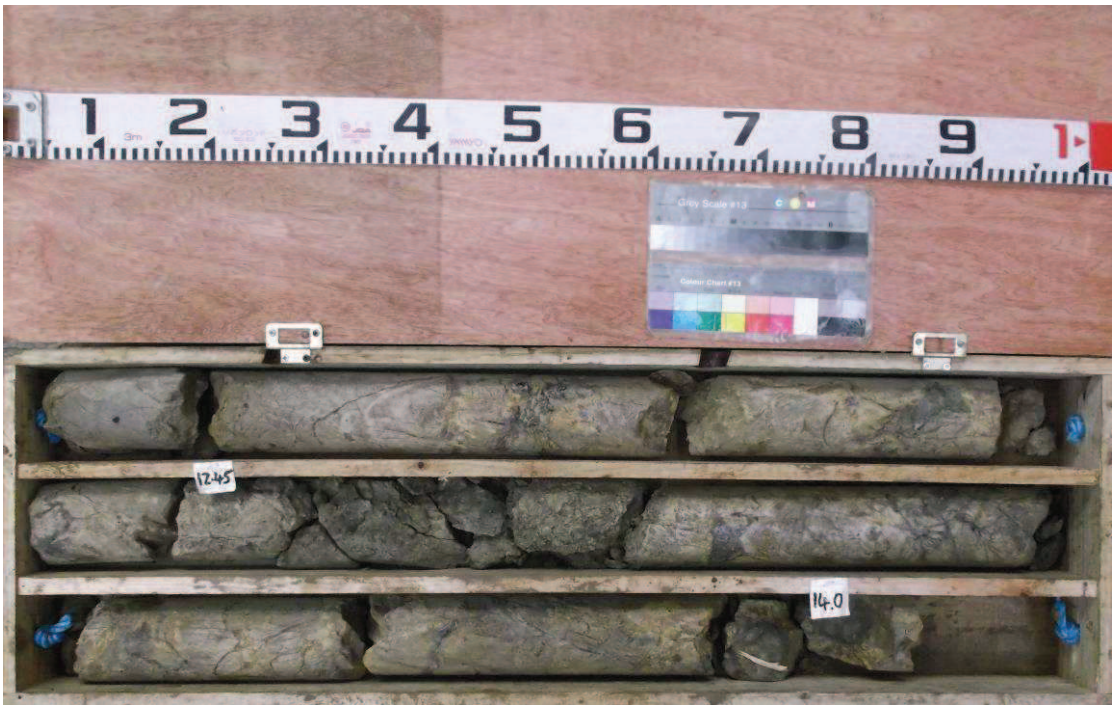


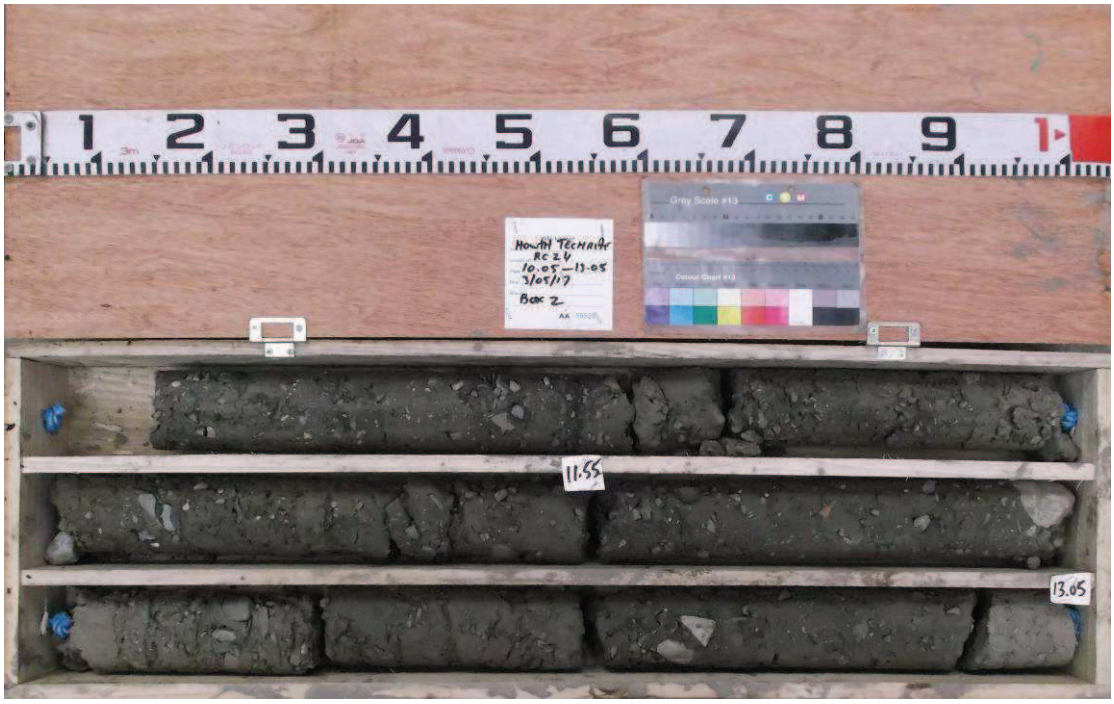
RC23 Box 1 of 3

RC23 Box 2 of 3

RC23 Box 3 of 3

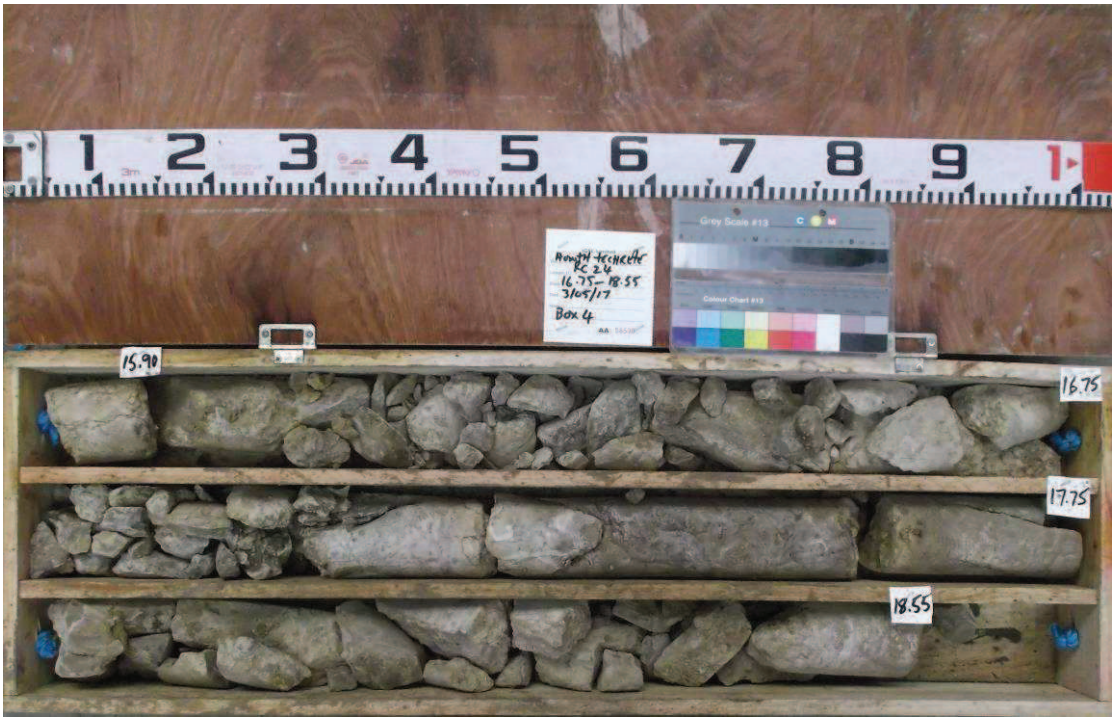
RC24 Box 1 of 5

RC24 Box 2 of 5



RC24 Box 3 of 5

RC24 Box 4 of 5



RC24 Box 5 of 5

RC25 Box 1 of 2

RC25 Box 2 of 2

RC30 Box 1 of 2

RC30 Box 2 of 2

RC31 Box 1 of 2

RC31 Box 2 of 2

Appendix 3

Trial Pit Records

TP102 - 1 of 2

TP102 - 2 of 2

TP103 - 1 of 2

TP103 - 2 of 2

TP104 - 1 of 2

TP104 - 2 of 2

TP105 - 1 of 2

TP105 – 2 of 2

TP106 - 1 of 2

TP106 - 2 of 2

TP107 - 1 of 2

TP107 - 2 of 2

TP108 - 1 of 2

TP108 - 2 of 2

TP109 - 1 of 2

TP109 - 2 of 2

TP115 - 1 of 2

TP115 - 2 of 2

TRIAL PIT RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**TRIAL PIT NO.**	**TP102**
		SHEET	Sheet 1 of 1
LOGGED BY	LD	**CO-ORDINATES**	727,926.74 E 739,371.61 N
		DATE STARTED	15/03/2017
		DATE COMPLETED	15/03/2017
CLIENT	Corcom Enterprises Ltd.	**GROUND LEVEL (m)**	3.84
ENGINEER	Roughan & O'Donovan	**EXCAVATION METHOD**	JCB

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 Concrete reinforced with rebar. (MADE GROUND).		0.20	3.64						
Light brown mottled black sandy fine to coarse subangular gravel with rare steel wire, plastic, concrete, brick. (MADE GROUND).		0.50	3.34			Env	0.40		
Brown clayey very sandy subangular to subrounded gravel with a medium cobble content. (MADE GROUND).					AA67824	B	0.40		
						Env	0.80		
1.0					AA67825	B	0.80		
Soft brown sandy gravelly CLAY. Gravel is fine to coarse subangular. (Possible made ground).		1.20	2.64						
						Env	1.50		
2.0					AA67826	B	1.50		
						Env	2.80		
3.0				1 (Moderate)	AA67827	B	2.80		
Wet brown sandy medium to coarse subangular GRAVEL with a high cobble content.		3.10	0.74						
End of pit due to obstruction - possible bedrock. End of Trial Pit at 3.50m		3.50	0.34			Env	3.50		
4.0					AA67828	B	3.50		

Groundwater Conditions

Stability
Wall collapse from 0.50 to 1.20m.

General Remarks

TRIAL PIT RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**TRIAL PIT NO.**	**TP103**
		SHEET	Sheet 1 of 1
LOGGED BY	LD	**CO-ORDINATES**	727,889.23 E 739,413.05 N
		DATE STARTED	15/03/2017
		DATE COMPLETED	15/03/2017
CLIENT	Corcom Enterprises Ltd.	**GROUND LEVEL (m)**	4.08
ENGINEER	Roughan & O'Donovan	**EXCAVATION METHOD**	JCB

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 Soft brown very gravelly sandy silt. Gravel is fine to coarse subangular. (TOPSOIL).		0.20	3.88						
Brown gravelly fine to coarse sand with a medium cobble content. Gravel is fine to coarse subrounded. Cobbles are subrounded. (MADE GROUND).					AA67829	Env B	0.50 0.50		
1.0 Grey mottled brown very sandy very silty medium to coarse subangular GRAVEL.		1.00	3.08		AA67830	Env B	1.20 1.20		
2.0 Soft to firm grey sandy gravelly SILT withfrequent shell fragments, rare rubber, rare porcelain. (possible sea deposit).		2.50	1.58		AA67831	Env B	2.50 2.50		
3.0 Firm black SILT with frequent shell fragments.		3.10	0.98	1 (Slow)	AA67832	Env B	3.30 3.30		
4.0 End of pit due to obstruction - possible bedrock. End of Trial Pit at 3.90m		3.90	0.18						

Groundwater Conditions

Stability
Stable.

General Remarks

TRIAL PIT RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**TRIAL PIT NO.**	**TP104**
		SHEET	Sheet 1 of 1
LOGGED BY	LD	**CO-ORDINATES**	727,837.73 E 739,376.70 N
		DATE STARTED	15/03/2017
		DATE COMPLETED	15/03/2017
CLIENT	Corcom Enterprises Ltd.	**GROUND LEVEL (m)**	4.01
		EXCAVATION METHOD	JCB
ENGINEER	Roughan & O'Donovan		

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 Concrete reinforced with rebar. (MADE GROUND).		0.20	3.81						
Black very sandy fine to coarse subangular gravel with a medium cobble content. Occasional bricks and concrete. Sand is coarse. Cobbles are subangular to subrounded. (MADE GROUND).		0.60	3.41		AA67821	Env B	0.50 0.50		
1.0 Black fine to medium subangular gravel. Has the appearance of ashy/burnt waste material. (MADE GROUND).		1.50	2.51						
Soft brown moist sandy clayey decomposed timber waste with a methane odour. (MADE GROUND).				1 (Slow)	AA67822	Env B	1.50 1.50		
2.0					AA67823	Env B	2.20 2.20		
End of pit due to obstruction - possible bedrock. End of Trial Pit at 2.90m		2.90	1.11						
3.0									
4.0									

Groundwater Conditions
Groundwater at 2.90m.

Stability
Stable.

General Remarks

TRIAL PIT RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**TRIAL PIT NO.**	**TP105**
		SHEET	Sheet 1 of 1
LOGGED BY	LD	**CO-ORDINATES**	727,753.95 E 739,438.79 N
		DATE STARTED	15/03/2017
		DATE COMPLETED	15/03/2017
CLIENT	Corcom Enterprises Ltd.	**GROUND LEVEL (m)**	3.64
		EXCAVATION METHOD	JCB
ENGINEER	Roughan & O'Donovan		

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
Concrete. (MADE GROUND).		0.00							
Grey sandy fine to coarse subangular to angular gravel of limestone. (MADE GROUND).		0.20	3.44						
Firm to stiff brown gravelly clay with a medium cobble content and rare plastic, bone, porcelain, timber, glass, red brick. Cobbles subangular to subrounded. Apparent slight methane odour. (MADE GROUND).		0.60	3.04		AA67817	Env B	0.50 0.50		
					AA67818	Env B	0.70 0.70		
Brown mottled black sandy fine to coarse subangular gravel with occasional bricks, concrete, plastic, rubber glove, timber. Apparent slight methane odour. (MADE GROUND).		1.30	2.34		AA67819	Env B	1.50 1.50		
				1 (Slow)	AA67820	Env B	2.20 2.20		
End of pit due to water. End of Trial Pit at 2.50m		2.50	1.14						

Groundwater Conditions
Groundwater at 2.50m.

Stability
Wall collapse from 2.20 to 2.50m.

General Remarks

TRIAL PIT RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**TRIAL PIT NO.**	**TP106**
		SHEET	Sheet 1 of 1
LOGGED BY	LD	**CO-ORDINATES**	
		DATE STARTED	14/03/2017
		DATE COMPLETED	14/03/2017
CLIENT	Corcom Enterprises Ltd.	**GROUND LEVEL (m)**	
ENGINEER	Roughan & O'Donovan	**EXCAVATION METHOD**	JCB

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 Grey brown subangular medium grained gravel of limestone. (MADE GROUND).									
Dark brown to black silty gravelly sand with fragments of red brick and rare ceramic. (MADE GROUND).		0.50			AA67801	Env B	0.90 0.90		
2.0 Dark brown angular to subangular clayey sandy GRAVEL. Sand is coarse.		2.10		(Moderate)	AA67802	Env B	2.10 2.10		
End of pit due to wall collapse and water. End of Trial Pit at 2.60m		2.60							
3.0									
4.0									

Groundwater Conditions
Groundwater at 2.60m.

Stability
Wall collapse from 0.70 to 2.60m.

General Remarks

TRIAL PIT RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**TRIAL PIT NO.**	**TP107**
		SHEET	Sheet 1 of 1
LOGGED BY	LD	**CO-ORDINATES**	727,716.60 E 739,440.08 N
		DATE STARTED	14/03/2017
		DATE COMPLETED	14/03/2017
CLIENT	Corcom Enterprises Ltd.	**GROUND LEVEL (m)**	4.07
		EXCAVATION METHOD	JCB
ENGINEER	Roughan & O'Donovan		

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 Soft brown very gravelly sandy silt. Gravel is fine to coarse subangular. (TOPSOIL).		0.20	3.87						
Grey brown silty fine to coarse subangular gravel with a high cobble content. Cobbles subangular to subrounded. Rare plastic and fabric. (MADE GROUND).					AA67814	Env B	0.60 0.60		
1.0		1.20	2.87						
Grey mottled light brown clayey sandy fine to coarse subangular gravel with a low cobble content. Sand is fine to coarse. Cobbles are subangular. (MADE GROUND).					AA67815	Env B	1.50 1.50		
2.0		2.40	1.67	1 (Slow)					
Grey brown sandy silty fine to coarse subangular wet gravel with a medium cobble content. Sand is fine to coarse. Rare plastic and fabric. (MADE GROUND).					AA67816	Env B	2.50 2.50		
		2.90	1.17						
3.0 End of pit due to water. End of Trial Pit at 2.90m									
4.0									

Groundwater Conditions
Groundwater at 2.80m.

Stability
Stable.

General Remarks

TRIAL PIT RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**TRIAL PIT NO.**	**TP108**
		SHEET	Sheet 1 of 1
LOGGED BY	LD	**CO-ORDINATES**	727,701.78 E 739,374.47 N
		DATE STARTED	14/03/2017
		DATE COMPLETED	14/03/2017
CLIENT	Corcom Enterprises Ltd.	**GROUND LEVEL (m)**	4.20
ENGINEER	Roughan & O'Donovan	**EXCAVATION METHOD**	JCB

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 Soft dark brown sandy silty very gravelly clay with a high cobble content. Gravel is fine to coarse subangular to angular. Cobbles are subangular. Frequent rootlets. (TOPSOIL).		0.50	3.70						
Brown clayey sandy fine to coarse subangular gravel with a medium cobble content and pockets of stiff brown gravelly clay. Rare broken glass. (MADE GROUND).						Env	1.30		
1.0					AA67803	B	1.30		
		1.60	2.60			Env	1.60		
Light brown very sandy subrounded to subangular GRAVEL. Sand is coarse.					AA67804	B	1.60		
2.0 Soft dark brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse subangular. Frequent shell fragments.		2.00	2.20						
				1 (Moderate)		Env	2.50		
		2.70	1.50		AA67805	B	2.50		
Grey gravelly silty fine to coarse SAND. Gravel is fine to coarse subangular. Frequent shell fragments. Rare ceramic and plastics. Possible sea deposit.									
3.0									
		3.70	0.50			Env	3.70		
Dark grey mottled black gravelly silty fine to coarse SAND. Gravel is fine to coarse subangular. Frequent shell fragments. Rare ceramic and plastics. Possible sea deposit.					AA67806	B	3.70		
4.0		4.00	0.20						
End of pit. End of Trial Pit at 4.00m									

Groundwater Conditions

Stability
Stable.

General Remarks

TRIAL PIT RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**TRIAL PIT NO.**	**TP109**
		SHEET	Sheet 1 of 1
LOGGED BY	LD	**CO-ORDINATES**	727,656.85 E 739,411.05 N
		DATE STARTED	14/03/2017
		DATE COMPLETED	14/03/2017
CLIENT	Corcom Enterprises Ltd.	**GROUND LEVEL (m)**	4.85
ENGINEER	Roughan & O'Donovan	**EXCAVATION METHOD**	JCB

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 Soft brown very gravelly sandy silt. Gravel is fine to coarse subangular. (TOPSOIL).		0.20	4.65						
Grey sandy fine to coarse subangular to angular gravel with a high cobble content and a low boulder content. Rare plastic, fabric, 500mm concrete slab. (MADE GROUND).		0.60	4.25						
Dark brown mottled black clayey sandy fine to coarse subangular gravel with rare steel wire, plastic fragments. (MADE GROUND).				1 (Slow)	AA67810	Env B	0.60 0.60		
1.0									
Soft dark brown slightly gravelly silt with a low cobble content and a low boulder content. Frequent wood/timber in the form of branches etc., rare plastic, glass. Gravel is fine to coarse subangular of limestone. Cobbles are subangular of limestone. Boulder subrounded ~300mm of limestone. MADE GROUND.		1.70	3.15		AA67811	Env B	1.70 1.70		
2.0									
Grey very sandy subangular fine to coarse gravel with a medium cobble content. Rare glass, plastic fragments. (MADE GROUND).		2.90	1.95		AA67812	Env B	2.90 2.90		
3.0									
End of pit due to water. End of Trial Pit at 3.80m		3.80	1.05		AA67813	Env B	3.70 3.70		
4.0									

Groundwater Conditions
Groundwater at 3.70m.

Stability
Stable.

General Remarks

TRIAL PIT RECORD

REPORT NUMBER 19956

CONTRACT	Techcrete Howth	**TRIAL PIT NO.**	**TP115**
		SHEET	Sheet 1 of 1
LOGGED BY	LD	**CO-ORDINATES**	727,701.00 E 739,430.37 N
		DATE STARTED	14/03/2017
		DATE COMPLETED	14/03/2017
CLIENT	Corcom Enterprises Ltd.	**GROUND LEVEL (m)**	4.23
ENGINEER	Roughan & O'Donovan	**EXCAVATION METHOD**	JCB

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 Soft dark brown sandy gravelly silt with a medium cobble content. Gravel is fine to coarse subangular of limestone. Cobbles are subangular. Frequent shell fragments, rare brick fragments, plastic fragments, timber, rubber. Possible slight hydrocarbon and/or methane odour. (MADE GROUND).					AA67807	Env B	0.80 0.80		
1.0									
Grey brown gravelly silty fine to coarse SAND. Gravel is fine to coarse subangular. Frequent shell fragments. Rare ceramic and plastics. Possible sea deposit or reworked ground/made ground.		1.60	2.63		AA67808	Env B	1.80 1.80		
2.0									
End of pit due to water. End of Trial Pit at 2.80m		2.80	1.43	1 (Moderate)	AA67809	Env B	2.80 2.80		
3.0									
4.0									

Groundwater Conditions
Groundwater at 2.80m.

Stability
Stable.

General Remarks

Appendix 4

Groundwater and Gas Monitoring

Groundwater Monitoring

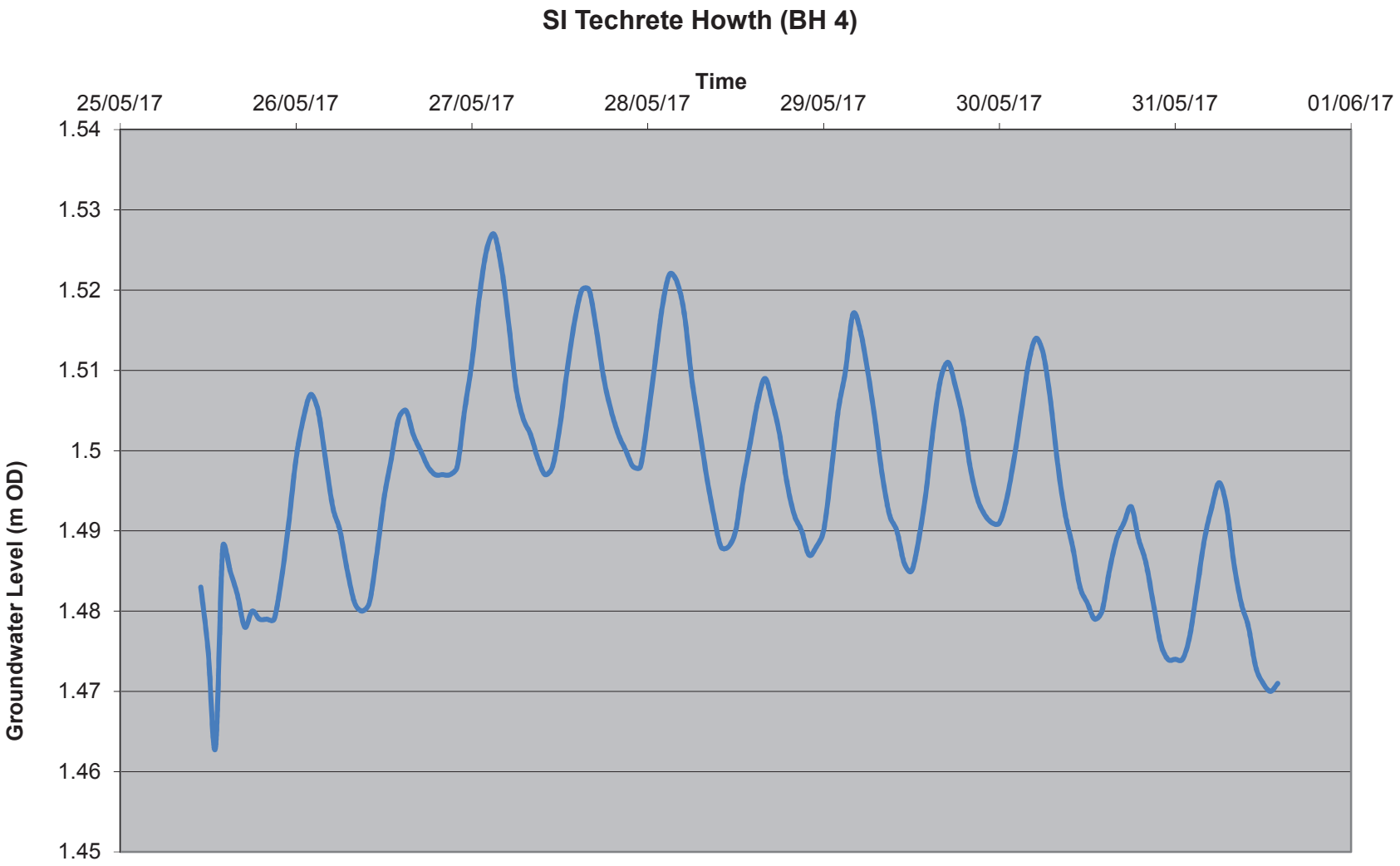
Site Location	Mixed Use Development, Techrete Site, Howth
Project No.	19956
Client	Corcom Enterprises Limited
Date	04-May-17

	BH11	RC16	RC22			
WATER LEVEL m bgl (m OD)	2.73	2.10	2.73			

Groundwater Monitoring

Site Location	Mixed Use Development, Techrete Site, Howth
Project No.	19956
Client	Corcom Enterprises Limited
Date	31/05/2017

	BH16	BH 15	BH 9	BH 31	BH 30	BH 27	BH 22	BH 25	
WATER LEVEL m BGL	2.26	2.17	2.76	2.25	2.32	2.17	2.8	3.34	


SI Techrete Howth (BH 4)
Time
25/05/17
26/05/17
27/05/17
28/05/17
29/05/17
30/05/17
31/05/17
01/06/17
Groundwater Level (m OD)
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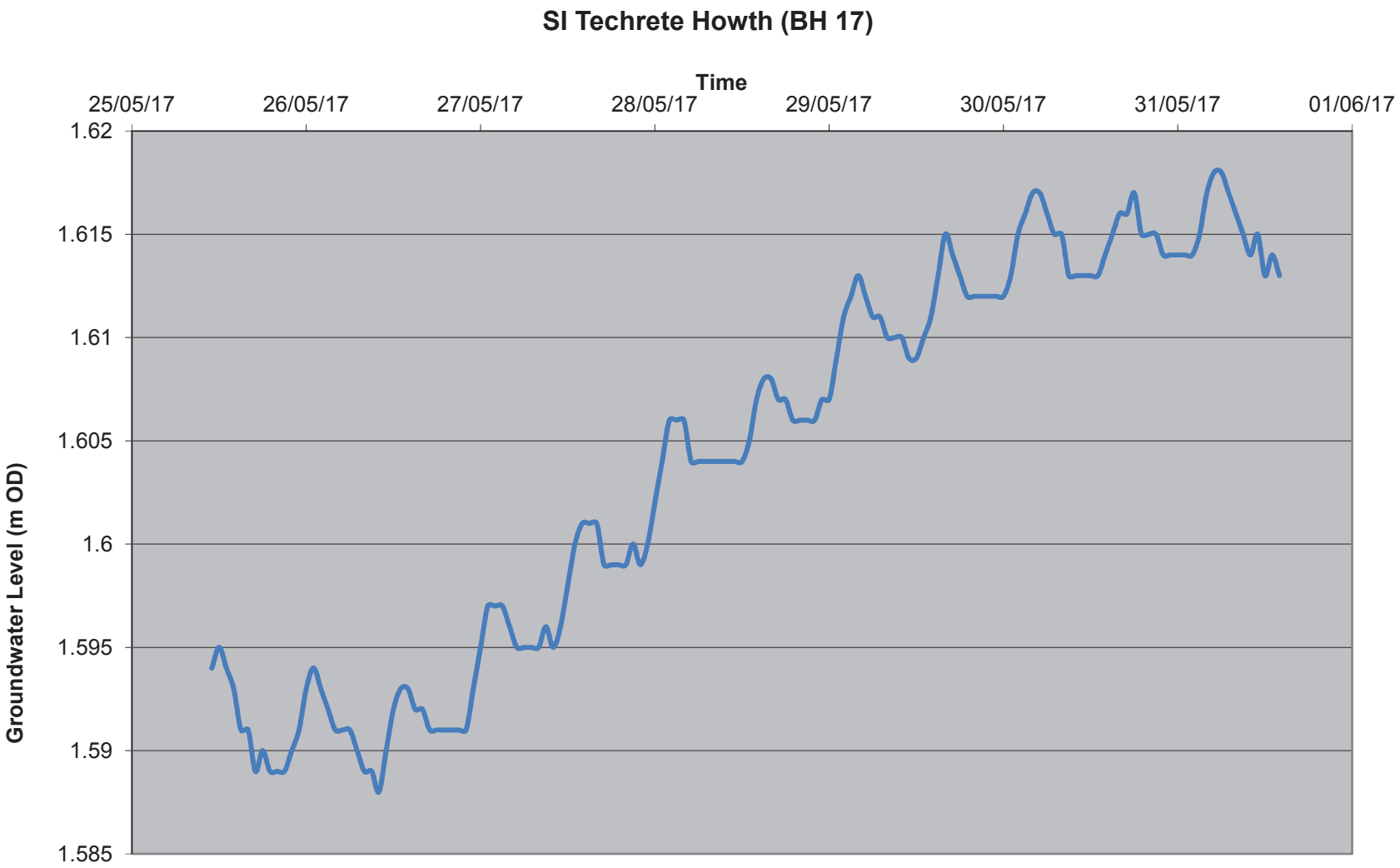
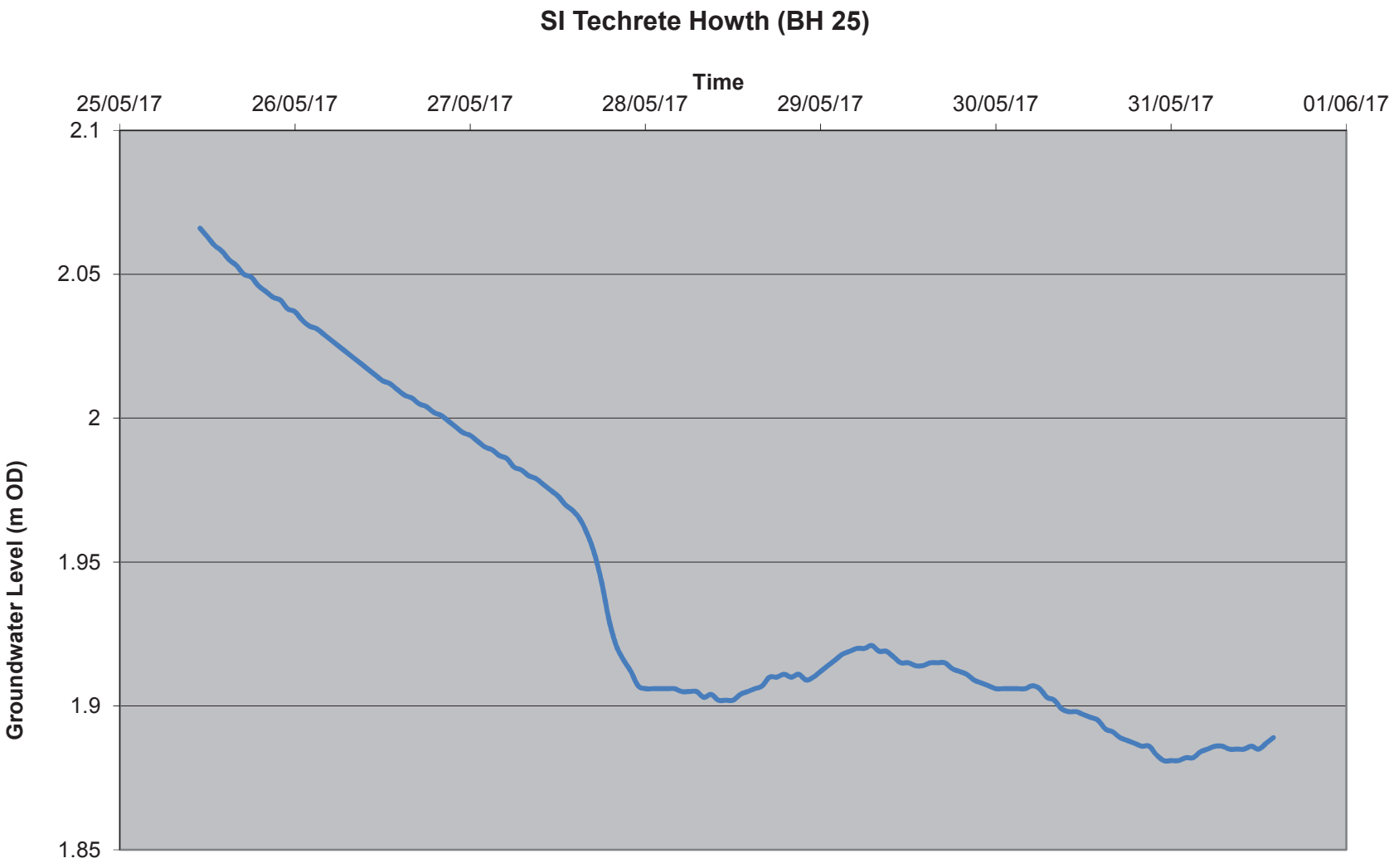
1.51
1.5
1.49
1.48
1.47
1.46
1.45


SI Techrete Howth (BH 17)
Time
25/05/17
26/05/17
27/05/17
28/05/17
29/05/17
30/05/17
31/05/17
01/06/17
Groundwater Level (m OD)
1.62
1.615
1.61
1.605
1.6
1.595
1.59
1.585


SI Techrete Howth (BH 25)
Time
25/05/17
26/05/17
27/05/17
28/05/17
29/05/17
30/05/17
31/05/17
01/06/17
Groundwater Level (m OD)
2.1
2.05
2
1.95
1.9
1.85

Gas Monitoring

Site Location	**Techrete, Howth**					
Project No.	**19956**					
Client	**ROD**					
Date	**31-May-17**					
	BH21					
GAS FLOW (l/min)	0.1					
CH4(%)	0.01					
CO2(%)	5.4					
O2(%)	9.4					
BAROMETRIC PRESURE (mb)	1026					
WEATHER	Clear/Sunny					
COMMENTS						

Appendix 5

Geotechnical Laboratory Testing

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2*, 4.3, 4.4 & 5.3

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.133T

Report No. **R79126** Contract No. 19956 Contract Name: Techrete , Howth

Customer Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.

Samples Received: 13-04-17 Date Tested: 15-05-27

BH/TP	Sample No.	Depth (m)	Lab. Ref	Sample Type	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH08	AA61710	2.0	A17/1893	B	30	31	NP	NP	88	WS	4.4		Grey/brown slightly gravelly SAND
BH08	AA61711	3.0	A17/1894	B	39	35	NP	NP	97	WS	4.4		Black/brown sandy slightly gravelly SILT
BH09	AA61702	2.0	A17/1895	B	15	25	NP	NP	57	WS	4.4		Mottled grey/brown very sandy gravelly SILT
BH09	AA61705	2.5	A17/1896	B	44	47	NP	NP	83	WS	4.4		Mottled grey/brown very sandy gravelly SILT with shell fragments
BH05	AA67944	3.0	A17/1906	B	36	33	NP	NP	95	WS	4.4		Black/brown sandy gravelly SILT
BH05	AA67945	4.0	A17/1907	B	9.2		NP	NP					Grey/orange clayey sandy GRAVEL
BH05	AA67946	5.0	A17/1908	B	44	78	NP	NP	89	WS	4.4		Dark brown slightly sandy slightly gravelly SILT
BH06	AA67924	2.0	A17/1910	B	27	35	NP	NP	98	WS	4.4		Grey/brown slightly gravelly SAND
BH06	AA67926	4.0	A17/1911	B	30	28	NP	NP	96	WS	4.4		Dark brown/black sandy slightly gravelly SILT
BH14	AA67930	3.0	A17/1917	B	14	26	NP	NP	29	WS	4.4		Grey/brown very sandy very gravelly SILT
BH14	AA67931	4.0	A17/1918	B	29	31	NP	NP	90	WS	4.4		Black/brown slightly gravelly sandy SILT
BH04	AA66867	2.0	A17/1922	B	21	35	NP	NP	79	WS	4.4		Grey/brown slightly gravelly SAND
BH11	AA61866	3.6	A17/1926	B	25	29	NP	NP	89	WS	4.4		Black/brown slightly gravelly sandy SILT
BH17	AA61877	3.6	A17/1933	B	33	35	NP	NP	92	WS	4.4		Grey/brown sandy gravelly SILT
BH18	AA61886	4.0	A17/1936	B	13	25	13	12	69	WS	4.4	C L	Dark brown slightly sandy, slightly gravelly, CLAY

Notes:
Preparation: WS - Wet sieved; AR - As received; NP - Non plastic
Liquid Limit Clause: 4.3 Cone Penetrometer definitive method; 4.4 Cone Penetrometer one point method
Sample Type: B - Bulk Disturbed; U - Undisturbed

Remarks:
NOTE: *Clause 3.2 of BS1377 is a "withdrawn" standard due to publication of ISO17892-1:2014
Opinions and interpretations are outside the scope of accreditation.
The results relate to the specimens tested. Any remaining material will be retained for one month.

IGSL Ltd Materials Laboratory

Persons authorized to approve reports
H Byrne (Laboratory Manager)

Approved by | Date: 31-05-17 | Page: 1 of 1

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2*, 4.3, 4.4 & 5.3

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.133T

Report No. **R79127** Contract No. 19956 Contract Name: Techrete , Howth

Customer Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.

Samples Received: 13-04-17 Date Tested: 15-05-17

BH/TP	Sample No.	Depth (m)	Lab. Ref	Sample Type	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH19	AA61882	4.0	A17/2236	B	14	25	13	12	77	WS	4.4	C L	Dark brown slightly sandy, slightly gravelly, CLAY
BH20	AA66858	3.0	A17/1939	B	23	28	NP	NP	47	WS	4.4		Dark brown/grey very sandy gravelly SILT
BH21	AA61900	4.0	A17/1942	B	11	25	12	13	64	WS	4.4	C L	Dark brown slightly sandy, gravelly, CLAY
BH22	AA66865	5.7	A17/1946	B	14	28	14	14	71	WS	4.4	C L	Grey/brown slightly sandy, gravelly, CLAY
BH23	AA66854	3.0	A17/1950	B	24	37	NP	NP	70	WS	4.4		Dark brown very sandy gravelly SILT
BH23	AA66855	4.0	A17/1951	B	9.6	26	NP	NP	61	WS	4.4		Dark brown slightly sandy, gravelly, SILT with some cobbles
BH24	AA61891	5.0	A17/1953	B	16	23	NP	NP	73	WS	4.4		Black/Brown clayey, gravelly, SAND with some cobbles
BH25	AA61896	5.0	A17/1958	B	11	26	12	14	70	WS	4.4	C L	Dark brown slightly sandy, gravelly, CLAY
TP102	AA67826	1.5	A17/1967	B	17	26	17	9	68	WS	4.4	C L	Brown slightly sandy, slightly gravelly, CLAY
TP103	AA67831	2.5	A17/1970	B	38	42	NP	NP	84	WS	4.4		Mottled brown sandy SILT with shell fragments
TP103	AA67832	3.3	A17/1971	B	43	39	25	14	84	WS	4.4	M I	Mottled brown sandy SILT with shells fragments

Notes:
Preparation: WS - Wet sieved; AR - As received; NP - Non plastic
Liquid Limit Clause: 4.3 Cone Penetrometer definitive method; 4.4 Cone Penetrometer one point method
Sample Type: B - Bulk Disturbed; U - Undisturbed

Remarks:

NOTE: *Clause 3.2 of BS1377 is a "withdrawn" standard due to publication of ISO17892-1:2014
Opinions and interpretations are outside the scope of accreditation.
The results relate to the specimens tested. Any remaining material will be retained for one month.

IGSL Ltd Materials Laboratory

Persons authorized to approve reports

H Byrne (Laboratory Manager)

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H Byrne	31-05-17	1 of 1

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2*, 4.3, 4.4 & 5.3

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.133T

Report No. **R79036** Contract No. 19956 Contract Name: Techrete , Howth

Customer Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.

Samples Received: 02-05-17 Date Tested: 02-05-17

BH/TP	Sample No.	Depth (m)	Lab. Ref	Sample Type	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
BH03	N/A	1.0	A17/2103	ENV	10	23	NP	NP	83	WS	4.4		Brown silty, gravelly, SAND
BH03	N/A	3.0	A17/2104	ENV	26	34	NP	NP	90	WS	4.4		Grey/black SILT
BH31	AA66877	2.0	A17/2106	ENV	37	33	NP	NP	94	WS	4.4		Dark grey SILT with shell fragments and glass

Notes:
Preparation: WS - Wet sieved; AR - As received; NP - Non plastic
Liquid Limit Clause: 4.3 Cone Penetrometer definitive method; 4.4 Cone Penetrometer one point method
Sample Type: B - Bulk Disturbed; U - Undisturbed

Remarks:

NOTE: *Clause 3.2 of BS1377 is a "withdrawn" standard due to publication of ISO17892-1:2014
Opinions and interpretations are outside the scope of accreditation.
The results relate to the specimens tested. Any remaining material will be retained for one month.

IGSL Ltd Materials Laboratory

Persons authorized to approve reports

H Byrne (Laboratory Manager)

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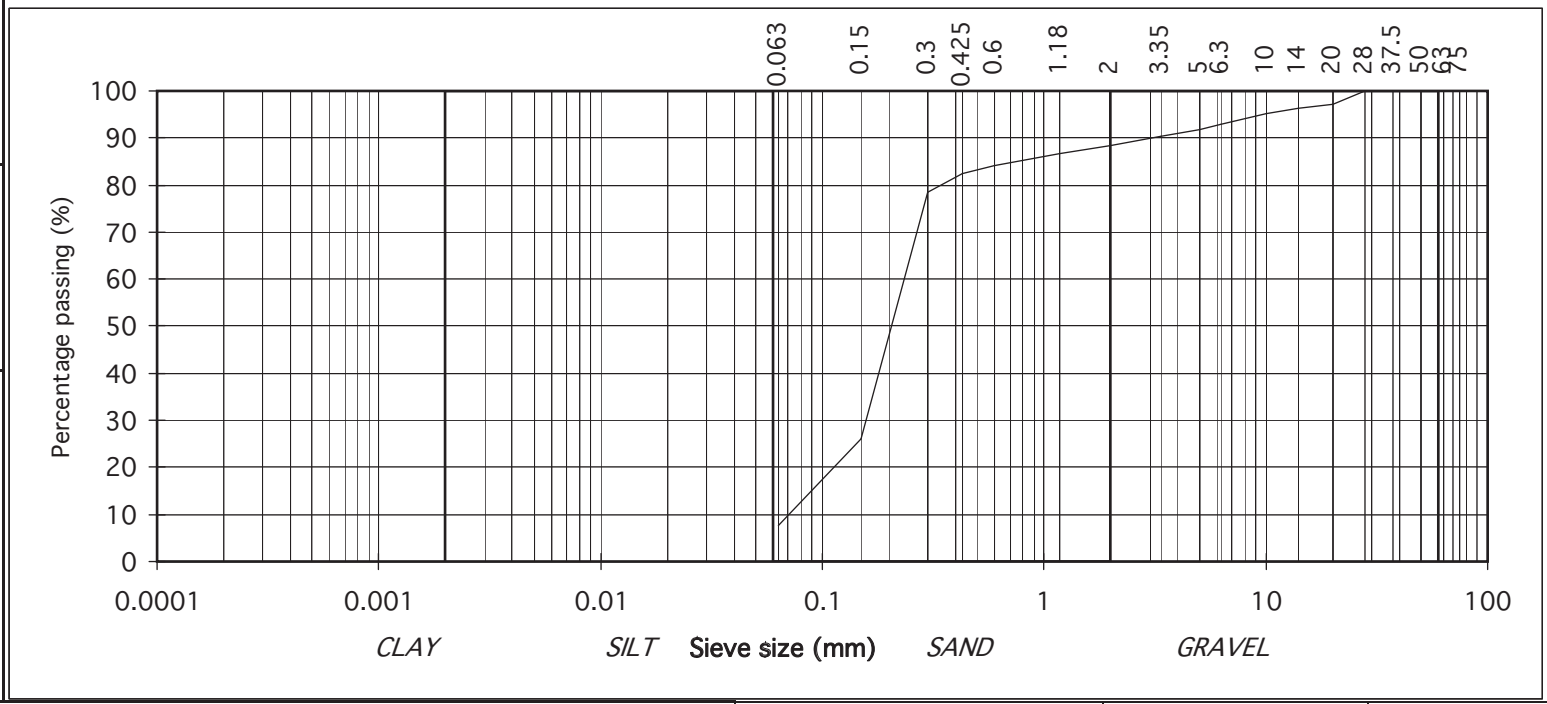
TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 137T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	97	
14	96	
10	95	
6.3	93	
5	92	
3.35	90	
2	89	SAND
1.18	87	
0.6	84	
0.425	82	
0.3	79	
0.15	26	
0.063	8	SILT/CLAY

Contract No: 19956 Report No. R79329
Contract: Techrete , Howth
BH/TP : BH02
Sample No. AA67938 Lab. Sample No. A17/1903
Sample Type: B
Depth (m) 1.20 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 12-05-17
Description: Brown clayey/silty, gravelly, SAND

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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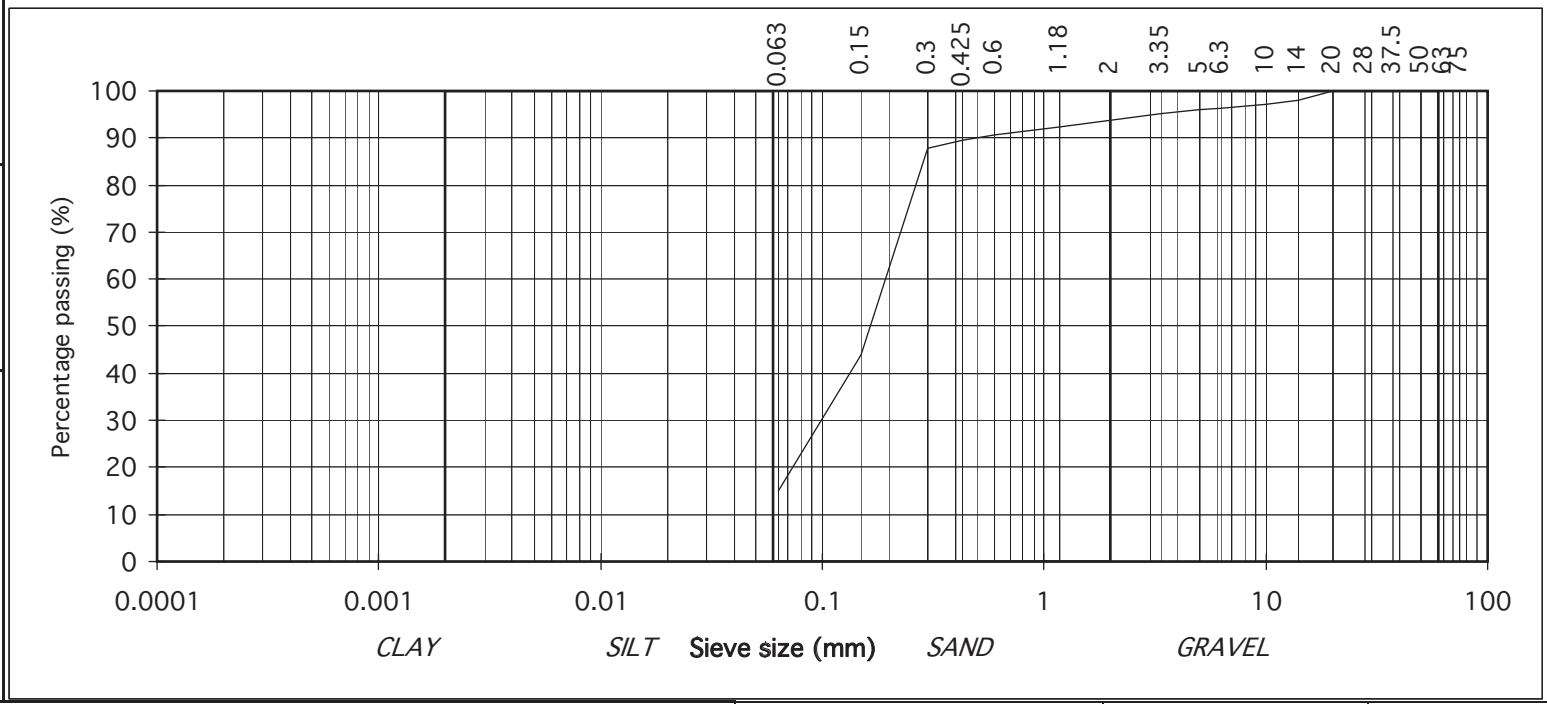
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	98	
10	97	
6.3	96	
5	96	
3.35	95	
2	94	SAND
1.18	92	
0.6	91	
0.425	90	
0.3	88	
0.15	44	
0.063	15	SILT/CLAY

Contract No: 19956 Report No. R79781
Contract: Techrete , Howth
BH/TP : BH02
Sample No. N/A Lab. Sample No. A17/1904
Sample Type: B
Depth (m) 3.00 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 24-05-17
Description: Black brown clayey/silty, gravelly, SAND

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

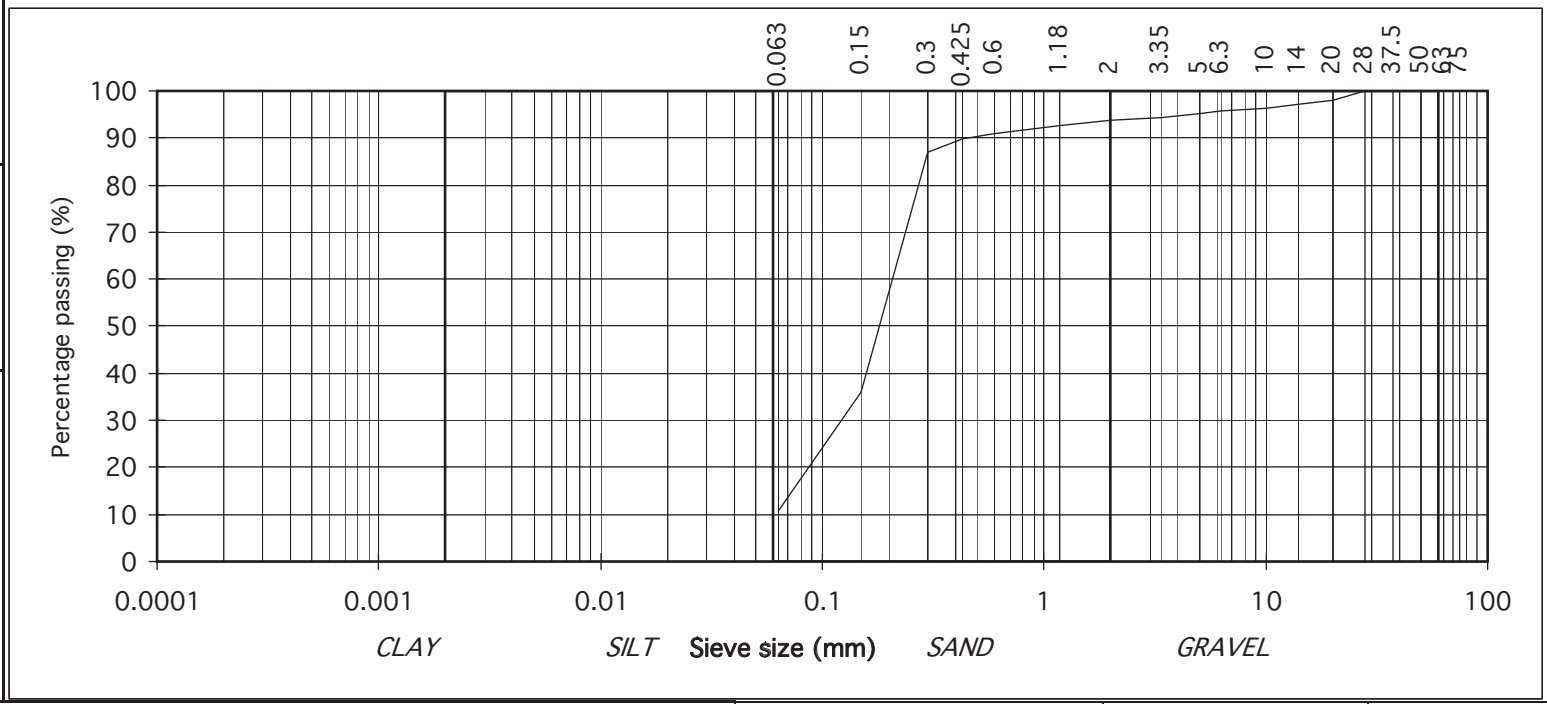
TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 137T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	98	
14	97	
10	96	
6.3	96	
5	95	
3.35	94	
2	94	SAND
1.18	93	
0.6	91	
0.425	90	
0.3	87	
0.15	36	
0.063	11	SILT/CLAY

Contract No: 19956 Report No. R79780
Contract: Techrete , Howth
BH/TP : BH03
Sample No. N/A Lab. Sample No. A17/2103
Sample Type: B
Depth (m) 1.00 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 24-05-17
Description: Brown clayey/silty, gravelly, SAND

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



IGSL Ltd Materials Laboratory

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

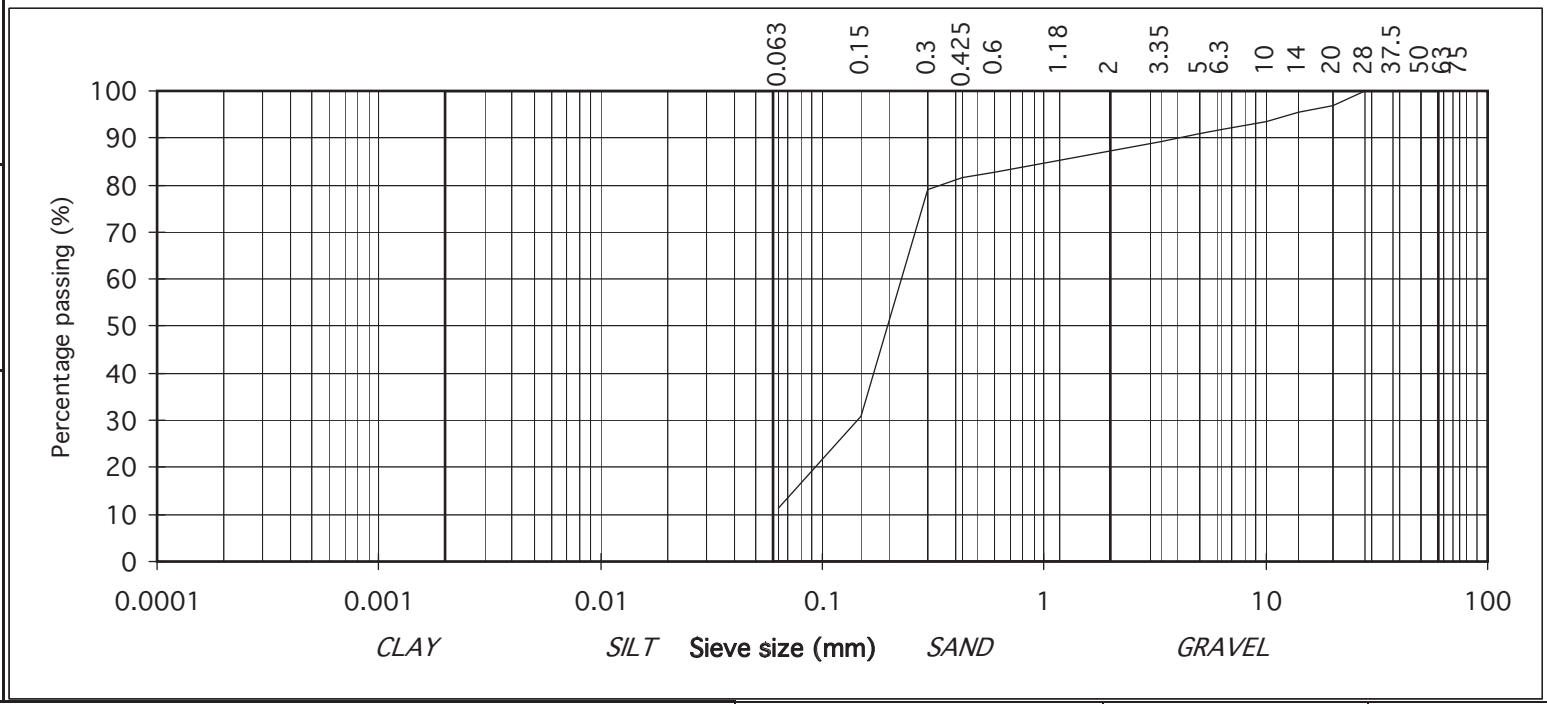
TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 137T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	97	
14	95	
10	93	
6.3	92	
5	91	
3.35	89	
2	87	SAND
1.18	85	
0.6	83	
0.425	81	
0.3	79	
0.15	31	
0.063	11	SILT/CLAY

Contract No: 19956 Report No. R79330
Contract: Techrete , Howth
BH/TP : BH04
Sample No. AA66867 Lab. Sample No. A17/1922
Sample Type: B
Depth (m) 2.00 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 11-05-17
Description: Grey/brown clayey/silty, gravelly, SAND

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



IGSL Ltd Materials Laboratory

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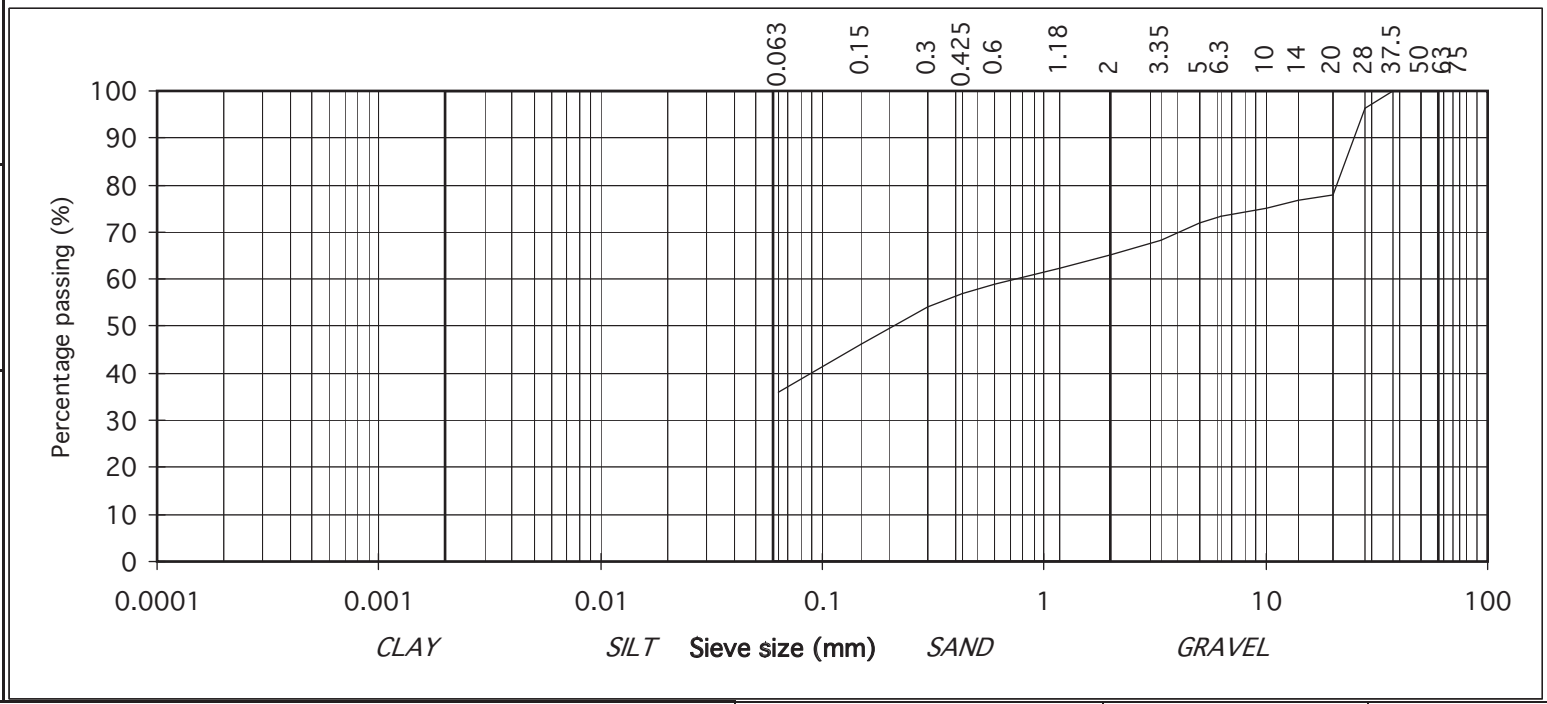
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	96	
20	78	
14	77	
10	75	
6.3	73	
5	72	
3.35	68	
2	65	
1.18	62	SAND
0.6	59	
0.425	57	
0.3	54	
0.15	46	
0.063	36	SILT/CLAY

Contract No: 19956 Report No. R79331
Contract: Techrete , Howth
BH/TP : BH07
Sample No. AA61707 Lab. Sample No. A17/1889
Sample Type: B
Depth (m) 2.00 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 11-05-17
Description: Mottled grey/brown slightly sandy, slightly gravelly, SILT/CLAY

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution

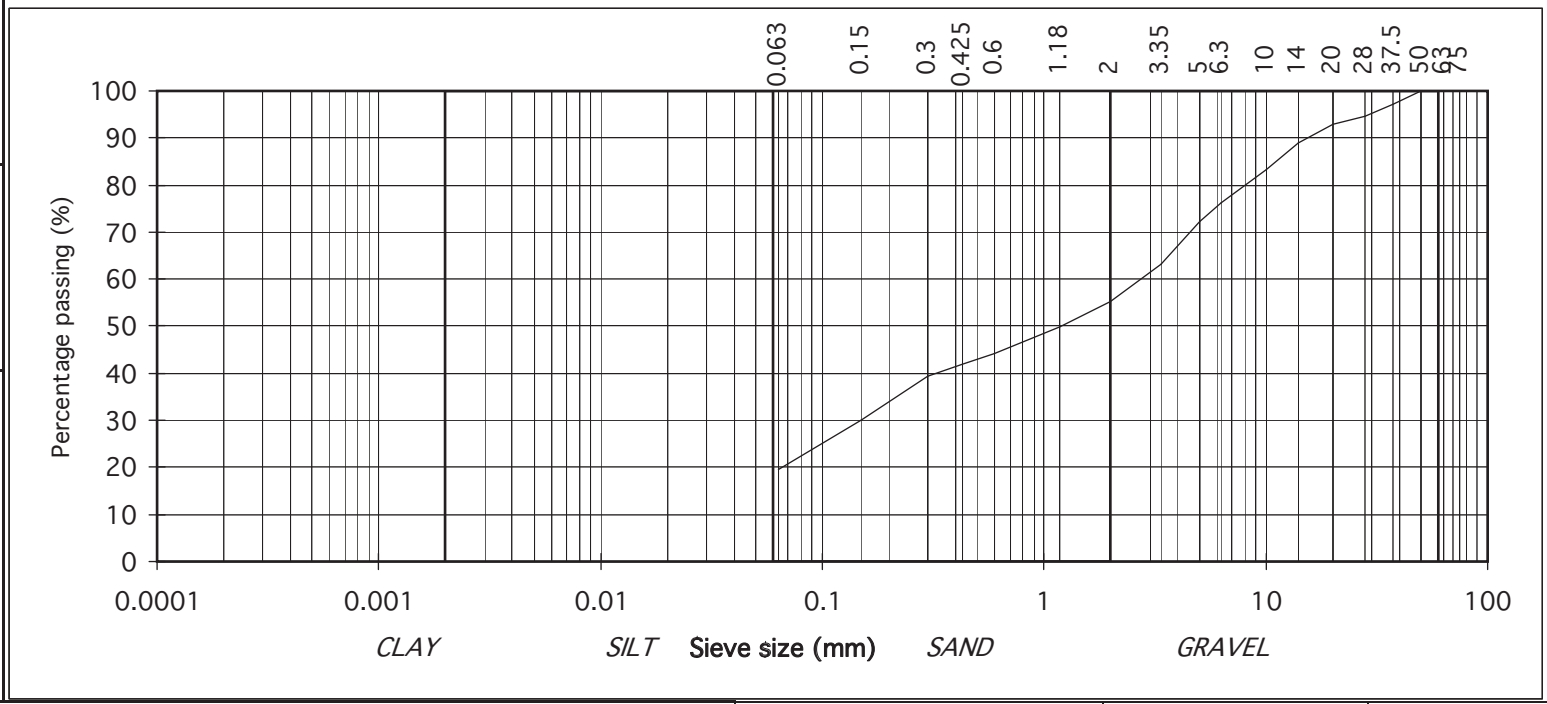
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 137T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	97	
28	95	
20	93	
14	89	
10	83	
6.3	76	
5	72	
3.35	63	
2	55	SAND
1.18	50	
0.6	44	
0.425	42	
0.3	39	
0.15	30	
0.063	20	SILT/CLAY

Contract No: 19956 Report No. R79365
Contract: Techrete , Howth
BH/TP : BH08
Sample No. AA61709 Lab. Sample No. A17/1892
Sample Type: B
Depth (m) 1.00 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 12-05-17
Description: Grey/black clayey/silty, very sandy, GRAVEL

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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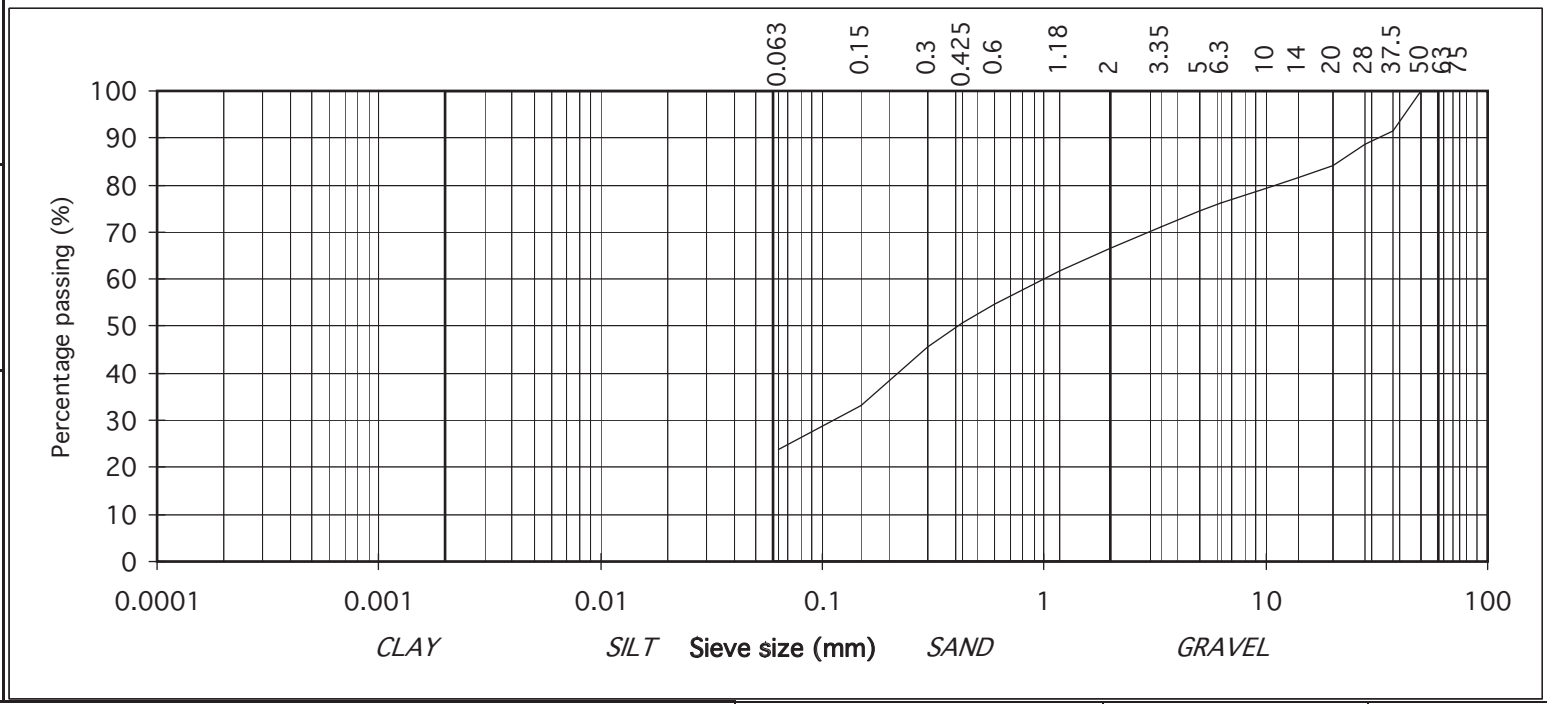
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	91	
28	89	
20	84	
14	82	
10	79	
6.3	76	
5	74	
3.35	71	
2	66	
1.18	62	SAND
0.6	55	
0.425	51	
0.3	46	
0.15	33	
0.063	24	SILT/CLAY

Contract No:	19956	Report No.	R79367
Contract:	Techrete , Howth		
BH/TP :	BH11		
Sample No.	AA61864	Lab. Sample No.	A17/1925
Sample Type:	B		
Depth (m)	2.00	Customer:	Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received	13-04-17	Date Testing started	12-05-17
Description:	Mottled brown sandy, slightly gravelly, SILT/CLAY		
Remarks	Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016		



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

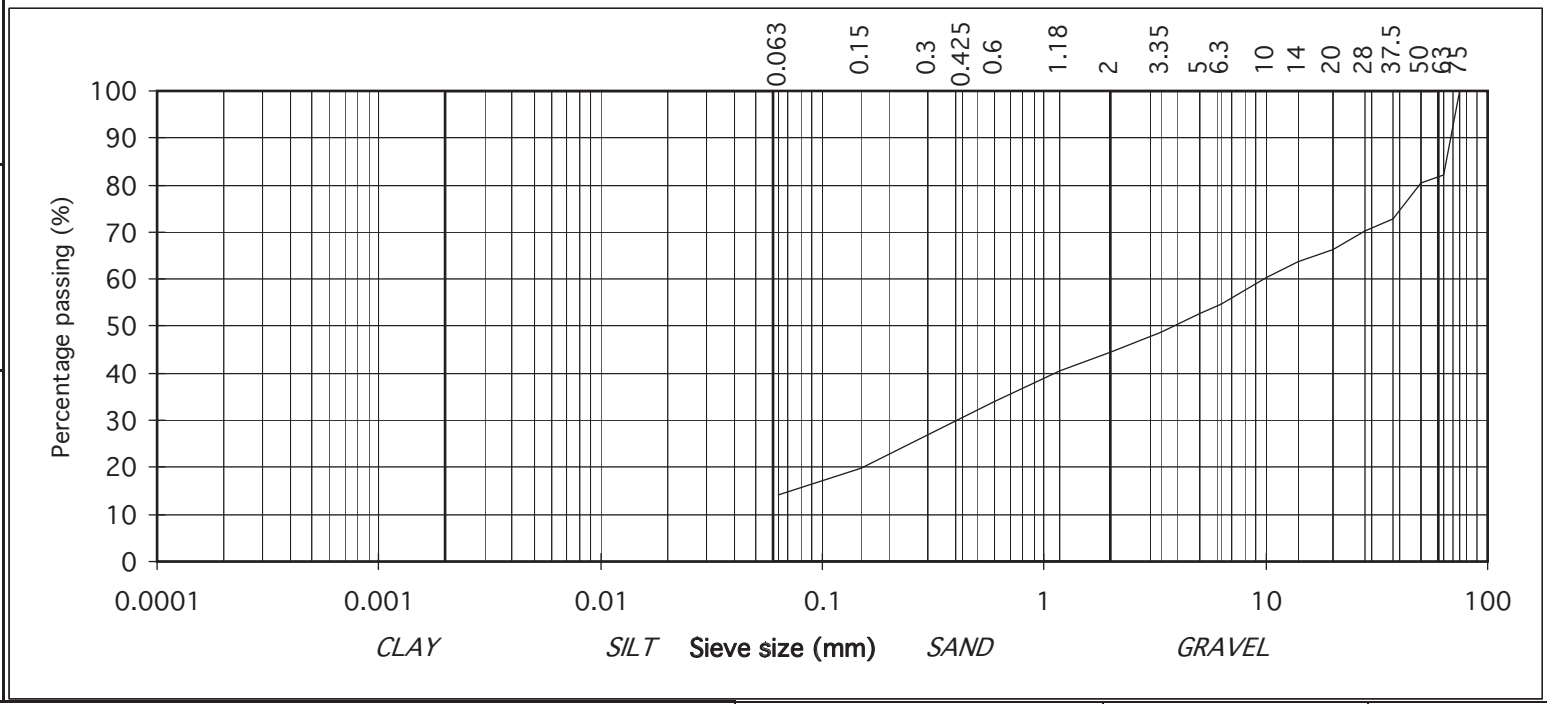
TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 137T

particle size	% passing	
75	100	COBBLES
63	82	
50	80	GRAVEL
37.5	73	
28	70	
20	66	
14	64	
10	60	
6.3	55	
5	53	
3.35	49	
2	45	
1.18	40	SAND
0.6	34	
0.425	31	
0.3	27	
0.15	20	
0.063	14	SILT/CLAY

Contract No: 19956 Report No. R79366
Contract: Techrete , Howth
BH/TP : BH12
Sample No. AA67934 Lab. Sample No. A17/1914
Sample Type: B
Depth (m) 1.00 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 12-05-17
Description: Dark brown/black clayey/silty, very sandy, GRAVEL with some cobbles

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	19-05-17	1 of 1

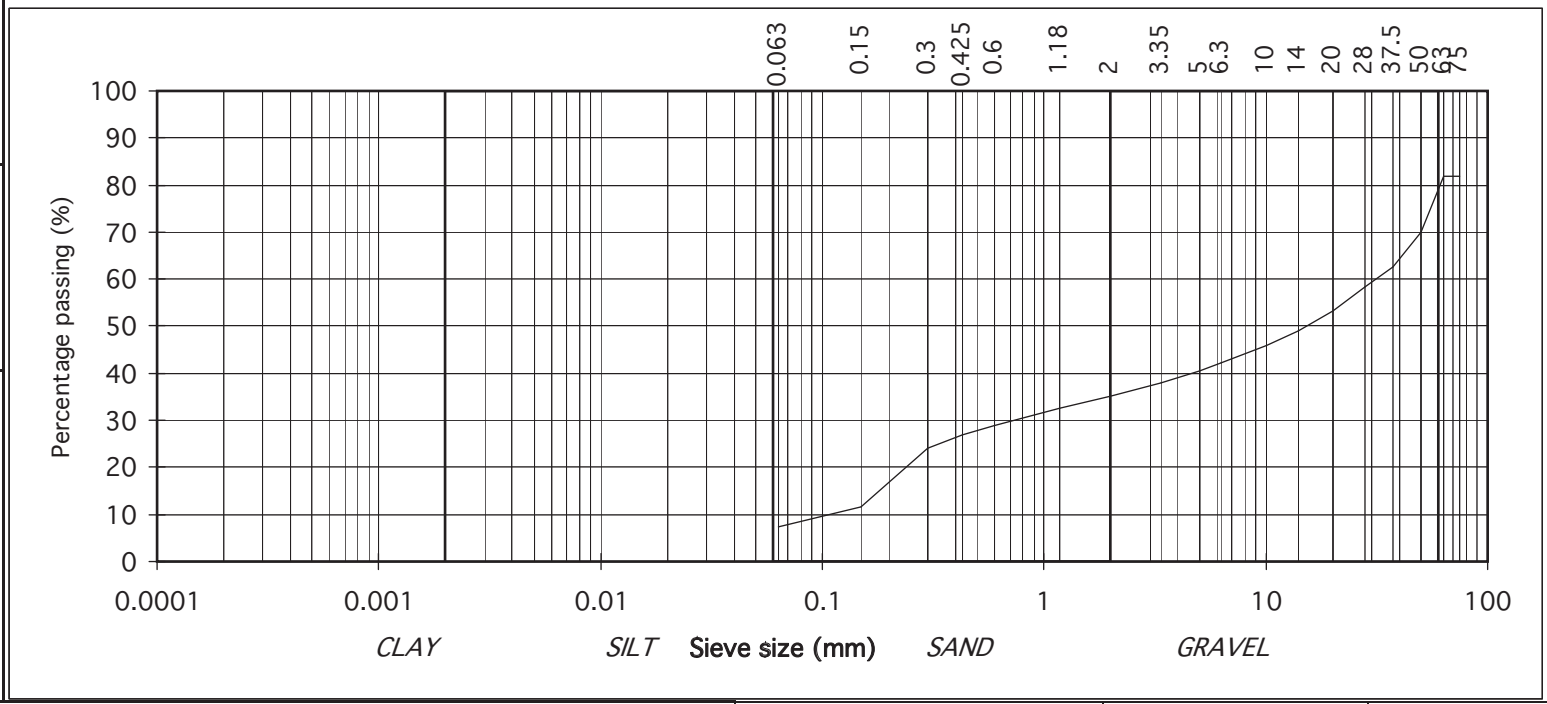
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

particle size	% passing	
75	82	COBBLES
63	82	
50	70	GRAVEL
37.5	63	
28	58	
20	53	
14	49	
10	46	
6.3	42	
5	41	
3.35	38	
2	35	
1.18	33	SAND
0.6	29	
0.425	27	
0.3	24	
0.15	12	
0.063	7	SILT/CLAY

Contract No: 19956 Report No. R79332
Contract: Techrete , Howth
BH/TP : BH12
Sample No. AA67936 Lab. Sample No. A17/1915
Sample Type: B
Depth (m) 3.00 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 12-05-17
Description: Light brown clayey/silty, very sandy, GRAVEL with some cobbles

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
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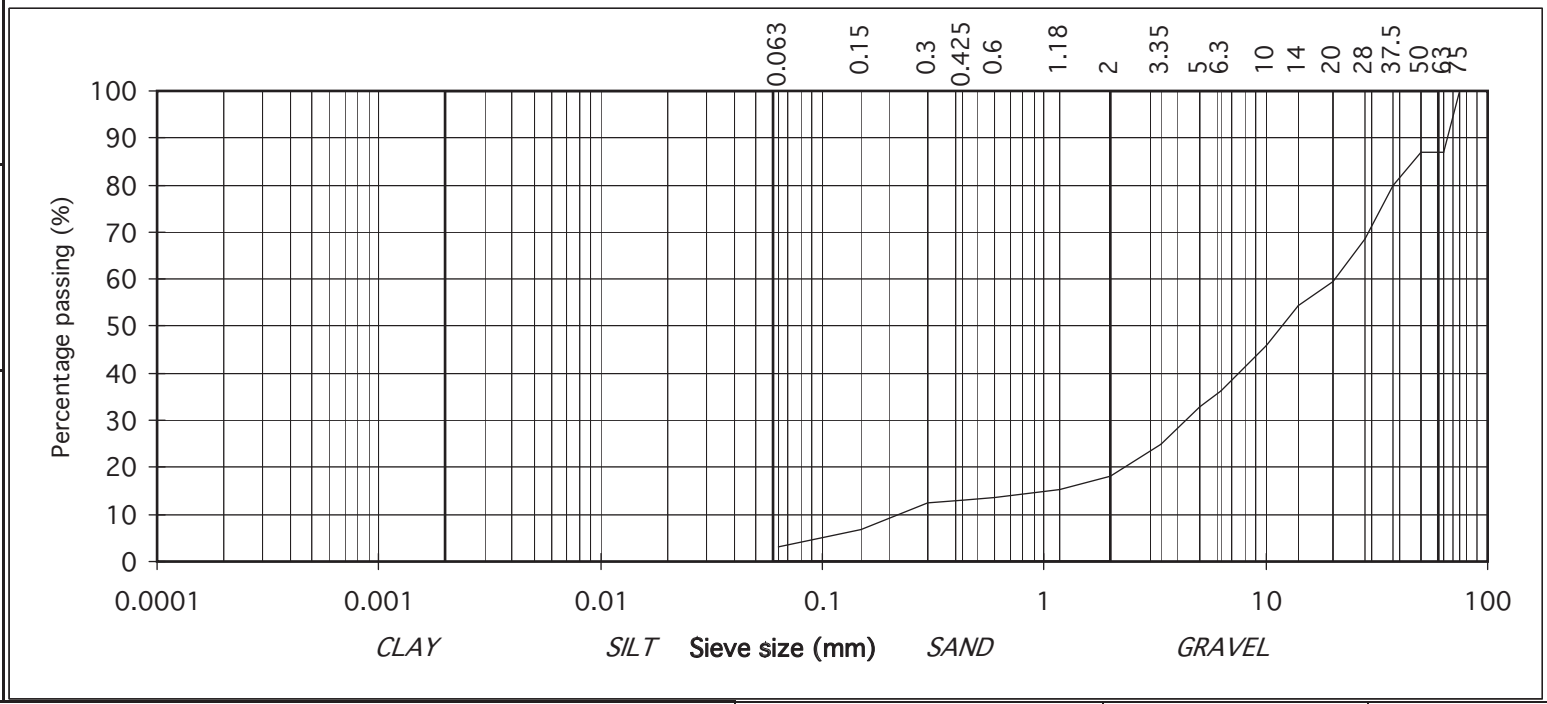
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

particle size	% passing	
75	100	COBBLES
63	87	
50	87	GRAVEL
37.5	80	
28	69	
20	59	
14	54	
10	46	
6.3	36	
5	33	
3.35	25	
2	18	
1.18	15	SAND
0.6	14	
0.425	13	
0.3	13	
0.15	7	
0.063	3	SILT/CLAY

Contract No: 19956 Report No. R79333
Contract: Techrete , Howth
BH/TP : BH14
Sample No. AA67932 Lab. Sample No. A17/1919
Sample Type: B
Depth (m) 5.00 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 11-05-17
Description: Brown slightly clayey/silty, sandy, GRAVEL with some cobbles

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

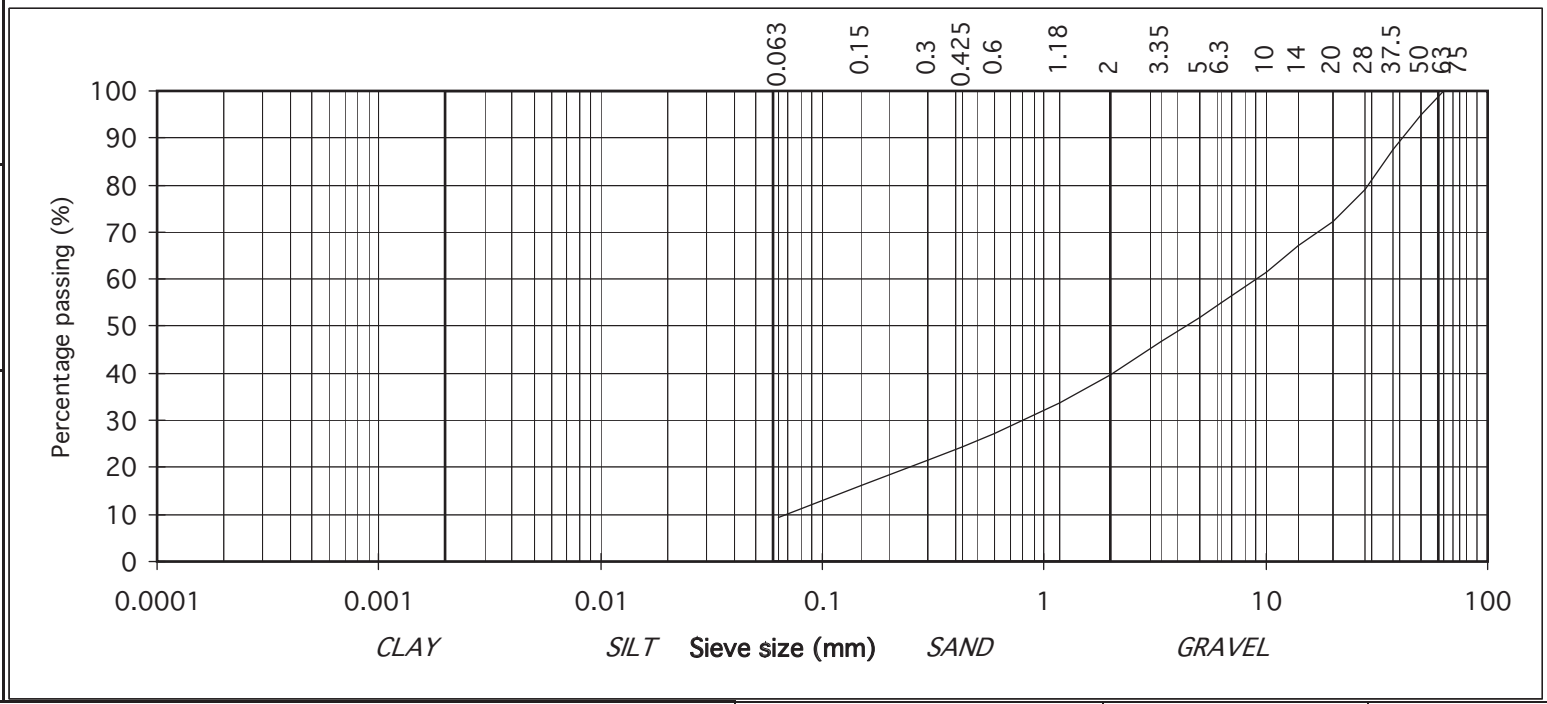
TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 137T

particle size	% passing	
75	100	COBBLES
63	100	
50	95	GRAVEL
37.5	88	
28	79	
20	72	
14	67	
10	61	
6.3	55	
5	52	
3.35	47	
2	40	SAND
1.18	34	
0.6	27	
0.425	24	
0.3	21	
0.15	16	
0.063	9	SILT/CLAY

Contract No: 19956 Report No. R79368
Contract: Techrete , Howth
BH/TP : BH15
Sample No. AA61869 Lab. Sample No. A17/1928
Sample Type: B
Depth (m) 2.00 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 12-05-17
Description: Black clayey/silty, very sandy, GRAVEL

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

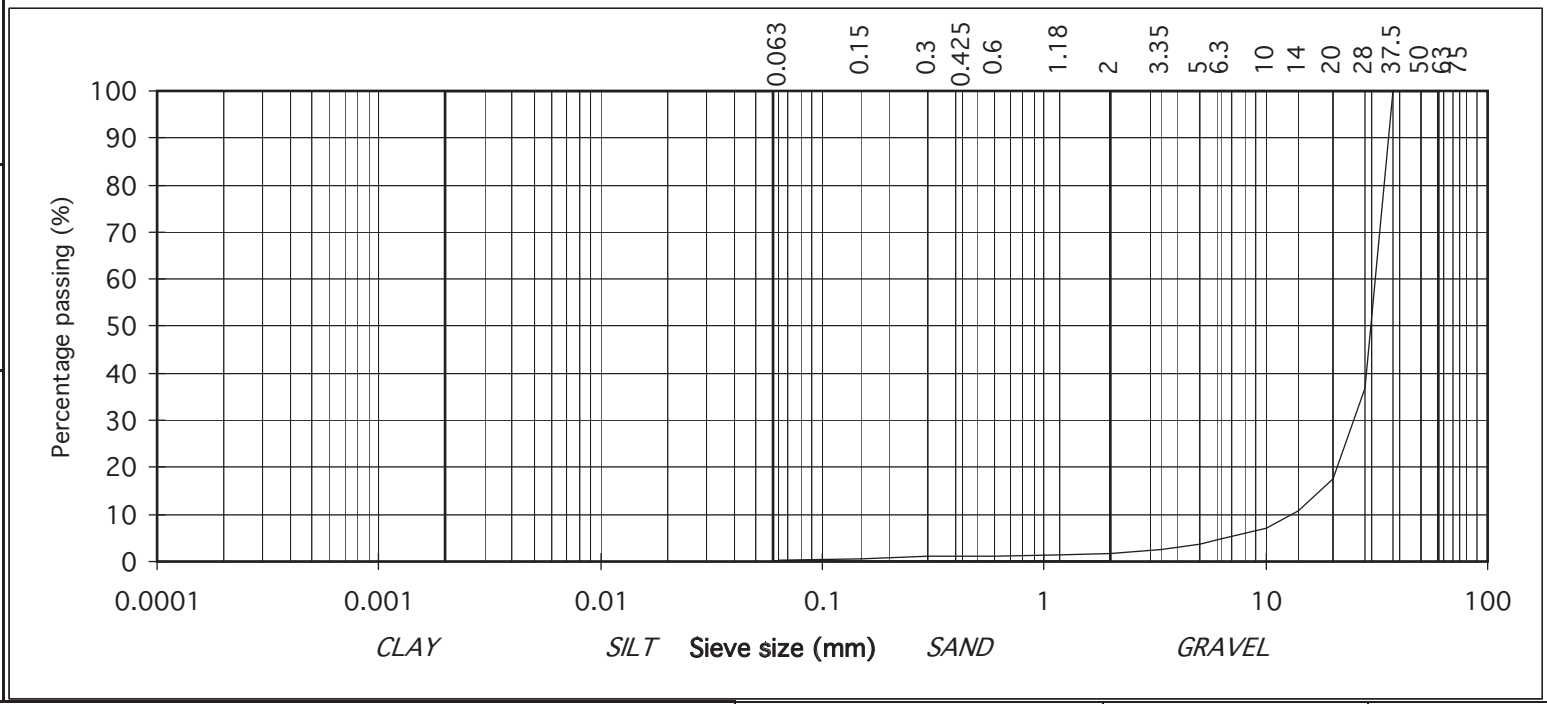
TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 137T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	37	
20	18	
14	11	
10	7	
6.3	5	
5	4	
3.35	3	
2	2	SAND
1.18	1	
0.6	1	
0.425	1	
0.3	1	
0.15	1	
0.063	0	SILT/CLAY

Contract No: 19956 Report No. R79334
Contract: Techrete , Howth
BH/TP : BH17
Sample No. AA61878 Lab. Sample No. A17/1933
Sample Type: B
Depth (m) 4.30 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 11-05-17
Description: Brown slightly sandy, GRAVEL

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 Sample size did not meet the requirements of BS1377



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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

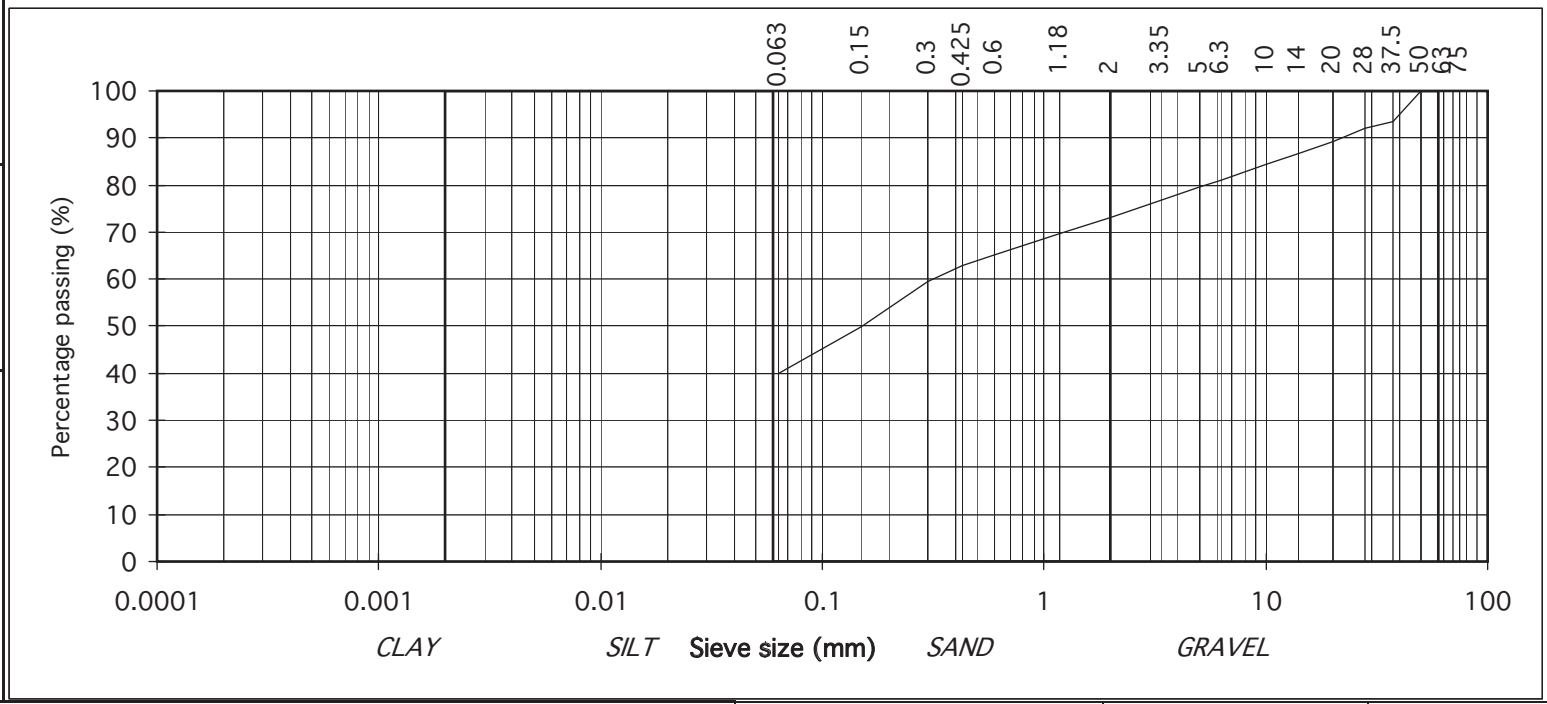
TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 137T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	93	
28	92	
20	89	
14	87	
10	84	
6.3	81	
5	79	
3.35	77	
2	73	
1.18	70	SAND
0.6	65	
0.425	63	
0.3	59	
0.15	50	
0.063	40	SILT/CLAY

Contract No: 19956 Report No. R79369
Contract: Techrete , Howth
BH/TP : BH18
Sample No. AA61886 Lab. Sample No. A17/1936
Sample Type: B
Depth (m) 4.00 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 12-05-17
Description: Dark brown slightly sandy, slightly gravelly, CLAY

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



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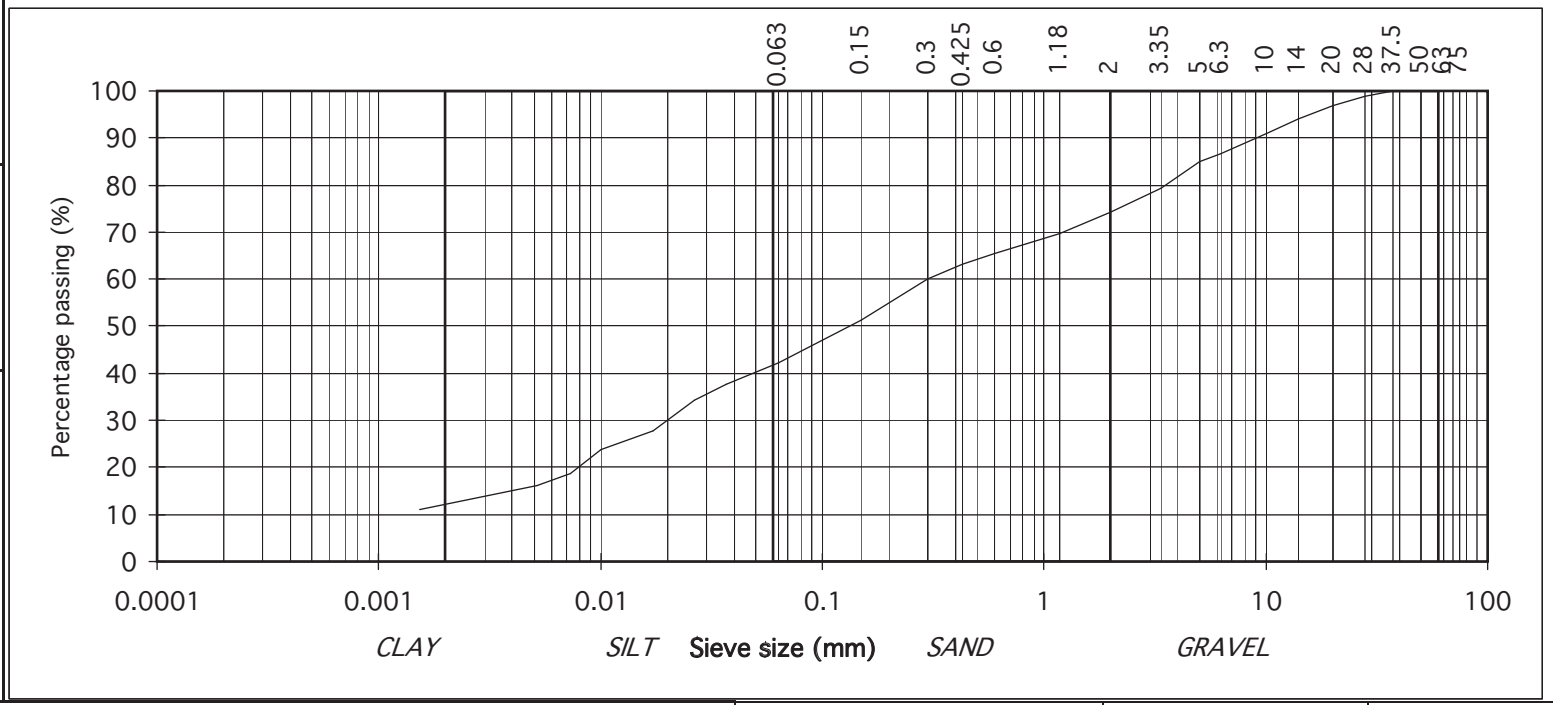
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	99	
20	97	
14	94	
10	91	
6.3	87	
5	85	
3.35	79	
2	74	
1.18	70	SAND
0.6	65	
0.425	63	
0.3	60	
0.15	51	
0.063	42	SILT/CLAY
0.037	38	
0.026	34	
0.017	28	
0.010	24	
0.007	19	
0.005	16	
0.002	11	

Contract No: 19956 Report No. R79370
Contract: Techrete , Howth
BH/TP : BH19
Sample No. AA61882 Lab. Sample No. A17/2236
Sample Type: B
Depth (m) 4.00 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 15-05-17
Description: Dark brown slightly sandy, slightly gravelly, CLAY

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

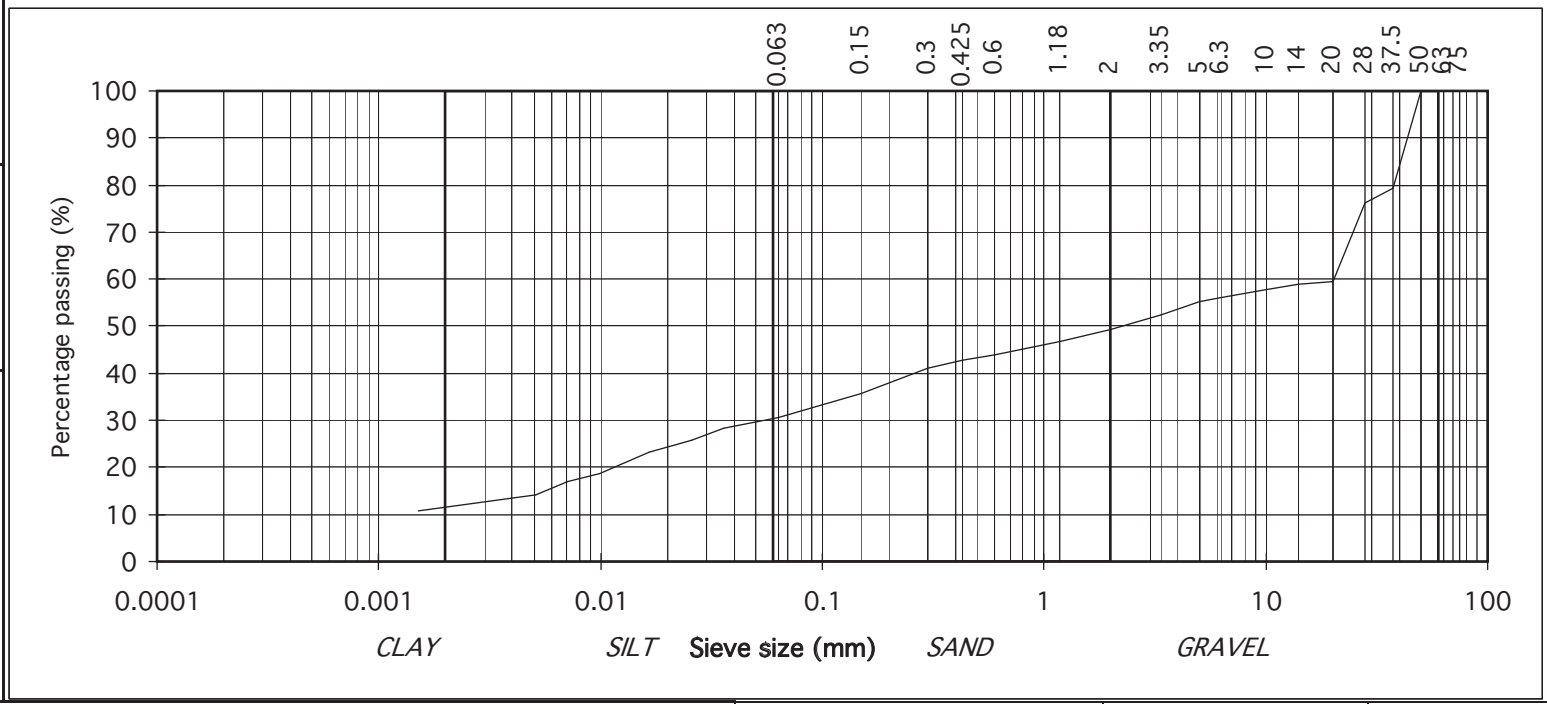
TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 137T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	79	
28	76	
20	60	
14	59	
10	58	
6.3	56	
5	55	
3.35	52	
2	49	
1.18	47	SAND
0.6	44	
0.425	43	
0.3	41	
0.15	36	
0.063	31	SILT/CLAY
0.036	28	
0.026	26	
0.017	23	
0.010	19	
0.007	17	
0.005	14	
0.002	11	

Contract No: 19956 Report No. R79335
Contract: Techrete , Howth
BH/TP : BH21
Sample No. AA61900 Lab. Sample No. A17/1942
Sample Type: B
Depth (m) 4.00 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 11-05-17
Description: Dark brown slightly sandy, gravelly, CLAY

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 Sample size did not meet the requirements of BS1377



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Approved by:	Date:	Page no:
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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

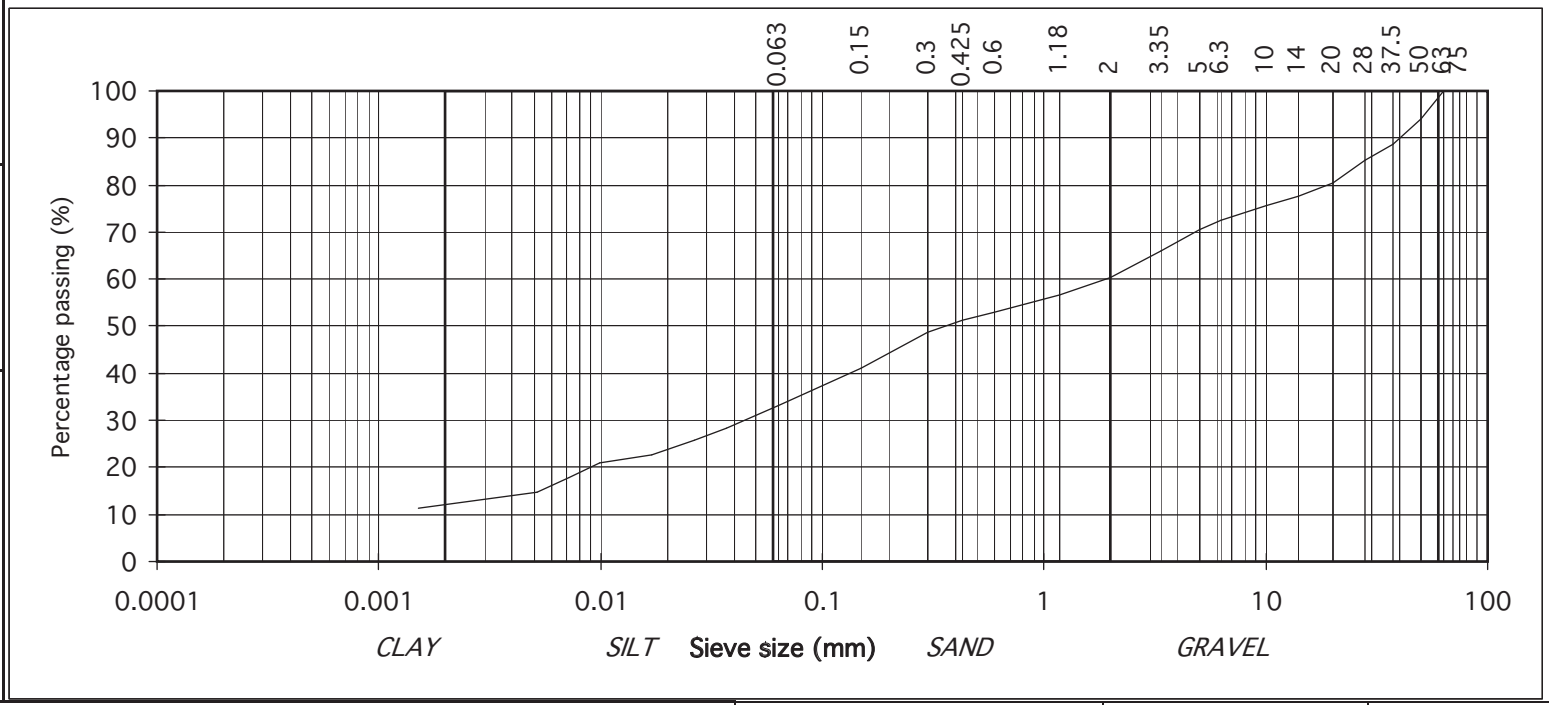
TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 13/37

particle size	% passing	
75	100	COBBLES
63	100	
50	94	GRAVEL
37.5	89	
28	85	
20	81	
14	78	
10	75	
6.3	72	
5	70	
3.35	66	
2	60	
1.18	57	SAND
0.6	53	
0.425	51	
0.3	49	
0.15	41	
0.063	33	SILT/CLAY
0.037	28	
0.027	26	
0.017	23	
0.010	21	
0.007	18	
0.005	15	
0.002	11	

Contract No: 19956 Report No. R79371
Contract: Techrete , Howth
BH/TP : BH22
Sample No. AA66865 Lab. Sample No. A17/1946
Sample Type: B
Depth (m) 5.70 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 12-05-17
Description: Grey/brown slightly sandy, gravelly, CLAY

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



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Approved by:	Date:	Page no:
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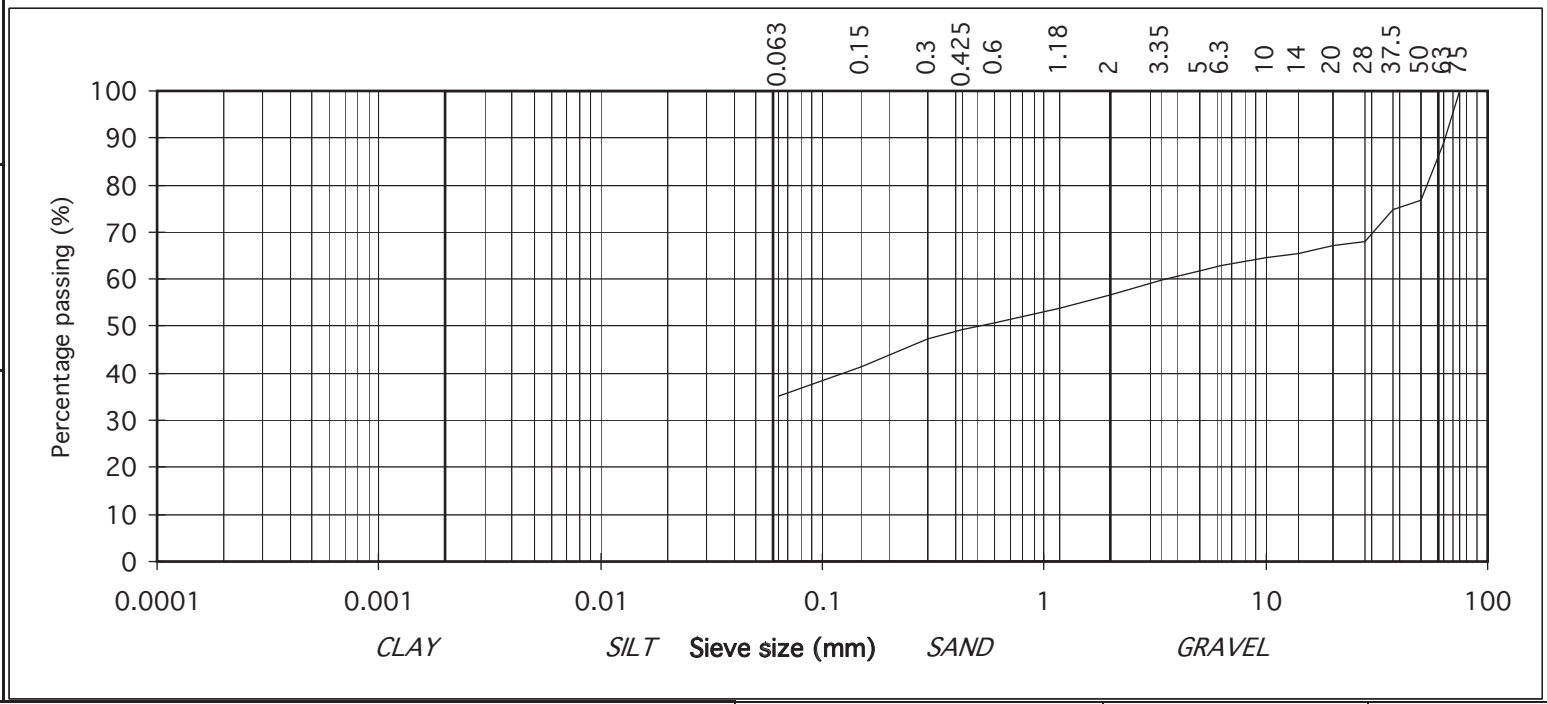
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

particle size	% passing	
75	100	COBBLES
63	89	
50	77	GRAVEL
37.5	75	
28	68	
20	67	
14	66	
10	65	
6.3	63	
5	62	
3.35	60	
2	57	
1.18	54	SAND
0.6	51	
0.425	49	
0.3	47	
0.15	41	
0.063	35	SILT/CLAY

Contract No: 19956 Report No. R79372
Contract: Techrete , Howth
BH/TP : BH23
Sample No. AA66855 Lab. Sample No. A17/1951
Sample Type: B
Depth (m) 4.00 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 12-05-17
Description: Dark brown slightly sandy, gravelly, CLAY with some cobbles

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 Sample size did not meet the requirements of BS1377



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Approved by:	Date:	Page no:
H Byrne	19-05-17	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

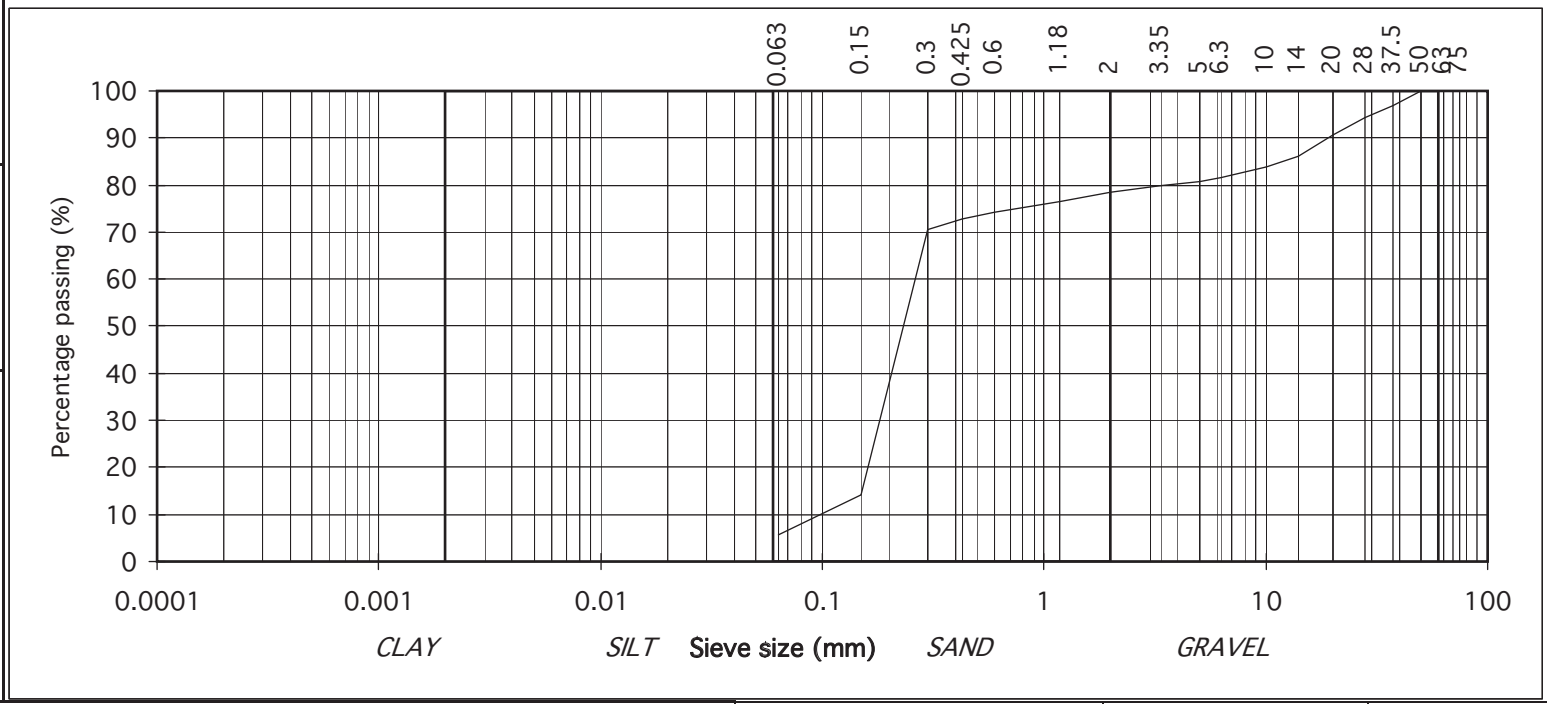
TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 137T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	97	
28	94	
20	91	
14	86	
10	84	
6.3	82	
5	81	
3.35	80	
2	78	
1.18	76	SAND
0.6	74	
0.425	73	
0.3	70	
0.15	14	
0.063	6	SILT/CLAY

Contract No: 19956 Report No. R79373
Contract: Techrete , Howth
BH/TP : BH24
Sample No. AA61890 Lab. Sample No. A17/1952
Sample Type: B
Depth (m) 4.00 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 12-05-17
Description: Black/Brown clayey/silty, very gravelly, SAND

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



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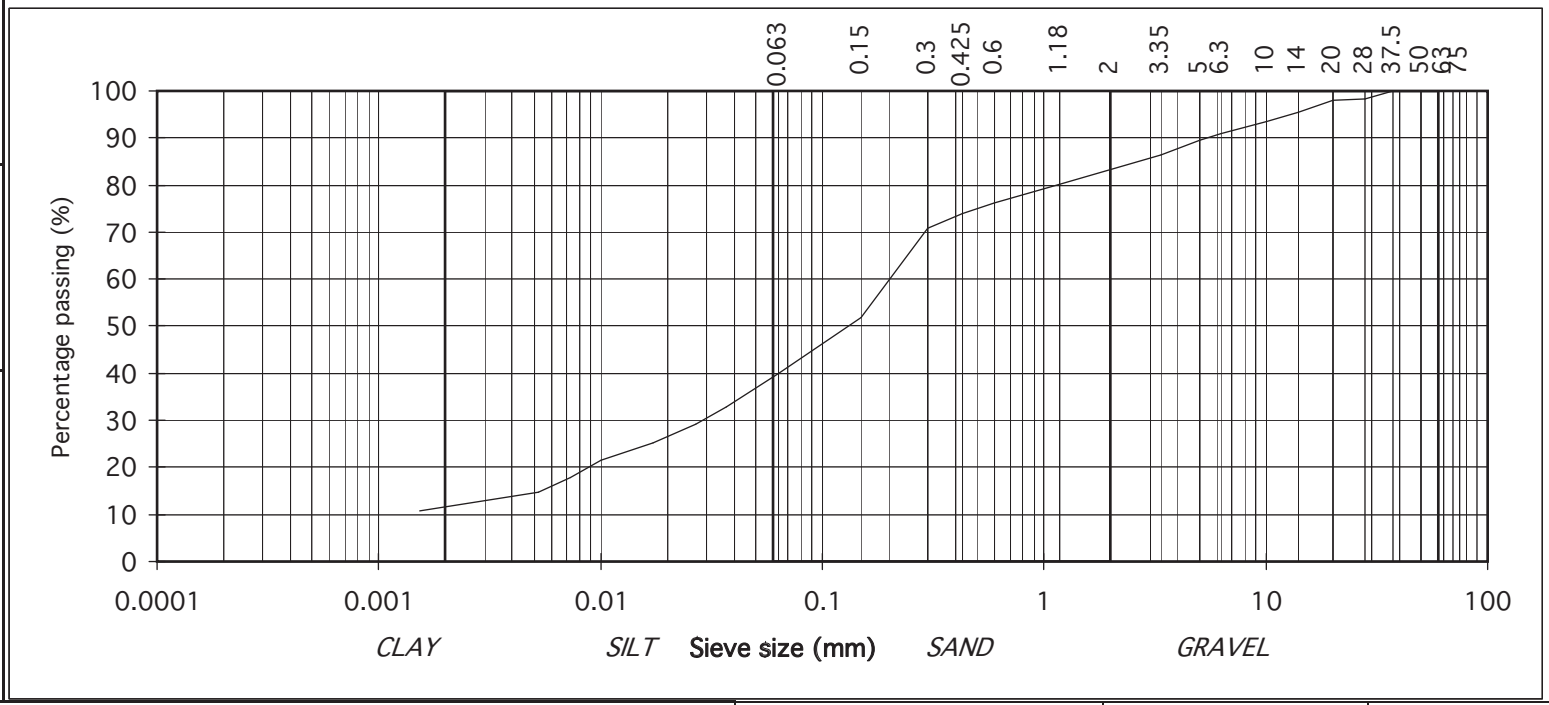
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	98	
20	98	
14	95	
10	93	
6.3	91	
5	89	
3.35	87	
2	83	
1.18	80	SAND
0.6	76	
0.425	74	
0.3	71	
0.15	52	
0.063	40	SILT/CLAY
0.037	33	
0.027	29	
0.017	25	
0.010	22	
0.007	18	
0.005	15	
0.002	11	

Contract No:	19956	Report No.	R79336
Contract:	Techrete , Howth		
BH/TP :	BH24		
Sample No.	AA61891	Lab. Sample No.	A17/1953
Sample Type:	B		
Depth (m)	5.00	Customer:	Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received	13-04-17	Date Testing started	12-05-17
Description:	Black/brown sandy, slightly gravelly, SILT/CLAY		
Remarks	Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016		



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Approved by:	Date:	Page no:
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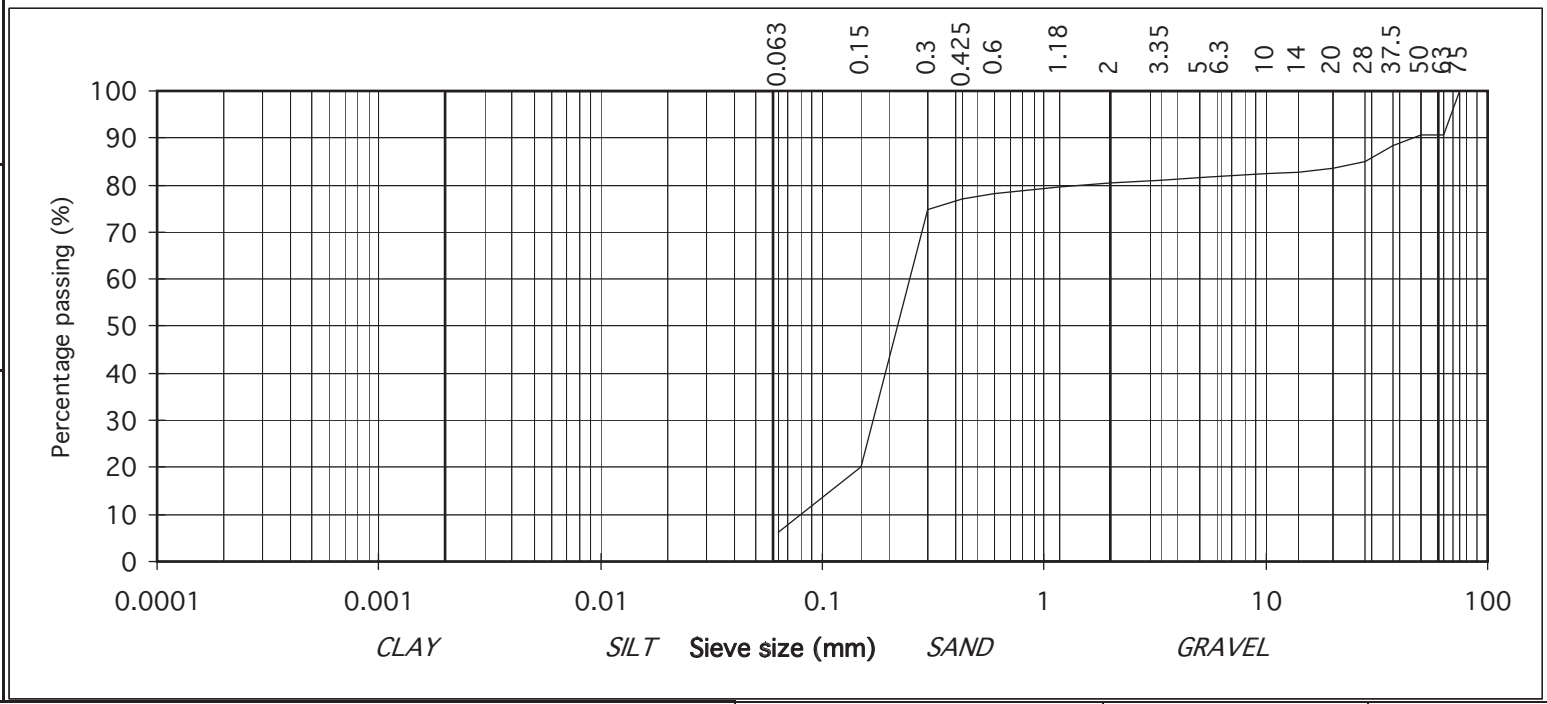
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

particle size	% passing	
75	100	COBBLES
63	91	
50	91	GRAVEL
37.5	88	
28	85	
20	84	
14	83	
10	82	
6.3	82	
5	82	
3.35	81	
2	80	
1.18	80	SAND
0.6	78	
0.425	77	
0.3	75	
0.15	20	
0.063	6	SILT/CLAY

Contract No: 19956 Report No. R79374
Contract: Techrete , Howth
BH/TP : BH25
Sample No. AA61895 Lab. Sample No. A17/1957
Sample Type: B
Depth (m) 4.00 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 15-05-17
Description: Black/Brown clayey, gravelly, SAND with some cobbles

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



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Approved by:	Date:	Page no:
H Byrne	19-05-17	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

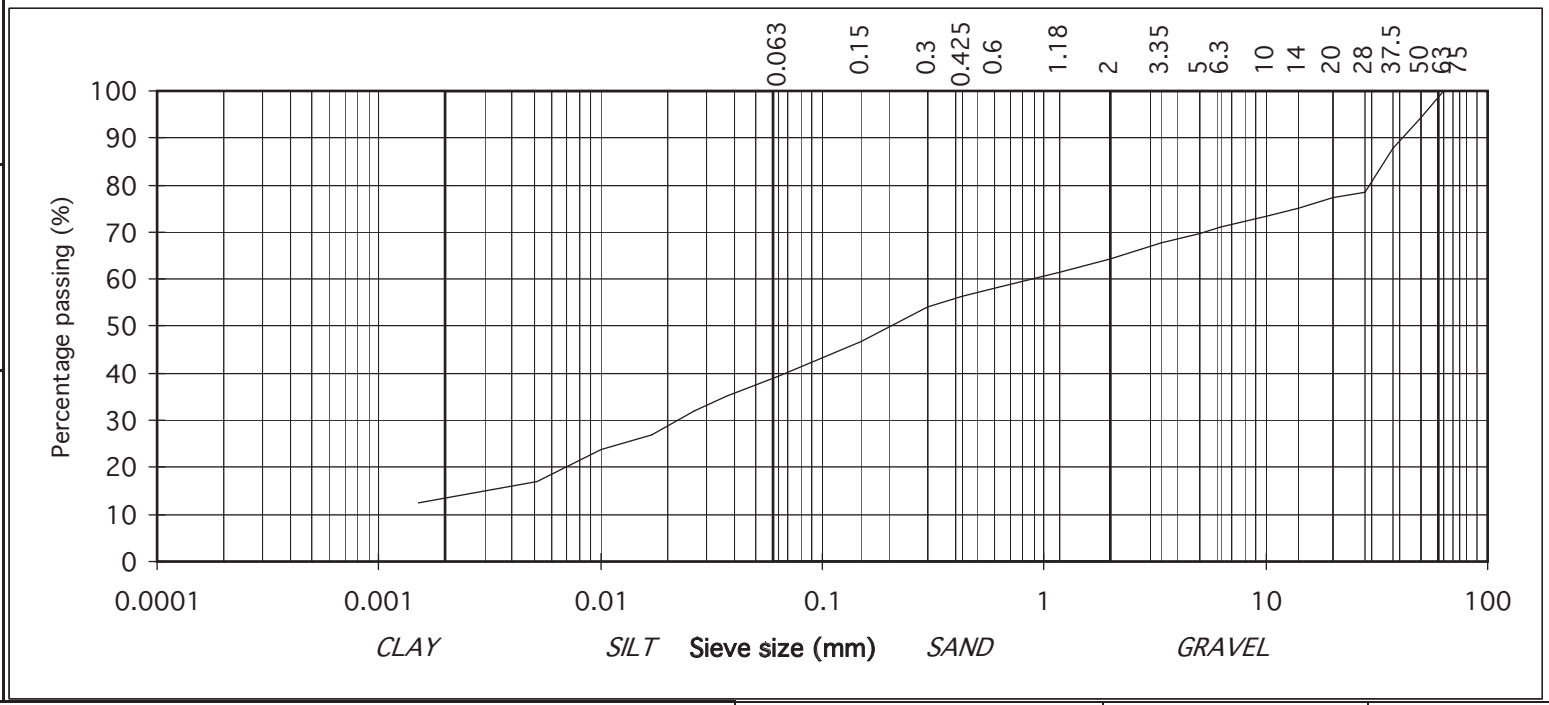
TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 137T

particle size	% passing	
75	100	COBBLES
63	100	
50	94	GRAVEL
37.5	88	
28	79	
20	77	
14	75	
10	73	
6.3	71	
5	70	
3.35	68	
2	64	
1.18	61	SAND
0.6	58	
0.425	56	
0.3	54	
0.15	47	
0.063	39	SILT/CLAY
0.037	35	
0.026	32	
0.017	27	
0.010	24	
0.007	20	
0.005	17	
0.002	12	

Contract No: 19956 Report No. R79375
Contract: Techrete , Howth
BH/TP : BH25
Sample No. AA61896 Lab. Sample No. A17/1958
Sample Type: B
Depth (m) 5.00 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 15-05-17
Description: Dark brown slightly sandy, gravelly, CLAY

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



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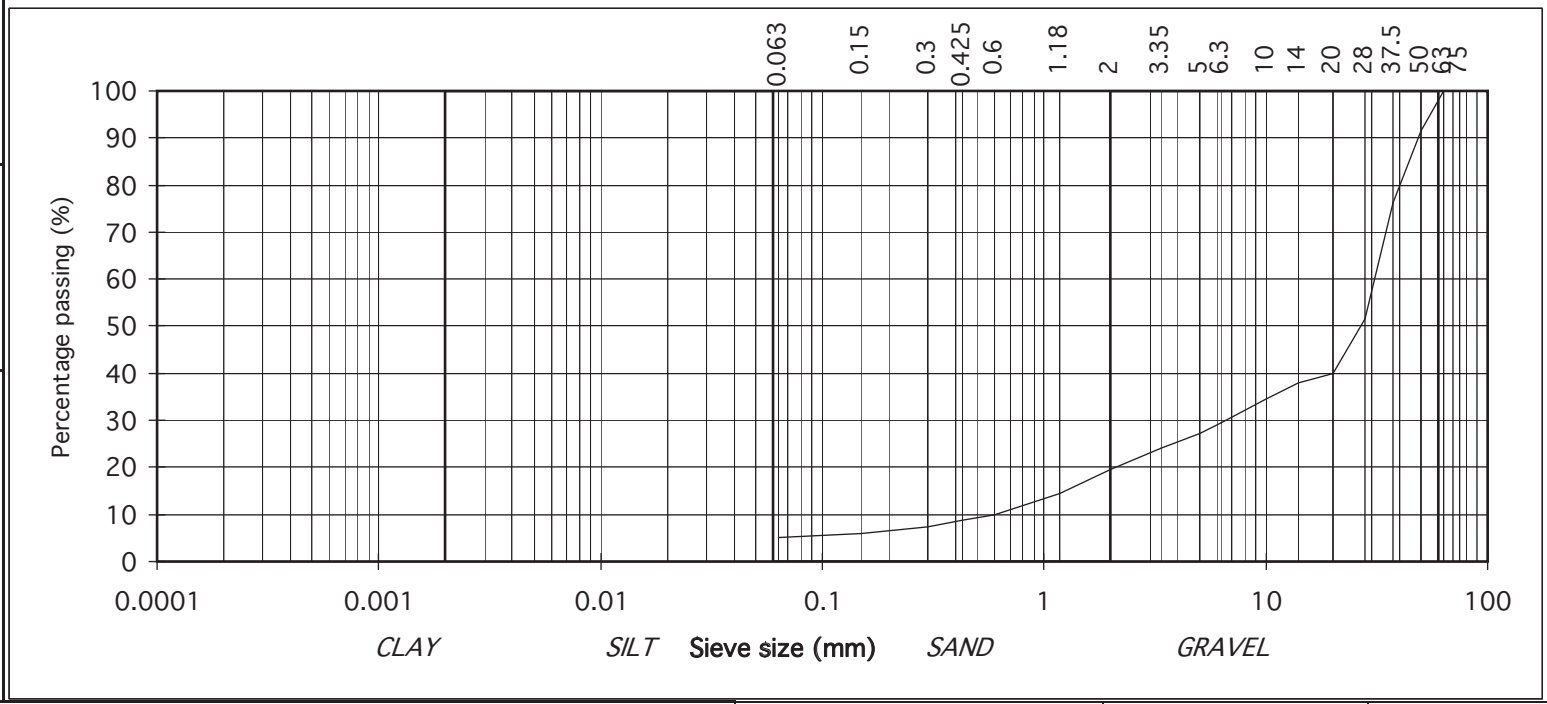
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

particle size	% passing	
75	100	COBBLES
63	100	
50	92	GRAVEL
37.5	76	
28	52	
20	40	
14	38	
10	35	
6.3	29	
5	27	
3.35	24	
2	19	
1.18	14	SAND
0.6	10	
0.425	9	
0.3	7	
0.15	6	
0.063	5	SILT/CLAY

Contract No: 19956 Report No. R79779
Contract: Techrete , Howth
BH/TP : BH30
Sample No. AA66882 Lab. Sample No. A17/2105
Sample Type: B
Depth (m) 3.20 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 24-05-17
Description: Brown slightly clayey/silty, sandy, GRAVEL

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



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Approved by:	Date:	Page no:
H Byrne	30-05-17	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

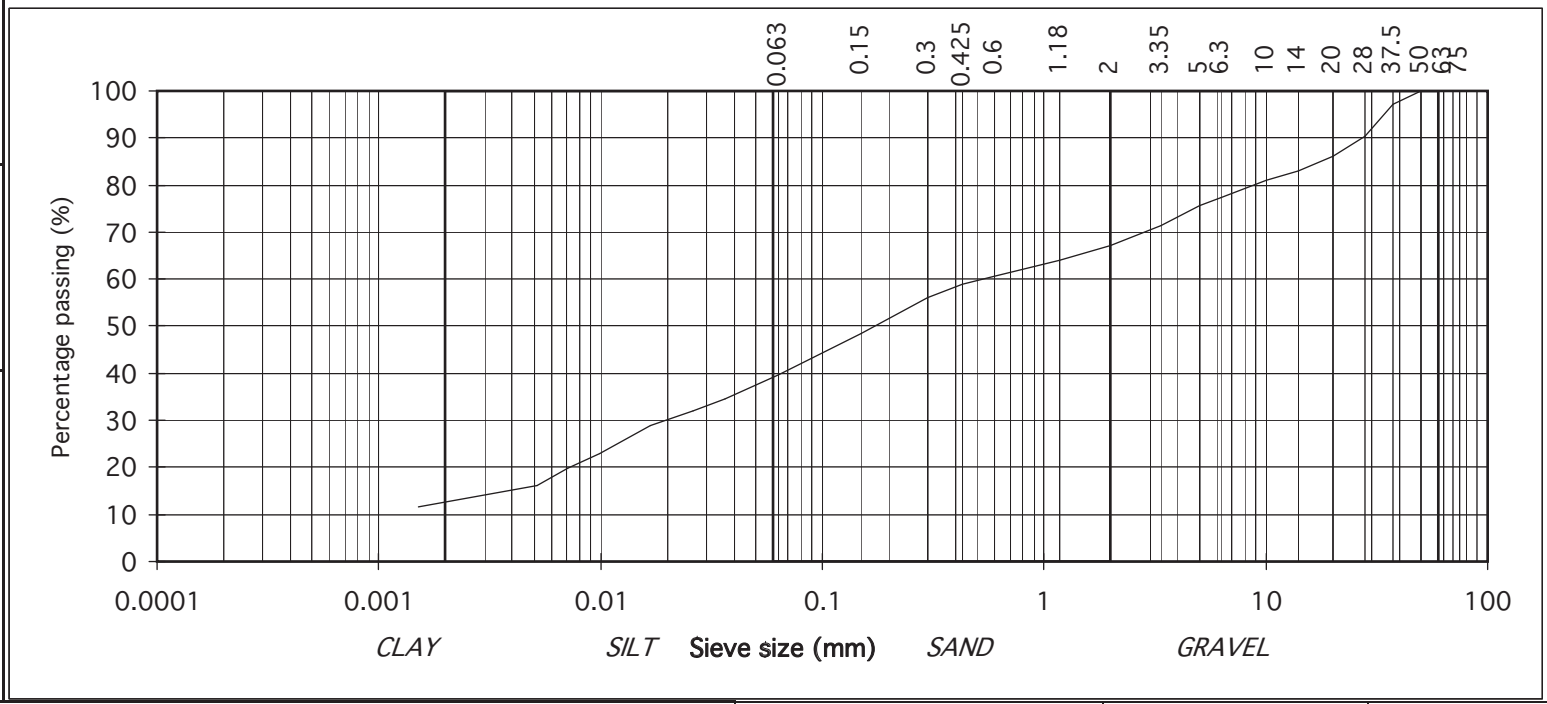
TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 13/37

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	97	
28	90	
20	86	
14	83	
10	81	
6.3	77	
5	76	
3.35	71	
2	67	
1.18	64	SAND
0.6	61	
0.425	59	
0.3	56	
0.15	48	
0.063	40	SILT/CLAY
0.036	35	
0.026	32	
0.017	29	
0.010	23	
0.007	20	
0.005	16	
0.002	12	

Contract No: 19956 Report No. R79648
Contract: Techrete , Howth
BH/TP : TP102
Sample No. AA67826 Lab. Sample No. A17/1967
Sample Type: B
Depth (m) 1.50 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 24-05-17
Description: Brown slightly sandy, slightly gravelly, CLAY

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



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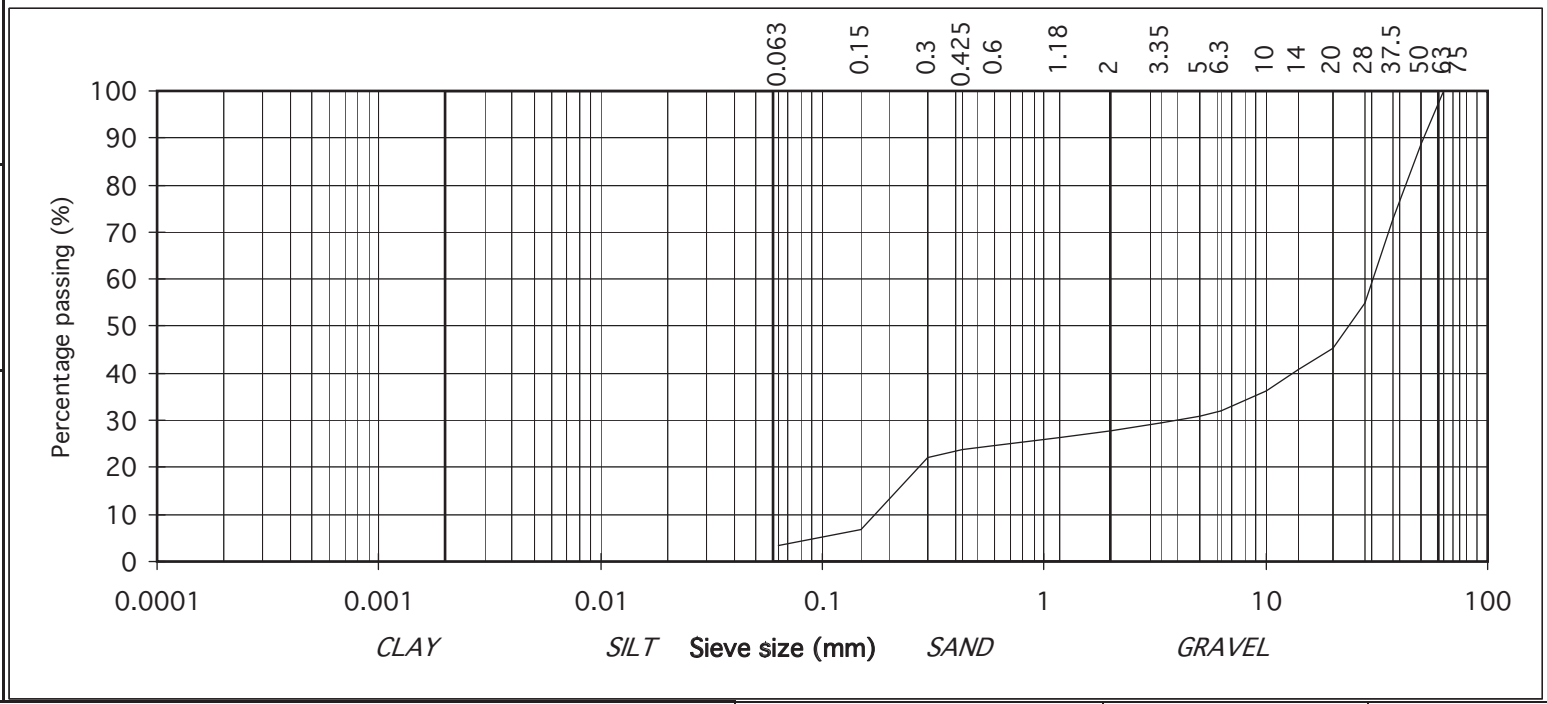
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

particle size	% passing	
75	100	COBBLES
63	100	
50	89	GRAVEL
37.5	73	
28	55	
20	45	
14	41	
10	36	
6.3	32	
5	31	
3.35	29	
2	28	
1.18	26	SAND
0.6	25	
0.425	24	
0.3	22	
0.15	7	
0.063	3	SILT/CLAY

Contract No: 19956 Report No. R79649
Contract: Techrete , Howth
BH/TP : TP102
Sample No. AA67828 Lab. Sample No. A17/1968
Sample Type: B
Depth (m) 3.50 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 24-05-17
Description: Dark brown/black slightly clayey/silty, very sandy, GRAVEL

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

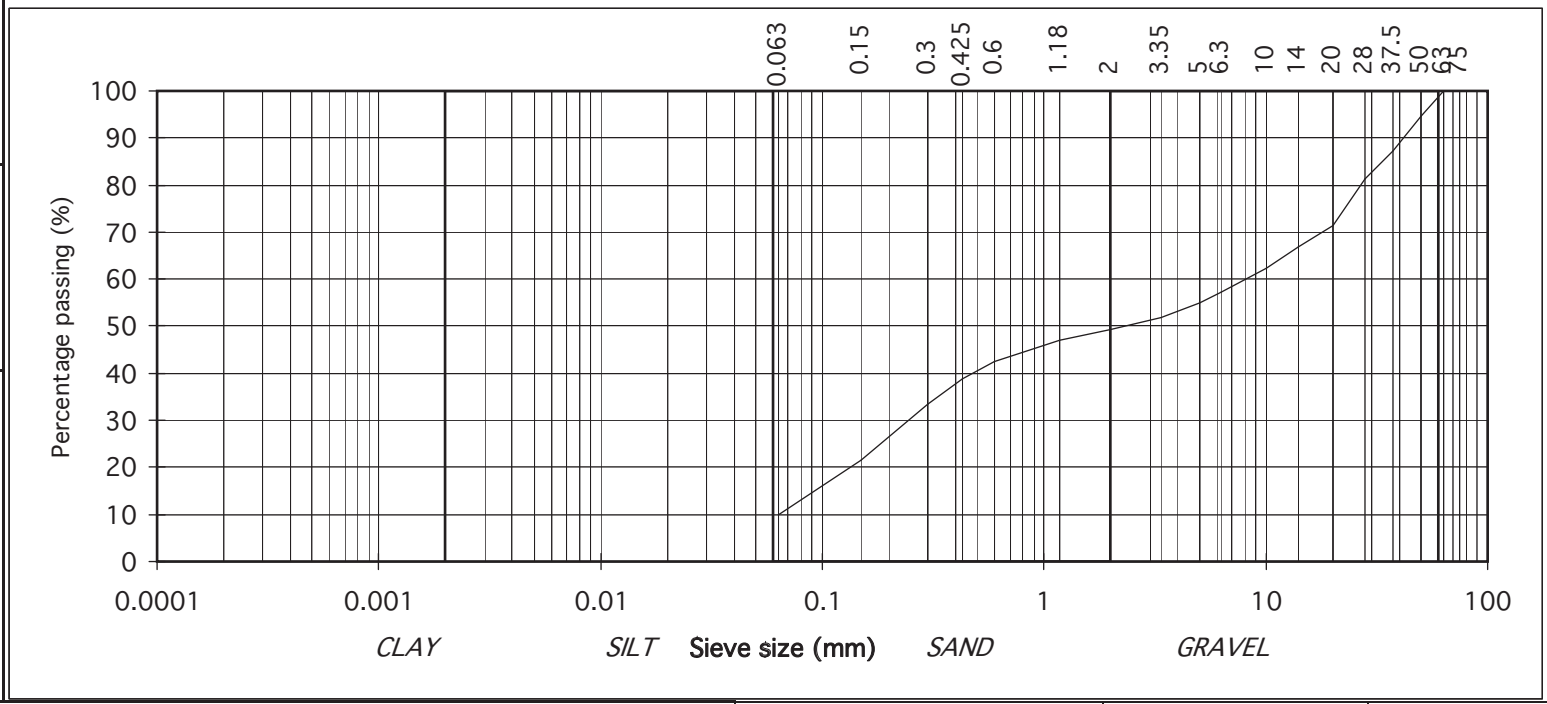
TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 137T

particle size	% passing	
75	100	COBBLES
63	100	
50	95	GRAVEL
37.5	87	
28	81	
20	71	
14	67	
10	62	
6.3	57	
5	55	
3.35	52	
2	49	
1.18	47	SAND
0.6	42	
0.425	39	
0.3	33	
0.15	21	
0.063	10	SILT/CLAY

Contract No: 19956 Report No. R79650
Contract: Techrete , Howth
BH/TP : TP103
Sample No. AA67830 Lab. Sample No. A17/1969
Sample Type: B
Depth (m) 1.20 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 24-05-17
Description: Brown clayey/silty, very sandy, GRAVEL

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



IGSL Ltd Materials Laboratory

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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

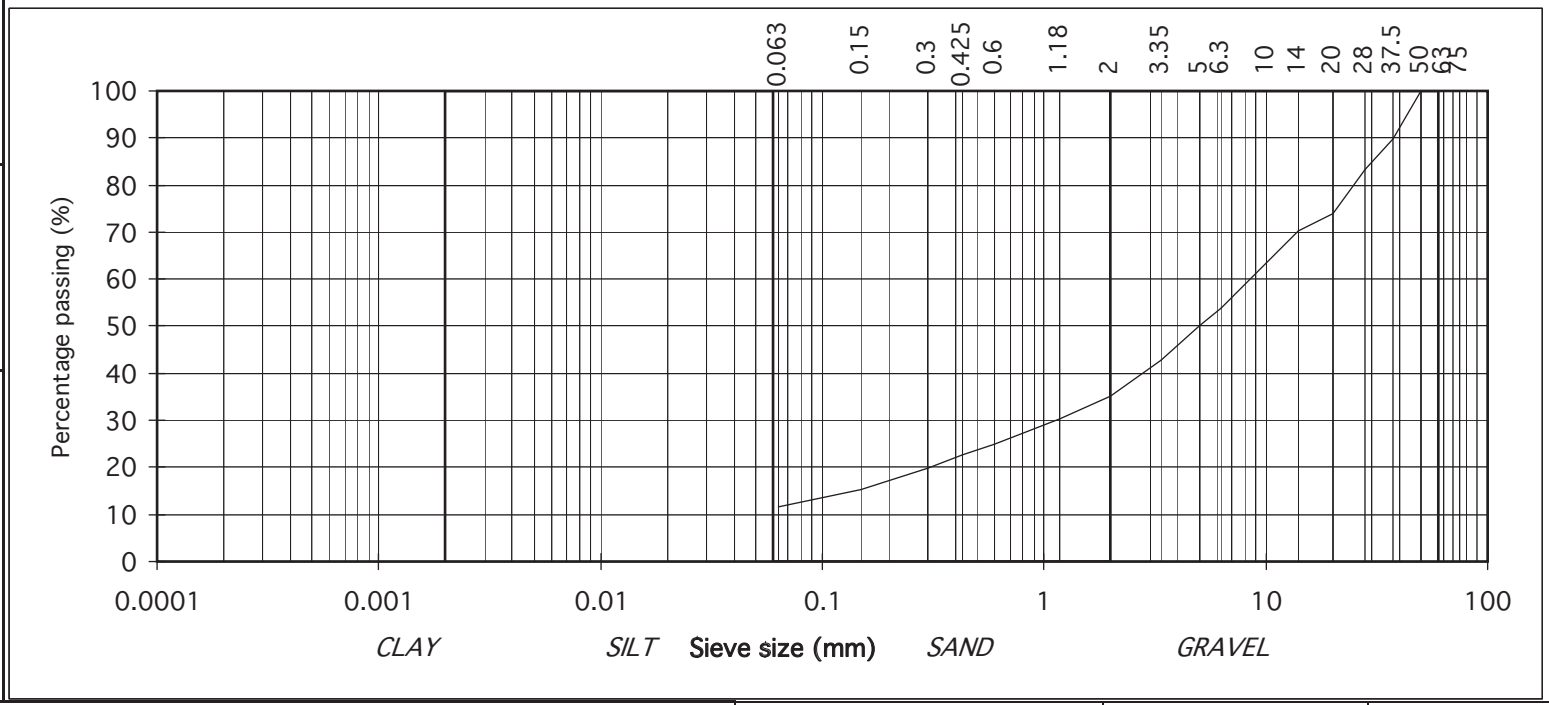
TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 13/37

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	90	
28	83	
20	74	
14	70	
10	63	
6.3	54	
5	50	
3.35	43	
2	35	
1.18	30	SAND
0.6	25	
0.425	23	
0.3	20	
0.15	15	
0.063	12	SILT/CLAY

Contract No: 19956 Report No. R79651
Contract: Techrete , Howth
BH/TP : TP106
Sample No. AA67802 Lab. Sample No. A17/1962
Sample Type: B
Depth (m) 2.10 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 24-05-17
Description: Dark brown/black clayey/silty, very sandy, GRAVEL

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



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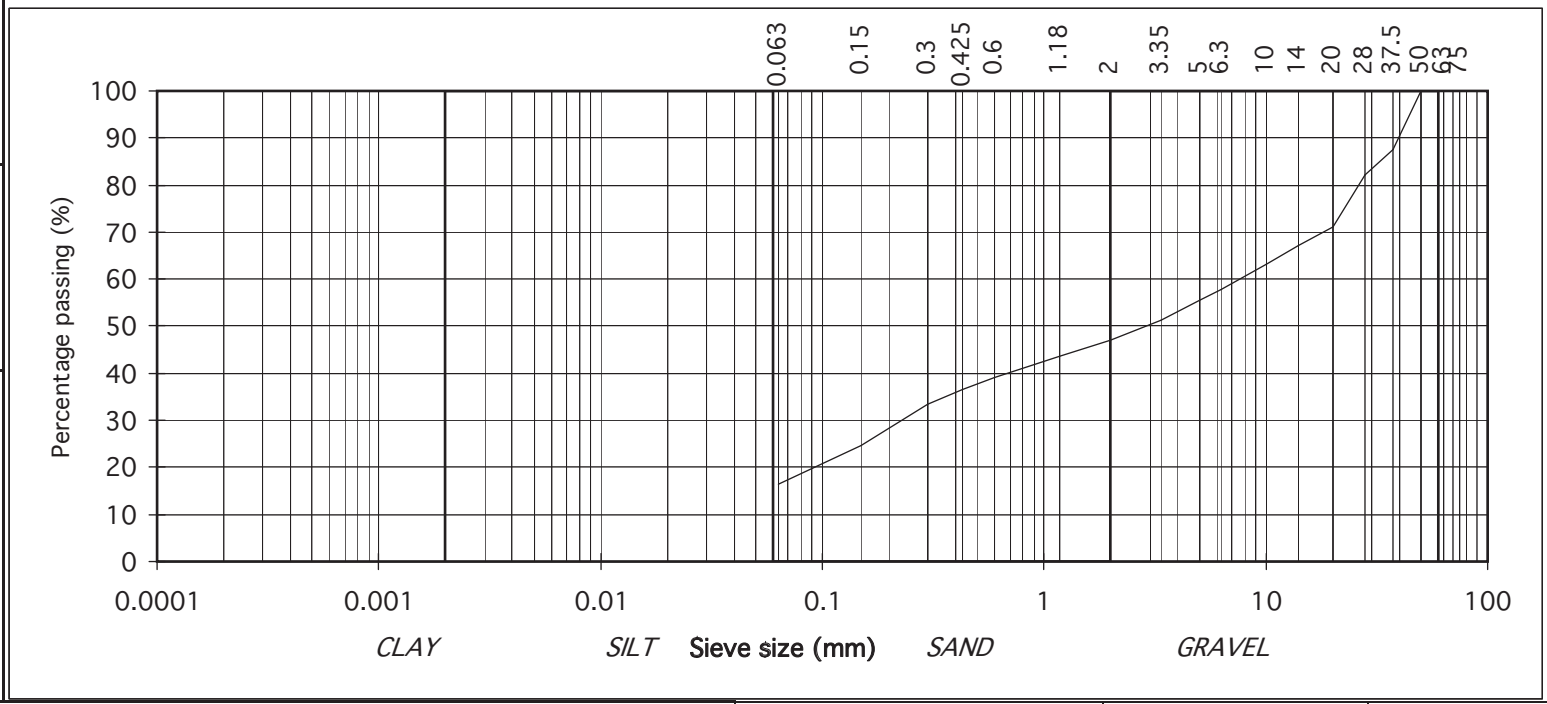
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	88	
28	82	
20	71	
14	67	
10	63	
6.3	58	
5	56	
3.35	51	
2	47	
1.18	44	SAND
0.6	39	
0.425	37	
0.3	33	
0.15	25	
0.063	16	SILT/CLAY

Contract No: 19956 Report No. R79652
Contract: Techrete , Howth
BH/TP : TP108
Sample No. AA67803 Lab. Sample No. A17/1263
Sample Type: B
Depth (m) 1.30 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 24-05-17
Description: Dark brown clayey/silty, very sandy, GRAVEL

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 Sample size did not meet the requirements of BS1377



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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

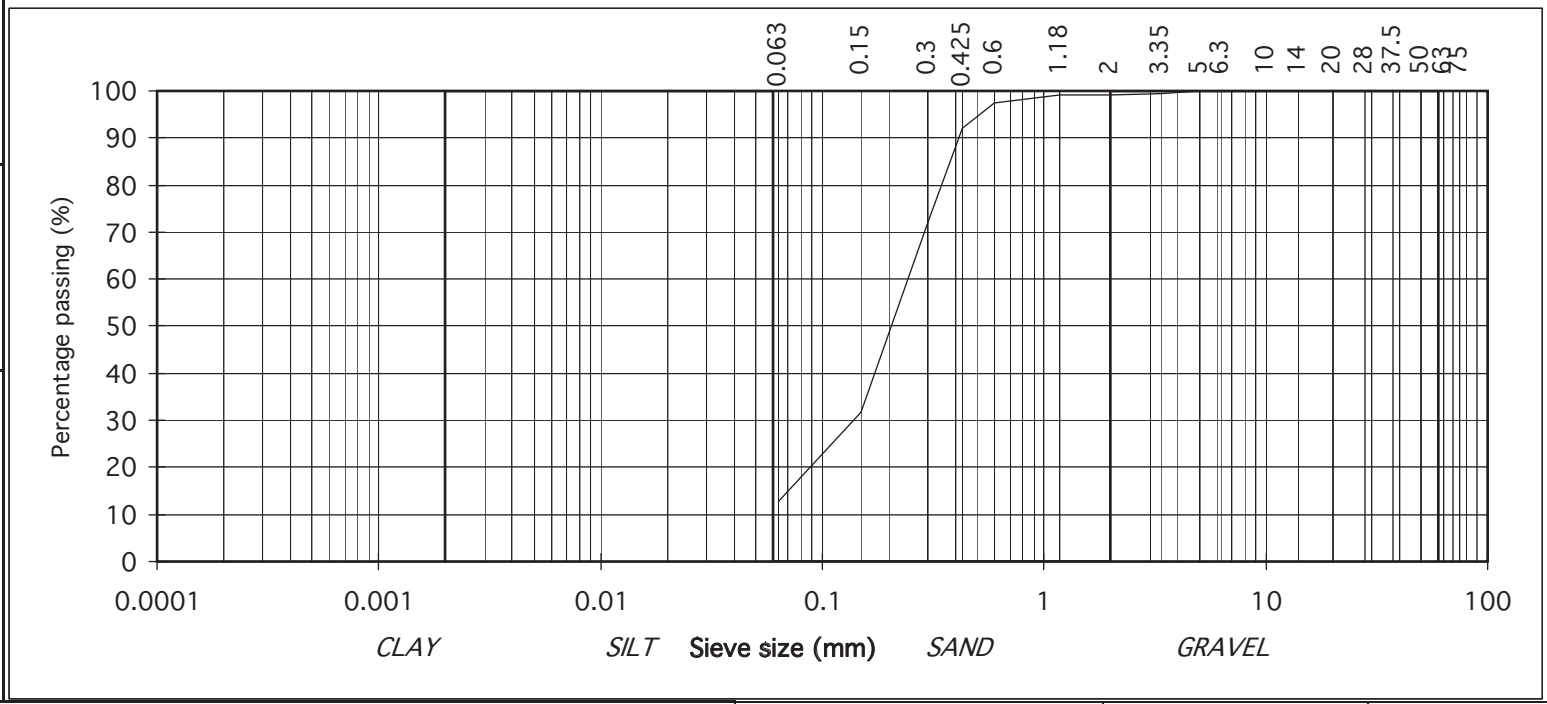
TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 137T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	100	
14	100	
10	100	
6.3	100	
5	100	
3.35	99	
2	99	
1.18	99	SAND
0.6	97	
0.425	92	
0.3	72	
0.15	32	
0.063	13	SILT/CLAY

Contract No: 19956 Report No. R79653
Contract: Techrete , Howth
BH/TP : TP108
Sample No. AA67806 Lab. Sample No. A17/1964
Sample Type: B
Depth (m) 3.70 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 24-05-17
Description: Grey clayey/silty, slightly gravelly, SAND

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

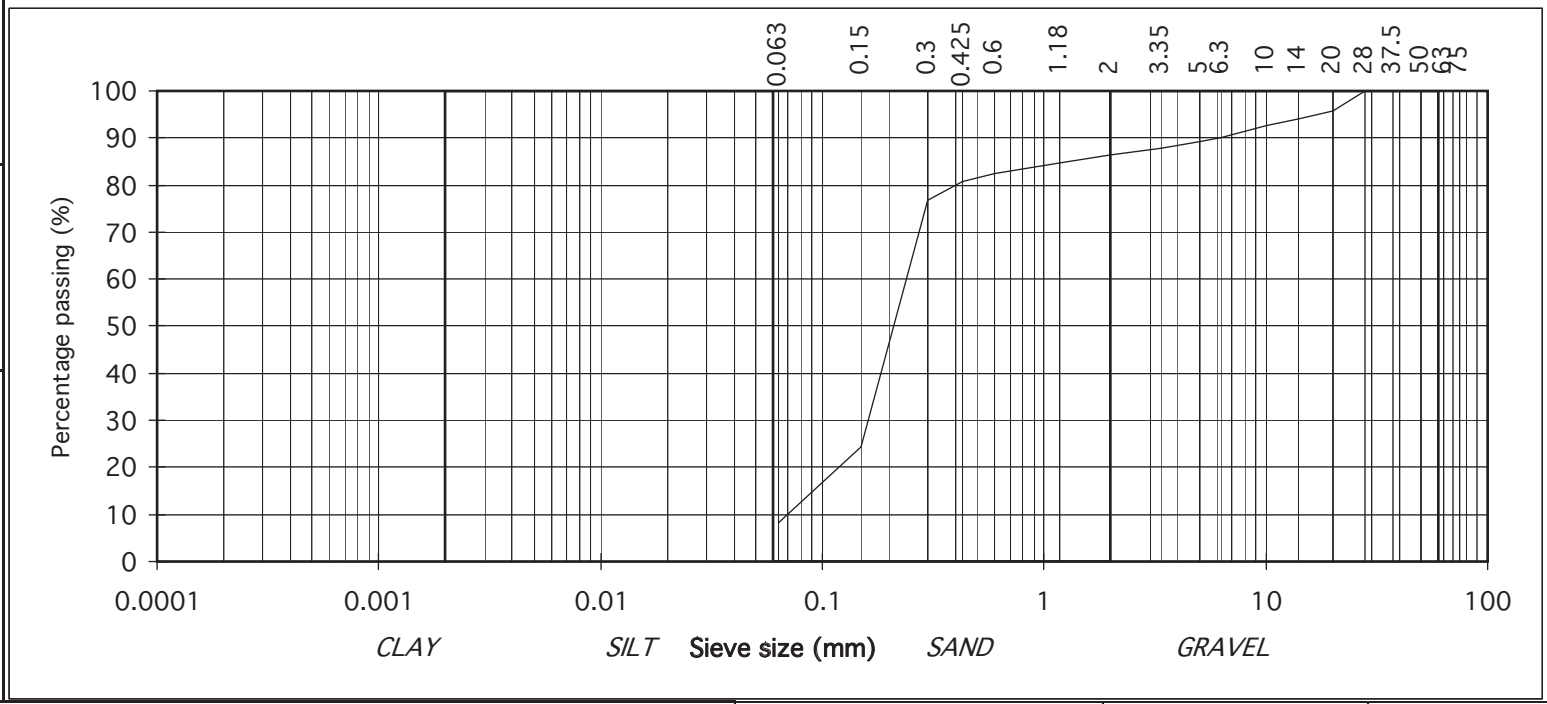
TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 137T

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	96	
14	94	
10	93	
6.3	90	
5	89	
3.35	88	
2	86	
1.18	85	SAND
0.6	82	
0.425	81	
0.3	77	
0.15	24	
0.063	8	SILT/CLAY

Contract No: 19956 Report No. R79654
Contract: Techrete , Howth
BH/TP : TP115
Sample No. AA67808 Lab. Sample No. A17/1965
Sample Type: B
Depth (m) 1.80 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 24-05-17
Description: Brown clayey/silty, gravelly, SAND

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



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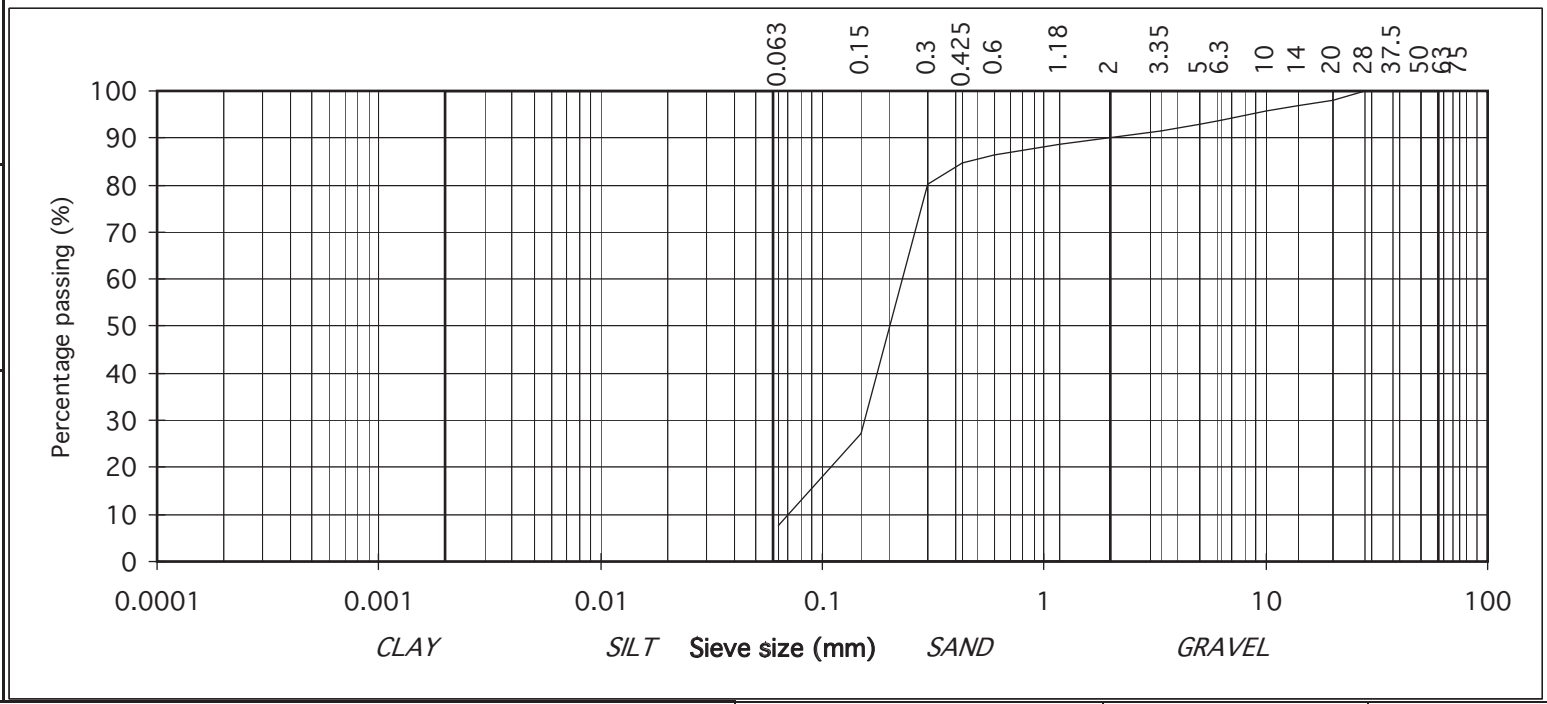
Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT
Determination of Particle Size Distribution
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	100	
20	98	
14	97	
10	96	
6.3	94	
5	93	
3.35	92	
2	90	
1.18	89	SAND
0.6	86	
0.425	85	
0.3	80	
0.15	27	
0.063	8	SILT/CLAY

Contract No: 19956 Report No. R79655
Contract: Techrete , Howth
BH/TP : TP115
Sample No. AA67809 Lab. Sample No. A17/1960
Sample Type: B
Depth (m) 2.80 Customer: Roughan & O'Donovan Consulting Engineers Arena House, Arena Rd, Sandyford Industrial Estate, Dublin 18.
Date Received 13-04-17 Date Testing started 24-05-17
Description: Brown clayey/silty, gravelly, SAND

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



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Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

IGSL Ltd
Materials Laboratory
Unit F, M7 Business Park
Naas
Co. Kildare

045-899324

Test Report

Undrained shear strength in triaxial compression
(without pore pressure measurement)

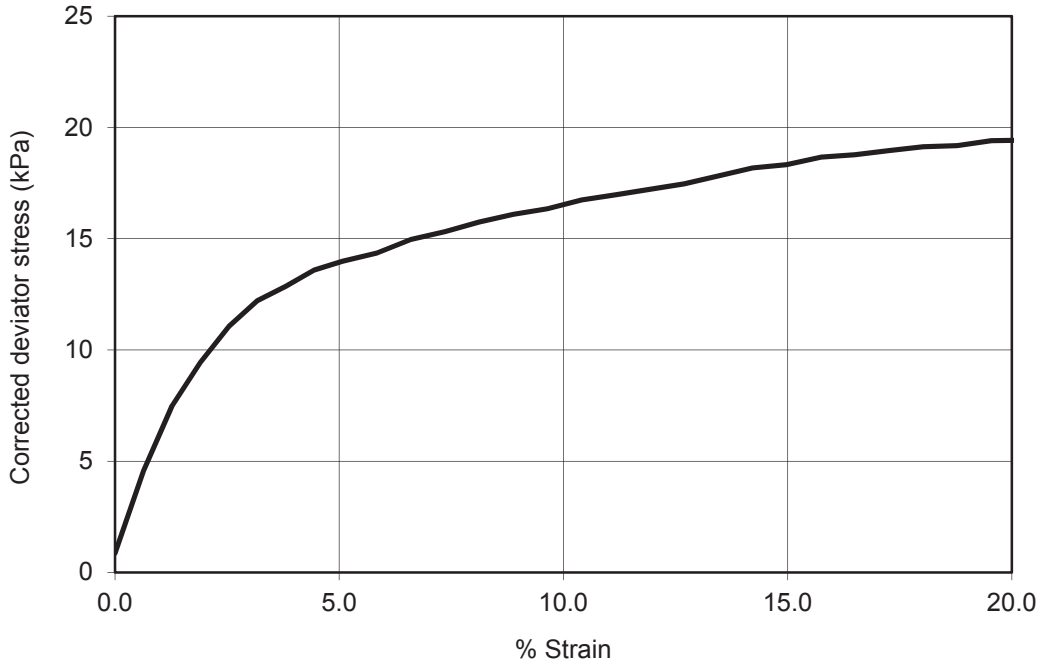
Tested in accordance with BS1377:Part 7:1990 clause 8
(definitive method)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 1331

Report no: R78947

Contract Name:	Techrete Howth	Contract No:	19556
Location:	BH09 @ 2.5m	Sample No.	AA61705
Description:	Grey slightly sandy slightly gravelly CLAY		
Customer:	Corcom Enterprises Ltd		

Height (mm)	197	Diameter	102	Cell pressure(kPa)	50
Moisture Content %	47	Bulk density (Mg/m^3)	1.62	Dry density (Mg/m^3)	1.10



Strain at failure %	20	Cohesion C_u (kPa) (Undrained shear strength kPa)	10
Rate of strain (%/minute)	2.1		
Thickness of membrane	0.4	Membrane correction (at failure)	1.49
Date received	27/04/17	Date tested	02/05/17

The result relates to the specimen tested.
Any remaining material will be retained for one month.

Person authorised to approve report: J Barrett (Quality Manager)

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IGSL Ltd.	IGSL Materials Laboratory		03/05/17	1 of 1

IGSL Ltd
Materials Laboratory
Unit F, M7 Business Park
Naas
Co. Kildare

045-899324

Test Report

Undrained shear strength in triaxial compression
(without pore pressure measurement)

Tested in accordance with BS1377:Part 7:1990 clause 8
(definitive method)

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 1331

Report no: R78948

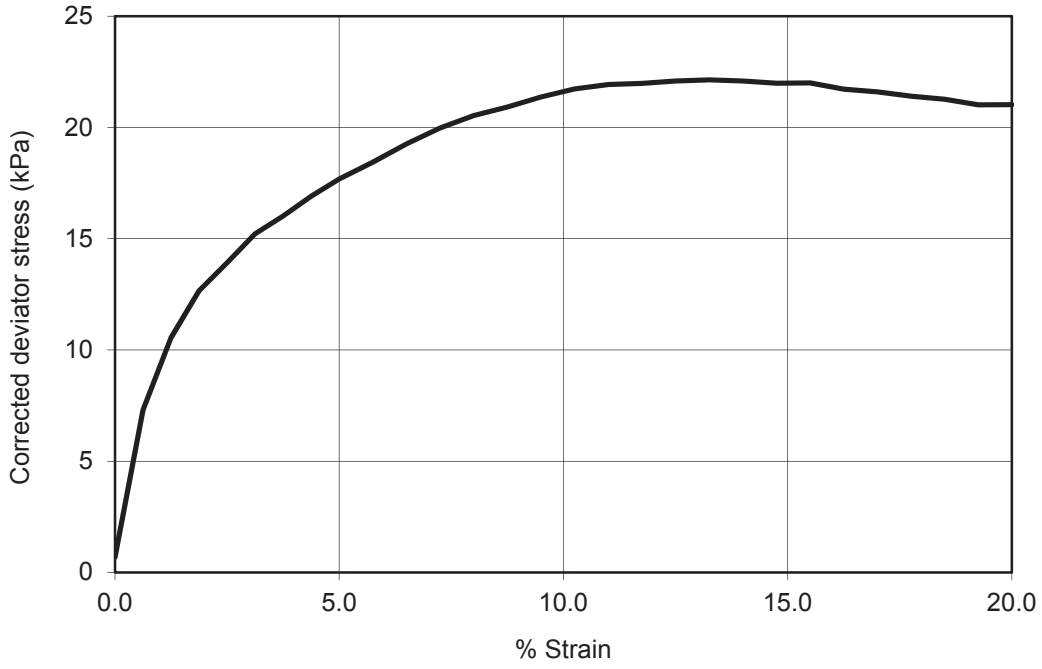
Contract Name: Techrete Howth Contract No: 19556

Location: BH17 @ 3.6m Sample No. AA61877

Description: Dark grey slightly sandy slightly gravelly CLAY

Customer: Corcom Enterprises Ltd

Height (mm)	200	Diameter	102	Cell pressure(kPa)	70
Moisture Content %	30	Bulk density (Mg/m^3)	1.79	Dry density (Mg/m^3)	1.38



Strain at failure %	13.3	Cohesion C_u (kPa) (Undrained shear strength kPa)	11
Rate of strain (%/minute)	2.1		
Thickness of membrane	0.4	Membrane correction (at failure)	1.08
Date received	27/04/17	Date tested	02/05/17

The result relates to the specimen tested.
Any remaining material will be retained for one month.

Person authorised to approve report: J Barrett (Quality Manager)

IGSL Ltd.	IGSL Materials Laboratory	Approved by	Date	Page
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Appendix 6

Rock Strength Tests

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Techrete Howth
Contract no. 19956
Date of test: 19/5/17

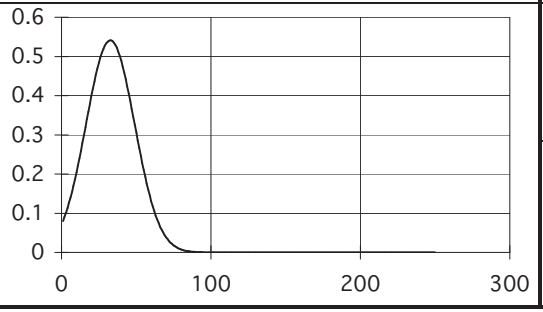
Sample Type: Core

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC02	5.1	78	16.0	1.222	2.63	3.21	64	d	//
	7.0	78	14.0	1.222	2.30	2.81	56	d	//
	7.3	78	6.0	1.222	0.99	1.20	24	d	//
	7.8	78	12.0	1.222	1.97	2.41	48	d	//
	9.2	78	2.0	1.222	0.33	0.40	8	d	//
	9.6	78	6.0	1.222	0.99	1.20	24	d	//
RC03	6.8	78	4.0	1.222	0.66	0.80	16	d	//
	7.8	78	7.0	1.222	1.15	1.41	28	d	//
	8.2	78	14.0	1.222	2.30	2.81	56	d	//
	9.7	78	8.0	1.222	1.31	1.61	32	d	//
RC04	11.7	78	12.0	1.222	1.97	2.41	48	d	//
	12.1	78	4.0	1.222	0.66	0.80	16	d	//
	14.5	78	9.0	1.222	1.48	1.81	36	d	//
	14.6	78	13.0	1.222	2.14	2.61	52	d	//
	14.7	78	10.0	1.222	1.64	2.01	40	d	//
	15.0	78	11.0	1.222	1.81	2.21	44	d	//
RC05	7.2	78	5.0	1.222	0.82	1.00	20	d	//
	7.8	78	5.0	1.222	0.82	1.00	20	d	//
	8.0	78	4.0	1.222	0.66	0.80	16	d	//
	9.0	78	8.0	1.222	1.31	1.61	32	d	//
	11.1	78	5.0	1.222	0.82	1.00	20	d	//
	11.3	78	4.0	1.222	0.66	0.80	16	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	22	22
Minimum	0.40	8
Average	1.63	33
Maximum	3.21	64
Standard Dev.	0.81	16
Upper 95% Confidence Limit	3.22	64.46
Lower 95% Confidence Limit	0.04	0.88

Comments:
*UCS taken as k x Point Load Is(50): k= 20

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Techrete Howth
Contract no. 19956
Date of test: 19/5/17

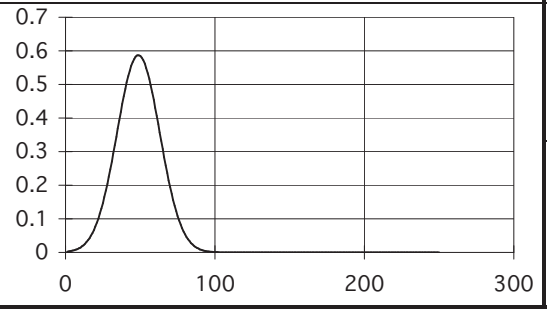
Sample Type: Core

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC06	5.6	78	14.0	1.222	2.30	2.81	56	d	//
	7.2	78	8.0	1.222	1.31	1.61	32	d	//
	8.2	78	11.0	1.222	1.81	2.21	44	d	//
	8.8	78	12.0	1.222	1.97	2.41	48	d	//
	10.8	78	12.0	1.222	1.97	2.41	48	d	//
RC07	3.3	78	9.0	1.222	1.48	1.81	36	d	//
	3.4	78	12.0	1.222	1.97	2.41	48	d	//
	3.5	78	8.0	1.222	1.31	1.61	32	d	//
	3.6	78	16.0	1.222	2.63	3.21	64	d	//
	8.0	78	12.0	1.222	1.97	2.41	48	d	//
	8.2	78	9.0	1.222	1.48	1.81	36	d	//
RC08	4.4	78	15.0	1.222	2.47	3.01	60	d	//
	5.7	78	6.0	1.222	0.99	1.20	24	d	//
	6.9	78	20.0	1.222	3.29	4.02	80	d	//
	7.5	78	12.0	1.222	1.97	2.41	48	d	//
	7.9	78	8.0	1.222	1.31	1.61	32	d	//
RC09	5.5	78	18.0	1.222	2.96	3.61	72	d	//
	5.7	78	14.0	1.222	2.30	2.81	56	d	//
	6.7	78	12.0	1.222	1.97	2.41	48	d	//
	8.3	78	11.0	1.222	1.81	2.21	44	d	//
	9.3	78	16.0	1.222	2.63	3.21	64	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	21	21
Minimum	1.20	24
Average	2.44	49
Maximum	4.02	80
Standard Dev.	0.71	14
Upper 95% Confidence Limit	3.84	76.73
Lower 95% Confidence Limit	1.04	20.79

Comments:
*UCS taken as k x Point Load Is(50): k= 20

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Techrete Howth
Contract no. 19956
Date of test: 19/5/17

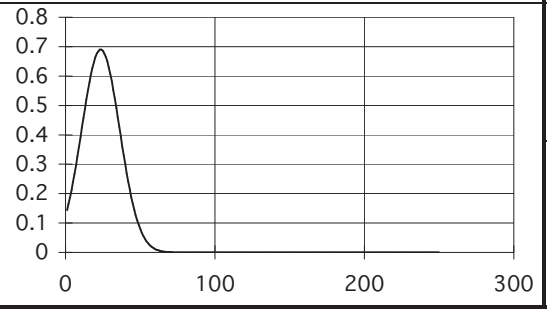
Sample Type: Core

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC10	2.3	78	4.0	1.222	0.66	0.80	16	d	//
	2.4	78	9.0	1.222	1.48	1.81	36	d	//
	4.6	78	7.0	1.222	1.15	1.41	28	d	//
	4.8	78	4.0	1.222	0.66	0.80	16	d	//
	5.7	78	5.0	1.222	0.82	1.00	20	d	//
	9.1	78	8.0	1.222	1.31	1.61	32	d	//
	9.4	78	2.0	1.222	0.33	0.40	8	d	//
RC11	8.0	78	2.0	1.222	0.33	0.40	8	d	//
	8.9	78	3.0	1.222	0.49	0.60	12	d	//
	9.6	78	2.0	1.222	0.33	0.40	8	d	//
	11.6	78	8.0	1.222	1.31	1.61	32	d	//
	12.4	78	3.0	1.222	0.49	0.60	12	d	//
	12.5	78	4.0	1.222	0.66	0.80	16	d	//
RC12	3.8	78	5.0	1.222	0.82	1.00	20	d	//
	4.8	78	8.0	1.222	1.31	1.61	32	d	//
	5.0	78	5.0	1.222	0.82	1.00	20	d	//
	6.0	78	4.0	1.222	0.66	0.80	16	d	//
	8.0	78	11.0	1.222	1.81	2.21	44	d	//
	8.3	78	3.0	1.222	0.49	0.60	12	d	//
	10.5	78	12.0	1.222	1.97	2.41	48	d	//
	10.6	78	9.0	1.222	1.48	1.81	36	d	//
	10.7	78	11.0	1.222	1.81	2.21	44	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	22	22
Minimum	0.40	8
Average	1.18	24
Maximum	2.41	48
Standard Dev.	0.64	13
Upper 95% Confidence Limit	2.42	48.47
Lower 95% Confidence Limit	-0.07	-1.38

Comments:
*UCS taken as k x Point Load Is(50): k= 20

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Techrete Howth
Contract no. 19956
Date of test: 19/5/17

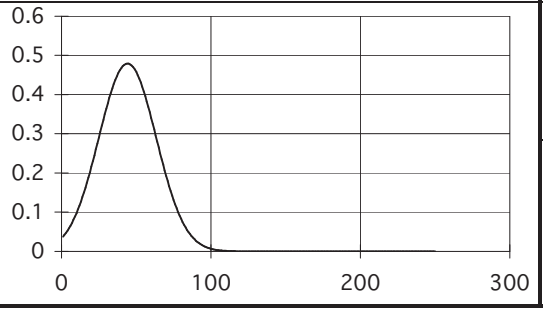
Sample Type: Core

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC13	5.8	78	18.0	1.222	2.96	3.61	72	d	//
	6.4	78	6.0	1.222	0.99	1.20	24	d	//
	8.1	78	5.0	1.222	0.82	1.00	20	d	//
	8.5	78	12.0	1.222	1.97	2.41	48	d	//
	9.1	78	17.0	1.222	2.79	3.41	68	d	//
RC14	10.1	78	7.0	1.222	1.15	1.41	28	d	//
	10.2	78	10.0	1.222	1.64	2.01	40	d	//
	11.9	78	9.0	1.222	1.48	1.81	36	d	//
	13.4	78	4.0	1.222	0.66	0.80	16	d	//
	13.5	78	12.0	1.222	1.97	2.41	48	d	//
	14.8	78	17.0	1.222	2.79	3.41	68	d	//
	14.9	78	8.0	1.222	1.31	1.61	32	d	//
	15.1	78	9.0	1.222	1.48	1.81	36	d	//
RC15	5.8	78	21.0	1.222	3.45	4.22	84	d	//
	5.9	78	13.0	1.222	2.14	2.61	52	d	//
	6.7	78	12.0	1.222	1.97	2.41	48	d	//
	10.2	78	6.0	1.222	0.99	1.20	24	d	//
	11.2	78	8.0	1.222	1.31	1.61	32	d	//
	11.3	78	11.0	1.222	1.81	2.21	44	d	//
RC16	4.3	78	14.0	1.222	2.30	2.81	56	d	//
	5.1	78	5.0	1.222	0.82	1.00	20	d	//
	6.4	78	18.0	1.222	2.96	3.61	72	d	//
	7.7	78	11.0	1.222	1.81	2.21	44	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	23	23
Minimum	0.80	16
Average	2.21	44
Maximum	4.22	84
Standard Dev.	0.96	19
Upper 95% Confidence Limit	4.08	81.69
Lower 95% Confidence Limit	0.33	6.65

Comments:
*UCS taken as k x Point Load Is(50): k= 20

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Techrete Howth
Contract no. 19956
Date of test: 19/5/17

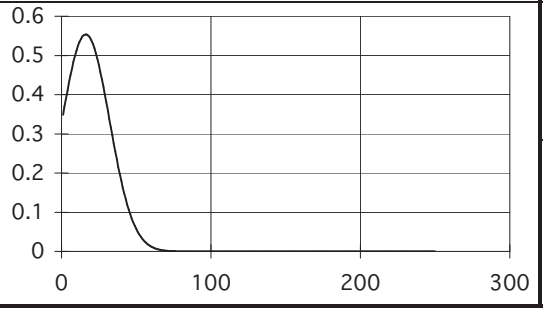
Sample Type: Core

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC17	7.0	78	8.0	1.222	1.31	1.61	32	d	//
	7.3	78	4.0	1.222	0.66	0.80	16	d	//
	8.0	78	2.0	1.222	0.33	0.40	8	d	//
	8.7	78	16.0	1.222	2.63	3.21	64	d	//
	9.4	78	10.0	1.222	1.64	2.01	40	d	//
	11.3	78	11.0	1.222	1.81	2.21	44	d	//
RC18	3.3	78	1.0	1.222	0.16	0.20	4	d	//
	4.0	78	2.0	1.222	0.33	0.40	8	d	//
	4.4	78	3.0	1.222	0.49	0.60	12	d	//
	5.3	78	1.0	1.222	0.16	0.20	4	d	//
	6.4	78	3.0	1.222	0.49	0.60	12	d	//
	7.0	78	5.0	1.222	0.82	1.00	20	d	//
	8.2	78	6.0	1.222	0.99	1.20	24	d	//
	8.3	78	4.0	1.222	0.66	0.80	16	d	//
	8.4	78	2.0	1.222	0.33	0.40	8	d	//
RC19	6.9	78	1.0	1.222	0.16	0.20	4	d	//
	7.1	78	2.0	1.222	0.33	0.40	8	d	//
	7.2	78	1.0	1.222	0.16	0.20	4	d	//
	7.8	78	3.0	1.222	0.49	0.60	12	d	//
	7.9	78	2.0	1.222	0.33	0.40	8	d	//
	8.3	78	1.0	1.222	0.16	0.20	4	d	//
	8.4	78	1.0	1.222	0.16	0.20	4	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	22	22
Minimum	0.20	4
Average	0.81	16
Maximum	3.21	64
Standard Dev.	0.79	16
Upper 95% Confidence Limit	2.37	47.30
Lower 95% Confidence Limit	-0.74	-14.81

Comments:
*UCS taken as k x Point Load Is(50): k= 20

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Techrete Howth
Contract no. 19956
Date of test: 19/5/17

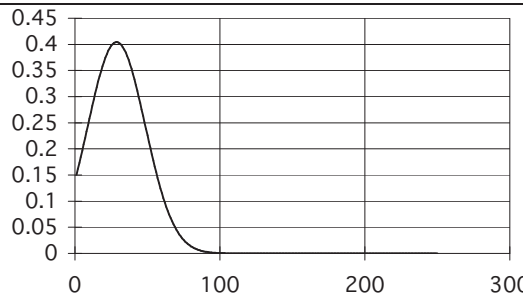
Sample Type: Core

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC20	6.1	78	4.0	1.222	0.66	0.80	16	d	//
	7.1	78	8.0	1.222	1.31	1.61	32	d	//
	8.1	78	2.0	1.222	0.33	0.40	8	d	//
	8.4	78	16.0	1.222	2.63	3.21	64	d	//
	9.4	78	9.0	1.222	1.48	1.81	36	d	//
RC21	7.7	78	18.0	1.222	2.96	3.61	72	d	//
	7.8	78	14.0	1.222	2.30	2.81	56	d	//
	8.3	78	11.0	1.222	1.81	2.21	44	d	//
	8.5	78	6.0	1.222	0.99	1.20	24	d	//
	9.8	78	10.0	1.222	1.64	2.01	40	d	//
	10.0	78	11.0	1.222	1.81	2.21	44	d	//
	10.7	78	3.0	1.222	0.49	0.60	12	d	//
RC22	9.4	78	4.0	1.222	0.66	0.80	16	d	//
	9.9	78	2.0	1.222	0.33	0.40	8	d	//
	10.8	78	6.0	1.222	0.99	1.20	24	d	//
	10.9	78	8.0	1.222	1.31	1.61	32	d	//
	11.5	78	3.0	1.222	0.49	0.60	12	d	//
	11.9	78	2.0	1.222	0.33	0.40	8	d	//
	13.0	78	4.0	1.222	0.66	0.80	16	d	//
	13.1	78	2.0	1.222	0.33	0.40	8	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	20	20
Minimum	0.40	8
Average	1.44	29
Maximum	3.61	72
Standard Dev.	0.99	20
Upper 95% Confidence Limit	3.37	67.38
Lower 95% Confidence Limit	-0.50	-9.95

Comments:
*UCS taken as k x Point Load Is(50): k= 20

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Techrete Howth
Contract no. 19956
Date of test: 19/5/17

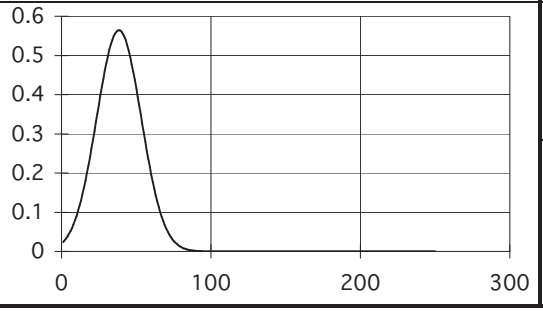
Sample Type: Core

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC23	7.6	78	5.0	1.222	0.82	1.00	20	d	//
	8.6	78	9.0	1.222	1.48	1.81	36	d	//
	9.9	78	16.0	1.222	2.63	3.21	64	d	//
	10.1	78	9.0	1.222	1.48	1.81	36	d	//
	11.2	78	14.0	1.222	2.30	2.81	56	d	//
	11.4	78	7.0	1.222	1.15	1.41	28	d	//
RC24	15.5	78	1.0	1.222	0.16	0.20	4	d	//
	17.5	78	8.0	1.222	1.31	1.61	32	d	//
	17.7	78	11.0	1.222	1.81	2.21	44	d	//
	19.3	78	9.0	1.222	1.48	1.81	36	d	//
	19.6	78	11.0	1.222	1.81	2.21	44	d	//
	19.7	78	16.0	1.222	2.63	3.21	64	d	//
	20.5	78	8.0	1.222	1.31	1.61	32	d	//
RC25	9.3	78	14.0	1.222	2.30	2.81	56	d	//
	10.4	78	8.0	1.222	1.31	1.61	32	d	//
	10.5	78	9.0	1.222	1.48	1.81	36	d	//
	10.6	78	11.0	1.222	1.81	2.21	44	d	//
	11.0	78	12.0	1.222	1.97	2.41	48	d	//
	12.5	78	5.0	1.222	0.82	1.00	20	d	//
	12.7	78	7.0	1.222	1.15	1.41	28	d	//
	14.7	78	11.0	1.222	1.81	2.21	44	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	21	21
Minimum	0.20	4
Average	1.92	38
Maximum	3.21	64
Standard Dev.	0.74	15
Upper 95% Confidence Limit	3.38	67.52
Lower 95% Confidence Limit	0.47	9.35

Comments:
*UCS taken as k x Point Load Is(50): k= 20

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

(Diametrial) POINT LOAD STRENGTH INDEX TEST DATA

Contract: Techrete Howth
Contract no. 19956
Date of test: 19/5/17

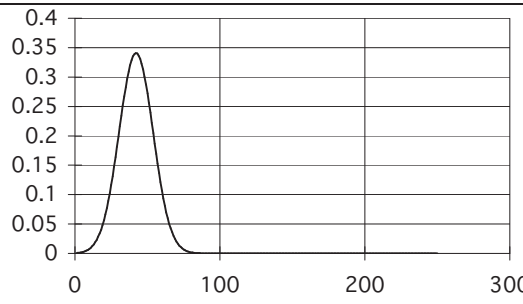
Sample Type: Core

RC No.	Depth m	D (Diameter) mm	P (failure load) kN	F	Is (index strength) Mpa	Is(50) (index strength) Mpa	*UCS MPa	Type	Orienation
RC30	3.9	78	11.0	1.222	1.81	2.21	44	d	//
	4.4	78	8.0	1.222	1.31	1.61	32	d	//
	4.7	78	8.0	1.222	1.31	1.61	32	d	//
	5.2	78	11.0	1.222	1.81	2.21	44	d	//
	6.8	78	7.0	1.222	1.15	1.41	28	d	//
	8.0	78	14.0	1.222	2.30	2.81	56	d	//
RC31	3.6	78	16.0	1.222	2.63	3.21	64	d	//
	4.3	78	12.0	1.222	1.97	2.41	48	d	//
	7.8	78	8.0	1.222	1.31	1.61	32	d	//
	8.7	78	10.0	1.222	1.64	2.01	40	d	//

Statistical Summary Data	Is(50)	UCS*
Number of Samples Tested	10	10
Minimum	1.41	28
Average	2.11	42
Maximum	3.21	64
Standard Dev.	0.59	12
Upper 95% Confidence Limit	3.26	65.11
Lower 95% Confidence Limit	0.96	19.22

Comments:
*UCS taken as k x Point Load Is(50): k= 20

*UCS Normal Distribution Curve



Abbreviations	
i	irregular
a	axial
b	block
d	diametral

approx. orientation to planes of weakness/bedding

U	unknown
P	perpendicular
//	parallel

Uniaxial Compression Test Report Sheet

I.G.S.L.

Sample Identification

Contract Name:	Techrete Howth
Job Number:	19956
Hole No:	RC10
Depth (m):	7.3-7.6m

Sample Description

Colour:	Brownish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	Dolomitised LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

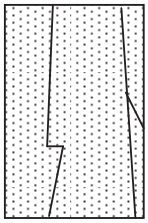
Sample Measurements

Length	199	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	214	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength $= \dfrac{214000}{4775.94}$

$= \dfrac{1000 \times P}{\prod \times (Ø/2)^2}$

$=$ 44.79 (Mpa)

Bulk Density $=$ 2.66 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet

I.G.S.L.

Sample Identification

Contract Name:	Techrete Howth
Job Number:	19956
Hole No:	RC12
Depth (m):	10.0-10.3m

Sample Description

Colour:	Brownish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	Dolomitised LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

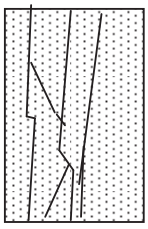
Sample Measurements

Length	204	
Diameter (Ø)	78.1	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	198	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{198000}{4788.19385}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 41.33 (Mpa)

Bulk Density = 2.68 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet

I.G.S.L.

Sample Identification

Contract Name:	Techrete Howth
Job Number:	19956
Hole No:	RC14
Depth (m):	14.3-14.6m

Sample Description

Colour:	Brownish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	Dolomitised LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

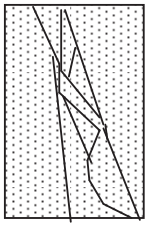
Sample Measurements

Length	199	
Diameter (Ø)	78	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	84	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength $= \dfrac{84000}{4775.94}$

$= \dfrac{1000 \times P}{\prod \times (Ø/2)^2}$

$=$ 17.58 (Mpa)

Bulk Density $=$ 2.67 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet

I.G.S.L.

Sample Identification

Contract Name:	Techrete Howth
Job Number:	19956
Hole No:	RC16
Depth (m):	6.6-6.9m

Sample Description

Colour:	Brownish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	Dolomitised LIMESTONE

Weathering Grade Criteria

I. Fresh: Unchanged from original state
II. Slightly weathered: Slight discolouration, slight weakening
III. Moderately weathered: Considerable weakening, penetrative discolouration
IV. Highly weathered: Considerable weakening, penetrative discolouration, breaks in hand

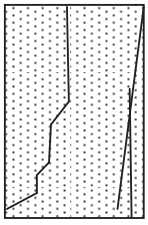
Sample Measurements

Length	204	
Diameter (Ø)	78.1	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	155	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength = $\frac{155000}{4788.19385}$

= $\frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 32.35 (Mpa)

Bulk Density = 2.68 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet

I.G.S.L.

Sample Identification

Contract Name:	Techrete Howth
Job Number:	19956
Hole No:	RC18
Depth (m):	6.0-6.3m

Sample Description

Colour:	Brownish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	Dolomitised LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

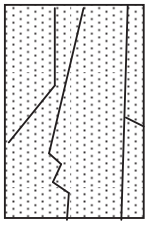
Sample Measurements

Length	189	
Diameter (Ø)	78.1	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	12	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength $= \dfrac{12000}{4788.19385}$

$= \dfrac{1000 \times P}{\prod \times (Ø/2)^2}$

$=$ 2.50 (Mpa)

Bulk Density $=$ 2.66 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet

I.G.S.L.

Sample Identification

Contract Name:	Techrete Howth
Job Number:	19956
Hole No:	RC21
Depth (m):	7.3-7.5m

Sample Description

Colour:	Brownish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	Dolomitised LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

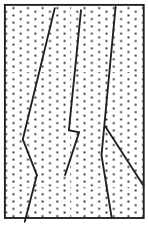
Sample Measurements

Length	210	
Diameter (Ø)	78.1	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	66	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength $= \dfrac{66000}{4788.19385}$

$= \dfrac{1000 \times P}{\prod \times (Ø/2)^2}$

$=$ 13.78 (Mpa)

Bulk Density $=$ 2.68 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet

I.G.S.L.

Sample Identification

Contract Name:	Techrete Howth
Job Number:	19956
Hole No:	RC22
Depth (m):	13.7-14.0m

Sample Description

Colour:	Brownish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	Dolomitised LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

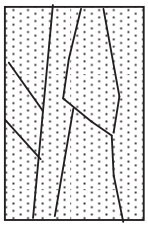
Sample Measurements

Length	195	
Diameter (Ø)	78.1	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	16	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength $= \dfrac{16000}{4788.19385}$

$= \dfrac{1000 \times P}{\prod \times (Ø/2)^2}$

$=$ 3.34 (Mpa)

Bulk Density $=$ 2.66 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet

I.G.S.L.

Sample Identification

Contract Name:	Techrete Howth
Job Number:	19956
Hole No:	RC23
Depth (m):	9.5-9.8m

Sample Description

Colour:	Brownish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	Dolomitised LIMESTONE

Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

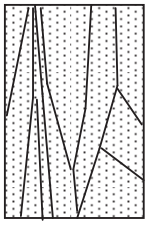
Sample Measurements

Length	195	
Diameter (Ø)	78.1	mm

Testing

Load Rate	4.3	kN/min
Load at Failure (P)	153	kN

Sketch of Failure Surfaces



Strength Calculations

Uniaxial Compressive Strength $= \dfrac{153000}{4788.19385}$

$= \dfrac{1000 \times P}{\prod \times (Ø/2)^2}$

$=$ 31.94 (Mpa)

Bulk Density $=$ 2.67 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet

I.G.S.L.

Sample Identification

Contract Name:	Techrete Howth
Job Number:	19956
Hole No:	RC24
Depth (m):	18.7-18.9m

Sample Description

Colour:	Brownish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	Dolomitised LIMESTONE

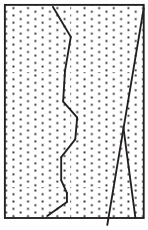
Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

Sample Measurements

Length	202	
Diameter (Ø)	78	mm

Sketch of Failure Surfaces



Testing

Load Rate	4.3	kN/min
Load at Failure (P)	143	kN

Strength Calculations

Uniaxial Compressive Strength = $\frac{143000}{4775.94}$

$= \frac{1000 \times P}{\prod \times (Ø/2)^2}$

= 29.93 (Mpa)

Bulk Density = 2.68 (Mg/m^3)

Notes:

Uniaxial Compression Test Report Sheet

I.G.S.L.

Sample Identification

Contract Name:	Techrete Howth
Job Number:	19956
Hole No:	RC25
Depth (m):	9.3-9.6m

Sample Description

Colour:	Brownish grey
Grain size:	Fine-grained
Weathering Grade:	Fresh
Rock Type:	Dolomitised LIMESTONE

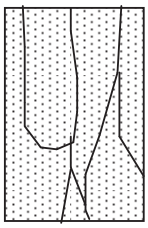
Weathering Grade Criteria

I. Fresh:	Unchanged from original state
II. Slightly weathered:	Slight discolouration, slight weakening
III. Moderately weathered:	Considerable weakening, penetrative discolouration
IV. Highly weathered:	Considerable weakening, penetrative discolouration, breaks in hand

Sample Measurements

Length	194	
Diameter (Ø)	78	mm

Sketch of Failure Surfaces



Testing

Load Rate	4.3	kN/min
Load at Failure (P)	113	kN

Strength Calculations

Uniaxial Compressive Strength $= \dfrac{113000}{4775.94}$

$= \dfrac{1000 \times P}{\prod \times (Ø/2)^2}$

$=$ 23.65 (Mpa)

Bulk Density $=$ 2.67 (Mg/m^3)

Notes:

Appendix 7

Environmental Laboratory Testing

Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

IGSL
Unit F
M7 Business Park
Naas
Co Kildare
Ireland

Attention :	Darren Keogh
Date :	5th May, 2017
Your reference :	
Our reference :	Test Report 17/6443 Batch 1
Location :	Howth
Date samples received :	3rd April, 2017
Status :	Final report
Issue :	2

Seven samples were received for analysis on 3rd April, 2017 of which seven were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Where Waste Acceptance Criteria Suite (EC Decision of 19 December 2002 (2003/33/EC)) has been requested, all analyses have been performed using the relevant EN methods where they exist.

Compiled By:

Phil Sommerton BSc
Project Manager

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/6443

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7-8	9-12	13-14	15-16				LOD/LOR	Units	Method No.
Sample ID	BH18	BH18	BH18	BH18	BH24	BH24	BH24						
Depth	1.00	2.00	3.00	4.00	1.00	3.00	4.00						
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J						
Sample Date	<>	<>	<>	<>	<>	<>	<>						
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
Batch Number	1	1	1	1	1	1	1						
Date of Receipt	03/04/2017	03/04/2017	03/04/2017	03/04/2017	03/04/2017	03/04/2017	03/04/2017						
Antimony	3	-	-	-	7	-	2				<1	mg/kg	TM30/PM15
Antimony	-	6	7	-	-	6	-				<1	mg/kg	TM30/PM62
Arsenic #	26.9	-	-	-	23.9	-	10.6				<0.5	mg/kg	TM30/PM15
Arsenic	-	53.7	23.4	-	-	47.0	-				<0.5	mg/kg	TM30/PM62
Barium #	150	-	-	-	348	-	143				<1	mg/kg	TM30/PM15
Barium	-	256	218	-	-	2672	-				<1	mg/kg	TM30/PM62
Cadmium #	0.4	-	-	-	1.3	-	0.3				<0.1	mg/kg	TM30/PM15
Cadmium	-	0.7	1.2	-	-	2.2	-				<0.1	mg/kg	TM30/PM62
Chromium #	102.2	-	-	-	71.1	-	68.0				<0.5	mg/kg	TM30/PM15
Chromium	-	25.1	35.1	-	-	23.0	-				<0.5	mg/kg	TM30/PM62
Copper #	163	-	-	-	176	-	46				<1	mg/kg	TM30/PM15
Copper	-	168	178	-	-	229	-				<1	mg/kg	TM30/PM62
Lead #	257	-	-	-	317	-	51				<5	mg/kg	TM30/PM15
Lead	-	631	440	-	-	326	-				<5	mg/kg	TM30/PM62
Mercury #	0.3	-	-	-	0.6	-	<0.1				<0.1	mg/kg	TM30/PM15
Mercury	-	0.6	0.9	-	-	<0.1	-				<0.1	mg/kg	TM30/PM62
Molybdenum #	6.7	-	-	-	4.7	-	6.6				<0.1	mg/kg	TM30/PM15
Molybdenum	-	3.0	2.8	-	-	13.2	-				<0.1	mg/kg	TM30/PM62
Nickel #	70.1	-	-	-	63.8	-	27.3				<0.7	mg/kg	TM30/PM15
Nickel	-	46.7	58.8	-	-	253.5	-				<0.7	mg/kg	TM30/PM62
Selenium #	2	-	-	-	1	-	3				<1	mg/kg	TM30/PM15
Selenium	-	2	5	-	-	82_{AA}	-				<1	mg/kg	TM30/PM62
Total Sulphate as SO4 #	619	-	-	-	786	-	734				<50	mg/kg	TM50/PM29
Total Sulphate as SO4	-	831	2348	-	-	1972	-				<50	mg/kg	TM50/PM29
Water Soluble Boron #	1.3	-	-	-	2.4	-	1.2				<0.1	mg/kg	TM74/PM32
Water Soluble Boron	-	1.6	2.1	-	-	1.8	-				<0.1	mg/kg	TM74/PM61
Zinc #	743	-	-	-	617	-	436				<5	mg/kg	TM30/PM15
Zinc	-	519	276	-	-	13390_{AB}	-				<5	mg/kg	TM30/PM62

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/6443

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7-8	9-12	13-14	15-16				LOD/LOR	Units	Method No.
Sample ID	BH18	BH18	BH18	BH18	BH24	BH24	BH24						
Depth	1.00	2.00	3.00	4.00	1.00	3.00	4.00						
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J						
Sample Date	<>	<>	<>	<>	<>	<>	<>						
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
Batch Number	1	1	1	1	1	1	1						
Date of Receipt	03/04/2017	03/04/2017	03/04/2017	03/04/2017	03/04/2017	03/04/2017	03/04/2017						
PAH MS													
Naphthalene #	0.31	0.39	0.23	-	0.18	<0.04	<0.04				<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.52	0.57	0.37	-	1.10	0.05	<0.03				<0.03	mg/kg	TM4/PM8
Acenaphthene #	0.30	0.32	0.16	-	0.15	<0.05	<0.05				<0.05	mg/kg	TM4/PM8
Fluorene #	0.56	0.48	0.19	-	0.19	<0.04	<0.04				<0.04	mg/kg	TM4/PM8
Phenanthrene #	3.19	3.44	1.62	-	1.57	0.12	<0.03				<0.03	mg/kg	TM4/PM8
Anthracene #	1.44	1.38	0.68	-	0.95	0.06	<0.04				<0.04	mg/kg	TM4/PM8
Fluoranthene #	5.02	5.57	3.68	-	5.45	0.32	0.09				<0.03	mg/kg	TM4/PM8
Pyrene #	4.36	4.89	3.37	-	5.21	0.28	0.10				<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	2.71	3.16	1.80	-	3.74	0.26	0.17				<0.06	mg/kg	TM4/PM8
Chrysene #	2.73	3.19	2.36	-	4.08	0.24	0.12				<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	4.37	5.44	4.33	-	7.65	0.48	0.19				<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	2.61	3.25	2.22	-	4.55	0.27	0.14				<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	1.33	1.69	1.43	-	2.53	0.17	<0.04				<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.41	0.53	0.42	-	0.73	<0.04	<0.04				<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	1.44	1.71	1.59	-	2.97	0.17	0.10				<0.04	mg/kg	TM4/PM8
Coronene	0.24	0.34	0.33	-	0.59	<0.04	<0.04				<0.04	mg/kg	TM4/PM8
PAH 6 Total #	14.77	17.66	13.25	-	23.15	1.41	0.52				<0.22	mg/kg	TM4/PM8
PAH 17 Total	31.54	36.35	24.78	-	41.64	2.42	0.91				<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	3.15	3.92	3.12	-	5.51	0.35	0.14				<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	1.22	1.52	1.21	-	2.14	0.13	0.05				<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	1	1	<1	-	3	<1	<1				<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	103	107	101	-	100	98	106				<0	%	TM4/PM8
Mineral Oil (C10-C40)	42	33	33	-	194	30	<30				<30	mg/kg	TM5/PM16
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1 SV	<0.1 SV	<0.1	-	<0.1	<0.1	<0.1				<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1 SV	<0.1 SV	<0.1	-	<0.1	<0.1	<0.1				<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1 SV	<0.1 SV	<0.1	-	<0.1	<0.1	0.7				<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2				<0.2	mg/kg	TM5/PM16
>C12-C16 #	<4	<4	<4	-	<4	<4	<4				<4	mg/kg	TM5/PM16
>C16-C21 #	<7	<7	<7	-	<7	<7	<7				<7	mg/kg	TM5/PM16
>C21-C35 #	42	33	33	-	147	30	<7				<7	mg/kg	TM5/PM16
>C35-C40	<7	<7	<7	-	47	<7	<7				<7	mg/kg	TM5/PM16
Total aliphatics C5-40	42	33	33	-	194	30	<26				<26	mg/kg	TM5/TM36/PM12/PM16
>C6-C10	<0.1 SV	<0.1 SV	<0.1	-	<0.1	<0.1	0.7				<0.1	mg/kg	TM36/PM12
>C10-C25	<10	<10	<10	-	16	<10	<10				<10	mg/kg	TM5/PM16
>C25-C35	38	34	37	-	128	28	<10				<10	mg/kg	TM5/PM16

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/6443

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7-8	9-12	13-14	15-16				LOD/LOR	Units	Method No.
Sample ID	BH18	BH18	BH18	BH18	BH24	BH24	BH24						
Depth	1.00	2.00	3.00	4.00	1.00	3.00	4.00						
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J						
Sample Date	<>	<>	<>	<>	<>	<>	<>						
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
Batch Number	1	1	1	1	1	1	1						
Date of Receipt	03/04/2017	03/04/2017	03/04/2017	03/04/2017	03/04/2017	03/04/2017	03/04/2017						
TPH CWG													
Aromatics													
>C5-EC7 #	<0.1 SV	<0.1 SV	<0.1	-	<0.1	<0.1	<0.1				<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1 SV	<0.1 SV	<0.1	-	<0.1	<0.1	<0.1				<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1 SV	<0.1 SV	<0.1	-	<0.1	<0.1	<0.1				<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	0.8	<0.2	<0.2	-	<0.2	<0.2	<0.2				<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	8	<4	-	8	<4	<4				<4	mg/kg	TM5/PM16
>EC16-EC21 #	21	47	<7	-	84	<7	<7				<7	mg/kg	TM5/PM16
>EC21-EC35 #	21	197	131	-	389	44	21				<7	mg/kg	TM5/PM16
>EC35-EC40	<7	49	56	-	96	<7	<7				<7	mg/kg	TM5/PM16
Total aromatics C5-40	43	301	187	-	577	44	<26				<26	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-40)	85	334	220	-	771	74	<52				<52	mg/kg	TM5/TM36/PM12/PM16
>EC6-EC10 #	<0.1 SV	<0.1 SV	<0.1	-	<0.1	<0.1	<0.1				<0.1	mg/kg	TM36/PM12
>EC10-EC25	113	99	30	-	165	<10	<10				<10	mg/kg	TM5/PM16
>EC25-EC35	162	154	110	-	300	45	20				<10	mg/kg	TM5/PM16
MTBE #	<5 SV	<5 SV	<5	-	<5	<5	<5				<5	ug/kg	TM31/PM12
Benzene #	-	-	<5	-	<5	<5	<5				<5	ug/kg	TM31/PM12
Toluene #	-	-	<5	-	<5	<5	<5				<5	ug/kg	TM31/PM12
Ethylbenzene #	-	-	<5	-	<5	<5	<5				<5	ug/kg	TM31/PM12
m/p-Xylene #	-	-	<5	-	<5	<5	<5				<5	ug/kg	TM31/PM12
o-Xylene #	-	-	<5	-	<5	<5	<5				<5	ug/kg	TM31/PM12
PCB 28 #	<5	<5	<5	-	10	<5	<5				<5	ug/kg	TM17/PM8
PCB 52 #	<5	<5	<5	-	34	<5	<5				<5	ug/kg	TM17/PM8
PCB 101 #	<5	<5	<5	-	25	<5	<5				<5	ug/kg	TM17/PM8
PCB 118 #	<5	<5	<5	-	16	<5	<5				<5	ug/kg	TM17/PM8
PCB 138 #	<5	<5	<5	-	10	<5	<5				<5	ug/kg	TM17/PM8
PCB 153 #	<5	<5	<5	-	7	<5	<5				<5	ug/kg	TM17/PM8
PCB 180 #	<5	<5	<5	-	<5	<5	<5				<5	ug/kg	TM17/PM8
Total 7 PCBs #	<35	<35	<35	-	102	<35	<35				<35	ug/kg	TM17/PM8
Phenol #	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01				<0.01	mg/kg	TM26/PM21
Natural Moisture Content	9.3	-	-	-	20.3	-	21.6				<0.1	%	PM4/PM0
Natural Moisture Content	-	14.8	134.1	-	-	28.5	-				<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	8.5	-	-	-	16.9	-	17.8				<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3				<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	-	-	-	0.0398	-	-	-				<0.0015	g/l	TM38/PM20
Chromium III	102.2	-	-	-	71.1	-	68.0				<0.5	mg/kg	NONE/NONE
Chromium III	-	25.1	35.1	-	-	23.0	-				<0.5	mg/kg	NONE/NONE
Total Cyanide #	<0.5	1.5	<0.5	-	1.0	0.8	<0.5				<0.5	mg/kg	TM89/PM45

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/6443

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7-8	9-12	13-14	15-16				LOD/LOR	Units	Method No.
Sample ID	BH18	BH18	BH18	BH18	BH24	BH24	BH24						
Depth	1.00	2.00	3.00	4.00	1.00	3.00	4.00						
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J						
Sample Date	<>	<>	<>	<>	<>	<>	<>						
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
Batch Number	1	1	1	1	1	1	1						
Date of Receipt	03/04/2017	03/04/2017	03/04/2017	03/04/2017	03/04/2017	03/04/2017	03/04/2017						
Total Organic Carbon #	6.70	NDP	NDP	-	6.65	NDP	1.03				<0.02	%	TM21/PM24
Sulphide	<10	<10	<10	-	<10	<10	<10				<10	mg/kg	TM106/PM119
Elemental Sulphur	17	-	-	-	55	-	287				<1	mg/kg	TM108/PM114
Elemental Sulphur	-	8	14	-	-	26	-				<1	mg/kg	TM108/PM8
pH #	8.15	8.12	7.99	8.71	7.86	7.51	7.75				<0.01	pH units	TM73/PM11
Mass of raw test portion	0.1029	0.1068	0.1123	-	0.1358	0.114	0.112					kg	NONE/PM17
Mass of dried test portion	0.09	0.09	0.09	-	0.09	0.09	0.09					kg	NONE/PM17

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/6443

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	9-12	13-14	15-16					LOD/LOR	Units	Method No.
Sample ID	BH18	BH18	BH18	BH24	BH24	BH24							
Depth	1.00	2.00	3.00	1.00	3.00	4.00							
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J							
Sample Date	<>	<>	<>	<>	<>	<>							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1	1							
Date of Receipt	03/04/2017	03/04/2017	03/04/2017	03/04/2017	03/04/2017	03/04/2017							
Dissolved Antimony #	0.006	0.013	0.012	0.008	0.009	0.012					<0.002	mg/l	TM30/PM17
Dissolved Antimony (A10) #	0.06	0.13	0.12	0.08	0.09	0.12					<0.02	mg/kg	TM30/PM17
Dissolved Arsenic #	0.0041	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025					<0.0025	mg/l	TM30/PM17
Dissolved Arsenic (A10) #	0.041	<0.025	<0.025	<0.025	<0.025	<0.025					<0.025	mg/kg	TM30/PM17
Dissolved Barium #	0.020	0.021	0.034	0.079	0.082	0.124					<0.003	mg/l	TM30/PM17
Dissolved Barium (A10) #	0.20	0.21	0.34	0.79	0.82	1.24					<0.03	mg/kg	TM30/PM17
Dissolved Boron #	0.043	0.052	0.020	0.061	0.057	0.031					<0.012	mg/l	TM30/PM17
Dissolved Boron (A10) #	0.43	0.52	0.20	0.61	0.57	0.31					<0.12	mg/kg	TM30/PM17
Dissolved Cadmium #	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005					<0.0005	mg/l	TM30/PM17
Dissolved Cadmium (A10) #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005					<0.005	mg/kg	TM30/PM17
Dissolved Chromium #	<0.0015	<0.0015	<0.0015	0.0027	<0.0015	<0.0015					<0.0015	mg/l	TM30/PM17
Dissolved Chromium (A10) #	<0.015	<0.015	<0.015	0.027	<0.015	<0.015					<0.015	mg/kg	TM30/PM17
Dissolved Copper #	0.008	0.011	<0.007	<0.007	<0.007	<0.007					<0.007	mg/l	TM30/PM17
Dissolved Copper (A10) #	0.08	0.11	<0.07	<0.07	<0.07	<0.07					<0.07	mg/kg	TM30/PM17
Dissolved Lead #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005					<0.005	mg/l	TM30/PM17
Dissolved Lead (A10) #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05					<0.05	mg/kg	TM30/PM17
Dissolved Molybdenum #	0.006	0.005	0.008	0.009	0.021	0.036					<0.002	mg/l	TM30/PM17
Dissolved Molybdenum (A10) #	0.06	0.05	0.08	0.09	0.21	0.36					<0.02	mg/kg	TM30/PM17
Dissolved Nickel #	<0.002	<0.002	<0.002	<0.002	0.002	<0.002					<0.002	mg/l	TM30/PM17
Dissolved Nickel (A10) #	<0.02	<0.02	<0.02	<0.02	0.02	<0.02					<0.02	mg/kg	TM30/PM17
Dissolved Selenium #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003					<0.003	mg/l	TM30/PM17
Dissolved Selenium (A10) #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03					<0.03	mg/kg	TM30/PM17
Dissolved Zinc #	<0.003	<0.003	<0.003	0.007	0.009	<0.003					<0.003	mg/l	TM30/PM17
Dissolved Zinc (A10) #	<0.03	<0.03	<0.03	0.07	0.09	<0.03					<0.03	mg/kg	TM30/PM17
Mercury Dissolved by CVAF #	0.00086	0.00181	0.00002	0.00101	0.00018	<0.00001					<0.00001	mg/l	TM61/PM38
Mercury Dissolved by CVAF #	0.0086	0.0181	0.0002	0.0101	0.0018	<0.0001					<0.0001	mg/kg	TM61/PM38
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	mg/l	TM26/PM0
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM26/PM0
Fluoride	0.3	0.4	<0.3	<0.3	<0.3	<0.3					<0.3	mg/l	TM173/PM0
Fluoride	<3	4	<3	<3	<3	<3					<3	mg/kg	TM173/PM0
Sulphate as SO4 #	16.59	17.04	35.38	16.24	44.67	19.28					<0.05	mg/l	TM38/PM0
Sulphate as SO4 #	165.9	170.4	353.7	162.3	446.8	192.9					<0.5	mg/kg	TM38/PM0
Chloride #	1.6	1.7	1.7	0.6	12.1	30.3					<0.3	mg/l	TM38/PM0
Chloride #	16	17	17	6	121	303					<3	mg/kg	TM38/PM0
Ammoniacal Nitrogen as N #	0.50	0.71	0.09	<0.03	<0.03	0.03					<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	5.0	7.1	0.9	<0.3	<0.3	0.3					<0.3	mg/kg	TM38/PM0
Dissolved Organic Carbon	7	7	3	5	8	3					<2	mg/l	TM60/PM0
Dissolved Organic Carbon	70	70	30	50	80	30					<20	mg/kg	TM60/PM0
Total Dissolved Solids #	90	96	117	121	230	136					<35	mg/l	TM20/PM0
Total Dissolved Solids #	900	960	1170	1210	2301	1361					<350	mg/kg	TM20/PM0

Please see attached notes for all abbreviations and acronyms

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	87.4
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

JEFL Job No	**17/6443**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**2**			
Client Sample No	**BH18**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	6.70	3	5	6
Sum of BTEX (mg/kg)	0.026	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	42	500	-	-
PAH Sum of 6 (mg/kg)	14.77	-	-	-
PAH Sum of 17 (mg/kg)	31.54	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.041	0.5	2	25
Barium	0.20	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	0.08	2	50	100
Mercury	0.0086	0.01	0.2	2
Molybdenum	0.06	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.06	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	16	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	165.9	1000	20000	50000
Total Dissolved Solids	900	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	70	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	84.1
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.82

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6443**			
Sample No	**4**			
Client Sample No	**BH18**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**2.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	NDP	3	5	6
Sum of BTEX (mg/kg)	0.059	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	33	500	-	-
PAH Sum of 6 (mg/kg)	17.66	-	-	-
PAH Sum of 17 (mg/kg)	36.35	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.21	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	0.11	2	50	100
Mercury	0.0181	0.01	0.2	2
Molybdenum	0.05	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.13	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	17	800	15000	25000
Fluoride	4	10	150	500
Sulphate as SO4	170.4	1000	20000	50000
Total Dissolved Solids	960	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	70	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	79.8
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.72

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6443**			
Sample No	**6**			
Client Sample No	**BH18**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**3.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	NDP	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	33	500	-	-
PAH Sum of 6 (mg/kg)	13.25	-	-	-
PAH Sum of 17 (mg/kg)	24.78	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.34	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0002	0.01	0.2	2
Molybdenum	0.08	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.12	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	17	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	353.7	1000	20000	50000
Total Dissolved Solids	1170	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	66.4
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.69

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6443**			
Sample No	**12**			
Client Sample No	**BH24**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	6.65	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	0.102	1	-	-
Mineral Oil (mg/kg)	194	500	-	-
PAH Sum of 6 (mg/kg)	23.15	-	-	-
PAH Sum of 17 (mg/kg)	41.64	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.79	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	0.027	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0101	0.01	0.2	2
Molybdenum	0.09	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.08	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.07	4	50	200
Chloride	6	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	162.3	1000	20000	50000
Total Dissolved Solids	1210	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	50	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	78.7
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.84

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6443**			
Sample No	**14**			
Client Sample No	**BH24**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**3.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	NDP	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	30	500	-	-
PAH Sum of 6 (mg/kg)	1.41	-	-	-
PAH Sum of 17 (mg/kg)	2.42	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.82	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0018	0.01	0.2	2
Molybdenum	0.21	0.5	10	30
Nickel	0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.09	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.09	4	50	200
Chloride	121	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	446.8	1000	20000	50000
Total Dissolved Solids	2301	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	80	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	80.1
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6443**			
Sample No	**16**			
Client Sample No	**BH24**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**4.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	1.03	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	0.52	-	-	-
PAH Sum of 17 (mg/kg)	0.91	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	1.24	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.36	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.12	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	303	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	192.9	1000	20000	50000
Total Dissolved Solids	1361	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

Client Name: IGSL **Matrix : Solid**
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	EPH Interpretation
17/6443	1	BH18	1.00	1-2	Trace Lube oil & PAH's
17/6443	1	BH18	2.00	3-4	Trace Lube oil & PAH's
17/6443	1	BH18	3.00	5-6	Trace Lube oil & PAH's
17/6443	1	BH24	1.00	9-12	Lube oil, tarmac/bitumen & PAH's
17/6443	1	BH24	3.00	13-14	Trace Lube oil & naturally occurring compounds
17/6443	1	BH24	4.00	15-16	No interpretation possible

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/6443	1	BH18	1.00	2	05/04/2017	**Mass of Dry Sample**	48.9 (g)
					12/04/2017	**General Description (Bulk Analysis)**	soil/stones
					12/04/2017	**Asbestos Fibres**	NAD
					12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD
					12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD
17/6443	1	BH18	2.00	4	05/04/2017	**Mass of Dry Sample**	47.5 (g)
					12/04/2017	**General Description (Bulk Analysis)**	Soil/Stone/Silt
					12/04/2017	**Asbestos Fibres**	Fibre Bundles
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos Type**	Chrysotile
					12/04/2017	**Asbestos Level Screen**	<0.1%
					19/04/2017	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					19/04/2017	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					19/04/2017	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
17/6443	1	BH18	3.00	6	05/04/2017	**Mass of Dry Sample**	28.4 (g)
					12/04/2017	**General Description (Bulk Analysis)**	Soil/Stone
					12/04/2017	**Asbestos Fibres**	Fibre Bundles
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos Type**	Chrysotile
					12/04/2017	**Asbestos Level Screen**	<0.1%
					19/04/2017	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					19/04/2017	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					19/04/2017	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
17/6443	1	BH24	1.00	11	05/04/2017	**Mass of Dry Sample**	40.6 (g)
					12/04/2017	**General Description (Bulk Analysis)**	soil/stones
					12/04/2017	**Asbestos Fibres**	NAD
					12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD
					12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/6443	1	BH24	3.00	14	05/04/2017	**Mass of Dry Sample**	41.9 (g)
					12/04/2017	**General Description (Bulk Analysis)**	Soil/Stone/Silt
					12/04/2017	**Asbestos Fibres**	Fibre Bundles
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos Type**	Chrysotile
					12/04/2017	**Asbestos Level Screen**	<0.1%
					19/04/2017	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					19/04/2017	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					19/04/2017	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
17/6443	1	BH24	4.00	16	26/04/2017	**Mass of Dry Sample**	46.7 (g)
					27/04/2017	**General Description (Bulk Analysis)**	soil/stones
					27/04/2017	**Asbestos Fibres**	NAD
					27/04/2017	**Asbestos Fibres (2)**	NAD
					27/04/2017	**Asbestos ACM**	NAD
					27/04/2017	**Asbestos ACM (2)**	NAD
					27/04/2017	**Asbestos Type**	NAD
					27/04/2017	**Asbestos Type (2)**	NAD
					27/04/2017	**Asbestos Level Screen**	NAD

Client Name: IGSL **Matrix : Solid**
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
17/6443	1	BH18	2.00	3-4	Asbestos detected in sample
17/6443	1	BH18	3.00	5-6	Asbestos detected in sample
17/6443	1	BH24	3.00	13-14	Asbestos detected in sample

Client Name: IGSL

Matrix : Solid

Reference:

Location: Howth

Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
17/6443	1	BH18	1.00	1-2	All analyses	No sampling date given
17/6443	1	BH18	1.00	1-2	GRO	Solid Samples were received at a temperature above 9°C.
17/6443	1	BH18	2.00	3-4	All analyses	No sampling date given
17/6443	1	BH18	2.00	3-4	GRO	Solid Samples were received at a temperature above 9°C.
17/6443	1	BH18	3.00	5-6	All analyses	No sampling date given
17/6443	1	BH18	3.00	5-6	GRO	Solid Samples were received at a temperature above 9°C.
17/6443	1	BH18	4.00	7-8	All analyses	No sampling date given
17/6443	1	BH24	1.00	9-12	All analyses	No sampling date given
17/6443	1	BH24	1.00	9-12	GRO	Solid Samples were received at a temperature above 9°C.
17/6443	1	BH24	3.00	13-14	All analyses	No sampling date given
17/6443	1	BH24	3.00	13-14	GRO	Solid Samples were received at a temperature above 9°C.
17/6443	1	BH24	4.00	15-16	All analyses	No sampling date given
17/6443	1	BH24	4.00	15-16	GRO	Solid Samples were received at a temperature above 9°C.

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/6443

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution
AB	x10 Dilution

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

JE Job No: 17/6443

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	Yes
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes

JE Job No: 17/6443

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM20	Modified BS 1377-3: 1990/USEPA 160.3 Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.	Yes		AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.	Yes		AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.	Yes		AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes

JE Job No: 17/6443

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	Dried and ground solid sample is boiled with dilute hydrochloric acid, the resulting liquor is then analysed.	Yes		AD	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	Dried and ground solid sample is boiled with dilute hydrochloric acid, the resulting liquor is then analysed.			AR	Yes
TM60	Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR).	PM0	No preparation is required.			AR	Yes
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	Yes

JE Job No: 17/6443

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM61	As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP.			AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes		AR	Yes
TM106	Determination of Sulphide by Skalar Continuous Flow Analyser	PM119	As received solid samples are extracted with 1M NaOH by orbital shaker for Sulphide and Thiocyanate analysis.			AR	Yes
TM108	Determination of Elemental Sulphur by Reversed Phase High Performance Liquid Chromatography with Ultra Violet spectroscopy.	PM114	End over end extraction of dried and crushed soil samples for organic analysis. The solvent mix varies depending on analysis required			AD	Yes
TM108	Determination of Elemental Sulphur by Reversed Phase High Performance Liquid Chromatography with Ultra Violet spectroscopy.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.			AR	Yes

JE Job No: 17/6443

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
NONE	No Method Code	NONE	No Method Code			AR	Yes
NONE	No Method Code	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.			AR	
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.			AR	

Appendix - Methods used for WAC (2003/33/EC)

Leachate tests	
10l/kg; 4mm	I.S. EN 12457-2:2002 Specified particle size; water added to L/S ratio; capped; agitated for 24 ± 0.5 hours; eluate settled and filtered over 0.45 µm membrane filter.
Eluate analysis	
As	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Ba	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cd	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cr total	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cu	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Hg	I.S. EN 13370 rec. EN 1483 (CVAAS)
Mo	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Ni	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Pb	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Sb	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Se	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Zn	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Chloride	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Fluoride	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Sulphate	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Phenol index	I.S. EN 13370 rec. ISO 6439 (4-Aminoantipyrine spectrometic methods after distillation)* (BY HPLC - Jones Env)
DOC	I.S. EN 1484
TDS	I.S. EN 15216
Compositional analysis	
TOC	I.S. EN 13137 Method B: carbonates removed with acid; TOC by combustion.
BTEX	GC-FID
PCB7**	I.S. EN 15308 analysis by GC-ECD.
Mineral oil	I.S. EN 14039 C10 to C40 analysis by GC-FID.
PAH17***	I.S. EN 15527 PAH17 analysis by GC-MS
Metals	I.S. EN 13657 - Aqua regia digestion: EN ISO 11885 (ICP-OES)
Other	
Dry matter	I.S. EN 14346 sample is dried to a constant mass in an oven at 105 ± 3 °C; Method B Water content by direct Karl-Fischer-titration and either volumetric or coulometric detection.
LOI	I.S. EN 15169 Difference in mass after heating in a furnace up to 550 ± 25 °C.
ANC	CEN/TS 15364 Determined by amounts of acid or base needed to cover the pH range

Notes:

*If not suitable due to LOD, precision, etc., any other suitable method can be used, e.g. AFS, ICP-MS

**PCB-28, PCB-52, PCB-101, PCB-118, PCB-138, PCB-153 and PCB-180

***Naphthalene, Acenaphthylene, Acenaphthene, Anthracene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(g,h,i)perylene, Benzo(a)pyrene, Chrysene, Coronene, Dibenzo(a,h)anthracene, Fluorene, Fluoranthene, Indeno(1,2,3-c,d)pyrene, Phenanthrene and Pyrene.

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IGSL
Unit F
M7 Business Park
Naas
Co Kildare
Ireland

Attention :	Darren Keogh
Date :	9th May, 2017
Your reference :	
Our reference :	Test Report 17/7329 Batch 1
Location :	Howth
Date samples received :	21st April, 2017
Status :	Final report
Issue :	1

Nineteen samples were received for analysis on 21st April, 2017 of which six were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Where Waste Acceptance Criteria Suite (EC Decision of 19 December 2002 (2003/33/EC)) has been requested, all analyses have been performed using the relevant EN methods where they exist.

Compiled By:

Phil Sommerton BSc
Project Manager

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7329

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	9-10	11-12	13-14	17-18	23-24					LOD/LOR	Units	Method No.
Sample ID	BH2	BH4	BH4	BH4	BH23	BH23							
Depth	1.00	1.00	2.00	3.00	1.00	4.00							
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J							
Sample Date	<>	<>	<>	<>	<>	<>							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1	1							
Date of Receipt	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017							
Antimony	1	7	-	<1	10	-					<1	mg/kg	TM30/PM15
Arsenic #	9.9	50.0	-	6.6	66.5	-					<0.5	mg/kg	TM30/PM15
Barium #	39	92	-	30	821	-					<1	mg/kg	TM30/PM15
Cadmium #	<0.1	0.3	-	0.7	1.1	-					<0.1	mg/kg	TM30/PM15
Chromium #	40.6	45.4	-	38.8	43.4	-					<0.5	mg/kg	TM30/PM15
Copper #	15	24	-	16	3517 AB	-					<1	mg/kg	TM30/PM15
Lead #	65	80	-	34	565	-					<5	mg/kg	TM30/PM15
Mercury #	<0.1	<0.1	-	<0.1	0.3	-					<0.1	mg/kg	TM30/PM15
Molybdenum #	1.6	12.1	-	3.2	10.6	-					<0.1	mg/kg	TM30/PM15
Nickel #	23.0	14.0	-	11.4	49.1	-					<0.7	mg/kg	TM30/PM15
Selenium #	<1	2	-	<1	4	-					<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	516	2719	-	417	2121	-					<50	mg/kg	TM50/PM29
Water Soluble Boron #	0.3	0.4	-	0.5	1.5	-					<0.1	mg/kg	TM74/PM32
Zinc #	46	47	-	37	690	-					<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	<0.04	<0.04	-	0.07	0.14	-					<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	-	<0.03	0.53	-					<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	-	<0.05	0.10	-					<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.04	-	<0.04	0.15	-					<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.07	0.36	-	0.08	2.27	-					<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	0.13	-	<0.04	0.91	-					<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.15	0.50	-	0.15	6.44	-					<0.03	mg/kg	TM4/PM8
Pyrene #	0.13	0.38	-	0.15	5.06	-					<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.13	0.26	-	0.15	3.57	-					<0.06	mg/kg	TM4/PM8
Chrysene #	0.12	0.22	-	0.13	3.53	-					<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	0.15	0.30	-	0.17	5.66	-					<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.09	0.19	-	0.12	3.46	-					<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.06	0.10	-	0.07	2.07	-					<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	-	<0.04	0.36	-					<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.05	0.11	-	0.07	1.98	-					<0.04	mg/kg	TM4/PM8
Coronene	<0.04	<0.04	-	<0.04	0.48	-					<0.04	mg/kg	TM4/PM8
PAH 6 Total #	0.50	1.20	-	0.58	19.61	-					<0.22	mg/kg	TM4/PM8
PAH 17 Total	0.95	2.55	-	1.16	36.71	-					<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.11	0.22	-	0.12	4.08	-					<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.04	0.08	-	0.05	1.58	-					<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	<1	<1	-	<1	<1	-					<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	104	92	-	101	102	-					<0	%	TM4/PM8
Mineral Oil (C10-C40)	<30	<30	-	<30	<30	-					<30	mg/kg	TM5/PM16

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7329

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	9-10	11-12	13-14	17-18	23-24					LOD/LOR	Units	Method No.
Sample ID	BH2	BH4	BH4	BH4	BH23	BH23							
Depth	1.00	1.00	2.00	3.00	1.00	4.00							
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J							
Sample Date	<>	<>	<>	<>	<>	<>							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1	1							
Date of Receipt	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017							
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1	<0.1	-	<0.1	<1.0 AA	-					<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1	<0.1	-	<0.1	<1.0 AA	-					<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	0.1	-	<0.1	<1.0 AA	-					<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2	<0.2	-	<0.2	<0.2	-					<0.2	mg/kg	TM5/PM16
>C12-C16 #	<4	<4	-	<4	<4	-					<4	mg/kg	TM5/PM16
>C16-C21 #	<7	<7	-	<7	<7	-					<7	mg/kg	TM5/PM16
>C21-C35 #	<7	<7	-	<7	15	-					<7	mg/kg	TM5/PM16
>C35-C40	<7	<7	-	<7	<7	-					<7	mg/kg	TM5/PM16
Total aliphatics C5-40	<26	<26	-	<26	<26	-					<26	mg/kg	TM5/TM36/PM12/PM16
>C6-C10	<0.1	0.1	-	<0.1	<1.0 AA	-					<0.1	mg/kg	TM36/PM12
>C10-C25	<10	<10	-	<10	<10	-					<10	mg/kg	TM5/PM16
>C25-C35	<10	<10	-	<10	15	-					<10	mg/kg	TM5/PM16
Aromatics													
>C5-EC7 #	<0.1	<0.1	-	<0.1	<1.0 AA	-					<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	<0.1	-	<0.1	<1.0 AA	-					<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1	<0.1	-	<0.1	<1.0 AA	-					<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	-	<0.2	<0.2	-					<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	<4	-	<4	<4	-					<4	mg/kg	TM5/PM16
>EC16-EC21 #	<7	<7	-	<7	11	-					<7	mg/kg	TM5/PM16
>EC21-EC35 #	<7	<7	-	<7	127	-					<7	mg/kg	TM5/PM16
>EC35-EC40	<7	<7	-	<7	50	-					<7	mg/kg	TM5/PM16
Total aromatics C5-40	<26	<26	-	<26	188	-					<26	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-40)	<52	<52	-	<52	188	-					<52	mg/kg	TM5/TM36/PM12/PM16
>EC6-EC10 #	<0.1	<0.1	-	<0.1	<1.0 AA	-					<0.1	mg/kg	TM36/PM12
>EC10-EC25	<10	<10	-	<10	36	-					<10	mg/kg	TM5/PM16
>EC25-EC35	<10	<10	-	<10	113	-					<10	mg/kg	TM5/PM16
MTBE #	<5	<5	-	<5	<50 AA	-					<5	ug/kg	TM31/PM12
Benzene #	<5	<5	-	<5	<50 AA	-					<5	ug/kg	TM31/PM12
Toluene #	<5	<5	-	<5	<50 AA	-					<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5	-	23	<50 AA	-					<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	<5	-	24	<50 AA	-					<5	ug/kg	TM31/PM12
o-Xylene #	<5	<5	-	11	<50 AA	-					<5	ug/kg	TM31/PM12
PCB 28 #	<5	<5	-	<5	<5	-					<5	ug/kg	TM17/PM8
PCB 52 #	<5	<5	-	<5	<5	-					<5	ug/kg	TM17/PM8
PCB 101 #	<5	<5	-	<5	<5	-					<5	ug/kg	TM17/PM8
PCB 118 #	<5	<5	-	<5	<5	-					<5	ug/kg	TM17/PM8
PCB 138 #	<5	<5	-	<5	<5	-					<5	ug/kg	TM17/PM8
PCB 153 #	<5	<5	-	<5	<5	-					<5	ug/kg	TM17/PM8
PCB 180 #	<5	<5	-	<5	<5	-					<5	ug/kg	TM17/PM8
Total 7 PCBs #	<35	<35	-	<35	<35	-					<35	ug/kg	TM17/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7329

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	9-10	11-12	13-14	17-18	23-24					LOD/LOR	Units	Method No.
Sample ID	BH2	BH4	BH4	BH4	BH23	BH23							
Depth	1.00	1.00	2.00	3.00	1.00	4.00							
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J							
Sample Date	<>	<>	<>	<>	<>	<>							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1	1							
Date of Receipt	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017	21/04/2017							
Phenol #	<0.01	<0.01	-	<0.01	<0.01	-					<0.01	mg/kg	TM26/PM21
Natural Moisture Content	11.8	15.4	-	19.7	31.8	-					<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	10.6	13.3	-	16.4	24.1	-					<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	-	<0.3	<0.3	-					<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	0.0122	-	0.0799	-	-	0.0975					<0.0015	g/l	TM38/PM20
Chromium III	40.6	45.4	-	38.8	43.4	-					<0.5	mg/kg	NONE/NONE
Total Cyanide #	<0.5	<0.5	-	<0.5	11.9	-					<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	1.68	0.29	-	0.36	15.63	-					<0.02	%	TM21/PM24
Sulphide	<10	<10	-	<10	<10	-					<10	mg/kg	TM106/PM119
Elemental Sulphur	11	4	-	34	474	-					<1	mg/kg	TM108/PM114
pH #	9.24	12.26	10.35	9.67	8.18	9.25					<0.01	pH units	TM73/PM11
Mass of raw test portion	0.0995	0.1128	-	0.1159	0.1218	-						kg	NONE/PM17
Mass of dried test portion	0.09	0.09	-	0.09	0.09	-						kg	NONE/PM17

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7329

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	9-10	13-14	17-18							LOD/LOR	Units	Method No.
Sample ID	BH2	BH4	BH4	BH23									
Depth	1.00	1.00	3.00	1.00									
COC No / misc													
Containers	V J	V J	V J	V J									
Sample Date	<>	<>	<>	<>									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	21/04/2017	21/04/2017	21/04/2017	21/04/2017									
Dissolved Antimony #	0.002	<0.002	0.007	0.005							<0.002	mg/l	TM30/PM17
Dissolved Antimony (A10) #	<0.02	<0.02	0.07	0.05							<0.02	mg/kg	TM30/PM17
Dissolved Arsenic #	0.0103	<0.0025	0.0247	<0.0025							<0.0025	mg/l	TM30/PM17
Dissolved Arsenic (A10) #	0.103	<0.025	0.247	<0.025							<0.025	mg/kg	TM30/PM17
Dissolved Barium #	<0.003	0.077	<0.003	0.050							<0.003	mg/l	TM30/PM17
Dissolved Barium (A10) #	<0.03	0.77	<0.03	0.50							<0.03	mg/kg	TM30/PM17
Dissolved Boron #	<0.012	<0.012	<0.012	0.017							<0.012	mg/l	TM30/PM17
Dissolved Boron (A10) #	<0.12	<0.12	<0.12	0.17							<0.12	mg/kg	TM30/PM17
Dissolved Cadmium #	<0.0005	<0.0005	<0.0005	<0.0005							<0.0005	mg/l	TM30/PM17
Dissolved Cadmium (A10) #	<0.005	<0.005	<0.005	<0.005							<0.005	mg/kg	TM30/PM17
Dissolved Chromium #	<0.0015	0.0315	<0.0015	0.0072							<0.0015	mg/l	TM30/PM17
Dissolved Chromium (A10) #	<0.015	0.315	<0.015	0.072							<0.015	mg/kg	TM30/PM17
Dissolved Copper #	<0.007	0.075	<0.007	<0.007							<0.007	mg/l	TM30/PM17
Dissolved Copper (A10) #	<0.07	0.75	<0.07	<0.07							<0.07	mg/kg	TM30/PM17
Dissolved Lead #	<0.005	<0.005	<0.005	<0.005							<0.005	mg/l	TM30/PM17
Dissolved Lead (A10) #	<0.05	<0.05	<0.05	<0.05							<0.05	mg/kg	TM30/PM17
Dissolved Molybdenum #	0.003	0.020	0.011	0.017							<0.002	mg/l	TM30/PM17
Dissolved Molybdenum (A10) #	0.03	0.20	0.11	0.17							<0.02	mg/kg	TM30/PM17
Dissolved Nickel #	<0.002	0.010	0.003	<0.002							<0.002	mg/l	TM30/PM17
Dissolved Nickel (A10) #	<0.02	0.10	0.03	<0.02							<0.02	mg/kg	TM30/PM17
Dissolved Selenium #	<0.003	<0.003	<0.003	<0.003							<0.003	mg/l	TM30/PM17
Dissolved Selenium (A10) #	<0.03	<0.03	<0.03	<0.03							<0.03	mg/kg	TM30/PM17
Dissolved Zinc #	0.004	<0.003	0.005	0.009							<0.003	mg/l	TM30/PM17
Dissolved Zinc (A10) #	0.04	<0.03	0.05	0.09							<0.03	mg/kg	TM30/PM17
Mercury Dissolved by CVAF #	0.00090	<0.00001	0.00027	0.00047							<0.00001	mg/l	TM61/PM38
Mercury Dissolved by CVAF #	0.0090	<0.0001	0.0027	0.0047							<0.0001	mg/kg	TM61/PM38
Phenol	<0.01	<0.01	<0.01	<0.01							<0.01	mg/l	TM26/PM0
Phenol	<0.1	<0.1	<0.1	<0.1							<0.1	mg/kg	TM26/PM0
Fluoride	<0.3	<0.3	<0.3	0.6							<0.3	mg/l	TM173/PM0
Fluoride	<3	<3	<3	6							<3	mg/kg	TM173/PM0
Sulphate as SO4 #	1.26	11.07	10.99	38.27							<0.05	mg/l	TM38/PM0
Sulphate as SO4 #	12.6	110.7	109.9	382.5							<0.5	mg/kg	TM38/PM0
Chloride #	0.5	5.5	1.5	0.9							<0.3	mg/l	TM38/PM0
Chloride #	5	55	15	9							<3	mg/kg	TM38/PM0
Ammoniacal Nitrogen as N #	0.03	0.29	<0.03	<0.03							<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	<0.3	2.9	<0.3	<0.3							<0.3	mg/kg	TM38/PM0
Dissolved Organic Carbon	5	10	5	4							<2	mg/l	TM60/PM0
Dissolved Organic Carbon	50	100	50	40							<20	mg/kg	TM60/PM0
Total Dissolved Solids #	65	384	76	196							<35	mg/l	TM20/PM0
Total Dissolved Solids #	650	3841	760	1959							<350	mg/kg	TM20/PM0

Please see attached notes for all abbreviations and acronyms

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	90.3
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7329**			
Sample No	**2**			
Client Sample No	**BH2**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	1.68	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	0.50	-	-	-
PAH Sum of 17 (mg/kg)	0.95	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.103	0.5	2	25
Barium	<0.03	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0090	0.01	0.2	2
Molybdenum	0.03	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.04	4	50	200
Chloride	5	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	12.6	1000	20000	50000
Total Dissolved Solids	650	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	50	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	79.5
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.75

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7329**			
Sample No	**10**			
Client Sample No	**BH4**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.29	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	1.20	-	-	-
PAH Sum of 17 (mg/kg)	2.55	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.77	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	0.315	0.5	10	70
Copper	0.75	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.20	0.5	10	30
Nickel	0.10	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	55	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	110.7	1000	20000	50000
Total Dissolved Solids	3841	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	100	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	77.4
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.89

JEFL Job No	**17/7329**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**14**			
Client Sample No	**BH4**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**3.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.36	3	5	6
Sum of BTEX (mg/kg)	0.058	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	0.58	-	-	-
PAH Sum of 17 (mg/kg)	1.16	100	-	-
Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.247	0.5	2	25
Barium	<0.03	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0027	0.01	0.2	2
Molybdenum	0.11	0.5	10	30
Nickel	0.03	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.07	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.05	4	50	200
Chloride	15	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	109.9	1000	20000	50000
Total Dissolved Solids	760	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	50	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	74.0
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7329**			
Sample No	**18**			
Client Sample No	**BH23**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	15.63	3	5	6
Sum of BTEX (mg/kg)	<0.250	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	19.61	-	-	-
PAH Sum of 17 (mg/kg)	36.71	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.50	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	0.072	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0047	0.01	0.2	2
Molybdenum	0.17	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.05	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.09	4	50	200
Chloride	9	800	15000	25000
Fluoride	6	10	150	500
Sulphate as SO4	382.5	1000	20000	50000
Total Dissolved Solids	1959	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

Client Name: IGSL **Matrix : Solid**
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	EPH Interpretation
17/7329	1	BH2	1.00	1-2	No interpretation possible
17/7329	1	BH4	1.00	9-10	No interpretation possible
17/7329	1	BH4	3.00	13-14	No interpretation possible
17/7329	1	BH23	1.00	17-18	PAH's

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/7329	1	BH2	1.00	2	25/04/2017	**Mass of Dry Sample**	46.1 (g)
					28/04/2017	**General Description (Bulk Analysis)**	Sand/Stones
					28/04/2017	**Asbestos Fibres**	NAD
					28/04/2017	**Asbestos Fibres (2)**	NAD
					28/04/2017	**Asbestos ACM**	NAD
					28/04/2017	**Asbestos ACM (2)**	NAD
					28/04/2017	**Asbestos Type**	NAD
					28/04/2017	**Asbestos Type (2)**	NAD
					28/04/2017	**Asbestos Level Screen**	NAD
17/7329	1	BH4	1.00	10	25/04/2017	**Mass of Dry Sample**	44.3 (g)
					28/04/2017	**General Description (Bulk Analysis)**	Soil/Stones
					28/04/2017	**Asbestos Fibres**	NAD
					28/04/2017	**Asbestos Fibres (2)**	NAD
					28/04/2017	**Asbestos ACM**	NAD
					28/04/2017	**Asbestos ACM (2)**	NAD
					28/04/2017	**Asbestos Type**	NAD
					28/04/2017	**Asbestos Type (2)**	NAD
					28/04/2017	**Asbestos Level Screen**	NAD
17/7329	1	BH4	3.00	14	25/04/2017	**Mass of Dry Sample**	41.2 (g)
					28/04/2017	**General Description (Bulk Analysis)**	Sand/Stones
					28/04/2017	**Asbestos Fibres**	NAD
					28/04/2017	**Asbestos Fibres (2)**	NAD
					28/04/2017	**Asbestos ACM**	NAD
					28/04/2017	**Asbestos ACM (2)**	NAD
					28/04/2017	**Asbestos Type**	NAD
					28/04/2017	**Asbestos Type (2)**	NAD
					28/04/2017	**Asbestos Level Screen**	NAD
17/7329	1	BH23	1.00	18	25/04/2017	**Mass of Dry Sample**	43.1 (g)
					28/04/2017	**General Description (Bulk Analysis)**	Soil/Stones
					28/04/2017	**Asbestos Fibres**	NAD
					28/04/2017	**Asbestos Fibres (2)**	NAD
					28/04/2017	**Asbestos ACM**	NAD
					28/04/2017	**Asbestos ACM (2)**	NAD
					28/04/2017	**Asbestos Type**	NAD
					28/04/2017	**Asbestos Type (2)**	NAD
					28/04/2017	**Asbestos Level Screen**	NAD

Client Name: IGSL

Matrix : Solid

Reference:

Location: Howth

Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
17/7329	1	BH2	1.00	1-2	All analyses	No sampling date given
17/7329	1	BH2	1.00	1-2	GRO	Solid Samples were received at a temperature above 9°C.
17/7329	1	BH4	1.00	9-10	All analyses	No sampling date given
17/7329	1	BH4	1.00	9-10	GRO	Solid Samples were received at a temperature above 9°C.
17/7329	1	BH4	2.00	11-12	All analyses	No sampling date given
17/7329	1	BH4	3.00	13-14	All analyses	No sampling date given
17/7329	1	BH4	3.00	13-14	GRO	Solid Samples were received at a temperature above 9°C.
17/7329	1	BH23	1.00	17-18	All analyses	No sampling date given
17/7329	1	BH23	1.00	17-18	GRO	Solid Samples were received at a temperature above 9°C.
17/7329	1	BH23	4.00	23-24	All analyses	No sampling date given

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

Please include all sections of this report if it is reproduced

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/7329

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x10 Dilution
AB	x20 Dilution

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

JE Job No: 17/7329

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	Yes
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes

JE Job No: 17/7329

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM20	Modified BS 1377-3: 1990/USEPA 160.3 Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.	Yes		AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.	Yes		AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.	Yes		AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

JE Job No: 17/7329

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	Dried and ground solid sample is boiled with dilute hydrochloric acid, the resulting liquor is then analysed.	Yes		AD	Yes
TM60	Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR).	PM0	No preparation is required.			AR	Yes
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No

JE Job No: 17/7329

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes		AR	Yes
TM106	Determination of Sulphide by Skalar Continuous Flow Analyser	PM119	As received solid samples are extracted with 1M NaOH by orbital shaker for Sulphide and Thiocyanate analysis.			AR	Yes
TM108	Determination of Elemental Sulphur by Reversed Phase High Performance Liquid Chromatography with Ultra Violet spectroscopy.	PM114	End over end extraction of dried and crushed soil samples for organic analysis. The solvent mix varies depending on analysis required			AD	Yes
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.			AR	Yes
NONE	No Method Code	NONE	No Method Code			AR	Yes
NONE	No Method Code	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.			AR	
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.			AR	

Appendix - Methods used for WAC (2003/33/EC)

Leachate tests	
10l/kg; 4mm	I.S. EN 12457-2:2002 Specified particle size; water added to L/S ratio; capped; agitated for 24 ± 0.5 hours; eluate settled and filtered over 0.45 µm membrane filter.
Eluate analysis	
As	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Ba	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cd	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cr total	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cu	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Hg	I.S. EN 13370 rec. EN 1483 (CVAAS)
Mo	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Ni	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Pb	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Sb	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Se	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Zn	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Chloride	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Fluoride	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Sulphate	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Phenol index	I.S. EN 13370 rec. ISO 6439 (4-Aminoantipyrine spectrometic methods after distillation)* (BY HPLC - Jones Env)
DOC	I.S. EN 1484
TDS	I.S. EN 15216
Compositional analysis	
TOC	I.S. EN 13137 Method B: carbonates removed with acid; TOC by combustion.
BTEX	GC-FID
PCB7**	I.S. EN 15308 analysis by GC-ECD.
Mineral oil	I.S. EN 14039 C10 to C40 analysis by GC-FID.
PAH17***	I.S. EN 15527 PAH17 analysis by GC-MS
Metals	I.S. EN 13657 - Aqua regia digestion: EN ISO 11885 (ICP-OES)
Other	
Dry matter	I.S. EN 14346 sample is dried to a constant mass in an oven at 105 ± 3 °C; Method B Water content by direct Karl-Fischer-titration and either volumetric or coulometric detection.
LOI	I.S. EN 15169 Difference in mass after heating in a furnace up to 550 ± 25 °C.
ANC	CEN/TS 15364 Determined by amounts of acid or base needed to cover the pH range

Notes:

*If not suitable due to LOD, precision, etc., any other suitable method can be used, e.g. AFS, ICP-MS

**PCB-28, PCB-52, PCB-101, PCB-118, PCB-138, PCB-153 and PCB-180

***Naphthalene, Acenaphthylene, Acenaphthene, Anthracene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(g,h,i)perylene, Benzo(a)pyrene, Chrysene, Coronene, Dibenzo(a,h)anthracene, Fluorene, Fluoranthene, Indeno(1,2,3-c,d)pyrene, Phenanthrene and Pyrene.

Exova Jones Environmental

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IGSL
Unit F
M7 Business Park
Naas
Co Kildare
Ireland

Attention :	Darren Keogh
Date :	3rd May, 2017
Your reference :	
Our reference :	Test Report 17/6349 Batch 1
Location :	Howth
Date samples received :	31st March, 2017
Status :	Final report
Issue :	2

Twenty six samples were received for analysis on 31st March, 2017 of which twenty one were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Where Waste Acceptance Criteria Suite (EC Decision of 19 December 2002 (2003/33/EC)) has been requested, all analyses have been performed using the relevant EN methods where they exist.

Compiled By:

Phil Sommerton BSc
Project Manager

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/6349

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-6	7-8	11-12	13-14	15-16	17-18	19-20	23-24	25-26	LOD/LOR	Units	Method No.
Sample ID	TP102	TP102	TP102	TP102	TP103	TP103	TP103	TP104	TP105	TP105			
Depth	0.40	0.80	1.50	4.30	0.50	2.50	3.50	2.20	0.70	1.30			
COC No / misc	]	]	]	]	]	]	]	]	]	]			
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017			
Antimony	4	3	2	1	3	2	1	3	2	4	<1	mg/kg	TM30/PM15
Antimony	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Arsenic #	11.6	19.7	10.0	10.2	33.7	17.4	12.5	39.0	13.9	61.1	<0.5	mg/kg	TM30/PM15
Arsenic	-	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	TM30/PM62
Barium #	132	83	49	55	201	77	72	70	117	65	<1	mg/kg	TM30/PM15
Barium	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Cadmium #	0.3	0.4	0.5	0.7	0.3	0.3	0.2	0.7	0.5	0.8	<0.1	mg/kg	TM30/PM15
Cadmium	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM62
Chromium #	152.1	68.7	67.7	60.3	71.5	64.6	59.7	78.0	80.0	164.3	<0.5	mg/kg	TM30/PM15
Chromium	-	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	TM30/PM62
Copper #	80	30	17	19	105	43	29	95	55	24	<1	mg/kg	TM30/PM15
Copper	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Lead #	247	63	13	14	223	135	94	369	96	74	<5	mg/kg	TM30/PM15
Lead	-	-	-	-	-	-	-	-	-	-	<5	mg/kg	TM30/PM62
Mercury #	<0.1	<0.1	<0.1	<0.1	0.5	<0.1	<0.1	0.8	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Mercury	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM62
Molybdenum #	4.6	5.5	4.8	4.6	4.6	5.7	4.3	7.4	5.7	1.3	<0.1	mg/kg	TM30/PM15
Molybdenum	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM62
Nickel #	90.8	41.6	28.3	41.5	27.1	28.2	26.5	30.3	24.3	55.7	<0.7	mg/kg	TM30/PM15
Nickel	-	-	-	-	-	-	-	-	-	-	<0.7	mg/kg	TM30/PM62
Selenium #	2	2	1	1	<1	1	1	3	1	2	<1	mg/kg	TM30/PM15
Selenium	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Total Sulphate as SO4 #	579	289	125	170	675	1212	3479	4448	1485	300	<50	mg/kg	TM50/PM29
Total Sulphate as SO4	-	-	-	-	-	-	-	-	-	-	<50	mg/kg	TM50/PM29
Water Soluble Boron #	0.5	0.8	0.4	0.3	0.6	3.5	5.5	5.3	0.5	1.0	<0.1	mg/kg	TM74/PM32
Water Soluble Boron	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM74/PM61
Zinc #	118	77	65	47	118	155	102	336	95	146	<5	mg/kg	TM30/PM15
Zinc	-	-	-	-	-	-	-	-	-	-	<5	mg/kg	TM30/PM62

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/6349

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-6	7-8	11-12	13-14	15-16	17-18	19-20	23-24	25-26	LOD/LOR	Units	Method No.
Sample ID	TP102	TP102	TP102	TP102	TP103	TP103	TP103	TP104	TP105	TP105			
Depth	0.40	0.80	1.50	4.30	0.50	2.50	3.50	2.20	0.70	1.30			
COC No / misc	]	]	]	]	]	]	]	]	]	]			
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017			
PAH MS													
Naphthalene #	<0.04	<0.04	<0.04	<0.04	0.21	0.23	0.43	0.40	0.07	0.18	<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.05	0.04	<0.03	<0.03	0.35	0.66	1.07	<0.03	0.09	0.45	<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	0.17	1.07	<0.05	0.54	<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.04	<0.04	<0.04	0.06	0.43	0.44	1.34	0.07	0.79	<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.13	0.31	<0.03	<0.03	0.62	3.88	4.75	2.13	0.51	6.97	<0.03	mg/kg	TM4/PM8
Anthracene #	0.07	0.12	<0.04	<0.04	0.46	1.43	2.74	0.47	0.20	2.88	<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.27	0.61	<0.03	<0.03	2.84	6.33	11.10	1.16	0.97	14.21	<0.03	mg/kg	TM4/PM8
Pyrene #	0.25	0.66	<0.03	<0.03	2.85	5.56	8.74	1.07	0.89	11.59	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.18	0.87	<0.06	<0.06	2.44	3.64	8.23	0.63	0.78	7.95	<0.06	mg/kg	TM4/PM8
Chrysene #	0.19	0.91	<0.02	<0.02	1.80	3.38	5.80	0.69	0.61	6.81	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	0.36	1.37	<0.07	<0.07	3.15	5.51	9.64	1.26	1.09	11.46	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.16	0.58	<0.04	<0.04	1.86	3.35	5.54	0.76	0.58	6.41	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.12	0.31	<0.04	<0.04	0.98	1.79	2.61	0.47	0.35	3.83	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	0.08	<0.04	<0.04	0.28	0.54	0.95	0.17	0.11	0.87	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.15	0.39	<0.04	<0.04	1.09	1.82	2.35	0.64	0.40	3.81	<0.04	mg/kg	TM4/PM8
Coronene	<0.04	0.08	<0.04	<0.04	0.20	0.32	0.52	0.14	0.10	0.79	<0.04	mg/kg	TM4/PM8
PAH 6 Total #	1.06	3.26	<0.22	<0.22	9.92	18.80	31.24	4.29	3.39	39.72	<0.22	mg/kg	TM4/PM8
PAH 17 Total	1.93	6.33	<0.64	<0.64	19.19	38.98	65.08	12.40	6.82	79.54	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.26	0.99	<0.05	<0.05	2.27	3.97	6.94	0.91	0.78	8.25	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.10	0.38	<0.02	<0.02	0.88	1.54	2.70	0.35	0.31	3.21	<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	<1	<1	<1	<1	<1	1	3	<1	<1	3	<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	106	106	106	103	106	100	101	95	106	103	<0	%	TM4/PM8
Mineral Oil (C10-C40)	70	<30	<30	<30	<30	<30	<30	91	<30	136	<30	mg/kg	TM5/PM16
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	0.2	<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	1.5	<0.2	<0.2	mg/kg	TM5/PM16
>C12-C16 #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM16
>C16-C21 #	9	<7	<7	<7	<7	<7	<7	30	<7	12	<7	mg/kg	TM5/PM16
>C21-C35 #	61	<7	<7	<7	<7	<7	<7	61	9	108	<7	mg/kg	TM5/PM16
>C35-C40	<7	<7	<7	<7	<7	<7	<7	<7	<7	16	<7	mg/kg	TM5/PM16
Total aliphatics C5-40	70	<26	<26	<26	<26	<26	<26	91	<26	136	<26	mg/kg	TM5/TM36/PM12/PM16
>C6-C10	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	0.2	<0.1	mg/kg	TM36/PM12
>C10-C25	20	<10	<10	<10	<10	<10	<10	41	<10	31	<10	mg/kg	TM5/PM16
>C25-C35	43	<10	<10	<10	<10	<10	<10	46	<10	84	<10	mg/kg	TM5/PM16

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/6349

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-6	7-8	11-12	13-14	15-16	17-18	19-20	23-24	25-26	LOD/LOR	Units	Method No.
Sample ID	TP102	TP102	TP102	TP102	TP103	TP103	TP103	TP104	TP105	TP105			
Depth	0.40	0.80	1.50	4.30	0.50	2.50	3.50	2.20	0.70	1.30			
COC No / misc	]	]	]	]	]	]	]	]	]	]			
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017			
TPH CWG													
Aromatics													
>C5-EC7 #	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	0.3	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.7	<0.2	<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	<4	<4	<4	<4	9	7	<4	<4	<4	<4	mg/kg	TM5/PM16
>EC16-EC21 #	<7	<7	<7	<7	<7	106	95	31	<7	49	<7	mg/kg	TM5/PM16
>EC21-EC35 #	49	<7	<7	<7	37	328	294	169	45	246	<7	mg/kg	TM5/PM16
>EC35-EC40	<7	<7	<7	<7	<7	54	44	37	<7	46	<7	mg/kg	TM5/PM16
Total aromatics C5-40	49	<26	<26	<26	37	497	440	237	46	341	<26	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-40)	119	<52	<52	<52	<52	497	440	328	<52	477	<52	mg/kg	TM5/TM36/PM12/PM16
>EC6-EC10 #	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	0.3	<0.1	mg/kg	TM36/PM12
>EC10-EC25	20	<10	<10	<10	18	162	168	64	<10	106	<10	mg/kg	TM5/PM16
>EC25-EC35	54	<10	<10	<10	40	206	193	132	39	858	<10	mg/kg	TM5/PM16
MTBE #	<5 SV	<5	<5	<5	<5	<5	<5	<5 SV	<5	<5	<5	ug/kg	TM31/PM12
Benzene #	<5 SV	<5	<5	<5	<5	<5	<5	<5 SV	<5	<5	<5	ug/kg	TM31/PM12
Toluene #	<5 SV	<5	<5	<5	<5	<5	<5	<5 SV	<5	<5	<5	ug/kg	TM31/PM12
Ethylbenzene #	<5 SV	<5	<5	<5	<5	<5	<5	<5 SV	<5	58	<5	ug/kg	TM31/PM12
m/p-Xylene #	<5 SV	<5	<5	<5	<5	<5	<5	<5 SV	40	188	<5	ug/kg	TM31/PM12
o-Xylene #	<5 SV	<5	<5	<5	<5	<5	<5	<5 SV	<5	43	<5	ug/kg	TM31/PM12
PCB 28 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 52 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 101 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 118 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 138 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 153 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 180 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
Total 7 PCBs #	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	ug/kg	TM17/PM8
Phenol #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	TM26/PM21
Natural Moisture Content	13.2	16.7	10.3	11.8	15.1	37.3	44.1	126.5	10.2	8.5	<0.1	%	PM4/PM0
Natural Moisture Content	-	-	-	-	-	-	-	-	-	-	<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	11.7	14.3	9.4	10.6	13.1	27.2	30.6	55.8	9.2	7.8	<0.1	%	PM4/PM0
Hexavalent Chromium #	1.4	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	-	-	0.0131	-	-	0.2186	-	-	-	-	<0.0015	g/l	TM38/PM20
Chromium III	150.7	68.7	67.7	60.3	71.5	64.6	59.7	78.0	80.0	164.3	<0.5	mg/kg	NONE/NONE
Chromium III	-	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	NONE/NONE
Total Cyanide #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.0	<0.5	<0.5	<0.5	mg/kg	TM89/PM45

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/6349

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-6	7-8	11-12	13-14	15-16	17-18	19-20	23-24	25-26	LOD/LOR	Units	Method No.
Sample ID	TP102	TP102	TP102	TP102	TP103	TP103	TP103	TP104	TP105	TP105			
Depth	0.40	0.80	1.50	4.30	0.50	2.50	3.50	2.20	0.70	1.30			
COC No / misc	]	]	]	]	]	]	]	]	]	]			
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017			
Total Organic Carbon #	4.58	1.96	0.05	0.08	8.77	12.97	11.34	25.91	3.57	0.47	<0.02	%	TM21/PM24
Sulphide	<10	<10	<10	<10	<10	<10	92	<10	<10	<10	<10	mg/kg	TM106/PM45
Elemental Sulphur	1	3	<1	2	34	170	2287	106	12	19	<1	mg/kg	TM108/PM114
Elemental Sulphur	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM108/PM8
pH #	9.06	8.61	8.63	8.66	8.42	7.93	8.12	7.42	8.13	8.26	<0.01	pH units	TM73/PM11
Mass of raw test portion	0.1026	0.1069	0.1045	0.1141	0.1039	0.1285	0.129	0.1263	0.1006	0.0991		kg	NONE/PM17
Mass of dried test portion	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09		kg	NONE/PM17

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/6349

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	27-28	29-30	31-32	33-34	37-38	39-40	41-42	43-44	45-46	49-50	LOD/LOR	Units	Method No.
Sample ID	TP105	TP106	TP106	TP108	TP108	TP108	TP109	TP109	TP109	TP115			
Depth	2.20	0.90	2.10	1.20	2.50	3.70	0.60	1.70	2.90	0.80			
COC No / misc	]	]	]	]	]	]	]	]	]	]			
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017			
Antimony	3	5	9	4	3	2	-	5	<1	2	<1	mg/kg	TM30/PM15
Antimony	-	-	-	-	-	-	4	-	-	-	<1	mg/kg	TM30/PM62
Arsenic #	17.5	18.2	34.3	52.2	16.2	14.5	-	10.9	17.8	19.3	<0.5	mg/kg	TM30/PM15
Arsenic	-	-	-	-	-	-	18.6	-	-	-	<0.5	mg/kg	TM30/PM62
Barium #	140	416	458	126	74	60	-	195	298	106	<1	mg/kg	TM30/PM15
Barium	-	-	-	-	-	-	142	-	-	-	<1	mg/kg	TM30/PM62
Cadmium #	0.4	0.4	0.3	0.6	0.6	0.5	-	0.5	0.3	0.4	<0.1	mg/kg	TM30/PM15
Cadmium	-	-	-	-	-	-	1.0	-	-	-	<0.1	mg/kg	TM30/PM62
Chromium #	57.0	57.5	111.5	76.8	70.9	64.5	-	126.8	51.9	56.0	<0.5	mg/kg	TM30/PM15
Chromium	-	-	-	-	-	-	20.3	-	-	-	<0.5	mg/kg	TM30/PM62
Copper #	45	176	934$_{AA}$	64	28	28	-	49	29	36	<1	mg/kg	TM30/PM15
Copper	-	-	-	-	-	-	95	-	-	-	<1	mg/kg	TM30/PM62
Lead #	99	679	737	125	37	43	-	250	207	77	<5	mg/kg	TM30/PM15
Lead	-	-	-	-	-	-	138	-	-	-	<5	mg/kg	TM30/PM62
Mercury #	<0.1	1.0	0.5	<0.1	<0.1	<0.1	-	<0.1	0.4	<0.1	<0.1	mg/kg	TM30/PM15
Mercury	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM30/PM62
Molybdenum #	2.4	6.8	8.4	7.3	3.9	3.1	-	3.3	2.9	3.6	<0.1	mg/kg	TM30/PM15
Molybdenum	-	-	-	-	-	-	2.2	-	-	-	<0.1	mg/kg	TM30/PM62
Nickel #	33.6	48.1	60.9	45.2	66.5	32.7	-	55.0	26.9	22.5	<0.7	mg/kg	TM30/PM15
Nickel	-	-	-	-	-	-	39.1	-	-	-	<0.7	mg/kg	TM30/PM62
Selenium #	1	1	1	1	1	2	-	2	1	1	<1	mg/kg	TM30/PM15
Selenium	-	-	-	-	-	-	1	-	-	-	<1	mg/kg	TM30/PM62
Total Sulphate as SO4 #	980	863	434	315	266	780	-	982	1499	1235	<50	mg/kg	TM50/PM29
Total Sulphate as SO4	-	-	-	-	-	-	1676	-	-	-	<50	mg/kg	TM50/PM29
Water Soluble Boron #	1.0	1.3	0.7	0.5	0.9	1.3	-	4.3	4.3	1.8	<0.1	mg/kg	TM74/PM32
Water Soluble Boron	-	-	-	-	-	-	2.9	-	-	-	<0.1	mg/kg	TM74/PM61
Zinc #	98	211	236	200	140	79	-	216	102	200	<5	mg/kg	TM30/PM15
Zinc	-	-	-	-	-	-	275	-	-	-	<5	mg/kg	TM30/PM62

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/6349

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	27-28	29-30	31-32	33-34	37-38	39-40	41-42	43-44	45-46	49-50	LOD/LOR	Units	Method No.
Sample ID	TP105	TP106	TP106	TP108	TP108	TP108	TP109	TP109	TP109	TP115			
Depth	2.20	0.90	2.10	1.20	2.50	3.70	0.60	1.70	2.90	0.80			
COC No / misc	]	]	]	]	]	]	]	]	]	]			
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017			
PAH MS													
Naphthalene #	<0.04	0.38	0.13	0.17	<0.04	<0.04	1.29	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	0.90	0.24	2.30	<0.03	<0.03	1.26	0.15	0.07	0.08	<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	0.94	0.07	0.12	<0.05	<0.05	19.72	<0.05	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	2.03	0.10	0.17	<0.04	<0.04	15.95	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.16	17.00	0.86	1.02	<0.03	<0.03	29.76 ++	0.19	0.24	0.25	<0.03	mg/kg	TM4/PM8
Anthracene #	0.09	6.04	0.45	0.91	<0.04	<0.04	14.17	0.15	0.11	0.14	<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.32	21.84	2.11	3.17	0.04	<0.03	55.94 ++	0.65	0.65	0.76	<0.03	mg/kg	TM4/PM8
Pyrene #	0.28	17.12	1.98	3.08	<0.03	<0.03	41.96 ++	0.70	0.57	0.72	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.27	11.90	1.31	4.23	<0.06	<0.06	23.80	0.49	0.49	0.48	<0.06	mg/kg	TM4/PM8
Chrysene #	0.18	10.29	1.35	3.05	0.02	<0.02	20.24	0.49	0.32	0.40	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	0.34	16.14	2.57	10.52	<0.07	<0.07	37.74	1.13	0.63	1.03	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.20	9.16	1.50	6.39	<0.04	<0.04	21.53	0.65	0.37	0.56	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.13	4.96	0.99	4.60	<0.04	<0.04	12.87	0.40	0.22	0.38	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	1.48	0.32	1.20	<0.04	<0.04	3.21	0.15	0.07	0.07	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.12	4.77	1.12	5.08	<0.04	<0.04	11.54	0.43	0.20	0.35	<0.04	mg/kg	TM4/PM8
Coronene	<0.04	0.96	0.26	1.20	<0.04	<0.04	2.02	0.13	<0.04	0.09	<0.04	mg/kg	TM4/PM8
PAH 6 Total #	1.11	56.87	8.29	29.76	<0.22	<0.22	139.62	3.26	2.07	3.08	<0.22	mg/kg	TM4/PM8
PAH 17 Total	2.09	125.91	15.36	47.21	<0.64	<0.64	313.00	5.71	3.94	5.31	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.24	11.62	1.85	7.57	<0.05	<0.05	27.17	0.81	0.45	0.74	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.10	4.52	0.72	2.95	<0.02	<0.02	10.57	0.32	0.18	0.29	<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	<1	5	<1	2	<1	<1	10	<1	<1	<1	<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	109	98	97	104	99	102	98	98	106	106	<0	%	TM4/PM8
Mineral Oil (C10-C40)	48	39	369	<30	<30	<30	1389	36	<30	289	<30	mg/kg	TM5/PM16
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10	0.7	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 #	3.8	<0.2	<0.2	<0.2	<0.2	<0.2	2.1	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>C12-C16 #	<4	<4	<4	<4	<4	<4	46	<4	<4	23	<4	mg/kg	TM5/PM16
>C16-C21 #	<7	<7	40	<7	<7	<7	150	<7	<7	79	<7	mg/kg	TM5/PM16
>C21-C35 #	34	39	267	18	<7	<7	1058	36	<7	145	<7	mg/kg	TM5/PM16
>C35-C40	10	<7	62	<7	<7	<7	133	<7	<7	42	<7	mg/kg	TM5/PM16
Total aliphatics C5-40	49	39	369	<26	<26	<26	1389	36	<26	289	<26	mg/kg	TM5/TM36/PM12/PM16
>C6-C10	0.7	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C25	<10	<10	73	<10	<10	<10	386	<10	<10	109	<10	mg/kg	TM5/PM16
>C25-C35	37	28	206	16	<10	<10	815	39	<10	99	<10	mg/kg	TM5/PM16

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/6349

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	27-28	29-30	31-32	33-34	37-38	39-40	41-42	43-44	45-46	49-50	LOD/LOR	Units	Method No.
Sample ID	TP105	TP106	TP106	TP108	TP108	TP108	TP109	TP109	TP109	TP115			
Depth	2.20	0.90	2.10	1.20	2.50	3.70	0.60	1.70	2.90	0.80			
COC No / misc	]	]	]	]	]	]	]	]	]	]			
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017			
TPH CWG													
Aromatics													
>C5-EC7 #	<0.1	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	0.1	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	2.9	<0.2	<0.2	<0.2	<0.2	<0.2	3.9	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	<4	12	<4	<4	<4	121	<4	<4	6	<4	mg/kg	TM5/PM16
>EC16-EC21 #	<7	27	95	29	<7	<7	553	13	18	44	<7	mg/kg	TM5/PM16
>EC21-EC35 #	61	136	510	298	<7	<7	1776	181	100	258	<7	mg/kg	TM5/PM16
>EC35-EC40	20	31	145	73	<7	<7	413	102	48	96	<7	mg/kg	TM5/PM16
Total aromatics C5-40	84	194	762	400	<26	<26	2867	296	166	404	<26	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-40)	133	233	1131	400	<52	<52	4256	332	166	693	<52	mg/kg	TM5/TM36/PM12/PM16
>EC6-EC10 #	0.1	<0.1 SV	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC25	29	46	174	88	<10	<10	1005	31	44	70	<10	mg/kg	TM5/PM16
>EC25-EC35	47	101	393	255	<10	<10	1330	156	90	205	<10	mg/kg	TM5/PM16
MTBE #	<5	<5 SV	<5 SV	<5	<5	<5	<5	<5 SV	<5	<5	<5	ug/kg	TM31/PM12
Benzene #	<5	<5 SV	<5 SV	<5	<5	<5	<5	<5 SV	<5	<5	<5	ug/kg	TM31/PM12
Toluene #	<5	<5 SV	<5 SV	<5	<5	<5	<5	<5 SV	<5	<5	<5	ug/kg	TM31/PM12
Ethylbenzene #	13	<5 SV	<5 SV	<5	<5	<5	<5	<5 SV	<5	<5	<5	ug/kg	TM31/PM12
m/p-Xylene #	136	<5 SV	<5 SV	<5	<5	<5	<5	<5 SV	<5	<5	<5	ug/kg	TM31/PM12
o-Xylene #	25	<5 SV	<5 SV	<5	<5	<5	<5	<5 SV	<5	<5	<5	ug/kg	TM31/PM12
PCB 28 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 52 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 101 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 118 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 138 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 153 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 180 #	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
Total 7 PCBs #	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	ug/kg	TM17/PM8
Phenol #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	TM26/PM21
Natural Moisture Content	18.7	19.5	26.8	20.1	14.8	24.3	-	14.7	21.5	14.3	<0.1	%	PM4/PM0
Natural Moisture Content	-	-	-	-	-	-	30.4	-	-	-	<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	15.8	16.3	21.1	16.7	12.9	19.6	-	12.8	17.7	12.5	<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	-	-	-	-	-	-	-	-	-	-	<0.0015	g/l	TM38/PM20
Chromium III	57.0	57.5	111.5	76.8	70.9	64.5	-	126.8	51.9	56.0	<0.5	mg/kg	NONE/NONE
Chromium III	-	-	-	-	-	-	20.3	-	-	-	<0.5	mg/kg	NONE/NONE
Total Cyanide #	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	4.4	0.7	<0.5	<0.5	<0.5	mg/kg	TM89/PM45

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/6349

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	27-28	29-30	31-32	33-34	37-38	39-40	41-42	43-44	45-46	49-50	LOD/LOR	Units	Method No.
Sample ID	TP105	TP106	TP106	TP108	TP108	TP108	TP109	TP109	TP109	TP115			
Depth	2.20	0.90	2.10	1.20	2.50	3.70	0.60	1.70	2.90	0.80			
COC No / misc	]	]	]	]	]	]	]	]	]	]			
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017			
Total Organic Carbon #	2.93	19.53	19.81	5.24	1.15	4.88	NDP	2.31	1.51	3.92	<0.02	%	TM21/PM24
Sulphide	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	mg/kg	TM106/PM45
Elemental Sulphur	145	23	10	27	15	38	-	121	60	84	<1	mg/kg	TM108/PM114
Elemental Sulphur	-	-	-	-	-	-	74	-	-	-	<1	mg/kg	TM108/PM8
pH #	7.88	8.14	8.14	8.32	7.87	7.76	7.87	8.24	8.59	7.95	<0.01	pH units	TM73/PM11
Mass of raw test portion	0.113	0.1141	0.1306	0.1035	0.1085	0.1134	0.1393	0.1533	0.106	0.1047		kg	NONE/PM17
Mass of dried test portion	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09		kg	NONE/PM17

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/6349

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	53-54												
Sample ID	TP115												
Depth	2.80												
COC No / misc	]												
Containers	V J												
Sample Date	31/03/2017												
Sample Type	Soil												
Batch Number	1												
Date of Receipt	31/03/2017												

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
Antimony	6										<1	mg/kg	TM30/PM15
Antimony	-										<1	mg/kg	TM30/PM62
Arsenic #	23.8										<0.5	mg/kg	TM30/PM15
Arsenic	-										<0.5	mg/kg	TM30/PM62
Barium #	177										<1	mg/kg	TM30/PM15
Barium	-										<1	mg/kg	TM30/PM62
Cadmium #	0.4										<0.1	mg/kg	TM30/PM15
Cadmium	-										<0.1	mg/kg	TM30/PM62
Chromium #	56.0										<0.5	mg/kg	TM30/PM15
Chromium	-										<0.5	mg/kg	TM30/PM62
Copper #	103										<1	mg/kg	TM30/PM15
Copper	-										<1	mg/kg	TM30/PM62
Lead #	163										<5	mg/kg	TM30/PM15
Lead	-										<5	mg/kg	TM30/PM62
Mercury #	<0.1										<0.1	mg/kg	TM30/PM15
Mercury	-										<0.1	mg/kg	TM30/PM62
Molybdenum #	3.5										<0.1	mg/kg	TM30/PM15
Molybdenum	-										<0.1	mg/kg	TM30/PM62
Nickel #	22.1										<0.7	mg/kg	TM30/PM15
Nickel	-										<0.7	mg/kg	TM30/PM62
Selenium #	1										<1	mg/kg	TM30/PM15
Selenium	-										<1	mg/kg	TM30/PM62
Total Sulphate as SO4 #	586										<50	mg/kg	TM50/PM29
Total Sulphate as SO4	-										<50	mg/kg	TM50/PM29
Water Soluble Boron #	1.3										<0.1	mg/kg	TM74/PM32
Water Soluble Boron	-										<0.1	mg/kg	TM74/PM61
Zinc #	310										<5	mg/kg	TM30/PM15
Zinc	-										<5	mg/kg	TM30/PM62

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/6349

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	53-54										LOD/LOR	Units	Method No.
Sample ID	TP115												
Depth	2.80												
COC No / misc	]												
Containers	V J												
Sample Date	31/03/2017												
Sample Type	Soil												
Batch Number	1												
Date of Receipt	31/03/2017												
PAH MS													
Naphthalene #	<0.04										<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.12										<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05										<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04										<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.45										<0.03	mg/kg	TM4/PM8
Anthracene #	0.21										<0.04	mg/kg	TM4/PM8
Fluoranthene #	1.57										<0.03	mg/kg	TM4/PM8
Pyrene #	1.53										<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	1.01										<0.06	mg/kg	TM4/PM8
Chrysene #	0.97										<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	1.91										<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	1.09										<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.67										<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.12										<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.61										<0.04	mg/kg	TM4/PM8
Coronene	0.15										<0.04	mg/kg	TM4/PM8
PAH 6 Total #	5.85										<0.22	mg/kg	TM4/PM8
PAH 17 Total	10.41										<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	1.38										<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.53										<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	<1										<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	107										<0	%	TM4/PM8
Mineral Oil (C10-C40)	260										<30	mg/kg	TM5/PM16
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1										<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1										<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1										<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2										<0.2	mg/kg	TM5/PM16
>C12-C16 #	<4										<4	mg/kg	TM5/PM16
>C16-C21 #	<7										<7	mg/kg	TM5/PM16
>C21-C35 #	173										<7	mg/kg	TM5/PM16
>C35-C40	87										<7	mg/kg	TM5/PM16
Total aliphatics C5-40	260										<26	mg/kg	TM5/TM36/PM12/PM16
>C6-C10	<0.1										<0.1	mg/kg	TM36/PM12
>C10-C25	19										<10	mg/kg	TM5/PM16
>C25-C35	148										<10	mg/kg	TM5/PM16

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/6349

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	53-54										LOD/LOR	Units	Method No.
Sample ID	TP115												
Depth	2.80												
COC No / misc	]												
Containers	V J												
Sample Date	31/03/2017												
Sample Type	Soil												
Batch Number	1												
Date of Receipt	31/03/2017												
TPH CWG													
Aromatics													
>C5-EC7 #	<0.1										<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1										<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1										<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2										<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4										<4	mg/kg	TM5/PM16
>EC16-EC21 #	33										<7	mg/kg	TM5/PM16
>EC21-EC35 #	269										<7	mg/kg	TM5/PM16
>EC35-EC40	106										<7	mg/kg	TM5/PM16
Total aromatics C5-40	408										<26	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-40)	668										<52	mg/kg	TM5/TM36/PM12/PM16
>EC6-EC10 #	<0.1										<0.1	mg/kg	TM36/PM12
>EC10-EC25	55										<10	mg/kg	TM5/PM16
>EC25-EC35	204										<10	mg/kg	TM5/PM16
MTBE #	<5										<5	ug/kg	TM31/PM12
Benzene #	<5										<5	ug/kg	TM31/PM12
Toluene #	<5										<5	ug/kg	TM31/PM12
Ethylbenzene #	<5										<5	ug/kg	TM31/PM12
m/p-Xylene #	<5										<5	ug/kg	TM31/PM12
o-Xylene #	<5										<5	ug/kg	TM31/PM12
PCB 28 #	<5										<5	ug/kg	TM17/PM8
PCB 52 #	<5										<5	ug/kg	TM17/PM8
PCB 101 #	<5										<5	ug/kg	TM17/PM8
PCB 118 #	<5										<5	ug/kg	TM17/PM8
PCB 138 #	<5										<5	ug/kg	TM17/PM8
PCB 153 #	<5										<5	ug/kg	TM17/PM8
PCB 180 #	<5										<5	ug/kg	TM17/PM8
Total 7 PCBs #	<35										<35	ug/kg	TM17/PM8
Phenol #	<0.01										<0.01	mg/kg	TM26/PM21
Natural Moisture Content	13.2										<0.1	%	PM4/PM0
Natural Moisture Content	-										<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	11.6										<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3										<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	-										<0.0015	g/l	TM38/PM20
Chromium III	56.0										<0.5	mg/kg	NONE/NONE
Chromium III	-										<0.5	mg/kg	NONE/NONE
Total Cyanide #	<0.5										<0.5	mg/kg	TM89/PM45

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/6349

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	53-54										Please see attached notes for all abbreviations and acronyms		
Sample ID	TP115												
Depth	2.80												
COC No / misc	]												
Containers	V J												
Sample Date	31/03/2017												
Sample Type	Soil												
Batch Number	1										LOD/LOR	Units	Method No.
Date of Receipt	31/03/2017												
Total Organic Carbon #	1.80										<0.02	%	TM21/PM24
Sulphide	<10										<10	mg/kg	TM106/PM45
Elemental Sulphur	20										<1	mg/kg	TM108/PM114
Elemental Sulphur	-										<1	mg/kg	TM108/PM8
pH #	8.00										<0.01	pH units	TM73/PM11
Mass of raw test portion	0.111											kg	NONE/PM17
Mass of dried test portion	0.09											kg	NONE/PM17

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/6349

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-6	7-8	11-12	13-14	15-16	17-18	19-20	23-24	25-26	LOD/LOR	Units	Method No.
Sample ID	TP102	TP102	TP102	TP102	TP103	TP103	TP103	TP104	TP105	TP105			
Depth	0.40	0.80	1.50	4.30	0.50	2.50	3.50	2.20	0.70	1.30			
COC No / misc	]	]	]	]	]	]	]	]	]	]			
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017			
Dissolved Antimony #	<0.002	<0.002	<0.002	0.002	<0.002	<0.002	0.002	<0.002	0.003	0.004	<0.002	mg/l	TM30/PM17
Dissolved Antimony (A10) #	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	0.03	0.04	<0.02	mg/kg	TM30/PM17
Dissolved Arsenic #	0.0116	0.0028	0.0027	0.0041	0.0141	0.0041	<0.0025	<0.0025	0.0040	0.0136	<0.0025	mg/l	TM30/PM17
Dissolved Arsenic (A10) #	0.116	0.028	0.027	0.041	0.141	0.041	<0.025	<0.025	0.040	0.136	<0.025	mg/kg	TM30/PM17
Dissolved Barium #	0.007	0.004	<0.003	<0.003	0.011	0.025	0.006	0.060	0.015	0.019	<0.003	mg/l	TM30/PM17
Dissolved Barium (A10) #	0.07	0.04	<0.03	<0.03	0.11	0.25	0.06	0.60	0.15	0.19	<0.03	mg/kg	TM30/PM17
Dissolved Boron #	<0.012	0.018	0.015	<0.012	<0.012	0.179	0.190	0.068	0.043	0.041	<0.012	mg/l	TM30/PM17
Dissolved Boron (A10) #	<0.12	0.18	0.15	<0.12	<0.12	1.79	1.90	0.68	0.43	0.41	<0.12	mg/kg	TM30/PM17
Dissolved Cadmium #	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	mg/l	TM30/PM17
Dissolved Cadmium (A10) #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	mg/kg	TM30/PM17
Dissolved Chromium #	0.0091	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	mg/l	TM30/PM17
Dissolved Chromium (A10) #	0.091	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	mg/kg	TM30/PM17
Dissolved Copper #	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	0.008	<0.007	mg/l	TM30/PM17
Dissolved Copper (A10) #	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	0.08	<0.07	mg/kg	TM30/PM17
Dissolved Lead #	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	mg/l	TM30/PM17
Dissolved Lead (A10) #	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM30/PM17
Dissolved Molybdenum #	0.003	0.011	0.006	0.010	0.004	0.041	0.052	0.010	0.009	0.008	<0.002	mg/l	TM30/PM17
Dissolved Molybdenum (A10) #	0.03	0.11	0.06	0.10	0.04	0.41	0.52	0.10	0.09	0.08	<0.02	mg/kg	TM30/PM17
Dissolved Nickel #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM30/PM17
Dissolved Nickel (A10) #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	TM30/PM17
Dissolved Selenium #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM30/PM17
Dissolved Selenium (A10) #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM30/PM17
Dissolved Zinc #	<0.003	0.004	0.003	<0.003	<0.003	<0.003	0.003	0.025	0.003	0.004	<0.003	mg/l	TM30/PM17
Dissolved Zinc (A10) #	<0.03	0.04	0.03	<0.03	<0.03	<0.03	<0.03	0.25	<0.03	0.04	<0.03	mg/kg	TM30/PM17
Mercury Dissolved by CVAF #	0.00095	0.00070	0.00006	0.00004	0.00130	0.00007	0.00019	0.00007	0.00011	0.00020	<0.00001	mg/l	TM61/PM38
Mercury Dissolved by CVAF #	0.0095	0.0070	0.0006	0.0004	0.0130	0.0007	0.0019	0.0007	0.0011	0.0020	<0.0001	mg/kg	TM61/PM38
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/l	TM26/PM0
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM26/PM0
Fluoride	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/l	TM173/PM0
Fluoride	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	mg/kg	TM173/PM0
Sulphate as SO4 #	7.75	0.43	2.40	0.57	1.17	17.46	45.59	142.03	20.64	21.99	<0.05	mg/l	TM38/PM0
Sulphate as SO4 #	77.5	4.3	24.0	5.7	11.7	174.6	455.8	1419.9	206.4	220.0	<0.5	mg/kg	TM38/PM0
Chloride #	<0.3	<0.3	<0.3	<0.3	<0.3	10.3	2.2	110.9	4.7	<0.3	<0.3	mg/l	TM38/PM0
Chloride #	<3	<3	<3	<3	<3	103	22	1109	47	<3	<3	mg/kg	TM38/PM0
Ammoniacal Nitrogen as N #	<0.03	0.05	0.04	<0.03	0.03	2.24	3.35	0.45	2.14	1.23	<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	<0.3	0.5	0.4	<0.3	0.3	22.4	33.5	4.5	21.4	12.3	<0.3	mg/kg	TM38/PM0
Dissolved Organic Carbon	3	8	6	3	4	9	18	7	7	8	<2	mg/l	TM60/PM0
Dissolved Organic Carbon	30	80	60	30	40	90	180	70	70	80	<20	mg/kg	TM60/PM0
Total Dissolved Solids #	104	39	39	61	69	155	120	507	58	82	<35	mg/l	TM20/PM0
Total Dissolved Solids #	1040	390	390	610	690	1550	1200	5068	580	820	<350	mg/kg	TM20/PM0

Please see attached notes for all abbreviations and acronyms

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/6349

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	27-28	29-30	31-32	33-34	37-38	39-40	41-42	43-44	45-46	49-50	LOD/LOR	Units	Method No.
Sample ID	TP105	TP106	TP106	TP108	TP108	TP108	TP109	TP109	TP109	TP115			
Depth	2.20	0.90	2.10	1.20	2.50	3.70	0.60	1.70	2.90	0.80			
COC No / misc	]	]	]	]	]	]	]	]	]	]			
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017			
Dissolved Antimony #	0.010	0.004	0.009	<0.002	0.006	0.008	0.019	0.029	0.006	0.008	<0.002	mg/l	TM30/PM17
Dissolved Antimony (A10) #	0.10	0.04	0.09	<0.02	0.06	0.08	0.19	0.29	0.06	0.08	<0.02	mg/kg	TM30/PM17
Dissolved Arsenic #	<0.0025	0.0026	<0.0025	0.0248	0.0177	0.0107	<0.0025	0.0300	0.0225	<0.0025	<0.0025	mg/l	TM30/PM17
Dissolved Arsenic (A10) #	<0.025	0.026	<0.025	0.248	0.177	0.107	<0.025	0.300	0.225	<0.025	<0.025	mg/kg	TM30/PM17
Dissolved Barium #	0.051	0.021	0.049	0.007	<0.003	<0.003	0.032	0.021	0.006	0.016	<0.003	mg/l	TM30/PM17
Dissolved Barium (A10) #	0.51	0.21	0.49	0.07	<0.03	<0.03	0.32	0.21	0.06	0.16	<0.03	mg/kg	TM30/PM17
Dissolved Boron #	0.041	0.016	0.015	<0.012	0.052	0.020	0.117	0.654	0.097	0.038	<0.012	mg/l	TM30/PM17
Dissolved Boron (A10) #	0.41	0.16	0.15	<0.12	0.52	0.20	1.17	6.54	0.97	0.38	<0.12	mg/kg	TM30/PM17
Dissolved Cadmium #	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	mg/l	TM30/PM17
Dissolved Cadmium (A10) #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	mg/kg	TM30/PM17
Dissolved Chromium #	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	0.0019	<0.0015	<0.0015	<0.0015	mg/l	TM30/PM17
Dissolved Chromium (A10) #	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.019	<0.015	<0.015	<0.015	mg/kg	TM30/PM17
Dissolved Copper #	<0.007	<0.007	0.009	<0.007	<0.007	<0.007	<0.007	0.022	0.008	<0.007	<0.007	mg/l	TM30/PM17
Dissolved Copper (A10) #	<0.07	<0.07	0.09	<0.07	<0.07	<0.07	<0.07	0.22	0.08	<0.07	<0.07	mg/kg	TM30/PM17
Dissolved Lead #	<0.005	<0.005	0.008	<0.005	<0.005	<0.005	<0.005	0.049	<0.005	<0.005	<0.005	mg/l	TM30/PM17
Dissolved Lead (A10) #	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	0.49	<0.05	<0.05	<0.05	mg/kg	TM30/PM17
Dissolved Molybdenum #	0.030	0.005	<0.002	<0.002	0.011	0.025	0.033	0.063	0.016	0.010	<0.002	mg/l	TM30/PM17
Dissolved Molybdenum (A10) #	0.30	0.05	<0.02	<0.02	0.11	0.25	0.33	0.63	0.16	0.10	<0.02	mg/kg	TM30/PM17
Dissolved Nickel #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.007	<0.002	<0.002	<0.002	mg/l	TM30/PM17
Dissolved Nickel (A10) #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.07	<0.02	<0.02	<0.02	mg/kg	TM30/PM17
Dissolved Selenium #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM30/PM17
Dissolved Selenium (A10) #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM30/PM17
Dissolved Zinc #	<0.003	0.004	0.005	0.003	<0.003	<0.003	<0.003	0.034	<0.003	0.004	<0.003	mg/l	TM30/PM17
Dissolved Zinc (A10) #	<0.03	0.04	0.05	0.03	<0.03	<0.03	<0.03	0.34	<0.03	0.04	<0.03	mg/kg	TM30/PM17
Mercury Dissolved by CVAF #	<0.00001	0.00085	0.00043	<0.00001	0.00029	0.00031	0.00018	0.00017	0.00150	0.00004	<0.00001	mg/l	TM61/PM38
Mercury Dissolved by CVAF #	<0.0001	0.0085	0.0043	<0.0001	0.0029	0.0031	0.0018	0.0017	0.0150	0.0004	<0.0001	mg/kg	TM61/PM38
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/l	TM26/PM0
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM26/PM0
Fluoride	<0.3	0.9	0.4	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/l	TM173/PM0
Fluoride	<3	9	4	3	<3	<3	<3	<3	<3	<3	<3	mg/kg	TM173/PM0
Sulphate as SO4 #	15.97	16.53	8.87	3.15	0.65	27.89	30.83	175.24	22.81	55.55	<0.05	mg/l	TM38/PM0
Sulphate as SO4 #	159.8	165.2	88.7	31.5	6.5	278.9	308.5	1751.9	228.1	555.8	<0.5	mg/kg	TM38/PM0
Chloride #	1.1	3.5	4.2	<0.3	<0.3	<0.3	4.0	35.2	29.6	3.4	<0.3	mg/l	TM38/PM0
Chloride #	11	35	42	<3	<3	<3	40	352	296	34	<3	mg/kg	TM38/PM0
Ammoniacal Nitrogen as N #	1.67	0.03	0.03	<0.03	0.37	0.14	0.47	1.77	0.54	<0.03	<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	16.7	<0.3	0.3	<0.3	3.7	1.4	4.7	17.7	5.4	<0.3	<0.3	mg/kg	TM38/PM0
Dissolved Organic Carbon	5	4	3	4	6	4	7	24	8	7	<2	mg/l	TM60/PM0
Dissolved Organic Carbon	50	40	30	40	60	40	70	240	80	70	<20	mg/kg	TM60/PM0
Total Dissolved Solids #	81	127	86	84	93	127	196	422	166	137	<35	mg/l	TM20/PM0
Total Dissolved Solids #	810	1270	860	840	930	1270	1961	4219	1660	1371	<350	mg/kg	TM20/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/6349

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	53-54										LOD/LOR	Units	Method No.
Sample ID	TP115												
Depth	2.80												
COC No / misc	]												
Containers	V J												
Sample Date	31/03/2017												
Sample Type	Soil												
Batch Number	1												
Date of Receipt	31/03/2017												
Dissolved Antimony #	0.014										<0.002	mg/l	TM30/PM17
Dissolved Antimony (A10) #	0.14										<0.02	mg/kg	TM30/PM17
Dissolved Arsenic #	<0.0025										<0.0025	mg/l	TM30/PM17
Dissolved Arsenic (A10) #	<0.025										<0.025	mg/kg	TM30/PM17
Dissolved Barium #	0.026										<0.003	mg/l	TM30/PM17
Dissolved Barium (A10) #	0.26										<0.03	mg/kg	TM30/PM17
Dissolved Boron #	0.073										<0.012	mg/l	TM30/PM17
Dissolved Boron (A10) #	0.73										<0.12	mg/kg	TM30/PM17
Dissolved Cadmium #	<0.0005										<0.0005	mg/l	TM30/PM17
Dissolved Cadmium (A10) #	<0.005										<0.005	mg/kg	TM30/PM17
Dissolved Chromium #	<0.0015										<0.0015	mg/l	TM30/PM17
Dissolved Chromium (A10) #	<0.015										<0.015	mg/kg	TM30/PM17
Dissolved Copper #	0.007										<0.007	mg/l	TM30/PM17
Dissolved Copper (A10) #	0.07										<0.07	mg/kg	TM30/PM17
Dissolved Lead #	<0.005										<0.005	mg/l	TM30/PM17
Dissolved Lead (A10) #	<0.05										<0.05	mg/kg	TM30/PM17
Dissolved Molybdenum #	0.031										<0.002	mg/l	TM30/PM17
Dissolved Molybdenum (A10) #	0.31										<0.02	mg/kg	TM30/PM17
Dissolved Nickel #	<0.002										<0.002	mg/l	TM30/PM17
Dissolved Nickel (A10) #	<0.02										<0.02	mg/kg	TM30/PM17
Dissolved Selenium #	<0.003										<0.003	mg/l	TM30/PM17
Dissolved Selenium (A10) #	<0.03										<0.03	mg/kg	TM30/PM17
Dissolved Zinc #	0.007										<0.003	mg/l	TM30/PM17
Dissolved Zinc (A10) #	0.07										<0.03	mg/kg	TM30/PM17
Mercury Dissolved by CVAF #	0.00059										<0.00001	mg/l	TM61/PM38
Mercury Dissolved by CVAF #	0.0059										<0.0001	mg/kg	TM61/PM38
Phenol	<0.01										<0.01	mg/l	TM26/PM0
Phenol	<0.1										<0.1	mg/kg	TM26/PM0
Fluoride	0.3										<0.3	mg/l	TM173/PM0
Fluoride	3										<3	mg/kg	TM173/PM0
Sulphate as SO4 #	21.14										<0.05	mg/l	TM38/PM0
Sulphate as SO4 #	211.4										<0.5	mg/kg	TM38/PM0
Chloride #	2.9										<0.3	mg/l	TM38/PM0
Chloride #	29										<3	mg/kg	TM38/PM0
Ammoniacal Nitrogen as N #	0.72										<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	7.2										<0.3	mg/kg	TM38/PM0
Dissolved Organic Carbon	6										<2	mg/l	TM60/PM0
Dissolved Organic Carbon	60										<20	mg/kg	TM60/PM0
Total Dissolved Solids #	172										<35	mg/l	TM20/PM0
Total Dissolved Solids #	1720										<350	mg/kg	TM20/PM0

Please see attached notes for all abbreviations and acronyms

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	87.5
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.855

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6349**			
Sample No	**2**			
Client Sample No	**TP102**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**0.40**			
Sample Date	**31/03/2017**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	4.58	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	70	500	-	-
PAH Sum of 6 (mg/kg)	1.06	-	-	-
PAH Sum of 17 (mg/kg)	1.93	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.116	0.5	2	25
Barium	0.07	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	0.091	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0095	0.01	0.2	2
Molybdenum	0.03	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	0.06	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	<3	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	77.5	1000	20000	50000
Total Dissolved Solids	1040	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	84.3
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.87

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6349**			
Sample No	**6**			
Client Sample No	**TP102**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**0.80**			
Sample Date	**31/03/2017**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	1.96	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	3.26	-	-	-
PAH Sum of 17 (mg/kg)	6.33	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.028	0.5	2	25
Barium	0.04	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0070	0.01	0.2	2
Molybdenum	0.11	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.04	4	50	200
Chloride	<3	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	4.3	1000	20000	50000
Total Dissolved Solids	390	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	80	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	86.3
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.875

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6349**			
Sample No	**8**			
Client Sample No	**TP102**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.50**			
Sample Date	**31/03/2017**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.05	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	<0.22	-	-	-
PAH Sum of 17 (mg/kg)	<0.64	100	-	-
Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.027	0.5	2	25
Barium	<0.03	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0006	0.01	0.2	2
Molybdenum	0.06	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.03	4	50	200
Chloride	<3	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	24.0	1000	20000	50000
Total Dissolved Solids	390	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	60	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	78.9
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.86

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6349**			
Sample No	**12**			
Client Sample No	**TP102**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**4.30**			
Sample Date	**31/03/2017**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.08	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	<0.22	-	-	-
PAH Sum of 17 (mg/kg)	<0.64	100	-	-
Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.041	0.5	2	25
Barium	<0.03	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0004	0.01	0.2	2
Molybdenum	0.10	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	<3	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	5.7	1000	20000	50000
Total Dissolved Solids	610	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	86.3
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.85

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6349**			
Sample No	**14**			
Client Sample No	**TP103**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**0.50**			
Sample Date	**31/03/2017**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	8.77	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	9.92	-	-	-
PAH Sum of 17 (mg/kg)	19.19	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.141	0.5	2	25
Barium	0.11	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0130	0.01	0.2	2
Molybdenum	0.04	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	<3	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	11.7	1000	20000	50000
Total Dissolved Solids	690	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	70.2
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.55

JEFL Job No	**17/6349**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**16**			
Client Sample No	**TP103**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**2.50**			
Sample Date	**31/03/2017**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	12.97	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	18.80	-	-	-
PAH Sum of 17 (mg/kg)	38.98	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.041	0.5	2	25
Barium	0.25	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0007	0.01	0.2	2
Molybdenum	0.41	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	103	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	174.6	1000	20000	50000
Total Dissolved Solids	1550	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	90	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	69.8
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.7

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6349**			
Sample No	**18**			
Client Sample No	**TP103**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**3.50**			
Sample Date	**31/03/2017**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	11.34	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	31.24	-	-	-
PAH Sum of 17 (mg/kg)	65.08	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.06	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0019	0.01	0.2	2
Molybdenum	0.52	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	22	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	455.8	1000	20000	50000
Total Dissolved Solids	1200	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	180	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	71.0
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6349**			
Sample No	**20**			
Client Sample No	**TP104**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**2.20**			
Sample Date	**31/03/2017**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	25.91	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	91	500	-	-
PAH Sum of 6 (mg/kg)	4.29	-	-	-
PAH Sum of 17 (mg/kg)	12.40	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.60	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0007	0.01	0.2	2
Molybdenum	0.10	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.25	4	50	200
Chloride	1109	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	1419.9	1000	20000	50000
Total Dissolved Solids	5068	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	70	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	89.2
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.85

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6349**			
Sample No	**24**			
Client Sample No	**TP105**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**0.70**			
Sample Date	**31/03/2017**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	3.57	3	5	6
Sum of BTEX (mg/kg)	0.040	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	3.39	-	-	-
PAH Sum of 17 (mg/kg)	6.82	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.040	0.5	2	25
Barium	0.15	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0011	0.01	0.2	2
Molybdenum	0.09	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.03	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	47	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	206.4	1000	20000	50000
Total Dissolved Solids	580	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	70	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	90.5
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.86

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6349**			
Sample No	**26**			
Client Sample No	**TP105**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.30**			
Sample Date	**31/03/2017**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.47	3	5	6
Sum of BTEX (mg/kg)	0.289	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	136	500	-	-
PAH Sum of 6 (mg/kg)	39.72	-	-	-
PAH Sum of 17 (mg/kg)	79.54	100	-	-
Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.136	0.5	2	25
Barium	0.19	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	0.08	2	50	100
Mercury	0.0020	0.01	0.2	2
Molybdenum	0.08	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.04	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.04	4	50	200
Chloride	<3	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	220.0	1000	20000	50000
Total Dissolved Solids	820	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	80	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	79.3
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6349**			
Sample No	**28**			
Client Sample No	**TP105**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**2.20**			
Sample Date	**31/03/2017**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	2.93	3	5	6
Sum of BTEX (mg/kg)	0.174	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	48	500	-	-
PAH Sum of 6 (mg/kg)	1.11	-	-	-
PAH Sum of 17 (mg/kg)	2.09	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.51	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.30	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.10	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	11	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	159.8	1000	20000	50000
Total Dissolved Solids	810	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	50	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	79.2
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.87

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6349**			
Sample No	**30**			
Client Sample No	**TP106**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**0.90**			
Sample Date	**31/03/2017**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	19.53	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	39	500	-	-
PAH Sum of 6 (mg/kg)	56.87	-	-	-
PAH Sum of 17 (mg/kg)	125.91	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.026	0.5	2	25
Barium	0.21	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0085	0.01	0.2	2
Molybdenum	0.05	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.04	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.04	4	50	200
Chloride	35	800	15000	25000
Fluoride	9	10	150	500
Sulphate as SO4	165.2	1000	20000	50000
Total Dissolved Solids	1270	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	68.7
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.85

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6349**			
Sample No	**32**			
Client Sample No	**TP106**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**2.10**			
Sample Date	**31/03/2017**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	19.81	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	369	500	-	-
PAH Sum of 6 (mg/kg)	8.29	-	-	-
PAH Sum of 17 (mg/kg)	15.36	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.49	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	0.09	2	50	100
Mercury	0.0043	0.01	0.2	2
Molybdenum	<0.02	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	0.08	0.5	10	50
Antimony	0.09	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.05	4	50	200
Chloride	42	800	15000	25000
Fluoride	4	10	150	500
Sulphate as SO4	88.7	1000	20000	50000
Total Dissolved Solids	860	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	86.9
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.82

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6349**			
Sample No	**34**			
Client Sample No	**TP108**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.20**			
Sample Date	**31/03/2017**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	5.24	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	29.76	-	-	-
PAH Sum of 17 (mg/kg)	47.21	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.248	0.5	2	25
Barium	0.07	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	<0.02	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.03	4	50	200
Chloride	<3	800	15000	25000
Fluoride	3	10	150	500
Sulphate as SO4	31.5	1000	20000	50000
Total Dissolved Solids	840	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	82.9
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.85

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6349**			
Sample No	**38**			
Client Sample No	**TP108**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**2.50**			
Sample Date	**31/03/2017**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	1.15	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	<0.22	-	-	-
PAH Sum of 17 (mg/kg)	<0.64	100	-	-
Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.177	0.5	2	25
Barium	<0.03	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0029	0.01	0.2	2
Molybdenum	0.11	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.06	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	<3	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	6.5	1000	20000	50000
Total Dissolved Solids	930	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	60	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	79.6
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.82

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6349**			
Sample No	**40**			
Client Sample No	**TP108**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**3.70**			
Sample Date	**31/03/2017**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	4.88	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	<0.22	-	-	-
PAH Sum of 17 (mg/kg)	<0.64	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.107	0.5	2	25
Barium	<0.03	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0031	0.01	0.2	2
Molybdenum	0.25	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.08	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	<3	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	278.9	1000	20000	50000
Total Dissolved Solids	1270	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	64.5
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6349**			
Sample No	**42**			
Client Sample No	**TP109**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**0.60**			
Sample Date	**31/03/2017**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	NDP	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	1389	500	-	-
PAH Sum of 6 (mg/kg)	139.62	-	-	-
PAH Sum of 17 (mg/kg)	313.00	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.32	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0018	0.01	0.2	2
Molybdenum	0.33	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.19	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	40	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	308.5	1000	20000	50000
Total Dissolved Solids	1961	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	70	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	58.5
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6349**			
Sample No	**44**			
Client Sample No	**TP109**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.70**			
Sample Date	**31/03/2017**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	2.31	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	36	500	-	-
PAH Sum of 6 (mg/kg)	3.26	-	-	-
PAH Sum of 17 (mg/kg)	5.71	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.300	0.5	2	25
Barium	0.21	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	0.019	0.5	10	70
Copper	0.22	2	50	100
Mercury	0.0017	0.01	0.2	2
Molybdenum	0.63	0.5	10	30
Nickel	0.07	0.4	10	40
Lead	0.49	0.5	10	50
Antimony	0.29	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.34	4	50	200
Chloride	352	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	1751.9	1000	20000	50000
Total Dissolved Solids	4219	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	240	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	84.9
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.82

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6349**			
Sample No	**46**			
Client Sample No	**TP109**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**2.90**			
Sample Date	**31/03/2017**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	1.51	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	2.07	-	-	-
PAH Sum of 17 (mg/kg)	3.94	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.225	0.5	2	25
Barium	0.06	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	0.08	2	50	100
Mercury	0.0150	0.01	0.2	2
Molybdenum	0.16	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.06	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	296	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	228.1	1000	20000	50000
Total Dissolved Solids	1660	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	80	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	86.1
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.85

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6349**			
Sample No	**50**			
Client Sample No	**TP115**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**0.80**			
Sample Date	**31/03/2017**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	3.92	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	289	500	-	-
PAH Sum of 6 (mg/kg)	3.08	-	-	-
PAH Sum of 17 (mg/kg)	5.31	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.16	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0004	0.01	0.2	2
Molybdenum	0.10	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.08	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.04	4	50	200
Chloride	34	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	555.8	1000	20000	50000
Total Dissolved Solids	1371	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	70	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	80.9
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.85

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6349**			
Sample No	**54**			
Client Sample No	**TP115**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**2.80**			
Sample Date	**31/03/2017**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	1.80	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	260	500	-	-
PAH Sum of 6 (mg/kg)	5.85	-	-	-
PAH Sum of 17 (mg/kg)	10.41	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.26	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	0.07	2	50	100
Mercury	0.0059	0.01	0.2	2
Molybdenum	0.31	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.14	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.07	4	50	200
Chloride	29	800	15000	25000
Fluoride	3	10	150	500
Sulphate as SO4	211.4	1000	20000	50000
Total Dissolved Solids	1720	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	60	500	800	1000

Client Name: IGSL **Matrix : Solid**
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	EPH Interpretation
17/6349	1	TP102	0.40	1-2	Lubricating oil & PAH's
17/6349	1	TP102	0.80	3-6	No interpretation possible
17/6349	1	TP102	1.50	7-8	No interpretation possible
17/6349	1	TP102	4.30	11-12	No interpretation possible
17/6349	1	TP103	0.50	13-14	PAH's
17/6349	1	TP103	2.50	15-16	PAH's
17/6349	1	TP103	3.50	17-18	PAH's
17/6349	1	TP104	2.20	19-20	PAH's, Possible degraded diesel & Possible lubricating oil
17/6349	1	TP105	0.70	23-24	PAH's
17/6349	1	TP105	1.30	25-26	PAH's & Lubricating oil
17/6349	1	TP105	2.20	27-28	Possible PAH's & Possible lubricating oil
17/6349	1	TP106	0.90	29-30	PAH's & Possible lubricating oil
17/6349	1	TP106	2.10	31-32	PAH's, Lubricating oil & Possible tarmac/bitumen
17/6349	1	TP108	1.20	33-34	PAH's & Possible tarmac/bitumen
17/6349	1	TP108	2.50	37-38	No interpretation possible
17/6349	1	TP108	3.70	39-40	No interpretation possible
17/6349	1	TP109	0.60	41-42	PAH's, Lubricating oil, Degraded diesel & Possible tarmac/bitumen
17/6349	1	TP109	1.70	43-44	PAH's & Possible tarmac/bitumen
17/6349	1	TP109	2.90	45-46	PAH's & Possible tarmac/bitumen
17/6349	1	TP115	0.80	49-50	PAH's, Possible tarmac/bitumen, Degraded diesel & Possible lubricating oil
17/6349	1	TP115	2.80	53-54	PAH's, Lubricating oil & Possible tarmac/bitumen

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/6349	1	TP102	0.40	2	04/04/2017	**Mass of Dry Sample**	46.5 (g)
					12/04/2017	**General Description (Bulk Analysis)**	Soil/Stone/Silt
					12/04/2017	**Asbestos Fibres**	NAD
					12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD
					12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD
17/6349	1	TP102	0.80	5	04/04/2017	**Mass of Dry Sample**	49.5 (g)
					12/04/2017	**General Description (Bulk Analysis)**	Soil/Stone
					12/04/2017	**Asbestos Fibres**	NAD
					12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD
					12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD
17/6349	1	TP102	1.50	8	04/04/2017	**Mass of Dry Sample**	47.2 (g)
					12/04/2017	**General Description (Bulk Analysis)**	Soil-Clay/Silt/Brick/Stone
					12/04/2017	**Asbestos Fibres**	NAD
					12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD
					12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD
17/6349	1	TP102	4.30	12	04/04/2017	**Mass of Dry Sample**	50.8 (g)
					12/04/2017	**General Description (Bulk Analysis)**	Soil/Stone
					12/04/2017	**Asbestos Fibres**	NAD
					12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD
					12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/6349	1	TP103	0.50	14	04/04/2017	**Mass of Dry Sample**	48.6 (g)
					12/04/2017	**General Description (Bulk Analysis)**	Soil/Stone
					12/04/2017	**Asbestos Fibres**	NAD
					12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD
					12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD
17/6349	1	TP103	2.50	16	04/04/2017	**Mass of Dry Sample**	37.8 (g)
					12/04/2017	**General Description (Bulk Analysis)**	Soil/Stone
					12/04/2017	**Asbestos Fibres**	NAD
					12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD
					12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD
17/6349	1	TP103	3.50	18	04/04/2017	**Mass of Dry Sample**	39.2 (g)
					12/04/2017	**General Description (Bulk Analysis)**	Soil-Clay/Silt/Brick/Stone
					12/04/2017	**Asbestos Fibres**	NAD
					12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD
					12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD
17/6349	1	TP104	2.20	20	04/04/2017	**Mass of Dry Sample**	39.9 (g)
					12/04/2017	**General Description (Bulk Analysis)**	Soil/Stone
					12/04/2017	**Asbestos Fibres**	NAD
					12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD
					12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD
17/6349	1	TP105	0.70	24	04/04/2017	**Mass of Dry Sample**	49.0 (g)
					12/04/2017	**General Description (Bulk Analysis)**	Soil/Stone
					12/04/2017	**Asbestos Fibres**	NAD
					12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD
					12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD
17/6349	1	TP105	1.30	26	04/04/2017	**Mass of Dry Sample**	47.7 (g)
					12/04/2017	**General Description (Bulk Analysis)**	Soil/Stones
					12/04/2017	**Asbestos Fibres**	NAD

Client Name: IGSL
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Location: Howth
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J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/6349	1	TP105	1.30	26	12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD
					12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD
17/6349	1	TP105	2.20	28	04/04/2017	**Mass of Dry Sample**	50.5 (g)
					12/04/2017	**General Description (Bulk Analysis)**	Soil/Stones
					12/04/2017	**Asbestos Fibres**	NAD
					12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD
					12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD
17/6349	1	TP106	0.90	30	04/04/2017	**Mass of Dry Sample**	48.0 (g)
					12/04/2017	**General Description (Bulk Analysis)**	Soil/Stones
					12/04/2017	**Asbestos Fibres**	NAD
					12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD
					12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD
17/6349	1	TP106	2.10	32	04/04/2017	**Mass of Dry Sample**	37.1 (g)
					12/04/2017	**General Description (Bulk Analysis)**	Soil/Stones
					12/04/2017	**Asbestos Fibres**	NAD
					12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD
					12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD
17/6349	1	TP108	1.20	34	04/04/2017	**Mass of Dry Sample**	45.2 (g)
					12/04/2017	**General Description (Bulk Analysis)**	Soil/Stones
					12/04/2017	**Asbestos Fibres**	NAD
					12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD
					12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD
17/6349	1	TP108	2.50	38	04/04/2017	**Mass of Dry Sample**	43.9 (g)
					12/04/2017	**General Description (Bulk Analysis)**	Soil-Clay/Silt/Brick/Stone
					12/04/2017	**Asbestos Fibres**	NAD
					12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/6349	1	TP108	2.50	38	12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD
17/6349	1	TP108	3.70	40	04/04/2017	**Mass of Dry Sample**	43.6 (g)
					12/04/2017	**General Description (Bulk Analysis)**	soil/stones
					12/04/2017	**Asbestos Fibres**	NAD
					12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD
					12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD
17/6349	1	TP109	0.60	42	04/04/2017	**Mass of Dry Sample**	44.1 (g)
					12/04/2017	**General Description (Bulk Analysis)**	Soil/Stone/Brick/Silt
					12/04/2017	**Asbestos Fibres**	Fibre Bundles
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos Type**	Chrysotile
					12/04/2017	**Asbestos Level Screen**	<0.1%
					19/04/2017	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					19/04/2017	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					19/04/2017	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
17/6349	1	TP109	1.70	44	04/04/2017	**Mass of Dry Sample**	38.1 (g)
					12/04/2017	**General Description (Bulk Analysis)**	Soil-Clay/Silt/Brick/Stone
					12/04/2017	**Asbestos Fibres**	NAD
					12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD
					12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD
17/6349	1	TP109	2.90	46	04/04/2017	**Mass of Dry Sample**	44.8 (g)
					12/04/2017	**General Description (Bulk Analysis)**	soil/stones
					12/04/2017	**Asbestos Fibres**	NAD
					12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD
					12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD
17/6349	1	TP115	0.80	50	04/04/2017	**Mass of Dry Sample**	47.6 (g)
					12/04/2017	**General Description (Bulk Analysis)**	soil/stones
					12/04/2017	**Asbestos Fibres**	NAD
					12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD
					12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/6349	1	TP115	2.80	54	04/04/2017	**Mass of Dry Sample**	46.7 (g)
					12/04/2017	**General Description (Bulk Analysis)**	soil/stones
					12/04/2017	**Asbestos Fibres**	NAD
					12/04/2017	**Asbestos Fibres (2)**	NAD
					12/04/2017	**Asbestos ACM**	NAD
					12/04/2017	**Asbestos ACM (2)**	NAD
					12/04/2017	**Asbestos Type**	NAD
					12/04/2017	**Asbestos Type (2)**	NAD
					12/04/2017	**Asbestos Level Screen**	NAD

Client Name: IGSL **Matrix : Solid**
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
17/6349	1	TP109	0.60	41-42	Asbestos detected in sample

Client Name: IGSL

Matrix : Solid

Reference:

Location: Howth

Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
17/6349	1	TP102	0.40	1-2	GRO	Solid Samples were received at a temperature above 9°C.
17/6349	1	TP102	0.80	3-6	GRO	Solid Samples were received at a temperature above 9°C.
17/6349	1	TP102	1.50	7-8	GRO	Solid Samples were received at a temperature above 9°C.
17/6349	1	TP102	4.30	11-12	GRO	Solid Samples were received at a temperature above 9°C.
17/6349	1	TP103	0.50	13-14	GRO	Solid Samples were received at a temperature above 9°C.
17/6349	1	TP103	2.50	15-16	GRO	Solid Samples were received at a temperature above 9°C.
17/6349	1	TP103	3.50	17-18	GRO	Solid Samples were received at a temperature above 9°C.
17/6349	1	TP104	2.20	19-20	GRO	Solid Samples were received at a temperature above 9°C.
17/6349	1	TP105	0.70	23-24	GRO	Solid Samples were received at a temperature above 9°C.
17/6349	1	TP105	1.30	25-26	EPH	Sample holding time exceeded
17/6349	1	TP105	1.30	25-26	GRO	Solid Samples were received at a temperature above 9°C.
17/6349	1	TP105	2.20	27-28	GRO	Solid Samples were received at a temperature above 9°C.
17/6349	1	TP106	0.90	29-30	GRO	Solid Samples were received at a temperature above 9°C.
17/6349	1	TP106	2.10	31-32	GRO	Solid Samples were received at a temperature above 9°C.
17/6349	1	TP108	1.20	33-34	GRO	Solid Samples were received at a temperature above 9°C.
17/6349	1	TP108	2.50	37-38	GRO	Solid Samples were received at a temperature above 9°C.
17/6349	1	TP108	3.70	39-40	GRO	Solid Samples were received at a temperature above 9°C.
17/6349	1	TP109	0.60	41-42	GRO	Solid Samples were received at a temperature above 9°C.
17/6349	1	TP109	1.70	43-44	GRO	Solid Samples were received at a temperature above 9°C.
17/6349	1	TP109	2.90	45-46	GRO	Solid Samples were received at a temperature above 9°C.
17/6349	1	TP115	0.80	49-50	GRO	Solid Samples were received at a temperature above 9°C.
17/6349	1	TP115	2.80	53-54	GRO	Solid Samples were received at a temperature above 9°C.

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/6349

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

JE Job No: 17/6349

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	Yes
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes

JE Job No: 17/6349

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM20	Modified BS 1377-3: 1990/USEPA 160.3 Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.	Yes		AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.	Yes		AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.	Yes		AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes

JE Job No: 17/6349

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	Dried and ground solid sample is boiled with dilute hydrochloric acid, the resulting liquor is then analysed.	Yes		AD	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	Dried and ground solid sample is boiled with dilute hydrochloric acid, the resulting liquor is then analysed.			AR	Yes
TM60	Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR).	PM0	No preparation is required.			AR	Yes
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	Yes

JE Job No: 17/6349

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM61	As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP.			AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes		AR	Yes
TM106	Determination of Sulphide by Skalar Continuous Flow Analyser	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.			AR	Yes
TM108	Determination of Elemental Sulphur by Reversed Phase High Performance Liquid Chromatography with Ultra Violet spectroscopy.	PM114	End over end extraction of dried and crushed soil samples for organic analysis. The solvent mix varies depending on analysis required			AD	Yes
TM108	Determination of Elemental Sulphur by Reversed Phase High Performance Liquid Chromatography with Ultra Violet spectroscopy.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.			AR	Yes

JE Job No: 17/6349

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
NONE	No Method Code	NONE	No Method Code			AR	Yes
NONE	No Method Code	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.			AR	
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.			AR	

Appendix - Methods used for WAC (2003/33/EC)

Leachate tests	
10l/kg; 4mm	I.S. EN 12457-2:2002 Specified particle size; water added to L/S ratio; capped; agitated for 24 ± 0.5 hours; eluate settled and filtered over 0.45 µm membrane filter.
Eluate analysis	
As	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Ba	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cd	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cr total	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cu	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Hg	I.S. EN 13370 rec. EN 1483 (CVAAS)
Mo	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Ni	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Pb	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Sb	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Se	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Zn	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Chloride	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Fluoride	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Sulphate	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Phenol index	I.S. EN 13370 rec. ISO 6439 (4-Aminoantipyrine spectrometic methods after distillation)* (BY HPLC - Jones Env)
DOC	I.S. EN 1484
TDS	I.S. EN 15216
Compositional analysis	
TOC	I.S. EN 13137 Method B: carbonates removed with acid; TOC by combustion.
BTEX	GC-FID
PCB7**	I.S. EN 15308 analysis by GC-ECD.
Mineral oil	I.S. EN 14039 C10 to C40 analysis by GC-FID.
PAH17***	I.S. EN 15527 PAH17 analysis by GC-MS
Metals	I.S. EN 13657 - Aqua regia digestion: EN ISO 11885 (ICP-OES)
Other	
Dry matter	I.S. EN 14346 sample is dried to a constant mass in an oven at 105 ± 3 °C; Method B Water content by direct Karl-Fischer-titration and either volumetric or coulometric detection.
LOI	I.S. EN 15169 Difference in mass after heating in a furnace up to 550 ± 25 °C.
ANC	CEN/TS 15364 Determined by amounts of acid or base needed to cover the pH range

Notes:

*If not suitable due to LOD, precision, etc., any other suitable method can be used, e.g. AFS, ICP-MS

**PCB-28, PCB-52, PCB-101, PCB-118, PCB-138, PCB-153 and PCB-180

***Naphthalene, Acenaphthylene, Acenaphthene, Anthracene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(g,h,i)perylene, Benzo(a)pyrene, Chrysene, Coronene, Dibenzo(a,h)anthracene, Fluorene, Fluoranthene, Indeno(1,2,3-c,d)pyrene, Phenanthrene and Pyrene.

Exova Jones Environmental

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IGSL
Unit F
M7 Business Park
Naas
Co Kildare
Ireland

Attention :	Darren Keogh
Date :	27th April, 2017
Your reference :	19956
Our reference :	Test Report 17/6858 Batch 1
Location :	Techrete Howth
Date samples received :	11th April, 2017
Status :	Final report
Issue :	1

Four samples were received for analysis on 11th April, 2017 of which four were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Where Waste Acceptance Criteria Suite (EC Decision of 19 December 2002 (2003/33/EC)) has been requested, all analyses have been performed using the relevant EN methods where they exist.

Compiled By:

Bruce Leslie
Project Co-ordinator

Client Name: IGSL
Reference: 19956
Location: Techrete Howth
Contact: Darren Keogh
JE Job No.: 17/6858

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7-8							LOD/LOR	Units	Method No.
Sample ID	TP104	TP104	TP107	TP107									
Depth	0.50	1.50	0.60	1.50									
COC No / misc													
Containers	V J	V J	V J	V J									
Sample Date	<>	<>	<>	<>									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	11/04/2017	11/04/2017	11/04/2017	11/04/2017									
Antimony	1	3	2	2							<1	mg/kg	TM30/PM15
Arsenic #	3.7	24.5	17.2	26.5							<0.5	mg/kg	TM30/PM15
Barium #	60	120	126	99							<1	mg/kg	TM30/PM15
Cadmium #	<0.1	0.4	0.2	0.2							<0.1	mg/kg	TM30/PM15
Chromium #	85.4	69.7	44.5	49.3							<0.5	mg/kg	TM30/PM15
Copper #	27	47	14	35							<1	mg/kg	TM30/PM15
Lead #	31	120	36	65							<5	mg/kg	TM30/PM15
Mercury #	<0.1	<0.1	<0.1	<0.1							<0.1	mg/kg	TM30/PM15
Molybdenum #	8.0	4.9	3.6	3.8							<0.1	mg/kg	TM30/PM15
Nickel #	10.6	27.0	28.5	20.5							<0.7	mg/kg	TM30/PM15
Selenium #	<1	<1	<1	<1							<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	234	823	707	637							<50	mg/kg	TM50/PM29
Water Soluble Boron #	0.8	1.2	0.6	0.9							<0.1	mg/kg	TM74/PM32
Zinc #	19	218	108	184							<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	0.16	<0.04	<0.04	0.05							<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.20	0.05	<0.03	0.10							<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	<0.05	<0.05							<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.04	<0.04	0.05							<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.45	0.41	<0.03	0.36							<0.03	mg/kg	TM4/PM8
Anthracene #	0.23	0.22	<0.04	0.19							<0.04	mg/kg	TM4/PM8
Fluoranthene #	1.13	1.40	0.08	1.29							<0.03	mg/kg	TM4/PM8
Pyrene #	1.11	1.10	0.08	1.11							<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	1.09	0.75	0.09	0.74							<0.06	mg/kg	TM4/PM8
Chrysene #	0.93	0.59	0.06	0.71							<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	1.79	1.07	0.08	1.35							<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	1.11	0.58	0.05	0.78							<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.77	0.37	<0.04	0.47							<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.18	0.09	<0.04	0.13							<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.76	0.33	<0.04	0.44							<0.04	mg/kg	TM4/PM8
Coronene	0.26	0.07	<0.04	0.08							<0.04	mg/kg	TM4/PM8
PAH 6 Total #	5.56	3.75	<0.22	4.33							<0.22	mg/kg	TM4/PM8
PAH 17 Total	10.17	7.03	<0.64	7.85							<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	1.29	0.77	0.06	0.97							<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.50	0.30	0.02	0.38							<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	<1	<1	<1	<1							<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	109	94	101	104							<0	%	TM4/PM8
Mineral Oil (C10-C40)	104	85	<30	415							<30	mg/kg	TM5/PM16

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference: 19956
Location: Techrete Howth
Contact: Darren Keogh
JE Job No.: 17/6858

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7-8							LOD/LOR	Units	Method No.
Sample ID	TP104	TP104	TP107	TP107									
Depth	0.50	1.50	0.60	1.50									
COC No / misc													
Containers	V J	V J	V J	V J									
Sample Date	<>	<>	<>	<>									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	11/04/2017	11/04/2017	11/04/2017	11/04/2017									
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1 SV	<0.1	<0.1 SV	<0.1							<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1 SV	<0.1	<0.1 SV	<0.1							<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1 SV	<0.1	<0.1 SV	<0.1							<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2	<0.2	<0.2	5.7							<0.2	mg/kg	TM5/PM16
>C12-C16 #	<4	<4	<4	45							<4	mg/kg	TM5/PM16
>C16-C21 #	<7	10	<7	87							<7	mg/kg	TM5/PM16
>C21-C35 #	72	54	<7	210							<7	mg/kg	TM5/PM16
>C35-C40	32	21	<7	67							<7	mg/kg	TM5/PM16
Total aliphatics C5-40	104	85	<26	415							<26	mg/kg	TM5/TM36/PM12/PM16
>C6-C10	<0.1 SV	<0.1	<0.1 SV	<0.1							<0.1	mg/kg	TM36/PM12
>C10-C25	18	12	<10	163							<10	mg/kg	TM5/PM16
>C25-C35	69	51	<10	168							<10	mg/kg	TM5/PM16
Aromatics													
>C5-EC7 #	<0.1 SV	<0.1	<0.1 SV	<0.1							<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1 SV	<0.1	<0.1 SV	<0.1							<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1 SV	<0.1	<0.1 SV	<0.1							<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	<0.2	1.0							<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	6	<4	39							<4	mg/kg	TM5/PM16
>EC16-EC21 #	11	48	<7	146							<7	mg/kg	TM5/PM16
>EC21-EC35 #	232	279	60	609							<7	mg/kg	TM5/PM16
>EC35-EC40	121	107	52	234							<7	mg/kg	TM5/PM16
Total aromatics C5-40	364	440	112	1029							<26	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-40)	468	525	112	1444							<52	mg/kg	TM5/TM36/PM12/PM16
>EC6-EC10 #	<0.1 SV	<0.1	<0.1 SV	<0.1							<0.1	mg/kg	TM36/PM12
>EC10-EC25	50	83	<10	269							<10	mg/kg	TM5/PM16
>EC25-EC35	195	206	50	491							<10	mg/kg	TM5/PM16
MTBE #	<5 SV	<5	<5 SV	<5							<5	ug/kg	TM31/PM12
Benzene #	<5 SV	<5	<5 SV	<5							<5	ug/kg	TM31/PM12
Toluene #	<5 SV	<5	8 SV	<5							<5	ug/kg	TM31/PM12
Ethylbenzene #	<5 SV	<5	<5 SV	<5							<5	ug/kg	TM31/PM12
m/p-Xylene #	<5 SV	<5	<5 SV	<5							<5	ug/kg	TM31/PM12
o-Xylene #	<5 SV	<5	<5 SV	<5							<5	ug/kg	TM31/PM12
PCB 28 #	<5	<5	<5	<5							<5	ug/kg	TM17/PM8
PCB 52 #	<5	<5	<5	<5							<5	ug/kg	TM17/PM8
PCB 101 #	<5	<5	<5	<5							<5	ug/kg	TM17/PM8
PCB 118 #	<5	<5	<5	<5							<5	ug/kg	TM17/PM8
PCB 138 #	<5	<5	<5	<5							<5	ug/kg	TM17/PM8
PCB 153 #	<5	<5	<5	<5							<5	ug/kg	TM17/PM8
PCB 180 #	<5	<5	<5	<5							<5	ug/kg	TM17/PM8
Total 7 PCBs #	<35	<35	<35	<35							<35	ug/kg	TM17/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference: 19956
Location: Techrete Howth
Contact: Darren Keogh
JE Job No.: 17/6858

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7-8							LOD/LOR	Units	Method No.
Sample ID	TP104	TP104	TP107	TP107									
Depth	0.50	1.50	0.60	1.50									
COC No / misc													
Containers	V J	V J	V J	V J									
Sample Date	<>	<>	<>	<>									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	11/04/2017	11/04/2017	11/04/2017	11/04/2017									
Phenol #	<0.01	<0.01	<0.01	<0.01							<0.01	mg/kg	TM26/PM21
Natural Moisture Content	27.5	26.0	14.1	15.9							<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	21.6	20.6	12.4	13.7							<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3							<0.3	mg/kg	TM38/PM20
Chromium III	85.4	69.7	44.5	49.3							<0.5	mg/kg	NONE/NONE
Total Cyanide #	<0.5	<0.5	<0.5	<0.5							<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	77.12	2.35	0.14	3.53							<0.02	%	TM21/PM24
Sulphide	<10	<10	<10	<10							<10	mg/kg	TM106/PM45
Elemental Sulphur	NDP	120	7	115							<1	mg/kg	TM108/PM114
pH #	8.48	7.74	8.19	8.09							<0.01	pH units	TM73/PM11
Mass of raw test portion	0.1171	0.1093	0.1111	0.1091								kg	NONE/PM17
Mass of dried test portion	0.09	0.09	0.09	0.09								kg	NONE/PM17

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference: 19956
Location: Techrete Howth
Contact: Darren Keogh
JE Job No.: 17/6858

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7-8							LOD/LOR	Units	Method No.
Sample ID	TP104	TP104	TP107	TP107									
Depth	0.50	1.50	0.60	1.50									
COC No / misc													
Containers	V J	V J	V J	V J									
Sample Date	<>	<>	<>	<>									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	11/04/2017	11/04/2017	11/04/2017	11/04/2017									
Dissolved Antimony #	0.003	0.006	<0.002	0.007							<0.002	mg/l	TM30/PM17
Dissolved Antimony (A10) #	0.03	0.06	<0.02	0.07							<0.02	mg/kg	TM30/PM17
Dissolved Arsenic #	0.0107	0.0062	0.0039	0.0065							<0.0025	mg/l	TM30/PM17
Dissolved Arsenic (A10) #	0.107	0.062	0.039	0.065							<0.025	mg/kg	TM30/PM17
Dissolved Barium #	0.007	0.031	0.031	0.023							<0.003	mg/l	TM30/PM17
Dissolved Barium (A10) #	0.07	0.31	0.31	0.23							<0.03	mg/kg	TM30/PM17
Dissolved Boron #	0.026	0.061	<0.012	0.042							<0.012	mg/l	TM30/PM17
Dissolved Boron (A10) #	0.26	0.61	<0.12	0.42							<0.12	mg/kg	TM30/PM17
Dissolved Cadmium #	<0.0005	<0.0005	<0.0005	<0.0005							<0.0005	mg/l	TM30/PM17
Dissolved Cadmium (A10) #	<0.005	<0.005	<0.005	<0.005							<0.005	mg/kg	TM30/PM17
Dissolved Chromium #	<0.0015	<0.0015	<0.0015	<0.0015							<0.0015	mg/l	TM30/PM17
Dissolved Chromium (A10) #	<0.015	<0.015	<0.015	<0.015							<0.015	mg/kg	TM30/PM17
Dissolved Copper #	<0.007	<0.007	<0.007	<0.007							<0.007	mg/l	TM30/PM17
Dissolved Copper (A10) #	<0.07	<0.07	<0.07	<0.07							<0.07	mg/kg	TM30/PM17
Dissolved Lead #	<0.005	<0.005	<0.005	<0.005							<0.005	mg/l	TM30/PM17
Dissolved Lead (A10) #	<0.05	<0.05	<0.05	<0.05							<0.05	mg/kg	TM30/PM17
Dissolved Molybdenum #	0.004	0.016	0.004	0.010							<0.002	mg/l	TM30/PM17
Dissolved Molybdenum (A10) #	0.04	0.16	0.04	0.10							<0.02	mg/kg	TM30/PM17
Dissolved Nickel #	<0.002	<0.002	<0.002	<0.002							<0.002	mg/l	TM30/PM17
Dissolved Nickel (A10) #	<0.02	<0.02	<0.02	<0.02							<0.02	mg/kg	TM30/PM17
Dissolved Selenium #	<0.003	<0.003	<0.003	<0.003							<0.003	mg/l	TM30/PM17
Dissolved Selenium (A10) #	<0.03	<0.03	<0.03	<0.03							<0.03	mg/kg	TM30/PM17
Dissolved Zinc #	0.003	0.005	0.003	0.004							<0.003	mg/l	TM30/PM17
Dissolved Zinc (A10) #	0.03	0.05	<0.03	0.04							<0.03	mg/kg	TM30/PM17
Mercury Dissolved by CVAF #	0.00022	0.00019	<0.00001	0.00025							<0.00001	mg/l	TM61/PM38
Mercury Dissolved by CVAF #	0.0022	0.0019	<0.0001	0.0025							<0.0001	mg/kg	TM61/PM38
Phenol	<0.01	<0.01	<0.01	<0.01							<0.01	mg/l	TM26/PM0
Phenol	<0.1	<0.1	<0.1	<0.1							<0.1	mg/kg	TM26/PM0
Fluoride	<0.3	<0.3	0.7	<0.3							<0.3	mg/l	TM173/PM0
Fluoride	<3	<3	7	<3							<3	mg/kg	TM173/PM0
Sulphate as SO4 #	8.12	57.24	16.73	35.90							<0.05	mg/l	TM38/PM0
Sulphate as SO4 #	81.2	572.6	167.3	358.8							<0.5	mg/kg	TM38/PM0
Chloride #	0.4	0.4	0.3	0.3							<0.3	mg/l	TM38/PM0
Chloride #	4	4	<3	<3							<3	mg/kg	TM38/PM0
Ammoniacal Nitrogen as N #	<0.03	0.05	<0.03	0.05							<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	<0.3	0.5	<0.3	0.5							<0.3	mg/kg	TM38/PM0
Dissolved Organic Carbon	3	5	<2	3							<2	mg/l	TM60/PM0
Dissolved Organic Carbon	30	50	<20	30							<20	mg/kg	TM60/PM0
Total Dissolved Solids #	67	191	74	93							<35	mg/l	TM20/PM0
Total Dissolved Solids #	670	1911	740	930							<350	mg/kg	TM20/PM0

Please see attached notes for all abbreviations and acronyms

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	76.8
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

JEFL Job No	**17/6858**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**2**			
Client Sample No	**TP104**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**0.50**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	77.12	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	104	500	-	-
PAH Sum of 6 (mg/kg)	5.56	-	-	-
PAH Sum of 17 (mg/kg)	10.17	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.107	0.5	2	25
Barium	0.07	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0022	0.01	0.2	2
Molybdenum	0.04	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.03	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.03	4	50	200
Chloride	4	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	81.2	1000	20000	50000
Total Dissolved Solids	670	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	82.4
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.82

JEFL Job No	**17/6858**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**4**			
Client Sample No	**TP104**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.50**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	2.35	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	85	500	-	-
PAH Sum of 6 (mg/kg)	3.75	-	-	-
PAH Sum of 17 (mg/kg)	7.03	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.062	0.5	2	25
Barium	0.31	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0019	0.01	0.2	2
Molybdenum	0.16	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.06	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.05	4	50	200
Chloride	4	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	572.6	1000	20000	50000
Total Dissolved Solids	1911	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	50	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	81.3
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.82

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6858**			
Sample No	**6**			
Client Sample No	**TP107**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**0.60**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.14	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	<0.22	-	-	-
PAH Sum of 17 (mg/kg)	<0.64	100	-	-
Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.039	0.5	2	25
Barium	0.31	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.04	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	<3	800	15000	25000
Fluoride	7	10	150	500
Sulphate as SO4	167.3	1000	20000	50000
Total Dissolved Solids	740	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	<20	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	82.1
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/6858**			
Sample No	**8**			
Client Sample No	**TP107**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.50**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	3.53	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	415	500	-	-
PAH Sum of 6 (mg/kg)	4.33	-	-	-
PAH Sum of 17 (mg/kg)	7.85	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.065	0.5	2	25
Barium	0.23	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0025	0.01	0.2	2
Molybdenum	0.10	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.07	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.04	4	50	200
Chloride	<3	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	358.8	1000	20000	50000
Total Dissolved Solids	930	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

Client Name: IGSL **Matrix : Solid**
Reference: 19956
Location: Techrete Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	EPH Interpretation
17/6858	1	TP104	0.50	1-2	PAH's, Lubricaitng oil & Possible tarmac/bitumen
17/6858	1	TP104	1.50	3-4	PAH's, Lubricaitng oil & Possible tarmac/bitumen
17/6858	1	TP107	0.60	5-6	Possible tarmac/bitumen
17/6858	1	TP107	1.50	7-8	PAH's, Lubricaitng oil Possible tarmac/bitumen & Degraded diesel

Client Name: IGSL
Reference: 19956
Location: Techrete Howth
Contact: Darren Keogh

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/6858	1	TP104	0.50	2	12/04/2017	**Mass of Dry Sample**	44.7 (g)
					21/04/2017	**General Description (Bulk Analysis)**	Soil/Stone
					21/04/2017	**Asbestos Fibres**	NAD
					21/04/2017	**Asbestos Fibres (2)**	NAD
					21/04/2017	**Asbestos ACM**	NAD
					21/04/2017	**Asbestos ACM (2)**	NAD
					21/04/2017	**Asbestos Type**	NAD
					21/04/2017	**Asbestos Type (2)**	NAD
					21/04/2017	**Asbestos Level Screen**	NAD
17/6858	1	TP104	1.50	4	12/04/2017	**Mass of Dry Sample**	50.5 (g)
					21/04/2017	**General Description (Bulk Analysis)**	Soil/Stone
					21/04/2017	**Asbestos Fibres**	NAD
					21/04/2017	**Asbestos Fibres (2)**	NAD
					21/04/2017	**Asbestos ACM**	NAD
					21/04/2017	**Asbestos ACM (2)**	NAD
					21/04/2017	**Asbestos Type**	NAD
					21/04/2017	**Asbestos Type (2)**	NAD
					21/04/2017	**Asbestos Level Screen**	NAD
17/6858	1	TP107	0.60	6	12/04/2017	**Mass of Dry Sample**	52.7 (g)
					21/04/2017	**General Description (Bulk Analysis)**	Soil/Stone
					21/04/2017	**Asbestos Fibres**	NAD
					21/04/2017	**Asbestos Fibres (2)**	NAD
					21/04/2017	**Asbestos ACM**	NAD
					21/04/2017	**Asbestos ACM (2)**	NAD
					21/04/2017	**Asbestos Type**	NAD
					21/04/2017	**Asbestos Type (2)**	NAD
					21/04/2017	**Asbestos Level Screen**	NAD
17/6858	1	TP107	1.50	8	12/04/2017	**Mass of Dry Sample**	51.3 (g)
					21/04/2017	**General Description (Bulk Analysis)**	Soil/Stone
					21/04/2017	**Asbestos Fibres**	NAD
					21/04/2017	**Asbestos Fibres (2)**	NAD
					21/04/2017	**Asbestos ACM**	NAD
					21/04/2017	**Asbestos ACM (2)**	NAD
					21/04/2017	**Asbestos Type**	NAD
					21/04/2017	**Asbestos Type (2)**	NAD
					21/04/2017	**Asbestos Level Screen**	NAD

Client Name: IGSL **Matrix : Solid**
Reference: 19956
Location: Techrete Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
17/6858	1	TP104	0.50	1-2	Insufficient sample for test

Client Name: IGSL

Matrix : Solid

Reference: 19956

Location: Techrete Howth

Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
17/6858	1	TP104	0.50	1-2	All analyses	No sampling date given
17/6858	1	TP104	1.50	3-4	All analyses	No sampling date given
17/6858	1	TP107	0.60	5-6	All analyses	No sampling date given
17/6858	1	TP107	1.50	7-8	All analyses	No sampling date given

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/6858

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

JE Job No: 17/6858

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	Yes
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes

JE Job No: 17/6858

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM20	Modified BS 1377-3: 1990/USEPA 160.3 Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.	Yes		AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.	Yes		AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.	Yes		AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

JE Job No: 17/6858

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	Dried and ground solid sample is boiled with dilute hydrochloric acid, the resulting liquor is then analysed.	Yes		AD	Yes
TM60	Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR).	PM0	No preparation is required.			AR	Yes
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes

JE Job No: 17/6858

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes		AR	Yes
TM106	Determination of Sulphide by Skalar Continuous Flow Analyser	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.			AR	Yes
TM108	Determination of Elemental Sulphur by Reversed Phase High Performance Liquid Chromatography with Ultra Violet spectroscopy.	PM114	End over end extraction of dried and crushed soil samples for organic analysis. The solvent mix varies depending on analysis required			AD	Yes
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.			AR	Yes
NONE	No Method Code	NONE	No Method Code			AR	Yes
NONE	No Method Code	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.			AR	
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.			AR	

Appendix - Methods used for WAC (2003/33/EC)

Leachate tests	
10l/kg; 4mm	I.S. EN 12457-2:2002 Specified particle size; water added to L/S ratio; capped; agitated for 24 ± 0.5 hours; eluate settled and filtered over 0.45 µm membrane filter.
Eluate analysis	
As	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Ba	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cd	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cr total	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cu	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Hg	I.S. EN 13370 rec. EN 1483 (CVAAS)
Mo	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Ni	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Pb	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Sb	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Se	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Zn	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Chloride	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Fluoride	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Sulphate	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Phenol index	I.S. EN 13370 rec. ISO 6439 (4-Aminoantipyrine spectrometic methods after distillation)* (BY HPLC - Jones Env)
DOC	I.S. EN 1484
TDS	I.S. EN 15216
Compositional analysis	
TOC	I.S. EN 13137 Method B: carbonates removed with acid; TOC by combustion.
BTEX	GC-FID
PCB7**	I.S. EN 15308 analysis by GC-ECD.
Mineral oil	I.S. EN 14039 C10 to C40 analysis by GC-FID.
PAH17***	I.S. EN 15527 PAH17 analysis by GC-MS
Metals	I.S. EN 13657 - Aqua regia digestion: EN ISO 11885 (ICP-OES)
Other	
Dry matter	I.S. EN 14346 sample is dried to a constant mass in an oven at 105 ± 3 °C; Method B Water content by direct Karl-Fischer-titration and either volumetric or coulometric detection.
LOI	I.S. EN 15169 Difference in mass after heating in a furnace up to 550 ± 25 °C.
ANC	CEN/TS 15364 Determined by amouns of acid or base needed to cover the pH range

Notes:

*If not suitable due to LOD, precision, etc., any other suitable method can be used, e.g. AFS, ICP-MS

**PCB-28, PCB-52, PCB-101, PCB-118, PCB-138, PCB-153 and PCB-180

***Naphthalene, Acenaphthylene, Acenaphthene, Anthracene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(g,h,i)perylene, Benzo(a)pyrene, Chrysene, Coronene, Dibenzo(a,h)anthracene, Fluorene, Fluoranthene, Indeno(1,2,3-c,d)pyrene, Phenanthrene and Pyrene.

Exova Jones Environmental

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IGSL
Unit F
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Naas
Co Kildare
Ireland

Attention :	Darren Keogh
Date :	30th May, 2017
Your reference :	
Our reference :	Test Report 17/8435 Batch 1
Location :	Howth
Date samples received :	11th May, 2017
Status :	Final report
Issue :	1

Twenty one samples were received for analysis on 11th May, 2017 of which twenty one were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Where Waste Acceptance Criteria Suite (EC Decision of 19 December 2002 (2003/33/EC)) has been requested, all analyses have been performed using the relevant EN methods where they exist.

Compiled By:

Bruce Leslie
Project Co-ordinator

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/8435

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7	8	9	10	11	12	13	LOD/LOR	Units	Method No.
Sample ID	BH3	BH3	BH3	BH10	BH12	BH15	BH16	BH17	BH19	BH20			
Depth	1.0	3.0	4.0	1.5	2.0	1.0	1.0	1.0	2.0	1.0			
COC No / misc													
Containers	V J	V J	V J	J	J	J	J	J	J	J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017			
Antimony	3	2	1	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM15
Arsenic #	16.0	12.1	10.7	-	-	-	-	-	-	-	<0.5	mg/kg	TM30/PM15
Barium #	52	41	236	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM15
Cadmium #	0.7	0.3	<0.1	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM15
Chromium #	56.1	55.4	26.9	-	-	-	-	-	-	-	<0.5	mg/kg	TM30/PM15
Copper #	18	23	11	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM15
Lead #	39	59	30	-	-	-	-	-	-	-	<5	mg/kg	TM30/PM15
Mercury #	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM15
Molybdenum #	4.6	3.1	1.0	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM15
Nickel #	23.8	25.6	10.3	-	-	-	-	-	-	-	<0.7	mg/kg	TM30/PM15
Selenium #	1	1	<1	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	432	3921	1002	-	-	-	-	-	-	-	<50	mg/kg	TM50/PM29
Water Soluble Boron #	0.7	7.0	1.9	-	-	-	-	-	-	-	<0.1	mg/kg	TM74/PM32
Zinc #	103	101	20	-	-	-	-	-	-	-	<5	mg/kg	TM30/PM15
Antimony	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Arsenic	-	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	TM30/PM62
Barium	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Cadmium	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM62
Chromium	-	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	TM30/PM62
Copper	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Lead	-	-	-	-	-	-	-	-	-	-	<5	mg/kg	TM30/PM62
Mercury	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM62
Molybdenum	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM62
Nickel	-	-	-	-	-	-	-	-	-	-	<0.7	mg/kg	TM30/PM62
Selenium	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Total Sulphate as SO4	-	-	-	-	-	-	-	-	-	-	<50	mg/kg	TM50/PM29
Water Soluble Boron	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM74/PM61
Zinc	-	-	-	-	-	-	-	-	-	-	<5	mg/kg	TM30/PM62

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/8435

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7	8	9	10	11	12	13	LOD/LOR	Units	Method No.
Sample ID	BH3	BH3	BH3	BH10	BH12	BH15	BH16	BH17	BH19	BH20			
Depth	1.0	3.0	4.0	1.5	2.0	1.0	1.0	1.0	2.0	1.0			
COC No / misc													
Containers	V J	V J	V J	J	J	J	J	J	J	J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017			
PAH MS													
Naphthalene #	<0.04	<0.04	<0.04	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	-	-	-	-	-	-	-	<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	<0.05	-	-	-	-	-	-	-	<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.04	<0.04	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.06	0.06	0.03	-	-	-	-	-	-	-	<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	<0.04	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.13	0.14	0.04	-	-	-	-	-	-	-	<0.03	mg/kg	TM4/PM8
Pyrene #	0.11	0.12	0.04	-	-	-	-	-	-	-	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.14	0.14	<0.06	-	-	-	-	-	-	-	<0.06	mg/kg	TM4/PM8
Chrysene #	0.10	0.09	0.03	-	-	-	-	-	-	-	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	0.12	0.13	<0.07	-	-	-	-	-	-	-	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.08	0.09	<0.04	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.04	<0.04	<0.04	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	<0.04	<0.04	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
Coronene	<0.04	<0.04	<0.04	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
PAH 6 Total #	0.37	0.36	<0.22	-	-	-	-	-	-	-	<0.22	mg/kg	TM4/PM8
PAH 17 Total	0.78	0.77	<0.64	-	-	-	-	-	-	-	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.09	0.09	<0.05	-	-	-	-	-	-	-	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.03	0.04	<0.02	-	-	-	-	-	-	-	<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	<1	<1	<1	-	-	-	-	-	-	-	<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	97	99	102	-	-	-	-	-	-	-	<0	%	TM4/PM8
Mineral Oil (C10-C40)	<30	<30	<30	-	-	-	-	-	-	-	<30	mg/kg	TM5/PM16
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	<0.2	mg/kg	TM5/PM16
>C12-C16 #	<4	<4	<4	-	-	-	-	-	-	-	<4	mg/kg	TM5/PM16
>C16-C21 #	<7	<7	<7	-	-	-	-	-	-	-	<7	mg/kg	TM5/PM16
>C21-C35 #	<7	<7	<7	-	-	-	-	-	-	-	<7	mg/kg	TM5/PM16
>C35-C40	<7	<7	<7	-	-	-	-	-	-	-	<7	mg/kg	TM5/PM16
Total aliphatics C5-40	<26	<26	<26	-	-	-	-	-	-	-	<26	mg/kg	TM5/TM36/PM12/PM16
>C6-C10	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
>C10-C25	<10	<10	<10	-	-	-	-	-	-	-	<10	mg/kg	TM5/PM16
>C25-C35	<10	<10	<10	-	-	-	-	-	-	-	<10	mg/kg	TM5/PM16

Please see attached notes for all abbreviations and acronyms

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Contact: Darren Keogh
JE Job No.: 17/8435

Report : Solid

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Sample ID	BH3	BH3	BH3	BH10	BH12	BH15	BH16	BH17	BH19	BH20			
Depth	1.0	3.0	4.0	1.5	2.0	1.0	1.0	1.0	2.0	1.0			
COC No / misc													
Containers	V J	V J	V J	J	J	J	J	J	J	J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017			
TPH CWG													
Aromatics													
>C5-EC7 #	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	<0.2	-	-	-	-	-	-	-	<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	<4	<4	-	-	-	-	-	-	-	<4	mg/kg	TM5/PM16
>EC16-EC21 #	<7	19	<7	-	-	-	-	-	-	-	<7	mg/kg	TM5/PM16
>EC21-EC35 #	<7	90	<7	-	-	-	-	-	-	-	<7	mg/kg	TM5/PM16
>EC35-EC40	<7	<7	<7	-	-	-	-	-	-	-	<7	mg/kg	TM5/PM16
Total aromatics C5-40	<26	109	<26	-	-	-	-	-	-	-	<26	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-40)	<52	109	<52	-	-	-	-	-	-	-	<52	mg/kg	TM5/TM36/PM12/PM16
>EC6-EC10 #	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	<0.1	mg/kg	TM36/PM12
>EC10-EC25	<10	30	<10	-	-	-	-	-	-	-	<10	mg/kg	TM5/PM16
>EC25-EC35	<10	68	<10	-	-	-	-	-	-	-	<10	mg/kg	TM5/PM16
MTBE #	<5	<5	<5	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
Benzene #	<5	<5	<5	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
Toluene #	<5	<5	<5	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5	<5	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	<5	<5	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
o-Xylene #	<5	<5	<5	-	-	-	-	-	-	-	<5	ug/kg	TM31/PM12
PCB 28 #	<5	<5	<5	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 52 #	<5	<5	<5	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 101 #	<5	<5	<5	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 118 #	<5	<5	<5	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 138 #	<5	<5	<5	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 153 #	<5	<5	<5	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 180 #	<5	<5	<5	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
Total 7 PCBs #	<35	<35	<35	-	-	-	-	-	-	-	<35	ug/kg	TM17/PM8
Phenol #	<0.01	<0.01	<0.01	-	-	-	-	-	-	-	<0.01	mg/kg	TM26/PM21
Natural Moisture Content	9.6	33.7	3.4	-	-	-	-	-	-	-	<0.1	%	PM4/PM0
Natural Moisture Content	-	-	-	-	-	-	-	-	-	-	<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	8.8	25.2	3.3	-	-	-	-	-	-	-	<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	-	-	-	-	-	-	-	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	0.0112	1.4642	-	0.0388	0.0233	0.1710	0.1462	0.1464	0.0995	0.1379	<0.0015	g/l	TM38/PM20
Sulphate as SO4 (2:1 Ext)	-	-	-	-	-	-	-	-	-	-	<0.0015	g/l	TM38/PM60
Chromium III	56.1	55.4	26.9	-	-	-	-	-	-	-	<0.5	mg/kg	NONE/NONE
Chromium III	-	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	NONE/NONE

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/8435

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	7	8	9	10	11	12	13	LOD/LOR	Units	Method No.
Sample ID	BH3	BH3	BH3	BH10	BH12	BH15	BH16	BH17	BH19	BH20			
Depth	1.0	3.0	4.0	1.5	2.0	1.0	1.0	1.0	2.0	1.0			
COC No / misc													
Containers	V J	V J	V J	J	J	J	J	J	J	J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017			
Total Cyanide #	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	0.56	3.24	0.52	-	-	-	-	-	-	-	<0.02	%	TM21/PM24
Sulphide	<10	110	<10	-	-	-	-	-	-	-	<10	mg/kg	TM106/PM119
Elemental Sulphur	21	1994	11	-	-	-	-	-	-	-	<1	mg/kg	TM108/PM114
Elemental Sulphur	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM108/PM8
pH #	9.10	8.22	8.44	8.64	8.76	8.18	8.18	8.22	8.11	8.22	<0.01	pH units	TM73/PM11
Mass of raw test portion	0.0974	0.13	0.0999	-	-	-	-	-	-	-		kg	NONE/PM17
Mass of dried test portion	0.09	0.09	0.09	-	-	-	-	-	-	-		kg	NONE/PM17

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/8435

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	14	15	16	17,31	18	19-20	21-22	23-24	25-26	27-28	LOD/LOR	Units	Method No.
Sample ID	BH21	BH22	BH22	BH24	BH25	BH30	BH30	BH30	BH31	BH31			
Depth	1.0	2.0	5.0	1.0	2.0	1.0	2.0	5.0	1.0	2.0			
COC No / misc													
Containers	J	J	J	J	J	V J	V J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017			
Antimony	-	-	-	-	-	-	3	8	-	2	<1	mg/kg	TM30/PM15
Arsenic #	-	-	-	-	-	-	18.2	177.1	-	19.0	<0.5	mg/kg	TM30/PM15
Barium #	-	-	-	-	-	-	97	336	-	113	<1	mg/kg	TM30/PM15
Cadmium #	-	-	-	-	-	-	0.6	1.6	-	0.7	<0.1	mg/kg	TM30/PM15
Chromium #	-	-	-	-	-	-	58.4	69.5	-	49.3	<0.5	mg/kg	TM30/PM15
Copper #	-	-	-	-	-	-	68	96	-	62	<1	mg/kg	TM30/PM15
Lead #	-	-	-	-	-	-	196	507	-	190	<5	mg/kg	TM30/PM15
Mercury #	-	-	-	-	-	-	0.6	0.6	-	1.4	<0.1	mg/kg	TM30/PM15
Molybdenum #	-	-	-	-	-	-	4.4	12.4	-	3.3	<0.1	mg/kg	TM30/PM15
Nickel #	-	-	-	-	-	-	29.1	63.3	-	33.0	<0.7	mg/kg	TM30/PM15
Selenium #	-	-	-	-	-	-	2	7	-	2	<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	-	-	-	-	-	-	779	2501	-	725	<50	mg/kg	TM50/PM29
Water Soluble Boron #	-	-	-	-	-	-	1.1	3.0	-	1.0	<0.1	mg/kg	TM74/PM32
Zinc #	-	-	-	-	-	-	138	2175	-	178	<5	mg/kg	TM30/PM15
Antimony	-	-	-	-	-	5	-	-	2	-	<1	mg/kg	TM30/PM62
Arsenic	-	-	-	-	-	24.3	-	-	33.3	-	<0.5	mg/kg	TM30/PM62
Barium	-	-	-	-	-	159	-	-	137	-	<1	mg/kg	TM30/PM62
Cadmium	-	-	-	-	-	0.6	-	-	0.6	-	<0.1	mg/kg	TM30/PM62
Chromium	-	-	-	-	-	24.9	-	-	20.0	-	<0.5	mg/kg	TM30/PM62
Copper	-	-	-	-	-	178	-	-	86	-	<1	mg/kg	TM30/PM62
Lead	-	-	-	-	-	424	-	-	266	-	<5	mg/kg	TM30/PM62
Mercury	-	-	-	-	-	1.9	-	-	2.5	-	<0.1	mg/kg	TM30/PM62
Molybdenum	-	-	-	-	-	3.2	-	-	2.8	-	<0.1	mg/kg	TM30/PM62
Nickel	-	-	-	-	-	43.9	-	-	28.2	-	<0.7	mg/kg	TM30/PM62
Selenium	-	-	-	-	-	<1	-	-	<1	-	<1	mg/kg	TM30/PM62
Total Sulphate as SO4	-	-	-	-	-	978	-	-	580	-	<50	mg/kg	TM50/PM29
Water Soluble Boron	-	-	-	-	-	1.6	-	-	1.6	-	<0.1	mg/kg	TM74/PM61
Zinc	-	-	-	-	-	180	-	-	203	-	<5	mg/kg	TM30/PM62

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/8435

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	14	15	16	17,31	18	19-20	21-22	23-24	25-26	27-28	LOD/LOR	Units	Method No.
Sample ID	BH21	BH22	BH22	BH24	BH25	BH30	BH30	BH30	BH31	BH31			
Depth	1.0	2.0	5.0	1.0	2.0	1.0	2.0	5.0	1.0	2.0			
COC No / misc													
Containers	J	J	J	J	J	V J	V J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017			
PAH MS													
Naphthalene #	-	-	-	-	-	<0.04	<0.04	<0.04	0.05	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	-	-	-	-	-	<0.03	0.06	<0.03	0.11	0.08	<0.03	mg/kg	TM4/PM8
Acenaphthene #	-	-	-	-	-	<0.05	<0.05	<0.05	0.17	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #	-	-	-	-	-	<0.04	<0.04	<0.04	0.18	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #	-	-	-	-	-	0.19	0.28	0.45	2.26	0.65	<0.03	mg/kg	TM4/PM8
Anthracene #	-	-	-	-	-	0.06	0.09	0.14	0.72	0.30	<0.04	mg/kg	TM4/PM8
Fluoranthene #	-	-	-	-	-	0.30	0.64	0.65	2.84	0.81	<0.03	mg/kg	TM4/PM8
Pyrene #	-	-	-	-	-	0.27	0.63	0.58	2.19	0.83	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	-	-	-	-	-	0.24	0.48	0.35	1.29	0.95	<0.06	mg/kg	TM4/PM8
Chrysene #	-	-	-	-	-	0.16	0.47	0.31	1.18	0.67	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	-	-	-	-	-	0.24	0.92	0.53	1.58	1.09	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	-	-	-	-	-	0.17	0.56	0.36	0.96	0.71	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	-	-	-	-	-	0.09	0.39	0.21	0.47	0.34	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	-	-	-	-	-	<0.04	0.08	0.06	0.12	0.12	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	-	-	-	-	-	0.09	0.53	0.25	0.44	0.37	<0.04	mg/kg	TM4/PM8
Coronene	-	-	-	-	-	<0.04	0.14	0.06	0.12	0.12	<0.04	mg/kg	TM4/PM8
PAH 6 Total #	-	-	-	-	-	0.89	3.04	2.00	6.29	3.32	<0.22	mg/kg	TM4/PM8
PAH 17 Total	-	-	-	-	-	1.81	5.27	3.95	14.68	7.04	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-	-	-	-	-	0.17	0.66	0.38	1.14	0.78	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	-	-	-	-	-	0.07	0.26	0.15	0.44	0.31	<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	-	-	-	-	-	<1	<1	<1	<1	<1	<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	-	-	-	-	-	100	104	102	96	101	<0	%	TM4/PM8
Mineral Oil (C10-C40)	-	-	-	-	-	<30	<30	<30	<30	<30	<30	mg/kg	TM5/PM16
TPH CWG													
Aliphatics													
>C5-C6 #	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 #	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 #	-	-	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>C12-C16 #	-	-	-	-	-	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM16
>C16-C21 #	-	-	-	-	-	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
>C21-C35 #	-	-	-	-	-	<7	29	<7	<7	<7	<7	mg/kg	TM5/PM16
>C35-C40	-	-	-	-	-	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
Total aliphatics C5-40	-	-	-	-	-	<26	29	<26	<26	<26	<26	mg/kg	TM5/TM36/PM12/PM16
>C6-C10	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C25	-	-	-	-	-	<10	<10	<10	<10	<10	<10	mg/kg	TM5/PM16
>C25-C35	-	-	-	-	-	<10	26	<10	<10	<10	<10	mg/kg	TM5/PM16

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/8435

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	14	15	16	17,31	18	19-20	21-22	23-24	25-26	27-28	LOD/LOR	Units	Method No.
Sample ID	BH21	BH22	BH22	BH24	BH25	BH30	BH30	BH30	BH31	BH31			
Depth	1.0	2.0	5.0	1.0	2.0	1.0	2.0	5.0	1.0	2.0			
COC No / misc													
Containers	J	J	J	J	J	V J	V J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017			
TPH CWG													
Aromatics													
>C5-EC7 #	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	-	-	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	-	-	-	-	-	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM16
>EC16-EC21 #	-	-	-	-	-	<7	25	<7	<7	19	<7	mg/kg	TM5/PM16
>EC21-EC35 #	-	-	-	-	-	<7	260	71	76	106	<7	mg/kg	TM5/PM16
>EC35-EC40	-	-	-	-	-	<7	47	17	21	34	<7	mg/kg	TM5/PM16
Total aromatics C5-40	-	-	-	-	-	<26	332	88	97	159	<26	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-40)	-	-	-	-	-	<52	361	88	97	159	<52	mg/kg	TM5/TM36/PM12/PM16
>EC6-EC10 #	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC25	-	-	-	-	-	<10	73	15	17	34	<10	mg/kg	TM5/PM16
>EC25-EC35	-	-	-	-	-	<10	195	61	61	78	<10	mg/kg	TM5/PM16
MTBE #	-	-	-	-	-	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
Benzene #	-	-	-	-	-	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
Toluene #	-	-	-	-	-	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
Ethylbenzene #	-	-	-	-	-	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
m/p-Xylene #	-	-	-	-	-	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
o-Xylene #	-	-	-	-	-	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
PCB 28 #	-	-	-	-	-	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 52 #	-	-	-	-	-	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 101 #	-	-	-	-	-	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 118 #	-	-	-	-	-	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 138 #	-	-	-	-	-	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 153 #	-	-	-	-	-	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 180 #	-	-	-	-	-	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
Total 7 PCBs #	-	-	-	-	-	<35	<35	<35	<35	<35	<35	ug/kg	TM17/PM8
Phenol #	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	TM26/PM21
Natural Moisture Content	-	-	-	-	-	-	20.7	36.3	-	17.8	<0.1	%	PM4/PM0
Natural Moisture Content	-	-	-	-	-	24.4	-	-	21.4	-	<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	-	-	-	-	-	-	17.2	26.6	-	15.1	<0.1	%	PM4/PM0
Hexavalent Chromium #	-	-	-	-	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	0.1758	0.0761	0.2677	0.1515	0.1046	-	-	-	-	0.0579	<0.0015	g/l	TM38/PM20
Sulphate as SO4 (2:1 Ext)	-	-	-	-	-	0.1465	-	-	0.0365	-	<0.0015	g/l	TM38/PM60
Chromium III	-	-	-	-	-	-	58.4	69.5	-	49.3	<0.5	mg/kg	NONE/NONE
Chromium III	-	-	-	-	-	24.9	-	-	20.0	-	<0.5	mg/kg	NONE/NONE

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/8435

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	14	15	16	17,31	18	19-20	21-22	23-24	25-26	27-28	LOD/LOR	Units	Method No.
Sample ID	BH21	BH22	BH22	BH24	BH25	BH30	BH30	BH30	BH31	BH31			
Depth	1.0	2.0	5.0	1.0	2.0	1.0	2.0	5.0	1.0	2.0			
COC No / misc													
Containers	J	J	J	J	J	V J	V J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017			
Total Cyanide #	-	-	-	-	-	<0.5	<0.5	1.1	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	-	-	-	-	-	NDP	11.63	13.75	NDP	1.86	<0.02	%	TM21/PM24
Sulphide	-	-	-	-	-	<10	<10	<10	<10	<10	<10	mg/kg	TM106/PM119
Elemental Sulphur	-	-	-	-	-	-	19	259	-	11	<1	mg/kg	TM108/PM114
Elemental Sulphur	-	-	-	-	-	<1	-	-	1	-	<1	mg/kg	TM108/PM8
pH #	8.19	8.08	8.28	8.21	8.10	8.62	8.40	7.99	8.43	8.39	<0.01	pH units	TM73/PM11
Mass of raw test portion	-	-	-	-	-	0.111	0.1075	0.1254	0.1074	0.1031		kg	NONE/PM17
Mass of dried test portion	-	-	-	-	-	0.09	0.09	0.09	0.09	0.09		kg	NONE/PM17

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/8435

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	29-30										Please see attached notes for all abbreviations and acronyms		
Sample ID	BH31												
Depth	2.8												
COC No / misc													
Containers	V J												
Sample Date	<>												
Sample Type	Soil												
Batch Number	1										LOD/LOR	Units	Method No.
Date of Receipt	11/05/2017												
Antimony	2										<1	mg/kg	TM30/PM15
Arsenic #	8.8										<0.5	mg/kg	TM30/PM15
Barium #	76										<1	mg/kg	TM30/PM15
Cadmium #	0.1										<0.1	mg/kg	TM30/PM15
Chromium #	65.0										<0.5	mg/kg	TM30/PM15
Copper #	5										<1	mg/kg	TM30/PM15
Lead #	8										<5	mg/kg	TM30/PM15
Mercury #	<0.1										<0.1	mg/kg	TM30/PM15
Molybdenum #	3.4										<0.1	mg/kg	TM30/PM15
Nickel #	26.1										<0.7	mg/kg	TM30/PM15
Selenium #	2										<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	104										<50	mg/kg	TM50/PM29
Water Soluble Boron #	0.4										<0.1	mg/kg	TM74/PM32
Zinc #	42										<5	mg/kg	TM30/PM15
Antimony	-										<1	mg/kg	TM30/PM62
Arsenic	-										<0.5	mg/kg	TM30/PM62
Barium	-										<1	mg/kg	TM30/PM62
Cadmium	-										<0.1	mg/kg	TM30/PM62
Chromium	-										<0.5	mg/kg	TM30/PM62
Copper	-										<1	mg/kg	TM30/PM62
Lead	-										<5	mg/kg	TM30/PM62
Mercury	-										<0.1	mg/kg	TM30/PM62
Molybdenum	-										<0.1	mg/kg	TM30/PM62
Nickel	-										<0.7	mg/kg	TM30/PM62
Selenium	-										<1	mg/kg	TM30/PM62
Total Sulphate as SO4	-										<50	mg/kg	TM50/PM29
Water Soluble Boron	-										<0.1	mg/kg	TM74/PM61
Zinc	-										<5	mg/kg	TM30/PM62

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/8435

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	29-30										LOD/LOR	Units	Method No.
Sample ID	BH31												
Depth	2.8												
COC No / misc													
Containers	V J												
Sample Date	<>												
Sample Type	Soil												
Batch Number	1												
Date of Receipt	11/05/2017												
PAH MS													
Naphthalene #	<0.04										<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03										<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05										<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04										<0.04	mg/kg	TM4/PM8
Phenanthrene #	<0.03										<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04										<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.05										<0.03	mg/kg	TM4/PM8
Pyrene #	0.04										<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.07										<0.06	mg/kg	TM4/PM8
Chrysene #	0.04										<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	<0.07										<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04										<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	<0.04										<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04										<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04										<0.04	mg/kg	TM4/PM8
Coronene	<0.04										<0.04	mg/kg	TM4/PM8
PAH 6 Total #	<0.22										<0.22	mg/kg	TM4/PM8
PAH 17 Total	<0.64										<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	<0.05										<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	<0.02										<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	<1										<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	103										<0	%	TM4/PM8
Mineral Oil (C10-C40)	<30										<30	mg/kg	TM5/PM16
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1										<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1										<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1										<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2										<0.2	mg/kg	TM5/PM16
>C12-C16 #	<4										<4	mg/kg	TM5/PM16
>C16-C21 #	<7										<7	mg/kg	TM5/PM16
>C21-C35 #	<7										<7	mg/kg	TM5/PM16
>C35-C40	<7										<7	mg/kg	TM5/PM16
Total aliphatics C5-40	<26										<26	mg/kg	TM5/TM36/PM12/PM16
>C6-C10	<0.1										<0.1	mg/kg	TM36/PM12
>C10-C25	<10										<10	mg/kg	TM5/PM16
>C25-C35	<10										<10	mg/kg	TM5/PM16

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/8435

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	29-30										LOD/LOR	Units	Method No.
Sample ID	BH31												
Depth	2.8												
COC No / misc													
Containers	V J												
Sample Date	<>												
Sample Type	Soil												
Batch Number	1												
Date of Receipt	11/05/2017												
TPH CWG													
Aromatics													
>C5-EC7 #	<0.1										<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1										<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1										<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2										<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4										<4	mg/kg	TM5/PM16
>EC16-EC21 #	<7										<7	mg/kg	TM5/PM16
>EC21-EC35 #	<7										<7	mg/kg	TM5/PM16
>EC35-EC40	<7										<7	mg/kg	TM5/PM16
Total aromatics C5-40	<26										<26	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-40)	<52										<52	mg/kg	TM5/TM36/PM12/PM16
>EC6-EC10 #	<0.1										<0.1	mg/kg	TM36/PM12
>EC10-EC25	<10										<10	mg/kg	TM5/PM16
>EC25-EC35	<10										<10	mg/kg	TM5/PM16
MTBE #	<5										<5	ug/kg	TM31/PM12
Benzene #	<5										<5	ug/kg	TM31/PM12
Toluene #	<5										<5	ug/kg	TM31/PM12
Ethylbenzene #	<5										<5	ug/kg	TM31/PM12
m/p-Xylene #	<5										<5	ug/kg	TM31/PM12
o-Xylene #	<5										<5	ug/kg	TM31/PM12
PCB 28 #	<5										<5	ug/kg	TM17/PM8
PCB 52 #	<5										<5	ug/kg	TM17/PM8
PCB 101 #	<5										<5	ug/kg	TM17/PM8
PCB 118 #	<5										<5	ug/kg	TM17/PM8
PCB 138 #	<5										<5	ug/kg	TM17/PM8
PCB 153 #	<5										<5	ug/kg	TM17/PM8
PCB 180 #	<5										<5	ug/kg	TM17/PM8
Total 7 PCBs #	<35										<35	ug/kg	TM17/PM8
Phenol #	<0.01										<0.01	mg/kg	TM26/PM21
Natural Moisture Content	<0.1										<0.1	%	PM4/PM0
Natural Moisture Content	-										<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	<0.1										<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3										<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	-										<0.0015	g/l	TM38/PM20
Sulphate as SO4 (2:1 Ext)	-										<0.0015	g/l	TM38/PM60
Chromium III	65.0										<0.5	mg/kg	NONE/NONE
Chromium III	-										<0.5	mg/kg	NONE/NONE

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/8435

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	29-30												
Sample ID	BH31												
Depth	2.8												
COC No / misc													
Containers	V J												
Sample Date	<>												
Sample Type	Soil												
Batch Number	1												
Date of Receipt	11/05/2017												

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
Total Cyanide #	<0.5										<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	0.69										<0.02	%	TM21/PM24
Sulphide	<10										<10	mg/kg	TM106/PM119
Elemental Sulphur	13										<1	mg/kg	TM108/PM114
Elemental Sulphur	-										<1	mg/kg	TM108/PM8
pH #	8.37										<0.01	pH units	TM73/PM11
Mass of raw test portion	0.0965											kg	NONE/PM17
Mass of dried test portion	0.09											kg	NONE/PM17

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/8435

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	19-20	21-22	23-24	25-26	27-28	29-30		LOD/LOR	Units	Method No.
Sample ID	BH3	BH3	BH3	BH30	BH30	BH30	BH31	BH31	BH31				
Depth	1.0	3.0	4.0	1.0	2.0	5.0	1.0	2.0	2.8				
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J				
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017				
Dissolved Antimony #	0.003	0.003	<0.002	0.002	<0.002	0.006	<0.002	<0.002	<0.002		<0.002	mg/l	TM30/PM17
Dissolved Antimony (A10) #	0.03	0.03	<0.02	<0.02	<0.02	0.06	<0.02	<0.02	<0.02		<0.02	mg/kg	TM30/PM17
Dissolved Arsenic #	0.0328	<0.0025	<0.0025	<0.0025	0.0053	0.0116	0.0078	0.0067	0.0039		<0.0025	mg/l	TM30/PM17
Dissolved Arsenic (A10) #	0.328	<0.025	<0.025	<0.025	0.053	0.116	0.078	0.067	0.039		<0.025	mg/kg	TM30/PM17
Dissolved Barium #	<0.003	0.022	0.034	0.011	0.006	0.028	0.009	0.004	0.008		<0.003	mg/l	TM30/PM17
Dissolved Barium (A10) #	<0.03	0.22	0.34	0.11	0.06	0.28	0.09	0.04	0.08		<0.03	mg/kg	TM30/PM17
Dissolved Boron #	<0.012	0.472	<0.012	0.040	0.026	0.115	0.021	0.021	<0.012		<0.012	mg/l	TM30/PM17
Dissolved Boron (A10) #	<0.12	4.72	<0.12	0.40	0.26	1.15	0.21	0.21	<0.12		<0.12	mg/kg	TM30/PM17
Dissolved Cadmium #	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	mg/l	TM30/PM17
Dissolved Cadmium (A10) #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	mg/kg	TM30/PM17
Dissolved Chromium #	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015		<0.0015	mg/l	TM30/PM17
Dissolved Chromium (A10) #	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015		<0.015	mg/kg	TM30/PM17
Dissolved Copper #	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007		<0.007	mg/l	TM30/PM17
Dissolved Copper (A10) #	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07		<0.07	mg/kg	TM30/PM17
Dissolved Lead #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	mg/l	TM30/PM17
Dissolved Lead (A10) #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		<0.05	mg/kg	TM30/PM17
Dissolved Molybdenum #	0.007	0.038	<0.002	0.018	0.012	0.017	0.008	0.008	0.008		<0.002	mg/l	TM30/PM17
Dissolved Molybdenum (A10) #	0.07	0.38	<0.02	0.18	0.12	0.17	0.08	0.08	0.08		<0.02	mg/kg	TM30/PM17
Dissolved Nickel #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/l	TM30/PM17
Dissolved Nickel (A10) #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	mg/kg	TM30/PM17
Dissolved Selenium #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM30/PM17
Dissolved Selenium (A10) #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03		<0.03	mg/kg	TM30/PM17
Dissolved Zinc #	<0.003	<0.003	<0.003	<0.003	0.004	0.092	<0.003	0.005	<0.003		<0.003	mg/l	TM30/PM17
Dissolved Zinc (A10) #	<0.03	<0.03	<0.03	<0.03	0.04	0.92	<0.03	0.05	<0.03		<0.03	mg/kg	TM30/PM17
Mercury Dissolved by CVAF #	0.00018	<0.00001	<0.00001	0.00016	0.00071	0.00052	0.00210	0.00112	<0.00001		<0.00001	mg/l	TM61/PM38
Mercury Dissolved by CVAF #	0.0018	<0.0001	<0.0001	0.0016	0.0071	0.0052	0.0210	0.0112	<0.0001		<0.0001	mg/kg	TM61/PM38
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	mg/l	TM26/PM0
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		<0.1	mg/kg	TM26/PM0
Fluoride	<0.3	0.3	<0.3	0.4	<0.3	<0.3	0.5	0.4	<0.3		<0.3	mg/l	TM173/PM0
Fluoride	<3	<3	<3	4	<3	<3	5	4	<3		<3	mg/kg	TM173/PM0
Sulphate as SO4 #	5.58	317.30	15.82	44.92	12.91	32.70	12.35	9.85	24.22		<0.05	mg/l	TM38/PM0
Sulphate as SO4 #	55.8	3171.6	158.3	449.0	129.1	326.9	123.4	98.5	242.1		<0.5	mg/kg	TM38/PM0
Chloride #	2.0	11.6	1.8	1.5	1.1	2.1	0.9	0.8	1.3		<0.3	mg/l	TM38/PM0
Chloride #	20	116	18	15	11	21	9	8	13		<3	mg/kg	TM38/PM0
Ammoniacal Nitrogen as N #	0.12	4.95	0.04	0.04	0.03	0.03	0.05	0.04	0.04		<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	1.2	49.5	0.4	0.4	0.3	<0.3	0.5	0.4	0.4		<0.3	mg/kg	TM38/PM0
Dissolved Organic Carbon	5	18	<2	4	6	8	6	6	3		<2	mg/l	TM60/PM0
Dissolved Organic Carbon	50	180	<20	40	60	80	60	60	30		<20	mg/kg	TM60/PM0
Total Dissolved Solids #	65	587	133	169	96	161	96	66	88		<35	mg/l	TM20/PM0
Total Dissolved Solids #	650	5867	1331	1689	960	1610	960	660	880		<350	mg/kg	TM20/PM0

Please see attached notes for all abbreviations and acronyms

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	92.1
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.85

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/8435**			
Sample No	**2**			
Client Sample No	**BH3**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.0**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.56	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	0.37	-	-	-
PAH Sum of 17 (mg/kg)	0.78	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.328	0.5	2	25
Barium	<0.03	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0018	0.01	0.2	2
Molybdenum	0.07	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.03	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	20	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	55.8	1000	20000	50000
Total Dissolved Solids	650	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	50	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	69.4
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.74

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/8435**			
Sample No	**4**			
Client Sample No	**BH3**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**3.0**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	3.24	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	0.36	-	-	-
PAH Sum of 17 (mg/kg)	0.77	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.22	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.38	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.03	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	116	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	3171.6	1000	20000	50000
Total Dissolved Solids	5867	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	180	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	89.6
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.82

JEFL Job No	**17/8435**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**6**			
Client Sample No	**BH3**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**4.0**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.52	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	<0.22	-	-	-
PAH Sum of 17 (mg/kg)	<0.64	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.34	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	<0.02	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	18	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	158.3	1000	20000	50000
Total Dissolved Solids	1331	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	<20	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	80.7
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

JEFL Job No	**17/8435**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**20**			
Client Sample No	**BH30**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.0**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	NDP	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	0.89	-	-	-
PAH Sum of 17 (mg/kg)	1.81	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.11	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0016	0.01	0.2	2
Molybdenum	0.18	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	15	800	15000	25000
Fluoride	4	10	150	500
Sulphate as SO4	449.0	1000	20000	50000
Total Dissolved Solids	1689	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	84.0
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.85

JEFL Job No	**17/8435**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**22**			
Client Sample No	**BH30**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**2.0**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	11.63	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	3.04	-	-	-
PAH Sum of 17 (mg/kg)	5.27	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.053	0.5	2	25
Barium	0.06	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0071	0.01	0.2	2
Molybdenum	0.12	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.04	4	50	200
Chloride	11	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	129.1	1000	20000	50000
Total Dissolved Solids	960	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	60	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	71.5
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.85

JEFL Job No	**17/8435**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**24**			
Client Sample No	**BH30**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**5.0**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	13.75	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	2.00	-	-	-
PAH Sum of 17 (mg/kg)	3.95	100	-	-
Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.116	0.5	2	25
Barium	0.28	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0052	0.01	0.2	2
Molybdenum	0.17	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.06	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.92	4	50	200
Chloride	21	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	326.9	1000	20000	50000
Total Dissolved Solids	1610	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	80	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	83.7
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.85

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/8435**			
Sample No	**26**			
Client Sample No	**BH31**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.0**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	NDP	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	6.29	-	-	-
PAH Sum of 17 (mg/kg)	14.68	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.078	0.5	2	25
Barium	0.09	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0210	0.01	0.2	2
Molybdenum	0.08	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	9	800	15000	25000
Fluoride	5	10	150	500
Sulphate as SO4	123.4	1000	20000	50000
Total Dissolved Solids	960	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	60	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	87.1
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.85

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/8435**			
Sample No	**28**			
Client Sample No	**BH31**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**2.0**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	1.86	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	3.32	-	-	-
PAH Sum of 17 (mg/kg)	7.04	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.067	0.5	2	25
Barium	0.04	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0112	0.01	0.2	2
Molybdenum	0.08	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.05	4	50	200
Chloride	8	800	15000	25000
Fluoride	4	10	150	500
Sulphate as SO4	98.5	1000	20000	50000
Total Dissolved Solids	660	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	60	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	93.0
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.85

JEFL Job No	**17/8435**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**30**			
Client Sample No	**BH31**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**2.8**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.69	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	<0.22	-	-	-
PAH Sum of 17 (mg/kg)	<0.64	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.039	0.5	2	25
Barium	0.08	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.08	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	13	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	242.1	1000	20000	50000
Total Dissolved Solids	880	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

Client Name: IGSL **Matrix : Solid**
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	EPH Interpretation
17/8435	1	BH3	1.0	1-2	No interpretation possible
17/8435	1	BH3	3.0	3-4	Possible PAH's
17/8435	1	BH3	4.0	5-6	No interpretation possible
17/8435	1	BH30	1.0	19-20	No interpretation possible
17/8435	1	BH30	2.0	21-22	PAH's & Possible lubricating oil
17/8435	1	BH30	5.0	23-24	Possible PAH's
17/8435	1	BH31	1.0	25-26	PAH's
17/8435	1	BH31	2.0	27-28	PAH's
17/8435	1	BH31	2.8	29-30	No interpretation possible

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/8435	1	BH3	1.0	2	15/05/2017	**Mass of Dry Sample**	55.6 (g)
					23/05/2017	**General Description (Bulk Analysis)**	Sand/Stones
					23/05/2017	**Asbestos Fibres**	NAD
					23/05/2017	**Asbestos Fibres (2)**	NAD
					23/05/2017	**Asbestos ACM**	NAD
					23/05/2017	**Asbestos ACM (2)**	NAD
					23/05/2017	**Asbestos Type**	NAD
					23/05/2017	**Asbestos Type (2)**	NAD
					23/05/2017	**Asbestos Level Screen**	NAD
17/8435	1	BH3	3.0	4	15/05/2017	**Mass of Dry Sample**	38.7 (g)
					23/05/2017	**General Description (Bulk Analysis)**	Soil-Silt/Stones
					23/05/2017	**Asbestos Fibres**	NAD
					23/05/2017	**Asbestos Fibres (2)**	NAD
					23/05/2017	**Asbestos ACM**	NAD
					23/05/2017	**Asbestos ACM (2)**	NAD
					23/05/2017	**Asbestos Type**	NAD
					23/05/2017	**Asbestos Type (2)**	NAD
					23/05/2017	**Asbestos Level Screen**	NAD
17/8435	1	BH3	4.0	6	15/05/2017	**Mass of Dry Sample**	50.1 (g)
					16/05/2017	**General Description (Bulk Analysis)**	soil/stones
					16/05/2017	**Asbestos Fibres**	NAD
					16/05/2017	**Asbestos Fibres (2)**	NAD
					16/05/2017	**Asbestos ACM**	NAD
					16/05/2017	**Asbestos ACM (2)**	NAD
					16/05/2017	**Asbestos Type**	NAD
					16/05/2017	**Asbestos Type (2)**	NAD
					16/05/2017	**Asbestos Level Screen**	NAD
17/8435	1	BH30	1.0	20	15/05/2017	**Mass of Dry Sample**	46.6 (g)
					23/05/2017	**General Description (Bulk Analysis)**	soil-stones
					23/05/2017	**Asbestos Fibres**	Fibre Bundles
					23/05/2017	**Asbestos ACM**	NAD
					23/05/2017	**Asbestos Type**	Chrysotile
					23/05/2017	**Asbestos Level Screen**	<0.1%
					24/05/2017	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					24/05/2017	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					24/05/2017	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/8435	1	BH30	2.0	22	15/05/2017	**Mass of Dry Sample**	48.0 (g)
					23/05/2017	**General Description (Bulk Analysis)**	Soil-Silt/Stones
					23/05/2017	**Asbestos Fibres**	NAD
					23/05/2017	**Asbestos Fibres (2)**	NAD
					23/05/2017	**Asbestos ACM**	NAD
					23/05/2017	**Asbestos ACM (2)**	NAD
					23/05/2017	**Asbestos Type**	NAD
					23/05/2017	**Asbestos Type (2)**	NAD
					23/05/2017	**Asbestos Level Screen**	NAD
17/8435	1	BH30	5.0	24	15/05/2017	**Mass of Dry Sample**	49.6 (g)
					23/05/2017	**General Description (Bulk Analysis)**	Soil/Stones/Concrete
					23/05/2017	**Asbestos Fibres**	NAD
					23/05/2017	**Asbestos Fibres (2)**	NAD
					23/05/2017	**Asbestos ACM**	NAD
					23/05/2017	**Asbestos ACM (2)**	NAD
					23/05/2017	**Asbestos Type**	NAD
					23/05/2017	**Asbestos Type (2)**	NAD
					23/05/2017	**Asbestos Level Screen**	NAD
17/8435	1	BH31	1.0	26	15/05/2017	**Mass of Dry Sample**	46.1 (g)
					23/05/2017	**General Description (Bulk Analysis)**	soil-stones
					23/05/2017	**Asbestos Fibres**	Fibre Bundles
					23/05/2017	**Asbestos ACM**	NAD
					23/05/2017	**Asbestos Type**	Chrysotile
					23/05/2017	**Asbestos Level Screen**	<0.1%
					24/05/2017	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					24/05/2017	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					24/05/2017	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
17/8435	1	BH31	2.0	28	15/05/2017	**Mass of Dry Sample**	46.8 (g)
					23/05/2017	**General Description (Bulk Analysis)**	soil-stones
					23/05/2017	**Asbestos Fibres**	NAD
					23/05/2017	**Asbestos Fibres (2)**	NAD
					23/05/2017	**Asbestos ACM**	NAD
					23/05/2017	**Asbestos ACM (2)**	NAD
					23/05/2017	**Asbestos Type**	NAD
					23/05/2017	**Asbestos Type (2)**	NAD
					23/05/2017	**Asbestos Level Screen**	NAD
17/8435	1	BH31	2.8	30	15/05/2017	**Mass of Dry Sample**	48.1 (g)
					23/05/2017	**General Description (Bulk Analysis)**	soil-stones
					23/05/2017	**Asbestos Fibres**	NAD
					23/05/2017	**Asbestos Fibres (2)**	NAD
					23/05/2017	**Asbestos ACM**	NAD
					23/05/2017	**Asbestos ACM (2)**	NAD
					23/05/2017	**Asbestos Type**	NAD
					23/05/2017	**Asbestos Type (2)**	NAD
					23/05/2017	**Asbestos Level Screen**	NAD

Client Name: IGSL **Matrix : Solid**
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
17/8435	1	BH30	1.0	19-20	Asbestos detected in sample
17/8435	1	BH31	1.0	25-26	Asbestos detected in sample

Client Name: IGSL

Matrix : Solid

Reference:

Location: Howth

Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
17/8435	1	BH3	1.0	1-2	All analyses	No sampling date given
17/8435	1	BH3	1.0	1-2	GRO	Solid Samples were received at a temperature above 9°C.
17/8435	1	BH3	3.0	3-4	All analyses	No sampling date given
17/8435	1	BH3	3.0	3-4	GRO	Solid Samples were received at a temperature above 9°C.
17/8435	1	BH3	4.0	5-6	All analyses	No sampling date given
17/8435	1	BH3	4.0	5-6	GRO	Solid Samples were received at a temperature above 9°C.
17/8435	1	BH10	1.5	7	All analyses	No sampling date given
17/8435	1	BH12	2.0	8	All analyses	No sampling date given
17/8435	1	BH15	1.0	9	All analyses	No sampling date given
17/8435	1	BH16	1.0	10	All analyses	No sampling date given
17/8435	1	BH17	1.0	11	All analyses	No sampling date given
17/8435	1	BH19	2.0	12	All analyses	No sampling date given
17/8435	1	BH20	1.0	13	All analyses	No sampling date given
17/8435	1	BH21	1.0	14	All analyses	No sampling date given
17/8435	1	BH22	2.0	15	All analyses	No sampling date given
17/8435	1	BH22	5.0	16	All analyses	No sampling date given
17/8435	1	BH24	1.0	17,31	All analyses	No sampling date given
17/8435	1	BH25	2.0	18	All analyses	No sampling date given
17/8435	1	BH30	1.0	19-20	All analyses	No sampling date given
17/8435	1	BH30	1.0	19-20	GRO	Solid Samples were received at a temperature above 9°C.
17/8435	1	BH30	2.0	21-22	All analyses	No sampling date given
17/8435	1	BH30	2.0	21-22	GRO	Solid Samples were received at a temperature above 9°C.
17/8435	1	BH30	5.0	23-24	All analyses	No sampling date given

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

Client Name: IGSL

Matrix : Solid

Reference:

Location: Howth

Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
17/8435	1	BH30	5.0	23-24	GRO	Solid Samples were received at a temperature above 9°C.
17/8435	1	BH31	1.0	25-26	All analyses	No sampling date given
17/8435	1	BH31	1.0	25-26	GRO	Solid Samples were received at a temperature above 9°C.
17/8435	1	BH31	2.0	27-28	All analyses	No sampling date given
17/8435	1	BH31	2.0	27-28	GRO	Solid Samples were received at a temperature above 9°C.
17/8435	1	BH31	2.8	29-30	All analyses	No sampling date given
17/8435	1	BH31	2.8	29-30	GRO	Solid Samples were received at a temperature above 9°C.

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

Please include all sections of this report if it is reproduced

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/8435

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

JE Job No: 17/8435

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	Yes
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes

JE Job No: 17/8435

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM20	Modified BS 1377-3: 1990/USEPA 160.3 Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.	Yes		AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.	Yes		AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.	Yes		AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes

JE Job No: 17/8435

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM60	As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid.			AR	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	Dried and ground solid sample is boiled with dilute hydrochloric acid, the resulting liquor is then analysed.	Yes		AD	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	Dried and ground solid sample is boiled with dilute hydrochloric acid, the resulting liquor is then analysed.			AR	Yes
TM60	Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR).	PM0	No preparation is required.			AR	Yes
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes		AR	Yes

JE Job No: 17/8435

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM61	As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP.			AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes		AR	Yes
TM106	Determination of Sulphide by Skalar Continuous Flow Analyser	PM119	As received solid samples are extracted with 1M NaOH by orbital shaker for Sulphide and Thiocyanate analysis.			AR	Yes
TM108	Determination of Elemental Sulphur by Reversed Phase High Performance Liquid Chromatography with Ultra Violet spectroscopy.	PM114	End over end extraction of dried and crushed soil samples for organic analysis. The solvent mix varies depending on analysis required			AD	Yes
TM108	Determination of Elemental Sulphur by Reversed Phase High Performance Liquid Chromatography with Ultra Violet spectroscopy.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes

JE Job No: 17/8435

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.			AR	Yes
NONE	No Method Code	NONE	No Method Code			AR	Yes
NONE	No Method Code	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.			AR	
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.			AR	

Appendix - Methods used for WAC (2003/33/EC)

Leachate tests	
10l/kg; 4mm	I.S. EN 12457-2:2002 Specified particle size; water added to L/S ratio; capped; agitated for 24 ± 0.5 hours; eluate settled and filtered over 0.45 µm membrane filter.
Eluate analysis	
As	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Ba	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cd	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cr total	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cu	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Hg	I.S. EN 13370 rec. EN 1483 (CVAAS)
Mo	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Ni	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Pb	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Sb	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Se	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Zn	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Chloride	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Fluoride	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Sulphate	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Phenol index	I.S. EN 13370 rec. ISO 6439 (4-Aminoantipyrine spectrometic methods after distillation)* (BY HPLC - Jones Env)
DOC	I.S. EN 1484
TDS	I.S. EN 15216
Compositional analysis	
TOC	I.S. EN 13137 Method B: carbonates removed with acid; TOC by combustion.
BTEX	GC-FID
PCB7**	I.S. EN 15308 analysis by GC-ECD.
Mineral oil	I.S. EN 14039 C10 to C40 analysis by GC-FID.
PAH17***	I.S. EN 15527 PAH17 analysis by GC-MS
Metals	I.S. EN 13657 - Aqua regia digestion: EN ISO 11885 (ICP-OES)
Other	
Dry matter	I.S. EN 14346 sample is dried to a constant mass in an oven at 105 ± 3 °C; Method B Water content by direct Karl-Fischer-titration and either volumetric or coulometric detection.
LOI	I.S. EN 15169 Difference in mass after heating in a furnace up to 550 ± 25 °C.
ANC	CEN/TS 15364 Determined by amouns of acid or base needed to cover the pH range

Notes:

*If not suitable due to LOD, precision, etc., any other suitable method can be used, e.g. AFS, ICP-MS

**PCB-28, PCB-52, PCB-101, PCB-118, PCB-138, PCB-153 and PCB-180

***Naphthalene, Acenaphthylene, Acenaphthene, Anthracene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(g,h,i)perylene, Benzo(a)pyrene, Chrysene, Coronene, Dibenzo(a,h)anthracene, Fluorene, Fluoranthene, Indeno(1,2,3-c,d)pyrene, Phenanthrene and Pyrene.

Exova Jones Environmental

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IGSL
Unit F
M7 Business Park
Naas
Co Kildare
Ireland

Attention :	Darren Keogh
Date :	23rd May, 2017
Your reference :	
Our reference :	Test Report 17/7987 Batch 1
Location :	Howth
Date samples received :	5th May, 2017
Status :	Final report
Issue :	1

Three samples were received for analysis on 5th May, 2017 of which three were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Phil Sommerton BSc
Project Manager

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7987

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1-2	3	4-5								LOD/LOR	Units	Method No.
Sample ID	BH11	BH16	BH22										
Depth	2.70	2.10	2.70										
COC No / misc													
Containers	P	P	P										
Sample Date	<>	<>	<>										
Sample Type	Liquid	Liquid	Liquid										
Batch Number	1	1	1										
Date of Receipt	05/05/2017	05/05/2017	05/05/2017										
Dissolved Aluminium	5.6	3.8	1.5								<1.5	ug/l	TM30/PM14
Dissolved Antimony	9	5	3								<2	ug/l	TM30/PM14
Dissolved Arsenic	9.5	6.9	10.3								<0.9	ug/l	TM30/PM14
Dissolved Barium	122.3	99.7	199.7								<1.8	ug/l	TM30/PM14
Dissolved Beryllium	<0.5	<0.5	<0.5								<0.5	ug/l	TM30/PM14
Dissolved Boron	88	94	631								<12	ug/l	TM30/PM14
Dissolved Cadmium	<0.03	<0.03	<0.03								<0.03	ug/l	TM30/PM14
Dissolved Calcium	154.7	182.9	143.1								<0.2	mg/l	TM30/PM14
Total Dissolved Chromium	<0.2	0.2	<0.2								<0.2	ug/l	TM30/PM14
Dissolved Cobalt	2.2	2.3	0.9								<0.1	ug/l	TM30/PM14
Dissolved Copper	<3	4	<3								<3	ug/l	TM30/PM14
Total Dissolved Iron	<4.7	<4.7	27.5								<4.7	ug/l	TM30/PM14
Dissolved Lead	<0.4	<0.4	<0.4								<0.4	ug/l	TM30/PM14
Dissolved Magnesium	10.3	12.4	27.1								<0.1	mg/l	TM30/PM14
Dissolved Manganese	445.4	615.6	804.2								<1.5	ug/l	TM30/PM14
Dissolved Molybdenum	14.5	6.4	18.8								<0.2	ug/l	TM30/PM14
Dissolved Nickel	4.0	6.1	4.2								<0.2	ug/l	TM30/PM14
Dissolved Potassium	6.0	9.9	31.8								<0.1	mg/l	TM30/PM14
Dissolved Selenium	<1.2	<1.2	<1.2								<1.2	ug/l	TM30/PM14
Dissolved Silver	<5	<5	<5								<5	ug/l	TM30/PM14
Dissolved Sodium	18.0	39.3	427.4_{AA}								<0.1	mg/l	TM30/PM14
Dissolved Strontium	606	696	1211_{AA}								<5	ug/l	TM30/PM14
Dissolved Uranium	<5	<5	<5								<5	ug/l	TM30/PM14
Dissolved Zinc	35.0	22.7	28.1								<1.5	ug/l	TM30/PM14
Mercury Dissolved by CVAF	0.07	0.47	<0.01								<0.01	ug/l	TM61/PM38
EPH (C8-C40)	<10	440	180								<10	ug/l	TM5/PM30
C8-C40 Mineral Oil (Calculation)	<10	70	<10								<10	ug/l	TM5/PM30
GRO (>C4-C8)	<10	-	<10								<10	ug/l	TM36/PM12
GRO (>C8-C12)	<10	-	<10								<10	ug/l	TM36/PM12
GRO (>C4-C12)	<10	-	<10								<10	ug/l	TM36/PM12
MTBE	<5	-	<5								<5	ug/l	TM31/PM12
Benzene	<5	-	<5								<5	ug/l	TM31/PM12
Toluene	<5	-	<5								<5	ug/l	TM31/PM12
Ethylbenzene	<5	-	<5								<5	ug/l	TM31/PM12
m/p-Xylene	<5	-	<5								<5	ug/l	TM31/PM12
o-Xylene	<5	-	<5								<5	ug/l	TM31/PM12
Fluoride	<0.3	0.3	<0.3								<0.3	mg/l	TM173/PM0
Sulphate as SO4	24.9	50.9	12.0								<0.5	mg/l	TM38/PM0
Chloride	18.3	37.1	456.5								<0.3	mg/l	TM38/PM0
Nitrate as NO3	<0.2	<0.2	<0.2								<0.2	mg/l	TM38/PM0

Please see attached notes for all abbreviations and acronyms

Exova Jones Environmental

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7987

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-2	3	4-5								LOD/LOR	Units	Method No.
Sample ID	BH11	BH16	BH22										
Depth	2.70	2.10	2.70										
COC No / misc													
Containers	P	P	P										
Sample Date	<>	<>	<>										
Sample Type	Liquid	Liquid	Liquid										
Batch Number	1	1	1										
Date of Receipt	05/05/2017	05/05/2017	05/05/2017										
Nitrite as NO2	<0.02	0.09	<0.02								<0.02	mg/l	TM38/PM0
Ortho Phosphate as PO4	<0.06	<0.06	<0.06								<0.06	mg/l	TM38/PM0
MRP Ortho Phosphate as PO4	<0.06	<0.06	<0.06								<0.06	mg/l	TM38/PM0
Ammoniacal Nitrogen as N	0.21	0.52	23.18								<0.03	mg/l	TM38/PM0
Hexavalent Chromium	<0.006	<0.006	<0.006								<0.006	mg/l	TM38/PM0
Total Alkalinity as CaCO3	NDP	NDP	NDP								<1	mg/l	TM75/PM0
Carbonate Alkalinity as CaCO3	NDP	NDP	NDP								<1	mg/l	TM75/PM0
Bicarbonate Alkalinity as CaCO3	NDP	NDP	NDP								<1	mg/l	TM75/PM0
BOD (Settled)	3	-	3								<1	mg/l	TM58/PM0
COD (Settled)	<7	14	47								<7	mg/l	TM57/PM0
Electrical Conductivity @25C	-	NDP	NDP								<2	uS/cm	TM76/PM0
pH	7.18	7.13	7.99								<0.01	pH units	TM73/PM0
Total Organic Carbon	<2	12	14								<2	mg/l	TM60/PM0
Total Dissolved Solids	612	NDP	1413								<35	mg/l	TM20/PM0
Total Suspended Solids	91004	72214	718								<10	mg/l	TM37/PM0
Turbidity	NDP	NDP	419.0								<0.1	NTU	TM34/PM0
Total Cations	9.50	12.11	28.78								<0.00	mmolc/l	TM30/PM14
Total Anions	NDP	NDP	NDP								<0.00	mmolc/l	TM0/PM0
% Cation Excess	NDP	NDP	NDP									%	TM0/PM0

Client Name: IGSL **Matrix : Liquid**
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
17/7987	1	BH11	2.70	1-2	Sample colour is interfering with this test
17/7987	1	BH11	2.70	1-2	Insufficient sample for test
17/7987	1	BH16	2.10	3	Sample colour is interfering with this test
17/7987	1	BH16	2.10	3	Insufficient sample for test
17/7987	1	BH22	2.70	4-5	Insufficient sample for test

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 17/7987						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/7987

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution

Please include all sections of this report if it is reproduced

All solid results are expressed on a dry weight basis unless stated otherwise.

JE Job No: 17/7987

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM0	Not available	PM0	No preparation is required.				
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM20	Modified BS 1377-3: 1990/USEPA 160.3 Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.				
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM34	Turbidity by 2100P Turbidity Meter	PM0	No preparation is required.				
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM37	Modified USEPA 160.2 .Gravimetric determination of Total Suspended Solids. Sample is filtered and the resulting residue is dried and weighed.	PM0	No preparation is required.				
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.				
TM57	Modified US EPA Method 410.4. Chemical Oxygen Demand is determined by hot digestion with Potassium Dichromate and measured spectrophotometerically.	PM0	No preparation is required.				

JE Job No: 17/7987

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM58	Modified USEPA methods 405.1 and BS 5667-3. Measurement of Biochemical Oxygen Demand. When cBOD (Carbonaceous BOD) is requested a nitrification inhibitor is added which prevents the oxidation of reduced forms of nitrogen, such as ammonia, nitrite and organic nitrogen which exert a nitrogenous demand.	PM0	No preparation is required.				
TM60	Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR).	PM0	No preparation is required.				
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.				
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.				
TM75	Modified US EPA method 310.1. Determination of Alkalinity by Metrohm automated titration analyser.	PM0	No preparation is required.				
TM76	Modified US EPA method 120.1. Determination of Specific Conductance by Metrohm automated probe analyser.	PM0	No preparation is required.				
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.				

Appendix - Methods used for WAC (2003/33/EC)

Leachate tests	
10l/kg; 4mm	I.S. EN 12457-2:2002 Specified particle size; water added to L/S ratio; capped; agitated for 24 ± 0.5 hours; eluate settled and filtered over 0.45 µm membrane filter.
Eluate analysis	
As	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Ba	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cd	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cr total	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cu	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Hg	I.S. EN 13370 rec. EN 1483 (CVAAS)
Mo	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Ni	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Pb	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Sb	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Se	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Zn	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Chloride	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Fluoride	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Sulphate	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Phenol index	I.S. EN 13370 rec. ISO 6439 (4-Aminoantipyrine spectrometic methods after distillation)* (BY HPLC - Jones Env)
DOC	I.S. EN 1484
TDS	I.S. EN 15216
Compositional analysis	
TOC	I.S. EN 13137 Method B: carbonates removed with acid; TOC by combustion.
BTEX	GC-FID
PCB7**	I.S. EN 15308 analysis by GC-ECD.
Mineral oil	I.S. EN 14039 C10 to C40 analysis by GC-FID.
PAH17***	I.S. EN 15527 PAH17 analysis by GC-MS
Metals	I.S. EN 13657 - Aqua regia digestion: EN ISO 11885 (ICP-OES)
Other	
Dry matter	I.S. EN 14346 sample is dried to a constant mass in an oven at 105 ± 3 °C; Method B Water content by direct Karl-Fischer-titration and either volumetric or coulometric detection.
LOI	I.S. EN 15169 Difference in mass after heating in a furnace up to 550 ± 25 °C.
ANC	CEN/TS 15364 Determined by amounts of acid or base needed to cover the pH range

Notes:

*If not suitable due to LOD, precision, etc., any other suitable method can be used, e.g. AFS, ICP-MS

**PCB-28, PCB-52, PCB-101, PCB-118, PCB-138, PCB-153 and PCB-180

***Naphthalene, Acenaphthylene, Acenaphthene, Anthracene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(g,h,i)perylene, Benzo(a)pyrene, Chrysene, Coronene, Dibenzo(a,h)anthracene, Fluorene, Fluoranthene, Indeno(1,2,3-c,d)pyrene, Phenanthrene and Pyrene.

Exova Jones Environmental

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IGSL
Unit F
M7 Business Park
Naas
Co Kildare
Ireland

Attention :	Darren Keogh
Date :	17th May, 2017
Your reference :	
Our reference :	Test Report 17/7789 Batch 1
Location :	Howth
Date samples received :	28th April, 2017
Status :	Final report
Issue :	1

Forty five samples were received for analysis on 28th April, 2017 of which forty five were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Where Waste Acceptance Criteria Suite (EC Decision of 19 December 2002 (2003/33/EC)) has been requested, all analyses have been performed using the relevant EN methods where they exist.

Compiled By:

Phil Sommerton BSc
Project Manager

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3	4-5	6-7	8	9-10	11	12-13	14-16	17-18	LOD/LOR	Units	Method No.
Sample ID	BH5	BH5	BH6	BH6	BH7	BH7	BH8	BH9	BH9	BH10			
Depth	1.00	3.00	1.00	4.00	2.00	3.00	2.00	1.00	2.00	1.00			
COC No / misc													
Containers	V J	J	V J	V J	J	V J	J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017			
Antimony	1	-	2	-	-	4	-	1	2	6	<1	mg/kg	TM30/PM15
Arsenic #	8.1	-	12.4	-	-	38.5	-	6.2	14.2	43.9	<0.5	mg/kg	TM30/PM15
Barium #	24	-	83	-	-	165	-	76	60	178	<1	mg/kg	TM30/PM15
Cadmium #	<0.1	-	0.4	-	-	0.3	-	0.2	0.1	0.1	<0.1	mg/kg	TM30/PM15
Chromium #	39.6	-	56.2	-	-	79.4	-	52.1	35.4	55.3	<0.5	mg/kg	TM30/PM15
Copper #	11	-	22	-	-	69	-	16	21	56	<1	mg/kg	TM30/PM15
Lead #	27	-	16	-	-	354	-	10	143	216	<5	mg/kg	TM30/PM15
Mercury #	<0.1	-	<0.1	-	-	0.5	-	<0.1	<0.1	0.4	<0.1	mg/kg	TM30/PM15
Molybdenum #	2.5	-	3.0	-	-	3.8	-	4.4	2.0	3.5	<0.1	mg/kg	TM30/PM15
Nickel #	11.5	-	41.4	-	-	35.9	-	19.1	24.0	38.5	<0.7	mg/kg	TM30/PM15
Selenium #	<1	-	2	-	-	2	-	1	1	2	<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	531	-	181	-	-	1011	-	126	3388	537	<50	mg/kg	TM50/PM29
Water Soluble Boron #	0.6	-	0.5	-	-	2.3	-	0.4	6.9	0.9	<0.1	mg/kg	TM74/PM32
Zinc #	39	-	62	-	-	143	-	26	102	147	<5	mg/kg	TM30/PM15
Antimony	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Arsenic	-	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	TM30/PM62
Barium	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Cadmium	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM62
Chromium	-	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	TM30/PM62
Copper	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Lead	-	-	-	-	-	-	-	-	-	-	<5	mg/kg	TM30/PM62
Mercury	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM62
Molybdenum	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM62
Nickel	-	-	-	-	-	-	-	-	-	-	<0.7	mg/kg	TM30/PM62
Selenium	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Total Sulphate as SO4	-	-	-	-	-	-	-	-	-	-	<50	mg/kg	TM50/PM29
Water Soluble Boron	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM74/PM61
Zinc	-	-	-	-	-	-	-	-	-	-	<5	mg/kg	TM30/PM62

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3	4-5	6-7	8	9-10	11	12-13	14-16	17-18	LOD/LOR	Units	Method No.
Sample ID	BH5	BH5	BH6	BH6	BH7	BH7	BH8	BH9	BH9	BH10			
Depth	1.00	3.00	1.00	4.00	2.00	3.00	2.00	1.00	2.00	1.00			
COC No / misc													
Containers	V J	J	V J	V J	J	V J	J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017			
PAH MS													
Naphthalene #	<0.04	-	<0.04	-	-	0.12	-	<0.04	<0.04	0.16	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	-	<0.03	-	-	0.26	-	<0.03	0.18	0.85	<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	-	<0.05	-	-	0.15	-	<0.05	<0.05	0.13	<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	-	<0.04	-	-	0.16	-	<0.04	0.08	0.20	<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.05	-	<0.03	-	-	1.45	-	0.06	0.68	1.33	<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	-	<0.04	-	-	0.44	-	<0.04	0.27	0.53	<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.09	-	<0.03	-	-	2.76	-	0.06	1.23	2.28	<0.03	mg/kg	TM4/PM8
Pyrene #	0.08	-	<0.03	-	-	2.35	-	0.05	0.97	2.16	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.11	-	<0.06	-	-	1.60	-	<0.06	0.70	1.47	<0.06	mg/kg	TM4/PM8
Chrysene #	0.07	-	<0.02	-	-	1.52	-	0.03	0.62	1.59	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	0.12	-	<0.07	-	-	2.53	-	<0.07	0.90	2.75	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.07	-	<0.04	-	-	1.59	-	<0.04	0.56	1.92	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.06	-	<0.04	-	-	0.98	-	<0.04	0.31	1.06	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	-	<0.04	-	-	0.21	-	<0.04	0.08	0.31	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.05	-	<0.04	-	-	0.91	-	<0.04	0.23	1.23	<0.04	mg/kg	TM4/PM8
Coronene	<0.04	-	<0.04	-	-	0.27	-	<0.04	0.08	0.35	<0.04	mg/kg	TM4/PM8
PAH 6 Total #	0.39	-	<0.22	-	-	8.77	-	<0.22	3.23	9.24	<0.22	mg/kg	TM4/PM8
PAH 17 Total	0.70	-	<0.64	-	-	17.30	-	<0.64	6.89	18.32	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.09	-	<0.05	-	-	1.82	-	<0.05	0.65	1.98	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.03	-	<0.02	-	-	0.71	-	<0.02	0.25	0.77	<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	<1	-	<1	-	-	<1	-	<1	<1	<1	<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	111	-	103	-	-	116	-	100	113	105	<0	%	TM4/PM8
Mineral Oil (C10-C40)	<30	-	<30	-	-	<30	-	<30	<30	34	<30	mg/kg	TM5/PM16
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1	-	<0.1	-	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1	-	<0.1	-	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	-	<0.1	-	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2	-	<0.2	-	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>C12-C16 #	<4	-	<4	-	-	<4	-	<4	<4	<4	<4	mg/kg	TM5/PM16
>C16-C21 #	<7	-	<7	-	-	<7	-	<7	<7	<7	<7	mg/kg	TM5/PM16
>C21-C35 #	<7	-	<7	-	-	<7	-	<7	<7	34	<7	mg/kg	TM5/PM16
>C35-C40	<7	-	<7	-	-	<7	-	<7	<7	<7	<7	mg/kg	TM5/PM16
Total aliphatics C5-40	<26	-	<26	-	-	<26	-	<26	<26	34	<26	mg/kg	TM5/TM36/PM12/PM16
>C6-C10	<0.1	-	<0.1	-	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C25	<10	-	<10	-	-	<10	-	<10	<10	<10	<10	mg/kg	TM5/PM16
>C25-C35	<10	-	<10	-	-	<10	-	<10	<10	31	<10	mg/kg	TM5/PM16

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3	4-5	6-7	8	9-10	11	12-13	14-16	17-18	LOD/LOR	Units	Method No.
Sample ID	BH5	BH5	BH6	BH6	BH7	BH7	BH8	BH9	BH9	BH10			
Depth	1.00	3.00	1.00	4.00	2.00	3.00	2.00	1.00	2.00	1.00			
COC No / misc													
Containers	V J	J	V J	V J	J	V J	J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017			
TPH CWG													
Aromatics													
>C5-EC7 #	<0.1	-	<0.1	-	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	-	<0.1	-	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1	-	<0.1	-	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	-	<0.2	-	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	-	<4	-	-	<4	-	<4	<4	5	<4	mg/kg	TM5/PM16
>EC16-EC21 #	<7	-	<7	-	-	27	-	<7	14	45	<7	mg/kg	TM5/PM16
>EC21-EC35 #	<7	-	<7	-	-	144	-	<7	70	266	<7	mg/kg	TM5/PM16
>EC35-EC40	<7	-	<7	-	-	27	-	<7	<7	48	<7	mg/kg	TM5/PM16
Total aromatics C5-40	<26	-	<26	-	-	198	-	<26	84	364	<26	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-40)	<52	-	<52	-	-	198	-	<52	84	398	<52	mg/kg	TM5/TM36/PM12/PM16
>EC6-EC10 #	<0.1	-	<0.1	-	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC25	<10	-	<10	-	-	38	-	<10	25	73	<10	mg/kg	TM5/PM16
>EC25-EC35	<10	-	<10	-	-	99	-	<10	56	180	<10	mg/kg	TM5/PM16
MTBE #	<5	-	<5	-	-	<5	-	<5	<5	<5	<5	ug/kg	TM31/PM12
Benzene #	<5	-	<5	-	-	-	-	<5	<5	<5	<5	ug/kg	TM31/PM12
Toluene #	<5	-	<5	-	-	-	-	<5	<5	<5	<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	-	<5	-	-	-	-	<5	<5	<5	<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	-	<5	-	-	-	-	<5	<5	<5	<5	ug/kg	TM31/PM12
o-Xylene #	<5	-	<5	-	-	-	-	<5	<5	<5	<5	ug/kg	TM31/PM12
PCB 28 #	<5	-	<5	-	-	<5	-	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 52 #	<5	-	<5	-	-	<5	-	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 101 #	<5	-	<5	-	-	<5	-	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 118 #	<5	-	<5	-	-	<5	-	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 138 #	<5	-	<5	-	-	<5	-	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 153 #	<5	-	<5	-	-	<5	-	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 180 #	<5	-	<5	-	-	<5	-	<5	<5	<5	<5	ug/kg	TM17/PM8
Total 7 PCBs #	<35	-	<35	-	-	<35	-	<35	<35	<35	<35	ug/kg	TM17/PM8
Phenol #	<0.01	-	<0.01	-	-	<0.01	-	<0.01	<0.01	<0.01	<0.01	mg/kg	TM26/PM21
Natural Moisture Content	17.4	-	15.9	-	-	17.5	-	7.5	42.9	14.5	<0.1	%	PM4/PM0
Natural Moisture Content	-	-	-	-	-	-	-	-	-	-	<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	14.8	-	13.7	-	-	14.9	-	7.0	30.0	12.6	<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	-	<0.3	-	-	<0.3	-	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	-	0.3288	-	0.3557	0.0492	-	0.0957	-	1.0178	-	<0.0015	g/l	TM38/PM20
Chromium III	39.6	-	56.2	-	-	79.4	-	52.1	35.4	55.3	<0.5	mg/kg	NONE/NONE
Chromium III	-	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	NONE/NONE
Total Cyanide #	<0.5	-	<0.5	-	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3	4-5	6-7	8	9-10	11	12-13	14-16	17-18	LOD/LOR	Units	Method No.
Sample ID	BH5	BH5	BH6	BH6	BH7	BH7	BH8	BH9	BH9	BH10			
Depth	1.00	3.00	1.00	4.00	2.00	3.00	2.00	1.00	2.00	1.00			
COC No / misc													
Containers	V J	J	V J	V J	J	V J	J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017			
Total Organic Carbon #	0.36	-	0.25	-	-	3.17	-	0.39	2.09	3.53	<0.02	%	TM21/PM24
Sulphide	<10	-	<10	-	-	<10	-	<10	59	<10	<10	mg/kg	TM106/PM119
Elemental Sulphur	18	-	3	-	-	57	-	3	3873$_{AC}$	22	<1	mg/kg	TM108/PM114
Elemental Sulphur	-	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM108/PM8
pH #	8.90	8.16	8.46	8.01	8.42	8.03	10.57	8.22	7.84	8.62	<0.01	pH units	TM73/PM11
Mass of raw test portion	0.1063	-	0.1046	-	-	0.1086	-	0.1065	0.1223	0.1074		kg	NONE/PM17
Mass of dried test portion	0.09	-	0.09	-	-	0.09	-	0.09	0.09	0.09		kg	NONE/PM17

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	19-20	21-22	23	24-25	26-27	28-29	30-31	32-33	34-35	36-37	LOD/LOR	Units	Method No.
Sample ID	BH10	BH11	BH11	BH12	BH13	BH13	BH14	BH14	BH15	BH16			
Depth	2.00	1.00	3.00	1.00	1.00	3.00	1.00	3.00	1.00	1.00			
COC No / misc													
Containers	V J	V J	J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017			
Antimony	2	-	-	7	3	2	4	2	-	8	<1	mg/kg	TM30/PM15
Arsenic #	9.2	-	-	21.6	5.9	18.7	2.5	9.8	-	8.8	<0.5	mg/kg	TM30/PM15
Barium #	70	-	-	973	144	60	2188	464	-	201	<1	mg/kg	TM30/PM15
Cadmium #	0.4	-	-	2.1	<0.1	0.3	<0.1	<0.1	-	0.1	<0.1	mg/kg	TM30/PM15
Chromium #	58.5	-	-	75.7	76.7	58.7	92.2	45.6	-	82.3	<0.5	mg/kg	TM30/PM15
Copper #	17	-	-	248_{AA}	102	28	47	38	-	111	<1	mg/kg	TM30/PM15
Lead #	14	-	-	1314	52	80	<5	49	-	363	<5	mg/kg	TM30/PM15
Mercury #	<0.1	-	-	2.7	<0.1	0.2	<0.1	<0.1	-	0.4	<0.1	mg/kg	TM30/PM15
Molybdenum #	3.1	-	-	5.1	7.4	2.8	12.7	5.1	-	6.1	<0.1	mg/kg	TM30/PM15
Nickel #	34.5	-	-	43.3	52.9	28.8	78.8	48.8	-	41.5	<0.7	mg/kg	TM30/PM15
Selenium #	2	-	-	3	1	2	3	2	-	2	<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	386	-	-	1202	292	3816	1198	294	-	547	<50	mg/kg	TM50/PM29
Water Soluble Boron #	0.4	-	-	2.1	0.7	9.0	0.7	0.6	-	0.6	<0.1	mg/kg	TM74/PM32
Zinc #	58	-	-	929	39	143	150	31	-	144	<5	mg/kg	TM30/PM15
Antimony	-	2	-	-	-	-	-	-	7	-	<1	mg/kg	TM30/PM62
Arsenic	-	21.3	-	-	-	-	-	-	13.3	-	<0.5	mg/kg	TM30/PM62
Barium	-	117	-	-	-	-	-	-	242	-	<1	mg/kg	TM30/PM62
Cadmium	-	0.1	-	-	-	-	-	-	0.5	-	<0.1	mg/kg	TM30/PM62
Chromium	-	25.8	-	-	-	-	-	-	22.0	-	<0.5	mg/kg	TM30/PM62
Copper	-	52	-	-	-	-	-	-	154	-	<1	mg/kg	TM30/PM62
Lead	-	177	-	-	-	-	-	-	690	-	<5	mg/kg	TM30/PM62
Mercury	-	0.7	-	-	-	-	-	-	1.2	-	<0.1	mg/kg	TM30/PM62
Molybdenum	-	2.6	-	-	-	-	-	-	1.9	-	<0.1	mg/kg	TM30/PM62
Nickel	-	25.1	-	-	-	-	-	-	32.5	-	<0.7	mg/kg	TM30/PM62
Selenium	-	1	-	-	-	-	-	-	1	-	<1	mg/kg	TM30/PM62
Total Sulphate as SO4	-	1299	-	-	-	-	-	-	692	-	<50	mg/kg	TM50/PM29
Water Soluble Boron	-	0.9	-	-	-	-	-	-	0.6	-	<0.1	mg/kg	TM74/PM61
Zinc	-	151	-	-	-	-	-	-	267	-	<5	mg/kg	TM30/PM62

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	19-20	21-22	23	24-25	26-27	28-29	30-31	32-33	34-35	36-37	LOD/LOR	Units	Method No.
Sample ID	BH10	BH11	BH11	BH12	BH13	BH13	BH14	BH14	BH15	BH16			
Depth	2.00	1.00	3.00	1.00	1.00	3.00	1.00	3.00	1.00	1.00			
COC No / misc													
Containers	V J	V J	J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017			
PAH MS													
Naphthalene #	<0.04	0.05	-	0.51 AA	0.59	<0.04	<0.04	<0.04	0.74 AA	0.22	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	0.10	-	2.92 AA	0.65	0.16	<0.03	<0.03	0.43 AA	0.34	<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	-	<0.25 AA	0.53	<0.05	<0.05	<0.05	0.31 AA	0.07	<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	0.05	-	<0.20 AA	0.59	0.09	<0.04	<0.04	0.41 AA	0.16	<0.04	mg/kg	TM4/PM8
Phenanthrene #	<0.03	0.45	-	3.32 AA	5.40	0.77	0.21	0.04	3.30 AA	1.64	<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	0.21	-	2.02 AA	1.88	0.29	<0.04	<0.04	0.94 AA	0.66	<0.04	mg/kg	TM4/PM8
Fluoranthene #	<0.03	0.85	-	17.74 AA	10.56	1.58	0.20	<0.03	4.10 AA	3.38	<0.03	mg/kg	TM4/PM8
Pyrene #	<0.03	0.71	-	16.07 AA	8.57	1.17	0.20	<0.03	3.36 AA	2.89	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	<0.06	0.55	-	12.39 AA	6.08	0.93	0.20	<0.06	2.22 AA	1.79	<0.06	mg/kg	TM4/PM8
Chrysene #	<0.02	0.46	-	11.94 AA	5.53	0.84	0.20	0.04	2.10 AA	1.67	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	<0.07	0.75	-	25.12 AA	11.31	1.29	0.22	<0.07	3.41 AA	2.90	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04	0.44	-	15.39 AA	7.14	0.80	0.10	<0.04	1.91 AA	1.72	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	<0.04	0.26	-	10.26 AA	4.49	0.51	0.09	<0.04	1.14 AA	1.08	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	0.07	-	1.28 AA	0.71	0.09	<0.04	<0.04	<0.20 AA	0.17	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	0.21	-	9.21 AA	3.96	0.41	0.10	<0.04	1.14 AA	0.95	<0.04	mg/kg	TM4/PM8
Coronene	<0.04	0.06	-	2.22 AA	0.91	0.10	<0.04	<0.04	0.26 AA	0.24	<0.04	mg/kg	TM4/PM8
PAH 6 Total #	<0.22	2.51	-	77.72 AA	37.46	4.59	0.71	<0.22	11.70 AA	10.03	<0.22	mg/kg	TM4/PM8
PAH 17 Total	<0.64	5.22	-	130.39 AA	68.90	9.03	1.52	<0.64	25.77 AA	19.88	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	<0.05	0.54	-	18.09 AA	8.14	0.93	0.16	<0.05	2.46 AA	2.09	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	<0.02	0.21	-	7.03 AA	3.17	0.36	0.06	<0.02	0.95 AA	0.81	<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	<1	<1	-	6 AA	4	<1	<1	<1	<5 AA	<1	<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	103	103	-	122 AA	113	116	117	111	118 AA	113	<0	%	TM4/PM8
Mineral Oil (C10-C40)	<30	<30	-	277	89	<30	<30	<30	183	124	<30	mg/kg	TM5/PM16
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1	<0.1	-	<0.1 SV	<0.1 SV	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1	<0.1	-	0.4 SV	<0.1 SV	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1	-	<0.1 SV	<0.1 SV	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>C12-C16 #	<4	<4	-	23	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM16
>C16-C21 #	<7	<7	-	95	<7	<7	<7	<7	16	14	<7	mg/kg	TM5/PM16
>C21-C35 #	<7	<7	-	159	69	<7	12	<7	142	91	<7	mg/kg	TM5/PM16
>C35-C40	<7	<7	-	<7	20	<7	<7	<7	25	19	<7	mg/kg	TM5/PM16
Total aliphatics C5-40	<26	<26	-	277	89	<26	<26	<26	183	124	<26	mg/kg	TM5/TM36/PM12/PM16
>C6-C10	<0.1	<0.1	-	0.4 SV	<0.1 SV	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1	mg/kg	TM36/PM12
>C10-C25	<10	<10	-	117	<10	<10	<10	<10	62	37	<10	mg/kg	TM5/PM16
>C25-C35	<10	<10	-	85	53	<10	17	<10	121	68	<10	mg/kg	TM5/PM16

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	19-20	21-22	23	24-25	26-27	28-29	30-31	32-33	34-35	36-37	LOD/LOR	Units	Method No.
Sample ID	BH10	BH11	BH11	BH12	BH13	BH13	BH14	BH14	BH15	BH16			
Depth	2.00	1.00	3.00	1.00	1.00	3.00	1.00	3.00	1.00	1.00			
COC No / misc													
Containers	V J	V J	J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017			
TPH CWG													
Aromatics													
>C5-EC7 #	<0.1	<0.1	-	<0.1 SV	<0.1 SV	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	<0.1	-	<0.1 SV	<0.1 SV	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1	<0.1	-	<0.1 SV	<0.1 SV	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	<4	-	6	<4	<4	<4	<4	<4	10	<4	mg/kg	TM5/PM16
>EC16-EC21 #	<7	15	-	104	72	26	<7	<7	42	77	<7	mg/kg	TM5/PM16
>EC21-EC35 #	<7	72	-	587	430	117	36	<7	249	235	<7	mg/kg	TM5/PM16
>EC35-EC40	<7	<7	-	90	99	38	21	<7	72	56	<7	mg/kg	TM5/PM16
Total aromatics C5-40	<26	87	-	787	601	181	57	<26	363	378	<26	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-40)	<52	87	-	1064	690	181	57	<52	546	502	<52	mg/kg	TM5/TM36/PM12/PM16
>EC6-EC10 #	<0.1	<0.1	-	<0.1 SV	<0.1 SV	<0.1	<0.1 SV	<0.1	<0.1 SV	<0.1 SV	<0.1	mg/kg	TM36/PM12
>EC10-EC25	<10	16	-	260	185	62	<10	<10	74	127	<10	mg/kg	TM5/PM16
>EC25-EC35	<10	56	-	431	335	103	44	<10	190	163	<10	mg/kg	TM5/PM16
MTBE #	<5	<5	-	<5 SV	<5 SV	<5	<5 SV	<5	<5 SV	<5 SV	<5	ug/kg	TM31/PM12
Benzene #	<5	<5	-	-	-	<5	-	<5	<5 SV	-	<5	ug/kg	TM31/PM12
Toluene #	<5	<5	-	-	-	<5	-	<5	<5 SV	-	<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5	-	-	-	<5	-	<5	<5 SV	-	<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	<5	-	-	-	<5	-	<5	<5 SV	-	<5	ug/kg	TM31/PM12
o-Xylene #	<5	<5	-	-	-	<5	-	<5	<5 SV	-	<5	ug/kg	TM31/PM12
PCB 28 #	<5	<5	-	<25 AA	<25 AA	<5	<30 AB	<5	<50 AC	<5	<5	ug/kg	TM17/PM8
PCB 52 #	<5	<5	-	<25 AA	<25 AA	<5	<30 AB	<5	<50 AC	<5	<5	ug/kg	TM17/PM8
PCB 101 #	<5	<5	-	<25 AA	<25 AA	<5	<30 AB	<5	<50 AC	<5	<5	ug/kg	TM17/PM8
PCB 118 #	<5	<5	-	<25 AA	<25 AA	<5	<30 AB	<5	<50 AC	<5	<5	ug/kg	TM17/PM8
PCB 138 #	<5	<5	-	<25 AA	<25 AA	<5	<30 AB	<5	<50 AC	<5	<5	ug/kg	TM17/PM8
PCB 153 #	<5	<5	-	<25 AA	<25 AA	<5	<30 AB	<5	<50 AC	<5	<5	ug/kg	TM17/PM8
PCB 180 #	<5	<5	-	<25 AA	<25 AA	<5	<30 AB	<5	<50 AC	<5	<5	ug/kg	TM17/PM8
Total 7 PCBs #	<35	<35	-	<175 AA	<175 AA	<35	<210 AB	<35	<350 AC	<35	<35	ug/kg	TM17/PM8
Phenol #	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	TM26/PM21
Natural Moisture Content	12.9	-	-	23.9	11.2	49.7	7.1	13.4	-	10.5	<0.1	%	PM4/PM0
Natural Moisture Content	-	24.7	-	-	-	-	-	-	23.5	-	<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	11.4	-	-	19.3	10.0	33.2	6.6	11.9	-	9.5	<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	-	-	0.6259	-	-	-	-	0.0567	-	-	<0.0015	g/l	TM38/PM20
Chromium III	58.5	NDP	-	75.7	76.7	58.7	92.2	45.6	NDP	82.3	<0.5	mg/kg	NONE/NONE
Chromium III	-	25.8	-	-	-	-	-	-	22.0	-	<0.5	mg/kg	NONE/NONE
Total Cyanide #	<0.5	<0.5	-	16.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	19-20	21-22	23	24-25	26-27	28-29	30-31	32-33	34-35	36-37	LOD/LOR	Units	Method No.
Sample ID	BH10	BH11	BH11	BH12	BH13	BH13	BH14	BH14	BH15	BH16			
Depth	2.00	1.00	3.00	1.00	1.00	3.00	1.00	3.00	1.00	1.00			
COC No / misc													
Containers	V J	V J	J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017			
Total Organic Carbon #	0.14	NDP	-	12.75	25.11	1.81	3.93	5.70	NDP	8.79	<0.02	%	TM21/PM24
Sulphide	<10	<10	-	<10	<10	45	<10	<10	<10	<10	<10	mg/kg	TM106/PM119
Elemental Sulphur	4	-	-	59	12	2824_{AC}	24	20	-	35	<1	mg/kg	TM108/PM114
Elemental Sulphur	-	7	-	-	-	-	-	-	5	-	<1	mg/kg	TM108/PM8
pH #	8.70	7.75	8.10	8.30	8.68	7.85	7.99	8.59	8.43	8.48	<0.01	pH units	TM73/PM11
Mass of raw test portion	0.1026	0.1163	-	0.1145	0.1091	0.1213	0.117	0.1033	0.1158	0.112		kg	NONE/PM17
Mass of dried test portion	0.09	0.09	-	0.09	0.09	0.09	0.09	0.09	0.09	0.09		kg	NONE/PM17

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	38-39	40-41	42-43	44-45	46-47	48-49	50-51	52-53	54-57	58-59	LOD/LOR	Units	Method No.
Sample ID	BH16	BH17	BH17	BH18	BH18	BH18	BH19	BH19	BH20	BH20			
Depth	2.00	1.00	3.00	1.00	3.00	4.00	1.00	3.00	1.00	3.00			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017			
Antimony	-	4	-	-	-	-	2	-	3	4	<1	mg/kg	TM30/PM15
Arsenic #	-	44.5	-	-	-	-	35.2	-	26.4	21.9	<0.5	mg/kg	TM30/PM15
Barium #	-	132	-	-	-	-	99	-	175	202	<1	mg/kg	TM30/PM15
Cadmium #	-	0.2	-	-	-	-	0.3	-	0.4	0.5	<0.1	mg/kg	TM30/PM15
Chromium #	-	54.3	-	-	-	-	30.0	-	41.8	49.8	<0.5	mg/kg	TM30/PM15
Copper #	-	46	-	-	-	-	100	-	48	55	<1	mg/kg	TM30/PM15
Lead #	-	108	-	-	-	-	116	-	194	156	<5	mg/kg	TM30/PM15
Mercury #	-	<0.1	-	-	-	-	<0.1	-	<0.1	0.1	<0.1	mg/kg	TM30/PM15
Molybdenum #	-	3.3	-	-	-	-	3.2	-	4.5	6.0	<0.1	mg/kg	TM30/PM15
Nickel #	-	39.4	-	-	-	-	26.5	-	23.3	27.4	<0.7	mg/kg	TM30/PM15
Selenium #	-	2	-	-	-	-	2	-	2	2	<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	-	554	-	-	-	-	187	-	874	781	<50	mg/kg	TM50/PM29
Water Soluble Boron #	-	1.4	-	-	-	-	0.9	-	1.4	1.7	<0.1	mg/kg	TM74/PM32
Zinc #	-	152	-	-	-	-	483	-	268	357	<5	mg/kg	TM30/PM15
Antimony	9	-	<1	6	8	-	-	2	-	-	<1	mg/kg	TM30/PM62
Arsenic	69.7	-	6.5	19.8	16.1	-	-	16.8	-	-	<0.5	mg/kg	TM30/PM62
Barium	263	-	663	229	123	-	-	113	-	-	<1	mg/kg	TM30/PM62
Cadmium	0.2	-	<0.1	0.5	0.5	-	-	0.6	-	-	<0.1	mg/kg	TM30/PM62
Chromium	21.7	-	10.5	20.8	23.6	-	-	24.2	-	-	<0.5	mg/kg	TM30/PM62
Copper	181	-	88	137	76	-	-	42	-	-	<1	mg/kg	TM30/PM62
Lead	890	-	34	400	198	-	-	67	-	-	<5	mg/kg	TM30/PM62
Mercury	1.0	-	<0.1	0.9	0.2	-	-	<0.1	-	-	<0.1	mg/kg	TM30/PM62
Molybdenum	3.1	-	2.7	2.8	2.1	-	-	1.6	-	-	<0.1	mg/kg	TM30/PM62
Nickel	36.5	-	26.7	43.7	32.9	-	-	39.7	-	-	<0.7	mg/kg	TM30/PM62
Selenium	<1	-	<1	1	2	-	-	2	-	-	<1	mg/kg	TM30/PM62
Total Sulphate as SO4	743	-	550	655	3515	-	-	460	-	-	<50	mg/kg	TM50/PM29
Water Soluble Boron	0.7	-	0.5	1.0	1.3	-	-	1.0	-	-	<0.1	mg/kg	TM74/PM61
Zinc	258	-	37	189	158	-	-	96	-	-	<5	mg/kg	TM30/PM62

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	38-39	40-41	42-43	44-45	46-47	48-49	50-51	52-53	54-57	58-59	LOD/LOR	Units	Method No.
Sample ID	BH16	BH17	BH17	BH18	BH18	BH18	BH19	BH19	BH20	BH20			
Depth	2.00	1.00	3.00	1.00	3.00	4.00	1.00	3.00	1.00	3.00			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017			
PAH MS													
Naphthalene #	0.24	<0.04	<0.04	0.46	<0.04	-	0.47	<0.04	0.10	0.06	<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.22	<0.03	<0.03	0.54	0.07	-	0.59	<0.03	0.11	0.15	<0.03	mg/kg	TM4/PM8
Acenaphthene #	0.07	<0.05	<0.05	0.15	<0.05	-	0.50	<0.05	0.15	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #	0.14	<0.04	<0.04	0.25	<0.04	-	0.70	<0.04	0.17	0.07	<0.04	mg/kg	TM4/PM8
Phenanthrene #	1.25	0.24	<0.03	2.68	0.18	-	4.08	0.13	1.53	0.69	<0.03	mg/kg	TM4/PM8
Anthracene #	0.39	0.07	<0.04	1.07	0.10	-	1.82	0.05	0.42	0.27	<0.04	mg/kg	TM4/PM8
Fluoranthene #	1.89	0.36	<0.03	4.33	0.72	-	6.84	0.28	2.43	1.55	<0.03	mg/kg	TM4/PM8
Pyrene #	1.59	0.29	<0.03	3.79	0.62	-	5.40	0.26	1.99	1.34	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	1.03	0.23	<0.06	2.40	0.43	-	3.59	0.18	1.32	0.93	<0.06	mg/kg	TM4/PM8
Chrysene #	1.02	0.21	<0.02	2.43	0.43	-	3.40	0.18	1.35	0.94	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	1.77	0.34	<0.07	4.21	0.86	-	5.32	0.33	2.27	1.61	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	1.03	0.19	<0.04	2.49	0.45	-	3.29	0.18	1.35	0.95	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.66	0.14	<0.04	1.57	0.34	-	2.11	0.15	0.95	0.73	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.11	<0.04	<0.04	0.25	<0.04	-	0.51	<0.04	0.21	0.18	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.59	0.12	<0.04	1.40	0.27	-	1.76	0.12	0.81	0.65	<0.04	mg/kg	TM4/PM8
Coronene	0.15	<0.04	<0.04	0.28	0.06	-	0.51	0.05	0.31	0.20	<0.04	mg/kg	TM4/PM8
PAH 6 Total #	5.94	1.15	<0.22	14.00	2.64	-	19.32	1.06	7.81	5.49	<0.22	mg/kg	TM4/PM8
PAH 17 Total	12.15	2.19	<0.64	28.30	4.53	-	40.89	1.91	15.47	10.32	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	1.27	0.24	<0.05	3.03	0.62	-	3.83	0.24	1.63	1.16	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.50	0.10	<0.02	1.18	0.24	-	1.49	0.09	0.64	0.45	<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	<1	<1	<1	1	<1	-	1	<1	<1	<1	<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	119	119	105	109	101	-	115	108	118	119	<0	%	TM4/PM8
Mineral Oil (C10-C40)	97	41	<30	<30	168	-	159	37	<30	<30	<30	mg/kg	TM5/PM16
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1 SV	<0.1	<0.1	<0.1 SV	<0.1	-	<0.1 SV	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1 SV	<0.1	<0.1	<0.1 SV	<0.1	-	<0.1 SV	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1 SV	0.1	<0.1	<0.1 SV	<0.1	-	<0.1 SV	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>C12-C16 #	<4	<4	<4	<4	<4	-	<4	<4	<4	<4	<4	mg/kg	TM5/PM16
>C16-C21 #	10	<7	<7	<7	13	-	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
>C21-C35 #	75	41	<7	28	114	-	110	20	15	<7	<7	mg/kg	TM5/PM16
>C35-C40	12	<7	<7	<7	41	-	49	17	<7	<7	<7	mg/kg	TM5/PM16
Total aliphatics C5-40	97	41	<26	28	168	-	159	37	<26	<26	<26	mg/kg	TM5/TM36/PM12/PM16
>C6-C10	<0.1 SV	0.1	<0.1	<0.1 SV	<0.1	-	<0.1 SV	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C25	46	<10	<10	<10	39	-	16	<10	<10	<10	<10	mg/kg	TM5/PM16
>C25-C35	69	31	<10	31	101	-	95	21	16	<10	<10	mg/kg	TM5/PM16

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	38-39	40-41	42-43	44-45	46-47	48-49	50-51	52-53	54-57	58-59	LOD/LOR	Units	Method No.
Sample ID	BH16	BH17	BH17	BH18	BH18	BH18	BH19	BH19	BH20	BH20			
Depth	2.00	1.00	3.00	1.00	3.00	4.00	1.00	3.00	1.00	3.00			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017			
TPH CWG													
Aromatics													
>C5-EC7 #	<0.1 SV	<0.1	<0.1	<0.1 SV	<0.1	-	<0.1 SV	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1 SV	<0.1	<0.1	<0.1 SV	<0.1	-	<0.1 SV	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1 SV	0.2	<0.1	<0.1 SV	<0.1	-	<0.1 SV	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	9	<4	<4	<4	<4	-	<4	<4	<4	<4	<4	mg/kg	TM5/PM16
>EC16-EC21 #	62	<7	<7	18	42	-	22	<7	9	42	<7	mg/kg	TM5/PM16
>EC21-EC35 #	280	84	<7	131	283	-	205	86	99	150	<7	mg/kg	TM5/PM16
>EC35-EC40	75	34	<7	27	91	-	108	55	37	35	<7	mg/kg	TM5/PM16
Total aromatics C5-40	426	118	<26	176	416	-	335	141	145	227	<26	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-40)	523	159	<52	204	584	-	494	178	145	227	<52	mg/kg	TM5/TM36/PM12/PM16
>EC6-EC10 #	<0.1 SV	0.2	<0.1	<0.1 SV	<0.1	-	<0.1 SV	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC25	98	12	<10	48	103	-	63	17	22	63	<10	mg/kg	TM5/PM16
>EC25-EC35	189	66	<10	107	223	-	187	78	73	103	<10	mg/kg	TM5/PM16
MTBE #	<5 SV	<5	<5	<5 SV	<5	-	<5 SV	<5	<5	<5	<5	ug/kg	TM31/PM12
Benzene #	-	<5	<5	-	-	-	-	-	<5	-	<5	ug/kg	TM31/PM12
Toluene #	-	<5	<5	-	-	-	-	-	<5	-	<5	ug/kg	TM31/PM12
Ethylbenzene #	-	12	<5	-	-	-	-	-	<5	-	<5	ug/kg	TM31/PM12
m/p-Xylene #	-	164	44	-	-	-	-	-	<5	-	<5	ug/kg	TM31/PM12
o-Xylene #	-	30	<5	-	-	-	-	-	<5	-	<5	ug/kg	TM31/PM12
PCB 28 #	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 52 #	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 101 #	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 118 #	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 138 #	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 153 #	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 180 #	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
Total 7 PCBs #	<35	<35	<35	<35	<35	-	<35	<35	<35	<35	<35	ug/kg	TM17/PM8
Phenol #	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	TM26/PM21
Natural Moisture Content	-	15.4	-	-	-	-	7.6	-	12.8	19.8	<0.1	%	PM4/PM0
Natural Moisture Content	24.6	-	30.7	13.9	20.8	-	-	22.6	-	-	<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	-	13.3	-	-	-	-	7.1	-	11.3	16.5	<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	-	-	-	-	-	0.0602	-	-	-	-	<0.0015	g/l	TM38/PM20
Chromium III	NDP	54.3	NDP	NDP	NDP	-	30.0	NDP	41.8	49.8	<0.5	mg/kg	NONE/NONE
Chromium III	21.7	-	10.5	20.8	23.6	-	-	24.2	-	-	<0.5	mg/kg	NONE/NONE
Total Cyanide #	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	38-39	40-41	42-43	44-45	46-47	48-49	50-51	52-53	54-57	58-59	LOD/LOR	Units	Method No.
Sample ID	BH16	BH17	BH17	BH18	BH18	BH18	BH19	BH19	BH20	BH20			
Depth	2.00	1.00	3.00	1.00	3.00	4.00	1.00	3.00	1.00	3.00			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017			
Total Organic Carbon #	NDP	3.32	NDP	NDP	NDP	-	3.43	NDP	2.50	4.00	<0.02	%	TM21/PM24
Sulphide	<10	<10	<10	<10	<10	-	<10	<10	<10	<10	<10	mg/kg	TM106/PM119
Elemental Sulphur	-	35	-	-	-	-	14	-	38	72	<1	mg/kg	TM108/PM114
Elemental Sulphur	5	-	3	5	14	-	-	4	-	-	<1	mg/kg	TM108/PM8
pH #	8.42	8.27	8.20	8.24	7.97	8.71	7.95	8.00	7.99	7.76	<0.01	pH units	TM73/PM11
Mass of raw test portion	0.1136	0.108	0.1189	0.1074	0.1055	-	0.0983	0.1052	0.1101	0.1111		kg	NONE/PM17
Mass of dried test portion	0.09	0.09	0.09	0.09	0.09	-	0.09	0.09	0.09	0.09		kg	NONE/PM17

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	60-61	62-63	64-65	66	67-68	69-70	71-72	73-74	75-76	77-78	LOD/LOR	Units	Method No.
Sample ID	BH21	BH21	BH21	BH21	BH22	BH22	BH22	BH24	BH24	BH24			
Depth	1.00	2.00	3.00	4.00	1.00	3.00	4.00	1.00	2.00	4.00			
COC No / misc													
Containers	V J	V J	V J	J	V J	V J	V J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017			
Antimony	2	12	2	-	-	-	-	-	6	4	<1	mg/kg	TM30/PM15
Arsenic #	10.3	88.0	13.6	-	-	-	-	-	87.3	26.8	<0.5	mg/kg	TM30/PM15
Barium #	322	585	43	-	-	-	-	-	176	1296	<1	mg/kg	TM30/PM15
Cadmium #	0.2	0.4	0.2	-	-	-	-	-	<0.1	0.9	<0.1	mg/kg	TM30/PM15
Chromium #	46.5	54.7	59.7	-	-	-	-	-	68.2	46.7	<0.5	mg/kg	TM30/PM15
Copper #	30	248	18	-	-	-	-	-	67	73	<1	mg/kg	TM30/PM15
Lead #	107	621	36	-	-	-	-	-	144	83	<5	mg/kg	TM30/PM15
Mercury #	<0.1	1.2	<0.1	-	-	-	-	-	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Molybdenum #	5.0	14.6	3.7	-	-	-	-	-	7.5	11.4	<0.1	mg/kg	TM30/PM15
Nickel #	20.1	94.0	28.3	-	-	-	-	-	31.8	177.7	<0.7	mg/kg	TM30/PM15
Selenium #	1	4	1	-	-	-	-	-	2	59_{AA}	<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	679	2455	1197	-	-	-	-	-	418	7153	<50	mg/kg	TM50/PM29
Water Soluble Boron #	1.4	1.8	0.5	-	-	-	-	-	1.0	1.7	<0.1	mg/kg	TM74/PM32
Zinc #	97	649	51	-	-	-	-	-	162	3212_{AA}	<5	mg/kg	TM30/PM15
Antimony	-	-	-	-	2	35	4	7	-	-	<1	mg/kg	TM30/PM62
Arsenic	-	-	-	-	62.7	47.5	31.3	27.9	-	-	<0.5	mg/kg	TM30/PM62
Barium	-	-	-	-	189	842	297	377	-	-	<1	mg/kg	TM30/PM62
Cadmium	-	-	-	-	0.5	1.3	0.7	1.7	-	-	<0.1	mg/kg	TM30/PM62
Chromium	-	-	-	-	30.7	45.4	23.8	42.0	-	-	<0.5	mg/kg	TM30/PM62
Copper	-	-	-	-	69	208	95	193	-	-	<1	mg/kg	TM30/PM62
Lead	-	-	-	-	288	3973_{AC}	327	367	-	-	<5	mg/kg	TM30/PM62
Mercury	-	-	-	-	<0.1	0.7	0.3	0.8	-	-	<0.1	mg/kg	TM30/PM62
Molybdenum	-	-	-	-	3.1	6.9	4.8	2.4	-	-	<0.1	mg/kg	TM30/PM62
Nickel	-	-	-	-	42.2	64.8	43.5	74.8	-	-	<0.7	mg/kg	TM30/PM62
Selenium	-	-	-	-	2	3	1	<1	-	-	<1	mg/kg	TM30/PM62
Total Sulphate as SO4	-	-	-	-	777	3508	5105	745	-	-	<50	mg/kg	TM50/PM29
Water Soluble Boron	-	-	-	-	2.0	7.2	6.2	1.9	-	-	<0.1	mg/kg	TM74/PM61
Zinc	-	-	-	-	255	786	400	712	-	-	<5	mg/kg	TM30/PM62

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	60-61	62-63	64-65	66	67-68	69-70	71-72	73-74	75-76	77-78	LOD/LOR	Units	Method No.
Sample ID	BH21	BH21	BH21	BH21	BH22	BH22	BH22	BH24	BH24	BH24			
Depth	1.00	2.00	3.00	4.00	1.00	3.00	4.00	1.00	2.00	4.00			
COC No / misc													
Containers	V J	V J	V J	J	V J	V J	V J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017			
PAH MS													
Naphthalene #	0.08	0.12	<0.04	-	0.06	0.16	0.07	0.10	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.23	0.27	<0.03	-	0.32	0.75	0.13	0.42	<0.03	0.07	<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	<0.05	-	0.08	0.24	<0.05	0.14	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	0.09	<0.04	-	0.11	0.27	0.07	0.14	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.73	1.91	<0.03	-	1.26	3.81	0.48	2.20	<0.03	0.27	<0.03	mg/kg	TM4/PM8
Anthracene #	0.30	0.36	<0.04	-	0.59	1.84	0.21	0.89	<0.04	0.09	<0.04	mg/kg	TM4/PM8
Fluoranthene #	2.56	2.37	0.07	-	4.49	13.53	1.51	6.03	<0.03	0.62	<0.03	mg/kg	TM4/PM8
Pyrene #	2.09	1.91	0.06	-	3.62	10.61	1.25	4.96	<0.03	0.51	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	1.59	1.15	0.09	-	2.80	8.14	0.97	3.12	<0.06	0.39	<0.06	mg/kg	TM4/PM8
Chrysene #	1.56	1.17	0.06	-	2.46	6.91	0.88	2.73	<0.02	0.39	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	2.92	1.74	0.09	-	4.74	12.82	1.71	5.68	<0.07	0.65	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	1.64	1.00	0.06	-	2.90	7.90	1.00	3.45	<0.04	0.35	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	1.14	0.67	0.06	-	1.85	4.91	0.73	2.42	<0.04	0.24	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.30	0.17	<0.04	-	0.25	1.13	0.15	0.43	<0.04	0.07	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.94	0.53	0.05	-	1.41	3.76	0.56	1.97	<0.04	0.23	<0.04	mg/kg	TM4/PM8
Coronene	0.24	0.15	<0.04	-	0.29	1.01	0.15	0.54	<0.04	0.07	<0.04	mg/kg	TM4/PM8
PAH 6 Total #	9.20	6.31	0.33	-	15.39	42.92	5.51	19.55	<0.22	2.09	<0.22	mg/kg	TM4/PM8
PAH 17 Total	16.32	13.61	<0.64	-	27.23	77.79	9.87	35.22	<0.64	3.95	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	2.10	1.25	0.06	-	3.41	9.23	1.23	4.09	<0.05	0.47	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.82	0.49	0.03	-	1.33	3.59	0.48	1.59	<0.02	0.18	<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	<1	<1	<1	-	1	3	<1	1	<1	<1	<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	104	104	111	-	114	119	104	113	97	102	<0	%	TM4/PM8
Mineral Oil (C10-C40)	<30	<30	<30	-	84	51	32	80	<30	52	<30	mg/kg	TM5/PM16
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1 SV	<0.1 SV	<0.1	-	<0.1	<0.1 SV	<0.1	<0.1	<0.1 SV	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1 SV	<0.1 SV	<0.1	-	<0.1	<0.1 SV	<0.1	<0.1	<0.1 SV	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1 SV	<0.1 SV	<0.1	-	<0.1	<0.1 SV	<0.1	<0.1	<0.1 SV	0.3	<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>C12-C16 #	<4	<4	<4	-	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM16
>C16-C21 #	<7	<7	<7	-	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
>C21-C35 #	<7	<7	<7	-	66	51	32	70	<7	52	<7	mg/kg	TM5/PM16
>C35-C40	<7	<7	<7	-	18	<7	<7	10	<7	<7	<7	mg/kg	TM5/PM16
Total aliphatics C5-40	<26	<26	<26	-	84	51	32	80	<26	52	<26	mg/kg	TM5/TM36/PM12/PM16
>C6-C10	<0.1 SV	<0.1 SV	<0.1	-	<0.1	<0.1 SV	<0.1	<0.1	<0.1 SV	0.3	<0.1	mg/kg	TM36/PM12
>C10-C25	<10	<10	<10	-	16	<10	<10	<10	<10	<10	<10	mg/kg	TM5/PM16
>C25-C35	<10	<10	<10	-	52	41	31	69	<10	42	<10	mg/kg	TM5/PM16

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	60-61	62-63	64-65	66	67-68	69-70	71-72	73-74	75-76	77-78	LOD/LOR	Units	Method No.
Sample ID	BH21	BH21	BH21	BH21	BH22	BH22	BH22	BH24	BH24	BH24			
Depth	1.00	2.00	3.00	4.00	1.00	3.00	4.00	1.00	2.00	4.00			
COC No / misc													
Containers	V J	V J	V J	J	V J	V J	V J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017			
TPH CWG													
Aromatics													
>C5-EC7 #	<0.1 SV	<0.1 SV	<0.1	-	<0.1	<0.1 SV	<0.1	<0.1	<0.1 SV	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1 SV	<0.1 SV	<0.1	-	<0.1	<0.1 SV	<0.1	<0.1	<0.1 SV	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1 SV	<0.1 SV	<0.1	-	<0.1	<0.1 SV	<0.1	<0.1	<0.1 SV	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	<4	<4	-	<4	<4	<4	5	<4	<4	<4	mg/kg	TM5/PM16
>EC16-EC21 #	12	24	<7	-	28	35	14	116	<7	17	<7	mg/kg	TM5/PM16
>EC21-EC35 #	142	146	<7	-	235	224	128	477	<7	196	<7	mg/kg	TM5/PM16
>EC35-EC40	38	38	<7	-	83	43	29	93	<7	<7	<7	mg/kg	TM5/PM16
Total aromatics C5-40	192	208	<26	-	346	302	171	691	<26	213	<26	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-40)	192	208	<52	-	430	353	203	771	<52	265	<52	mg/kg	TM5/TM36/PM12/PM16
>EC6-EC10 #	<0.1 SV	<0.1 SV	<0.1	-	<0.1	<0.1 SV	<0.1	<0.1	<0.1 SV	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC25	33	38	<10	-	91	78	36	249	<10	42	<10	mg/kg	TM5/PM16
>EC25-EC35	109	91	<10	-	202	174	102	364	<10	118	<10	mg/kg	TM5/PM16
MTBE #	<5 SV	<5 SV	<5	-	<5	<5 SV	<5	<5	<5 SV	<5	<5	ug/kg	TM31/PM12
Benzene #	-	-	<5	-	<5	<5 SV	<5	<5	<5 SV	<5	<5	ug/kg	TM31/PM12
Toluene #	-	-	<5	-	<5	<5 SV	<5	<5	<5 SV	<5	<5	ug/kg	TM31/PM12
Ethylbenzene #	-	-	<5	-	<5	<5 SV	<5	<5	<5 SV	<5	<5	ug/kg	TM31/PM12
m/p-Xylene #	-	-	<5	-	<5	<5 SV	<5	<5	<5 SV	<5	<5	ug/kg	TM31/PM12
o-Xylene #	-	-	<5	-	<5	<5 SV	<5	<5	<5 SV	<5	<5	ug/kg	TM31/PM12
PCB 28 #	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 52 #	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 101 #	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 118 #	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 138 #	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 153 #	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
PCB 180 #	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM17/PM8
Total 7 PCBs #	<35	<35	<35	-	<35	<35	<35	<35	<35	<35	<35	ug/kg	TM17/PM8
Phenol #	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	TM26/PM21
Natural Moisture Content	17.8	47.0	8.9	-	-	-	-	-	17.5	23.7	<0.1	%	PM4/PM0
Natural Moisture Content	-	-	-	-	17.6	41.8	40.2	20.8	-	-	<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	15.1	32.0	8.2	-	-	-	-	-	14.9	19.1	<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	-	-	-	0.0770	-	-	-	-	-	-	<0.0015	g/l	TM38/PM20
Chromium III	46.5	54.7	59.7	-	NDP	NDP	NDP	NDP	68.2	46.7	<0.5	mg/kg	NONE/NONE
Chromium III	-	-	-	-	30.7	45.4	23.8	42.0	-	-	<0.5	mg/kg	NONE/NONE
Total Cyanide #	1.1	0.8	<0.5	-	<0.5	1.7	0.8	0.7	<0.5	<0.5	<0.5	mg/kg	TM89/PM45

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	60-61	62-63	64-65	66	67-68	69-70	71-72	73-74	75-76	77-78	LOD/LOR	Units	Method No.
Sample ID	BH21	BH21	BH21	BH21	BH22	BH22	BH22	BH24	BH24	BH24			
Depth	1.00	2.00	3.00	4.00	1.00	3.00	4.00	1.00	2.00	4.00			
COC No / misc													
Containers	V J	V J	V J	J	V J	V J	V J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017			
Total Organic Carbon #	29.68	27.81	0.67	-	NDP	NDP	NDP	NDP	9.73	6.11	<0.02	%	TM21/PM24
Sulphide	<10	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	mg/kg	TM106/PM119
Elemental Sulphur	9	56	15	-	-	-	-	-	21	708	<1	mg/kg	TM108/PM114
Elemental Sulphur	-	-	-	-	14	58	63	11	-	-	<1	mg/kg	TM108/PM8
pH #	8.02	7.83	7.98	9.39	7.90	7.74	7.73	8.15	8.20	7.33	<0.01	pH units	TM73/PM11
Mass of raw test portion	0.1418	0.1392	0.1096	-	0.1008	0.1316	0.121	0.1117	0.1314	0.1334		kg	NONE/PM17
Mass of dried test portion	0.09	0.09	0.09	-	0.09	0.09	0.09	0.09	0.09	0.09		kg	NONE/PM17

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	79	80-81	82-83	84-85	86-87						LOD/LOR	Units	Method No.
Sample ID	BH24	BH25	BH25	BH25	BH25								
Depth	5.00	1.00	2.00	3.00	5.00								
COC No / misc													
Containers	J	V J	V J	V J	V J								
Sample Date	<>	<>	<>	<>	<>								
Sample Type	Soil	Soil	Soil	Soil	Soil								
Batch Number	1	1	1	1	1								
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017								
Antimony	-	3	4	5	-						<1	mg/kg	TM30/PM15
Arsenic #	-	18.8	23.2	44.4	-						<0.5	mg/kg	TM30/PM15
Barium #	-	188	204	454	-						<1	mg/kg	TM30/PM15
Cadmium #	-	0.9	1.1	0.4	-						<0.1	mg/kg	TM30/PM15
Chromium #	-	40.0	52.7	34.3	-						<0.5	mg/kg	TM30/PM15
Copper #	-	52	76	173	-						<1	mg/kg	TM30/PM15
Lead #	-	94	168	430	-						<5	mg/kg	TM30/PM15
Mercury #	-	<0.1	<0.1	0.2	-						<0.1	mg/kg	TM30/PM15
Molybdenum #	-	3.8	4.7	12.0	-						<0.1	mg/kg	TM30/PM15
Nickel #	-	30.3	45.5	80.1	-						<0.7	mg/kg	TM30/PM15
Selenium #	-	2	2	3	-						<1	mg/kg	TM30/PM15
Total Sulphate as SO4 #	-	866	1086	1838	-						<50	mg/kg	TM50/PM29
Water Soluble Boron #	-	2.1	3.2	2.0	-						<0.1	mg/kg	TM74/PM32
Zinc #	-	203	472	591	-						<5	mg/kg	TM30/PM15
Antimony	-	-	-	-	-						<1	mg/kg	TM30/PM62
Arsenic	-	-	-	-	-						<0.5	mg/kg	TM30/PM62
Barium	-	-	-	-	-						<1	mg/kg	TM30/PM62
Cadmium	-	-	-	-	-						<0.1	mg/kg	TM30/PM62
Chromium	-	-	-	-	-						<0.5	mg/kg	TM30/PM62
Copper	-	-	-	-	-						<1	mg/kg	TM30/PM62
Lead	-	-	-	-	-						<5	mg/kg	TM30/PM62
Mercury	-	-	-	-	-						<0.1	mg/kg	TM30/PM62
Molybdenum	-	-	-	-	-						<0.1	mg/kg	TM30/PM62
Nickel	-	-	-	-	-						<0.7	mg/kg	TM30/PM62
Selenium	-	-	-	-	-						<1	mg/kg	TM30/PM62
Total Sulphate as SO4	-	-	-	-	-						<50	mg/kg	TM50/PM29
Water Soluble Boron	-	-	-	-	-						<0.1	mg/kg	TM74/PM61
Zinc	-	-	-	-	-						<5	mg/kg	TM30/PM62

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	79	80-81	82-83	84-85	86-87							
Sample ID	BH24	BH25	BH25	BH25	BH25							
Depth	5.00	1.00	2.00	3.00	5.00							
COC No / misc												
Containers	J	V J	V J	V J	V J							
Sample Date	<>	<>	<>	<>	<>							
Sample Type	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1							
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017							

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
PAH MS													
Naphthalene #	-	0.20	0.13	0.14	-						<0.04	mg/kg	TM4/PM8
Acenaphthylene	-	0.26	0.40	0.53	-						<0.03	mg/kg	TM4/PM8
Acenaphthene #	-	0.35	0.25	0.14	-						<0.05	mg/kg	TM4/PM8
Fluorene #	-	0.28	0.29	0.19	-						<0.04	mg/kg	TM4/PM8
Phenanthrene #	-	1.81	2.01	2.45	-						<0.03	mg/kg	TM4/PM8
Anthracene #	-	0.91	1.04	0.72	-						<0.04	mg/kg	TM4/PM8
Fluoranthene #	-	5.47	5.27	5.08	-						<0.03	mg/kg	TM4/PM8
Pyrene #	-	4.65	4.77	4.12	-						<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	-	2.92	2.77	2.66	-						<0.06	mg/kg	TM4/PM8
Chrysene #	-	2.59	2.45	2.49	-						<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	-	5.94	5.36	4.79	-						<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	-	3.80	3.48	2.88	-						<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	-	2.55	2.20	1.95	-						<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	-	0.44	0.38	0.51	-						<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	-	2.13	1.80	1.62	-						<0.04	mg/kg	TM4/PM8
Coronene	-	0.50	0.55	0.43	-						<0.04	mg/kg	TM4/PM8
PAH 6 Total #	-	19.89	18.11	16.32	-						<0.22	mg/kg	TM4/PM8
PAH 17 Total	-	34.80	33.15	30.70	-						<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-	4.28	3.86	3.45	-						<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	-	1.66	1.50	1.34	-						<0.02	mg/kg	TM4/PM8
Benzo(j)fluoranthene	-	1	1	<1	-						<1	mg/kg	TM4/PM8
PAH Surrogate % Recovery	-	107	102	111	-						<0	%	TM4/PM8
Mineral Oil (C10-C40)	-	176	340	113	-						<30	mg/kg	TM5/PM16
TPH CWG													
Aliphatics													
>C5-C6 #	-	<0.1	<0.1	0.1 SV	-						<0.1	mg/kg	TM36/PM12
>C6-C8 #	-	<0.1	<0.1	0.1 SV	-						<0.1	mg/kg	TM36/PM12
>C8-C10	-	<0.1	<0.1	1.0 SV	-						<0.1	mg/kg	TM36/PM12
>C10-C12 #	-	<0.2	<0.2	<0.2	-						<0.2	mg/kg	TM5/PM16
>C12-C16 #	-	<4	9	<4	-						<4	mg/kg	TM5/PM16
>C16-C21 #	-	24	40	<7	-						<7	mg/kg	TM5/PM16
>C21-C35 #	-	120	192	77	-						<7	mg/kg	TM5/PM16
>C35-C40	-	32	99	36	-						<7	mg/kg	TM5/PM16
Total aliphatics C5-40	-	176	340	114	-						<26	mg/kg	TM5/TM36/PM12/PM16
>C6-C10	-	<0.1	<0.1	1.1 SV	-						<0.1	mg/kg	TM36/PM12
>C10-C25	-	42	55	17	-						<10	mg/kg	TM5/PM16
>C25-C35	-	93	162	58	-						<10	mg/kg	TM5/PM16

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	79	80-81	82-83	84-85	86-87						LOD/LOR	Units	Method No.
Sample ID	BH24	BH25	BH25	BH25	BH25								
Depth	5.00	1.00	2.00	3.00	5.00								
COC No / misc													
Containers	J	V J	V J	V J	V J								
Sample Date	<>	<>	<>	<>	<>								
Sample Type	Soil	Soil	Soil	Soil	Soil								
Batch Number	1	1	1	1	1								
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017								
TPH CWG													
Aromatics													
>C5-EC7 #	-	<0.1	<0.1	<0.1 SV	-						<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	-	<0.1	<0.1	<0.1 SV	-						<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	-	<0.1	<0.1	<0.1 SV	-						<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	-	<0.2	<0.2	<0.2	-						<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	-	<4	8	<4	-						<4	mg/kg	TM5/PM16
>EC16-EC21 #	-	46	77	77	-						<7	mg/kg	TM5/PM16
>EC21-EC35 #	-	277	490	604	-						<7	mg/kg	TM5/PM16
>EC35-EC40	-	97	252	156	-						<7	mg/kg	TM5/PM16
Total aromatics C5-40	-	420	827	837	-						<26	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-40)	-	596	1167	951	-						<52	mg/kg	TM5/TM36/PM12/PM16
>EC6-EC10 #	-	<0.1	<0.1	<0.1 SV	-						<0.1	mg/kg	TM36/PM12
>EC10-EC25	-	98	134	275	-						<10	mg/kg	TM5/PM16
>EC25-EC35	-	223	414	318	-						<10	mg/kg	TM5/PM16
MTBE #	-	<5	<5	<5 SV	-						<5	ug/kg	TM31/PM12
Benzene #	-	<5	<5	<5 SV	-						<5	ug/kg	TM31/PM12
Toluene #	-	<5	<5	<5 SV	-						<5	ug/kg	TM31/PM12
Ethylbenzene #	-	<5	<5	<5 SV	-						<5	ug/kg	TM31/PM12
m/p-Xylene #	-	<5	<5	7 SV	-						<5	ug/kg	TM31/PM12
o-Xylene #	-	<5	<5	<5 SV	-						<5	ug/kg	TM31/PM12
PCB 28 #	-	<5	<5	<5	-						<5	ug/kg	TM17/PM8
PCB 52 #	-	<5	<5	<5	-						<5	ug/kg	TM17/PM8
PCB 101 #	-	<5	<5	<5	-						<5	ug/kg	TM17/PM8
PCB 118 #	-	<5	<5	<5	-						<5	ug/kg	TM17/PM8
PCB 138 #	-	<5	<5	<5	-						<5	ug/kg	TM17/PM8
PCB 153 #	-	<5	<5	<5	-						<5	ug/kg	TM17/PM8
PCB 180 #	-	<5	<5	<5	-						<5	ug/kg	TM17/PM8
Total 7 PCBs #	-	<35	<35	<35	-						<35	ug/kg	TM17/PM8
Phenol #	-	<0.01	<0.01	<0.01	-						<0.01	mg/kg	TM26/PM21
Natural Moisture Content	-	10.9	18.6	30.6	-						<0.1	%	PM4/PM0
Natural Moisture Content	-	-	-	-	-						<0.1	%	PM4/PM0
Moisture Content (% Wet Weight)	-	9.8	15.7	23.4	-						<0.1	%	PM4/PM0
Hexavalent Chromium #	-	<0.3	<0.3	<0.3	-						<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	0.0361	-	-	-	0.0917						<0.0015	g/l	TM38/PM20
Chromium III	-	40.0	52.7	34.3	-						<0.5	mg/kg	NONE/NONE
Chromium III	-	-	-	-	-						<0.5	mg/kg	NONE/NONE
Total Cyanide #	-	6.6	15.8	0.8	-						<0.5	mg/kg	TM89/PM45

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	79	80-81	82-83	84-85	86-87							
Sample ID	BH24	BH25	BH25	BH25	BH25							
Depth	5.00	1.00	2.00	3.00	5.00							
COC No / misc												
Containers	J	V J	V J	V J	V J							
Sample Date	<>	<>	<>	<>	<>							
Sample Type	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1							
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017							

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
Total Organic Carbon #	-	3.56	6.85	16.65	-						<0.02	%	TM21/PM24
Sulphide	-	<10	<10	<10	-						<10	mg/kg	TM106/PM119
Elemental Sulphur	-	36	63	107	-						<1	mg/kg	TM108/PM114
Elemental Sulphur	-	-	-	-	-						<1	mg/kg	TM108/PM8
pH #	8.90	8.40	8.31	7.99	9.16						<0.01	pH units	TM73/PM11
Mass of raw test portion	-	0.1088	0.1111	0.124	-							kg	NONE/PM17
Mass of dried test portion	-	0.09	0.09	0.09	-							kg	NONE/PM17

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	4-5	9-10	12-13	14-16	17-18	19-20	21-22	24-25	26-27	LOD/LOR	Units	Method No.
Sample ID	BH5	BH6	BH7	BH9	BH9	BH10	BH10	BH11	BH12	BH13			
Depth	1.00	1.00	3.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017			
Dissolved Antimony #	<0.002	<0.002	0.005	<0.002	0.002	0.016	<0.002	0.025	0.010	0.005	<0.002	mg/l	TM30/PM17
Dissolved Antimony (A10) #	<0.02	<0.02	0.05	<0.02	0.02	0.16	<0.02	0.25	0.10	0.05	<0.02	mg/kg	TM30/PM17
Dissolved Arsenic #	0.0068	<0.0025	0.0054	<0.0025	<0.0025	0.0349	<0.0025	0.0201	<0.0025	0.0161	<0.0025	mg/l	TM30/PM17
Dissolved Arsenic (A10) #	0.068	<0.025	0.054	<0.025	<0.025	0.349	<0.025	0.201	<0.025	0.161	<0.025	mg/kg	TM30/PM17
Dissolved Barium #	<0.003	0.005	0.023	0.009	0.037	<0.003	0.006	0.037	0.022	<0.003	<0.003	mg/l	TM30/PM17
Dissolved Barium (A10) #	<0.03	0.05	0.23	0.09	0.37	<0.03	0.06	0.37	0.22	<0.03	<0.03	mg/kg	TM30/PM17
Dissolved Boron #	<0.012	<0.012	0.082	0.019	0.136	0.018	<0.012	0.048	0.038	0.022	<0.012	mg/l	TM30/PM17
Dissolved Boron (A10) #	<0.12	<0.12	0.82	0.19	1.36	0.18	<0.12	0.48	0.38	0.22	<0.12	mg/kg	TM30/PM17
Dissolved Cadmium #	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	mg/l	TM30/PM17
Dissolved Cadmium (A10) #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	mg/kg	TM30/PM17
Dissolved Chromium #	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	0.0496	<0.0015	<0.0015	mg/l	TM30/PM17
Dissolved Chromium (A10) #	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	0.496	<0.015	<0.015	mg/kg	TM30/PM17
Dissolved Copper #	<0.007	<0.007	0.009	<0.007	<0.007	0.012	<0.007	<0.007	0.013	<0.007	<0.007	mg/l	TM30/PM17
Dissolved Copper (A10) #	<0.07	<0.07	0.09	<0.07	<0.07	0.12	<0.07	<0.07	0.13	<0.07	<0.07	mg/kg	TM30/PM17
Dissolved Lead #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.011	<0.005	<0.005	mg/l	TM30/PM17
Dissolved Lead (A10) #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	<0.05	<0.05	mg/kg	TM30/PM17
Dissolved Molybdenum #	0.006	0.009	0.011	0.006	0.029	0.005	0.006	0.080	0.005	0.005	<0.002	mg/l	TM30/PM17
Dissolved Molybdenum (A10) #	0.06	0.09	0.11	0.06	0.29	0.05	0.06	0.80	0.05	0.05	<0.02	mg/kg	TM30/PM17
Dissolved Nickel #	<0.002	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM30/PM17
Dissolved Nickel (A10) #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	TM30/PM17
Dissolved Selenium #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM30/PM17
Dissolved Selenium (A10) #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM30/PM17
Dissolved Zinc #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.006	0.016	<0.003	<0.003	mg/l	TM30/PM17
Dissolved Zinc (A10) #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.06	0.16	<0.03	<0.03	mg/kg	TM30/PM17
Mercury Dissolved by CVAF #	0.00032	<0.00001	0.00044	<0.00001	0.00001	0.00255	<0.00001	0.00013	0.01210	0.00030	<0.00001	mg/l	TM61/PM38
Mercury Dissolved by CVAF #	0.0032	<0.0001	0.0044	<0.0001	0.0001	0.0255	<0.0001	0.0013	0.1210	0.0030	<0.0001	mg/kg	TM61/PM38
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/l	TM26/PM0
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM26/PM0
Fluoride	<0.3	<0.3	0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.6	<0.3	<0.3	mg/l	TM173/PM0
Fluoride	<3	<3	<3	<3	<3	<3	<3	<3	6	<3	<3	mg/kg	TM173/PM0
Sulphate as SO4 #	3.23	3.90	24.30	5.80	62.31	11.47	7.27	41.66	14.06	11.48	<0.05	mg/l	TM38/PM0
Sulphate as SO4 #	32.3	39.0	242.9	58.0	623.3	114.8	72.7	416.7	140.5	114.9	<0.5	mg/kg	TM38/PM0
Chloride #	<0.3	0.8	2.0	4.4	2.4	0.5	0.4	0.6	0.7	0.6	<0.3	mg/l	TM38/PM0
Chloride #	<3	8	20	44	24	5	4	6	7	6	<3	mg/kg	TM38/PM0
Ammoniacal Nitrogen as N #	<0.03	0.22	<0.03	0.04	2.90	0.18	<0.03	0.14	<0.03	<0.03	<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	<0.3	2.2	<0.3	0.4	29.0	1.8	<0.3	1.4	<0.3	<0.3	<0.3	mg/kg	TM38/PM0
Dissolved Organic Carbon	4	2	5	3	6	6	2	4	5	4	<2	mg/l	TM60/PM0
Dissolved Organic Carbon	40	20	50	30	60	60	<20	40	50	40	<20	mg/kg	TM60/PM0
Total Dissolved Solids #	59	65	151	63	235	69	67	167	123	103	<35	mg/l	TM20/PM0
Total Dissolved Solids #	590	650	1509	630	2351	690	670	1670	1230	1031	<350	mg/kg	TM20/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	28-29	30-31	32-33	34-35	36-37	38-39	40-41	42-43	44-45	46-47	LOD/LOR	Units	Method No.
Sample ID	BH13	BH14	BH14	BH15	BH16	BH16	BH17	BH17	BH18	BH18			
Depth	3.00	1.00	3.00	1.00	1.00	2.00	1.00	3.00	1.00	3.00			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017			
Dissolved Antimony #	0.002	<0.002	<0.002	0.008	0.005	0.008	0.002	0.003	0.008	0.007	<0.002	mg/l	TM30/PM17
Dissolved Antimony (A10) #	0.02	<0.02	<0.02	0.08	0.05	0.08	<0.02	0.03	0.08	0.07	<0.02	mg/kg	TM30/PM17
Dissolved Arsenic #	<0.0025	<0.0025	0.0045	0.0030	<0.0025	<0.0025	0.0053	0.0055	<0.0025	<0.0025	<0.0025	mg/l	TM30/PM17
Dissolved Arsenic (A10) #	<0.025	<0.025	0.045	0.030	<0.025	<0.025	0.053	0.055	<0.025	<0.025	<0.025	mg/kg	TM30/PM17
Dissolved Barium #	0.016	0.025	0.009	0.028	0.024	0.025	0.028	0.016	0.021	0.071	<0.003	mg/l	TM30/PM17
Dissolved Barium (A10) #	0.16	0.25	0.09	0.28	0.24	0.25	0.28	0.16	0.21	0.71	<0.03	mg/kg	TM30/PM17
Dissolved Boron #	0.271	<0.012	<0.012	<0.012	0.012	0.013	0.050	0.029	0.052	0.037	<0.012	mg/l	TM30/PM17
Dissolved Boron (A10) #	2.71	<0.12	<0.12	<0.12	0.12	0.13	0.50	0.29	0.52	0.37	<0.12	mg/kg	TM30/PM17
Dissolved Cadmium #	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	mg/l	TM30/PM17
Dissolved Cadmium (A10) #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	mg/kg	TM30/PM17
Dissolved Chromium #	<0.0015	<0.0015	<0.0015	0.0017	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	mg/l	TM30/PM17
Dissolved Chromium (A10) #	<0.015	<0.015	<0.015	0.017	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	mg/kg	TM30/PM17
Dissolved Copper #	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	0.010	<0.007	<0.007	mg/l	TM30/PM17
Dissolved Copper (A10) #	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	0.10	<0.07	<0.07	mg/kg	TM30/PM17
Dissolved Lead #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	mg/l	TM30/PM17
Dissolved Lead (A10) #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM30/PM17
Dissolved Molybdenum #	0.025	0.008	0.008	0.005	0.006	0.006	0.016	0.011	0.008	0.020	<0.002	mg/l	TM30/PM17
Dissolved Molybdenum (A10) #	0.25	0.08	0.08	0.05	0.06	0.06	0.16	0.11	0.08	0.20	<0.02	mg/kg	TM30/PM17
Dissolved Nickel #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM30/PM17
Dissolved Nickel (A10) #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	TM30/PM17
Dissolved Selenium #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM30/PM17
Dissolved Selenium (A10) #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM30/PM17
Dissolved Zinc #	<0.003	0.003	<0.003	<0.003	<0.003	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM30/PM17
Dissolved Zinc (A10) #	<0.03	0.03	<0.03	<0.03	<0.03	0.04	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM30/PM17
Mercury Dissolved by CVAF #	<0.00001	<0.00001	<0.00001	0.00057	0.00036	0.00042	0.00002	<0.00001	0.00074	<0.00001	<0.00001	mg/l	TM61/PM38
Mercury Dissolved by CVAF #	<0.0001	<0.0001	<0.0001	0.0057	0.0036	0.0042	0.0002	<0.0001	0.0074	<0.0001	<0.0001	mg/kg	TM61/PM38
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/l	TM26/PM0
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM26/PM0
Fluoride	<0.3	<0.3	<0.3	0.6	0.5	0.6	0.3	<0.3	0.4	0.4	<0.3	mg/l	TM173/PM0
Fluoride	<3	<3	<3	6	5	6	<3	<3	4	4	<3	mg/kg	TM173/PM0
Sulphate as SO4 #	105.42	43.70	10.34	7.22	10.80	12.43	24.19	14.36	27.15	86.68	<0.05	mg/l	TM38/PM0
Sulphate as SO4 #	1054.6	437.2	103.4	72.2	108.0	124.3	241.9	143.6	271.5	866.8	<0.5	mg/kg	TM38/PM0
Chloride #	2.5	0.4	<0.3	0.3	0.5	0.6	1.4	0.8	1.8	1.4	<0.3	mg/l	TM38/PM0
Chloride #	25	4	<3	3	5	6	14	8	18	14	<3	mg/kg	TM38/PM0
Ammoniacal Nitrogen as N #	4.00	0.03	0.07	<0.03	<0.03	<0.03	3.83	0.05	0.11	0.09	<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	40.0	0.3	0.7	<0.3	<0.3	<0.3	38.3	0.5	1.1	0.9	<0.3	mg/kg	TM38/PM0
Dissolved Organic Carbon	10	<2	<2	3	3	3	6	<2	6	3	<2	mg/l	TM60/PM0
Dissolved Organic Carbon	100	<20	<20	30	30	30	60	<20	60	30	<20	mg/kg	TM60/PM0
Total Dissolved Solids #	239	88	<35	67	85	76	102	60	99	219	<35	mg/l	TM20/PM0
Total Dissolved Solids #	2391	880	<350	670	850	760	1020	600	990	2190	<350	mg/kg	TM20/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	50-51	52-53	54-57	58-59	60-61	62-63	64-65	67-68	69-70	71-72	LOD/LOR	Units	Method No.
Sample ID	BH19	BH19	BH20	BH20	BH21	BH21	BH21	BH22	BH22	BH22			
Depth	1.00	3.00	1.00	3.00	1.00	2.00	3.00	1.00	3.00	4.00			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	<>	<>	<>	<>	<>	<>	<>	<>	<>	<>			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017			
Dissolved Antimony #	0.004	0.004	0.008	0.011	0.002	0.003	<0.002	0.005	0.008	0.005	<0.002	mg/l	TM30/PM17
Dissolved Antimony (A10) #	0.04	0.04	0.08	0.11	0.02	0.03	<0.02	0.05	0.08	0.05	<0.02	mg/kg	TM30/PM17
Dissolved Arsenic #	0.0075	<0.0025	<0.0025	0.0043	<0.0025	0.0032	0.0030	0.0055	0.0131	0.0114	<0.0025	mg/l	TM30/PM17
Dissolved Arsenic (A10) #	0.075	<0.025	<0.025	0.043	<0.025	0.032	0.030	0.055	0.131	0.114	<0.025	mg/kg	TM30/PM17
Dissolved Barium #	0.020	0.055	0.052	0.054	0.046	0.042	0.029	0.057	0.087	0.052	<0.003	mg/l	TM30/PM17
Dissolved Barium (A10) #	0.20	0.55	0.52	0.54	0.46	0.42	0.29	0.57	0.87	0.52	<0.03	mg/kg	TM30/PM17
Dissolved Boron #	0.022	0.019	0.044	0.086	0.022	0.028	0.019	0.075	0.428	0.291	<0.012	mg/l	TM30/PM17
Dissolved Boron (A10) #	0.22	0.19	0.44	0.86	0.22	0.28	0.19	0.75	4.28	2.91	<0.12	mg/kg	TM30/PM17
Dissolved Cadmium #	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	mg/l	TM30/PM17
Dissolved Cadmium (A10) #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	mg/kg	TM30/PM17
Dissolved Chromium #	<0.0015	<0.0015	<0.0015	<0.0015	0.0121	0.0030	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	mg/l	TM30/PM17
Dissolved Chromium (A10) #	<0.015	<0.015	<0.015	<0.015	0.121	0.030	<0.015	<0.015	<0.015	<0.015	<0.015	mg/kg	TM30/PM17
Dissolved Copper #	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	mg/l	TM30/PM17
Dissolved Copper (A10) #	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	TM30/PM17
Dissolved Lead #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	mg/l	TM30/PM17
Dissolved Lead (A10) #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM30/PM17
Dissolved Molybdenum #	0.008	0.004	0.003	0.069	0.018	0.020	0.025	0.017	0.087	0.073	<0.002	mg/l	TM30/PM17
Dissolved Molybdenum (A10) #	0.08	0.04	0.03	0.69	0.18	0.20	0.25	0.17	0.87	0.73	<0.02	mg/kg	TM30/PM17
Dissolved Nickel #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM30/PM17
Dissolved Nickel (A10) #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	TM30/PM17
Dissolved Selenium #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM30/PM17
Dissolved Selenium (A10) #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM30/PM17
Dissolved Zinc #	<0.003	<0.003	0.003	0.012	<0.003	0.012	0.003	0.003	0.004	<0.003	<0.003	mg/l	TM30/PM17
Dissolved Zinc (A10) #	<0.03	<0.03	0.03	0.12	<0.03	0.12	0.03	<0.03	0.04	<0.03	<0.03	mg/kg	TM30/PM17
Mercury Dissolved by CVAF #	0.00010	<0.00001	0.00035	0.00032	0.00008	0.00078	0.00007	0.00001	0.00002	<0.00001	<0.00001	mg/l	TM61/PM38
Mercury Dissolved by CVAF #	0.0010	<0.0001	0.0035	0.0032	0.0008	0.0078	0.0007	<0.0001	0.0002	<0.0001	<0.0001	mg/kg	TM61/PM38
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/l	TM26/PM0
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM26/PM0
Fluoride	0.3	0.4	0.3	0.5	0.8	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/l	TM173/PM0
Fluoride	<3	4	3	5	8	<3	<3	<3	<3	<3	<3	mg/kg	TM173/PM0
Sulphate as SO4 #	15.16	25.02	9.65	21.20	73.90	24.19	39.19	39.17	68.80	68.04	<0.05	mg/l	TM38/PM0
Sulphate as SO4 #	151.6	250.2	96.5	211.9	739.2	242.0	392.1	391.6	687.7	680.2	<0.5	mg/kg	TM38/PM0
Chloride #	1.8	0.6	0.5	4.2	0.7	1.7	5.0	4.1	6.2	10.2	<0.3	mg/l	TM38/PM0
Chloride #	18	6	5	42	7	17	50	41	62	102	<3	mg/kg	TM38/PM0
Ammoniacal Nitrogen as N #	0.04	<0.03	0.04	0.08	<0.03	<0.03	<0.03	1.88	13.88	3.80	<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	0.4	<0.3	0.4	0.8	<0.3	<0.3	<0.3	18.8	138.7	38.0	<0.3	mg/kg	TM38/PM0
Dissolved Organic Carbon	3	<2	4	6	5	3	3	5	5	4	<2	mg/l	TM60/PM0
Dissolved Organic Carbon	30	<20	40	60	50	30	30	50	50	40	<20	mg/kg	TM60/PM0
Total Dissolved Solids #	54	87	111	153	218	128	115	163	282	246	<35	mg/l	TM20/PM0
Total Dissolved Solids #	540	870	1110	1529	2180	1281	1150	1629	2819	2459	<350	mg/kg	TM20/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh
JE Job No.: 17/7789

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	73-74	75-76	77-78	80-81	82-83	84-85					LOD/LOR	Units	Method No.
Sample ID	BH24	BH24	BH24	BH25	BH25	BH25							
Depth	1.00	2.00	4.00	1.00	2.00	3.00							
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J							
Sample Date	<>	<>	<>	<>	<>	<>							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1	1							
Date of Receipt	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017							
Dissolved Antimony #	0.008	0.005	<0.002	0.018	0.019	0.004					<0.002	mg/l	TM30/PM17
Dissolved Antimony (A10) #	0.08	0.05	<0.02	0.18	0.19	0.04					<0.02	mg/kg	TM30/PM17
Dissolved Arsenic #	0.0027	<0.0025	<0.0025	0.0256	0.0185	<0.0025					<0.0025	mg/l	TM30/PM17
Dissolved Arsenic (A10) #	0.027	<0.025	<0.025	0.256	0.185	<0.025					<0.025	mg/kg	TM30/PM17
Dissolved Barium #	0.050	0.071	0.050	0.014	0.016	0.056					<0.003	mg/l	TM30/PM17
Dissolved Barium (A10) #	0.50	0.71	0.50	0.14	0.16	0.56					<0.03	mg/kg	TM30/PM17
Dissolved Boron #	0.050	0.047	0.090	0.115	0.123	0.024					<0.012	mg/l	TM30/PM17
Dissolved Boron (A10) #	0.50	0.47	0.90	1.15	1.23	0.24					<0.12	mg/kg	TM30/PM17
Dissolved Cadmium #	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005					<0.0005	mg/l	TM30/PM17
Dissolved Cadmium (A10) #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005					<0.005	mg/kg	TM30/PM17
Dissolved Chromium #	0.0029	0.0017	<0.0015	0.0019	<0.0015	0.0047					<0.0015	mg/l	TM30/PM17
Dissolved Chromium (A10) #	0.029	0.017	<0.015	0.019	<0.015	0.047					<0.015	mg/kg	TM30/PM17
Dissolved Copper #	0.008	<0.007	<0.007	0.036	0.031	<0.007					<0.007	mg/l	TM30/PM17
Dissolved Copper (A10) #	0.08	<0.07	<0.07	0.36	0.31	<0.07					<0.07	mg/kg	TM30/PM17
Dissolved Lead #	<0.005	<0.005	<0.005	0.007	<0.005	<0.005					<0.005	mg/l	TM30/PM17
Dissolved Lead (A10) #	<0.05	<0.05	<0.05	0.07	<0.05	<0.05					<0.05	mg/kg	TM30/PM17
Dissolved Molybdenum #	0.006	0.013	0.021	0.030	0.025	0.018					<0.002	mg/l	TM30/PM17
Dissolved Molybdenum (A10) #	0.06	0.13	0.21	0.30	0.25	0.18					<0.02	mg/kg	TM30/PM17
Dissolved Nickel #	0.003	<0.002	<0.002	0.009	0.006	<0.002					<0.002	mg/l	TM30/PM17
Dissolved Nickel (A10) #	0.03	<0.02	<0.02	0.09	0.06	<0.02					<0.02	mg/kg	TM30/PM17
Dissolved Selenium #	<0.003	<0.003	0.003	<0.003	0.004	<0.003					<0.003	mg/l	TM30/PM17
Dissolved Selenium (A10) #	<0.03	<0.03	0.03	<0.03	0.04	<0.03					<0.03	mg/kg	TM30/PM17
Dissolved Zinc #	0.007	0.005	<0.003	0.012	0.011	0.013					<0.003	mg/l	TM30/PM17
Dissolved Zinc (A10) #	0.07	0.05	<0.03	0.12	0.11	0.13					<0.03	mg/kg	TM30/PM17
Mercury Dissolved by CVAF #	0.00047	0.00012	<0.00001	0.00099	0.00093	0.00040					<0.00001	mg/l	TM61/PM38
Mercury Dissolved by CVAF #	0.0047	0.0012	<0.0001	0.0099	0.0093	0.0040					<0.0001	mg/kg	TM61/PM38
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	mg/l	TM26/PM0
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM26/PM0
Fluoride	0.3	<0.3	<0.3	<0.3	<0.3	0.4					<0.3	mg/l	TM173/PM0
Fluoride	<3	<3	<3	<3	<3	4					<3	mg/kg	TM173/PM0
Sulphate as SO4 #	10.59	9.73	228.59	65.98	65.01	26.99					<0.05	mg/l	TM38/PM0
Sulphate as SO4 #	105.9	97.3	2286.2	659.8	650.3	270.0					<0.5	mg/kg	TM38/PM0
Chloride #	0.6	<0.3	28.7	135.1	83.5	1.2					<0.3	mg/l	TM38/PM0
Chloride #	6	<3	287	1351	835	12					<3	mg/kg	TM38/PM0
Ammoniacal Nitrogen as N #	0.03	<0.03	1.36	0.53	0.05	<0.03					<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	<0.3	<0.3	13.6	5.3	0.5	<0.3					<0.3	mg/kg	TM38/PM0
Dissolved Organic Carbon	4	4	3	19	14	5					<2	mg/l	TM60/PM0
Dissolved Organic Carbon	40	40	30	190	140	50					<20	mg/kg	TM60/PM0
Total Dissolved Solids #	112	105	574	416	363	133					<35	mg/l	TM20/PM0
Total Dissolved Solids #	1120	1050	5741	4160	3631	1330					<350	mg/kg	TM20/PM0

Please see attached notes for all abbreviations and acronyms

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	84.4
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.83

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**2**			
Client Sample No	**BH5**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.36	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	0.39	-	-	-
PAH Sum of 17 (mg/kg)	0.70	100	-	-
Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.068	0.5	2	25
Barium	<0.03	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0032	0.01	0.2	2
Molybdenum	0.06	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	<3	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	32.3	1000	20000	50000
Total Dissolved Solids	590	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	85.6
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.73

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**5**			
Client Sample No	**BH6**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.25	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	<0.22	-	-	-
PAH Sum of 17 (mg/kg)	<0.64	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.05	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.09	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	8	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	39.0	1000	20000	50000
Total Dissolved Solids	650	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	20	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	82.9
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.71

JEFL Job No	**17/7789**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**10**			
Client Sample No	**BH7**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**3.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	3.17	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	8.77	-	-	-
PAH Sum of 17 (mg/kg)	17.30	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.054	0.5	2	25
Barium	0.23	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	0.09	2	50	100
Mercury	0.0044	0.01	0.2	2
Molybdenum	0.11	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.05	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	20	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	242.9	1000	20000	50000
Total Dissolved Solids	1509	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	50	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	84.3
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.77

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**13**			
Client Sample No	**BH9**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.39	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	<0.22	-	-	-
PAH Sum of 17 (mg/kg)	<0.64	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.09	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.06	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	44	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	58.0	1000	20000	50000
Total Dissolved Solids	630	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	73.6
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.62

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**16**			
Client Sample No	**BH9**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**2.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	2.09	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	3.23	-	-	-
PAH Sum of 17 (mg/kg)	6.89	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.37	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0001	0.01	0.2	2
Molybdenum	0.29	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	24	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	623.3	1000	20000	50000
Total Dissolved Solids	2351	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	60	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	83.7
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.79

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**18**			
Client Sample No	**BH10**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	3.53	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	34	500	-	-
PAH Sum of 6 (mg/kg)	9.24	-	-	-
PAH Sum of 17 (mg/kg)	18.32	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.349	0.5	2	25
Barium	<0.03	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	0.12	2	50	100
Mercury	0.0255	0.01	0.2	2
Molybdenum	0.05	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.16	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	5	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	114.8	1000	20000	50000
Total Dissolved Solids	690	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	60	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	87.7
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.72

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**20**			
Client Sample No	**BH10**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**2.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.14	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	<0.22	-	-	-
PAH Sum of 17 (mg/kg)	<0.64	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.06	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.06	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	4	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	72.7	1000	20000	50000
Total Dissolved Solids	670	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	<20	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	77.5
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.73

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**22**			
Client Sample No	**BH11**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	NDP	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	2.51	-	-	-
PAH Sum of 17 (mg/kg)	5.22	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.201	0.5	2	25
Barium	0.37	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0013	0.01	0.2	2
Molybdenum	0.80	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.25	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.06	4	50	200
Chloride	6	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	416.7	1000	20000	50000
Total Dissolved Solids	1670	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	78.5
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.75

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**25**			
Client Sample No	**BH12**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	12.75	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.175	1	-	-
Mineral Oil (mg/kg)	277	500	-	-
PAH Sum of 6 (mg/kg)	77.72	-	-	-
PAH Sum of 17 (mg/kg)	130.39	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.22	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	0.496	0.5	10	70
Copper	0.13	2	50	100
Mercury	0.1210	0.01	0.2	2
Molybdenum	0.05	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	0.11	0.5	10	50
Antimony	0.10	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.16	4	50	200
Chloride	7	800	15000	25000
Fluoride	6	10	150	500
Sulphate as SO4	140.5	1000	20000	50000
Total Dissolved Solids	1230	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	50	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	82.2
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.82

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**27**			
Client Sample No	**BH13**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	25.11	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.175	1	-	-
Mineral Oil (mg/kg)	89	500	-	-
PAH Sum of 6 (mg/kg)	37.46	-	-	-
PAH Sum of 17 (mg/kg)	68.90	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.161	0.5	2	25
Barium	<0.03	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0030	0.01	0.2	2
Molybdenum	0.05	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.05	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	6	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	114.9	1000	20000	50000
Total Dissolved Solids	1031	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	74.2
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.64

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**29**			
Client Sample No	**BH13**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**3.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	1.81	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	4.59	-	-	-
PAH Sum of 17 (mg/kg)	9.03	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.16	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.25	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	25	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	1054.6	1000	20000	50000
Total Dissolved Solids	2391	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	100	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	76.7
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.73

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**31**			
Client Sample No	**BH14**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	3.93	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.210	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	0.71	-	-	-
PAH Sum of 17 (mg/kg)	1.52	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.25	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.08	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.03	4	50	200
Chloride	4	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	437.2	1000	20000	50000
Total Dissolved Solids	880	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	<20	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	87.1
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.86

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**33**			
Client Sample No	**BH14**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**3.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	5.70	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	<0.22	-	-	-
PAH Sum of 17 (mg/kg)	<0.64	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.045	0.5	2	25
Barium	0.09	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.08	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	<3	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	103.4	1000	20000	50000
Total Dissolved Solids	<350	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	<20	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	77.5
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.85

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**35**			
Client Sample No	**BH15**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	NDP	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.350	1	-	-
Mineral Oil (mg/kg)	183	500	-	-
PAH Sum of 6 (mg/kg)	11.70	-	-	-
PAH Sum of 17 (mg/kg)	25.77	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.030	0.5	2	25
Barium	0.28	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	0.017	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0057	0.01	0.2	2
Molybdenum	0.05	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.08	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	3	800	15000	25000
Fluoride	6	10	150	500
Sulphate as SO4	72.2	1000	20000	50000
Total Dissolved Solids	670	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	80.1
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.84

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**37**			
Client Sample No	**BH16**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	8.79	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	124	500	-	-
PAH Sum of 6 (mg/kg)	10.03	-	-	-
PAH Sum of 17 (mg/kg)	19.88	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.24	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0036	0.01	0.2	2
Molybdenum	0.06	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.05	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	5	800	15000	25000
Fluoride	5	10	150	500
Sulphate as SO4	108.0	1000	20000	50000
Total Dissolved Solids	850	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	79.1
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.85

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**39**			
Client Sample No	**BH16**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**2.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	NDP	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	97	500	-	-
PAH Sum of 6 (mg/kg)	5.94	-	-	-
PAH Sum of 17 (mg/kg)	12.15	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.25	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0042	0.01	0.2	2
Molybdenum	0.06	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.08	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.04	4	50	200
Chloride	6	800	15000	25000
Fluoride	6	10	150	500
Sulphate as SO4	124.3	1000	20000	50000
Total Dissolved Solids	760	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	83.4
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.68

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**41**			
Client Sample No	**BH17**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	3.32	3	5	6
Sum of BTEX (mg/kg)	0.206	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	41	500	-	-
PAH Sum of 6 (mg/kg)	1.15	-	-	-
PAH Sum of 17 (mg/kg)	2.19	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.053	0.5	2	25
Barium	0.28	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0002	0.01	0.2	2
Molybdenum	0.16	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	14	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	241.9	1000	20000	50000
Total Dissolved Solids	1020	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	60	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	75.5
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.83

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**43**			
Client Sample No	**BH17**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**3.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	NDP	3	5	6
Sum of BTEX (mg/kg)	0.044	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	<0.22	-	-	-
PAH Sum of 17 (mg/kg)	<0.64	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.055	0.5	2	25
Barium	0.16	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.11	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.03	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	8	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	143.6	1000	20000	50000
Total Dissolved Solids	600	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	<20	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	83.4
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.84

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**45**			
Client Sample No	**BH18**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	NDP	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	14.00	-	-	-
PAH Sum of 17 (mg/kg)	28.30	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.21	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	0.10	2	50	100
Mercury	0.0074	0.01	0.2	2
Molybdenum	0.08	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.08	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	18	800	15000	25000
Fluoride	4	10	150	500
Sulphate as SO4	271.5	1000	20000	50000
Total Dissolved Solids	990	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	60	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	84.9
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.68

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**47**			
Client Sample No	**BH18**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**3.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	NDP	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	168	500	-	-
PAH Sum of 6 (mg/kg)	2.64	-	-	-
PAH Sum of 17 (mg/kg)	4.53	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.71	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.20	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.07	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	14	800	15000	25000
Fluoride	4	10	150	500
Sulphate as SO4	866.8	1000	20000	50000
Total Dissolved Solids	2190	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	91.1
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.86

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**51**			
Client Sample No	**BH19**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	3.43	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	159	500	-	-
PAH Sum of 6 (mg/kg)	19.32	-	-	-
PAH Sum of 17 (mg/kg)	40.89	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.075	0.5	2	25
Barium	0.20	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0010	0.01	0.2	2
Molybdenum	0.08	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.04	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	18	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	151.6	1000	20000	50000
Total Dissolved Solids	540	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	85.7
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.68

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**53**			
Client Sample No	**BH19**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**3.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	NDP	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	37	500	-	-
PAH Sum of 6 (mg/kg)	1.06	-	-	-
PAH Sum of 17 (mg/kg)	1.91	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.55	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.04	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.04	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	6	800	15000	25000
Fluoride	4	10	150	500
Sulphate as SO4	250.2	1000	20000	50000
Total Dissolved Solids	870	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	<20	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	81.8
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.76

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**57**			
Client Sample No	**BH20**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	2.50	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	7.81	-	-	-
PAH Sum of 17 (mg/kg)	15.47	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.52	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0035	0.01	0.2	2
Molybdenum	0.03	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.08	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.03	4	50	200
Chloride	5	800	15000	25000
Fluoride	3	10	150	500
Sulphate as SO4	96.5	1000	20000	50000
Total Dissolved Solids	1110	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	81.4
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

JEFL Job No	**17/7789**	**Landfill Waste Acceptance Criteria Limits**		
Sample No	**59**			
Client Sample No	**BH20**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**3.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	4.00	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	5.49	-	-	-
PAH Sum of 17 (mg/kg)	10.32	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.043	0.5	2	25
Barium	0.54	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0032	0.01	0.2	2
Molybdenum	0.69	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.11	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.12	4	50	200
Chloride	42	800	15000	25000
Fluoride	5	10	150	500
Sulphate as SO4	211.9	1000	20000	50000
Total Dissolved Solids	1529	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	60	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	63.3
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.78

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**61**			
Client Sample No	**BH21**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	29.68	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	9.20	-	-	-
PAH Sum of 17 (mg/kg)	16.32	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.46	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	0.121	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0008	0.01	0.2	2
Molybdenum	0.18	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	7	800	15000	25000
Fluoride	8	10	150	500
Sulphate as SO4	739.2	1000	20000	50000
Total Dissolved Solids	2180	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	50	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	64.5
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**63**			
Client Sample No	**BH21**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**2.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	27.81	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	6.31	-	-	-
PAH Sum of 17 (mg/kg)	13.61	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.032	0.5	2	25
Barium	0.42	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	0.030	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0078	0.01	0.2	2
Molybdenum	0.20	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.03	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.12	4	50	200
Chloride	17	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	242.0	1000	20000	50000
Total Dissolved Solids	1281	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	82.3
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.82

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**65**			
Client Sample No	**BH21**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**3.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	0.67	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	0.33	-	-	-
PAH Sum of 17 (mg/kg)	<0.64	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.030	0.5	2	25
Barium	0.29	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0007	0.01	0.2	2
Molybdenum	0.25	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.03	4	50	200
Chloride	50	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	392.1	1000	20000	50000
Total Dissolved Solids	1150	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	89.3
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.76

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**68**			
Client Sample No	**BH22**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	NDP	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	84	500	-	-
PAH Sum of 6 (mg/kg)	15.39	-	-	-
PAH Sum of 17 (mg/kg)	27.23	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.055	0.5	2	25
Barium	0.57	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.17	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.05	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	41	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	391.6	1000	20000	50000
Total Dissolved Solids	1629	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	50	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	68.4
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.6

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**70**			
Client Sample No	**BH22**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**3.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	NDP	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	51	500	-	-
PAH Sum of 6 (mg/kg)	42.92	-	-	-
PAH Sum of 17 (mg/kg)	77.79	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.131	0.5	2	25
Barium	0.87	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0002	0.01	0.2	2
Molybdenum	0.87	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.08	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.04	4	50	200
Chloride	62	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	687.7	1000	20000	50000
Total Dissolved Solids	2819	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	50	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	74.5
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**72**			
Client Sample No	**BH22**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**4.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	NDP	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	32	500	-	-
PAH Sum of 6 (mg/kg)	5.51	-	-	-
PAH Sum of 17 (mg/kg)	9.87	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.114	0.5	2	25
Barium	0.52	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.73	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.05	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	102	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	680.2	1000	20000	50000
Total Dissolved Solids	2459	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	80.7
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**74**			
Client Sample No	**BH24**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	NDP	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	80	500	-	-
PAH Sum of 6 (mg/kg)	19.55	-	-	-
PAH Sum of 17 (mg/kg)	35.22	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.027	0.5	2	25
Barium	0.50	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	0.029	0.5	10	70
Copper	0.08	2	50	100
Mercury	0.0047	0.01	0.2	2
Molybdenum	0.06	0.5	10	30
Nickel	0.03	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.08	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.07	4	50	200
Chloride	6	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	105.9	1000	20000	50000
Total Dissolved Solids	1120	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	68.7
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.81

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**76**			
Client Sample No	**BH24**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**2.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	9.73	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	<30	500	-	-
PAH Sum of 6 (mg/kg)	<0.22	-	-	-
PAH Sum of 17 (mg/kg)	<0.64	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.71	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	0.017	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0012	0.01	0.2	2
Molybdenum	0.13	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.05	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.05	4	50	200
Chloride	<3	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	97.3	1000	20000	50000
Total Dissolved Solids	1050	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	40	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	67.6
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.79

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**78**			
Client Sample No	**BH24**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**4.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	6.11	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	52	500	-	-
PAH Sum of 6 (mg/kg)	2.09	-	-	-
PAH Sum of 17 (mg/kg)	3.95	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.50	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	<0.07	2	50	100
Mercury	<0.0001	0.01	0.2	2
Molybdenum	0.21	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	<0.02	0.06	0.7	5
Selenium	0.03	0.1	0.5	7
Zinc	<0.03	4	50	200
Chloride	287	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	2286.2	1000	20000	50000
Total Dissolved Solids	5741	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	30	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	82.6
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.81

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**81**			
Client Sample No	**BH25**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**1.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	3.56	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	176	500	-	-
PAH Sum of 6 (mg/kg)	19.89	-	-	-
PAH Sum of 17 (mg/kg)	34.80	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.256	0.5	2	25
Barium	0.14	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	0.019	0.5	10	70
Copper	0.36	2	50	100
Mercury	0.0099	0.01	0.2	2
Molybdenum	0.30	0.5	10	30
Nickel	0.09	0.4	10	40
Lead	0.07	0.5	10	50
Antimony	0.18	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.12	4	50	200
Chloride	1351	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	659.8	1000	20000	50000
Total Dissolved Solids	4160	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	190	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	80.9
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.82

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**83**			
Client Sample No	**BH25**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**2.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	6.85	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	340	500	-	-
PAH Sum of 6 (mg/kg)	18.11	-	-	-
PAH Sum of 17 (mg/kg)	33.15	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	0.185	0.5	2	25
Barium	0.16	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	<0.015	0.5	10	70
Copper	0.31	2	50	100
Mercury	0.0093	0.01	0.2	2
Molybdenum	0.25	0.5	10	30
Nickel	0.06	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.19	0.06	0.7	5
Selenium	0.04	0.1	0.5	7
Zinc	0.11	4	50	200
Chloride	835	800	15000	25000
Fluoride	<3	10	150	500
Sulphate as SO4	650.3	1000	20000	50000
Total Dissolved Solids	3631	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	140	500	800	1000

Mass of sample taken (kg)	-	Dry Matter Content Ratio (%) =	72.4
Mass of dry sample (kg) =	0.09	Leachant Volume (l)	-
Particle Size <4mm =	>95%	Eluate Volume (l)	0.8

		Landfill Waste Acceptance Criteria Limits		
JEFL Job No	**17/7789**			
Sample No	**85**			
Client Sample No	**BH25**	**Inert**	**Stable Non-reactive**	**Hazardous**
Depth/Other	**3.00**			
Sample Date	**<>**			
Batch No	**1**			
Solid Waste Analysis				
Total Organic Carbon (%)	16.65	3	5	6
Sum of BTEX (mg/kg)	<0.025	6	-	-
Sum of 7 PCBs (mg/kg)	<0.035	1	-	-
Mineral Oil (mg/kg)	113	500	-	-
PAH Sum of 6 (mg/kg)	16.32	-	-	-
PAH Sum of 17 (mg/kg)	30.70	100	-	-

Eluate Analysis	**10:1 concn leached**	**Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg**		
	A10			
	mg/kg	**mg/kg**		
Arsenic	<0.025	0.5	2	25
Barium	0.56	20	100	300
Cadmium	<0.005	0.04	1	5
Chromium	0.047	0.5	10	70
Copper	<0.07	2	50	100
Mercury	0.0040	0.01	0.2	2
Molybdenum	0.18	0.5	10	30
Nickel	<0.02	0.4	10	40
Lead	<0.05	0.5	10	50
Antimony	0.04	0.06	0.7	5
Selenium	<0.03	0.1	0.5	7
Zinc	0.13	4	50	200
Chloride	12	800	15000	25000
Fluoride	4	10	150	500
Sulphate as SO4	270.0	1000	20000	50000
Total Dissolved Solids	1330	4000	60000	100000
Phenol	<0.1	1	-	-
Dissolved Organic Carbon	50	500	800	1000

Client Name: IGSL **Matrix : Solid**
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	EPH Interpretation
17/7789	1	BH5	1.00	1-2	No interpretation possible
17/7789	1	BH6	1.00	4-5	No interpretation possible
17/7789	1	BH7	3.00	9-10	PAH's
17/7789	1	BH9	1.00	12-13	No interpretation possible
17/7789	1	BH9	2.00	14-16	PAH's
17/7789	1	BH10	1.00	17-18	PAH's
17/7789	1	BH10	2.00	19-20	No interpretation possible
17/7789	1	BH11	1.00	21-22	PAH's
17/7789	1	BH12	1.00	24-25	PAH's, Degraded diesel & Lubricating oil
17/7789	1	BH13	1.00	26-27	PAH's, Lubricating oil & Possible tarmac/bitumen
17/7789	1	BH13	3.00	28-29	PAH's
17/7789	1	BH14	1.00	30-31	No interpretation possible
17/7789	1	BH14	3.00	32-33	No interpretation possible
17/7789	1	BH15	1.00	34-35	PAH's, Lubricating oil & Possible tarmac/bitumen
17/7789	1	BH16	1.00	36-37	PAH's, Lubricating oil & Possible tarmac/bitumen
17/7789	1	BH16	2.00	38-39	PAH's, Lubricating oil & Possible tarmac/bitumen
17/7789	1	BH17	1.00	40-41	PAH's & Possible lubricating oil
17/7789	1	BH17	3.00	42-43	No interpretation possible
17/7789	1	BH18	1.00	44-45	PAH's & Lubricating oil
17/7789	1	BH18	3.00	46-47	PAH's, Lubricating oi & Possible tarmac/bitumen
17/7789	1	BH19	1.00	50-51	PAH's, Lubricating oi & Possible tarmac/bitumen
17/7789	1	BH19	3.00	52-53	PAH's, Lubricating oi & Possible tarmac/bitumen
17/7789	1	BH20	1.00	54-57	PAH's
17/7789	1	BH20	3.00	58-59	PAH's
17/7789	1	BH21	1.00	60-61	PAH's
17/7789	1	BH21	2.00	62-63	PAH's
17/7789	1	BH21	3.00	64-65	No interpretation possible
17/7789	1	BH22	1.00	67-68	PAH's, Lubricating oi & Possible tarmac/bitumen
17/7789	1	BH22	3.00	69-70	PAH's & Lubricating oi
17/7789	1	BH22	4.00	71-72	PAH's & Possible lubricating oil
17/7789	1	BH24	1.00	73-74	PAH's & Lubricating oil
17/7789	1	BH24	2.00	75-76	No interpretation possible

Client Name: IGSL **Matrix : Solid**
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	EPH Interpretation
17/7789	1	BH24	4.00	77-78	PAH's & Possible lubricating oil
17/7789	1	BH25	1.00	80-81	PAH's, Lubricating oi & Possible tarmac/bitumen
17/7789	1	BH25	2.00	82-83	PAH's, Possible tarmac/bitumen, Possibler lubricating oil & Trace of degrade diesel
17/7789	1	BH25	3.00	84-85	PAH's & Possible tarmac/bitumen

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/7789	1	BH5	1.00	2	04/05/2017	**Mass of Dry Sample**	46.8 (g)
					10/05/2017	**General Description (Bulk Analysis)**	Soil/Stone
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH6	1.00	5	04/05/2017	**Mass of Dry Sample**	53.9 (g)
					10/05/2017	**General Description (Bulk Analysis)**	Soil/Stone
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH7	3.00	10	04/05/2017	**Mass of Dry Sample**	48.9 (g)
					10/05/2017	**General Description (Bulk Analysis)**	Soil/Stone
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH9	1.00	13	04/05/2017	**Mass of Dry Sample**	50.6 (g)
					10/05/2017	**General Description (Bulk Analysis)**	Soil/Stone
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/7789	1	BH9	2.00	15	04/05/2017	**Mass of Dry Sample**	45.9 (g)
					10/05/2017	**General Description (Bulk Analysis)**	Soil/Stone
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH10	1.00	18	04/05/2017	**Mass of Dry Sample**	52.7 (g)
					10/05/2017	**General Description (Bulk Analysis)**	Soil/Stone
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH10	2.00	20	04/05/2017	**Mass of Dry Sample**	49.0 (g)
					10/05/2017	**General Description (Bulk Analysis)**	Soil/Stone
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH11	1.00	22	04/05/2017	**Mass of Dry Sample**	48.6 (g)
					10/05/2017	**General Description (Bulk Analysis)**	Soil/Stone
					10/05/2017	**Asbestos Fibres**	Fibre Bundles
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos Type**	Chrysotile
					10/05/2017	**Asbestos Level Screen**	<0.1%
					16/05/2017	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					16/05/2017	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					16/05/2017	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
17/7789	1	BH12	1.00	25	04/05/2017	**Mass of Dry Sample**	44.5 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil/stones
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH13	1.00	27	04/05/2017	**Mass of Dry Sample**	52.1 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil/stones
					10/05/2017	**Asbestos Fibres**	NAD

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/7789	1	BH13	1.00	27	10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH13	3.00	29	04/05/2017	**Mass of Dry Sample**	41.2 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil/stones
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH14	1.00	31	04/05/2017	**Mass of Dry Sample**	47.8 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil/stones
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH14	3.00	33	04/05/2017	**Mass of Dry Sample**	49.5 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil/stones
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH15	1.00	35	04/05/2017	**Mass of Dry Sample**	48.3 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil/stones
					10/05/2017	**Asbestos Fibres**	Fibre Bundles
					10/05/2017	**Asbestos Fibres (2)**	Fibre Bundles
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	Chrysotile
					10/05/2017	**Asbestos Type (2)**	Amosite
					10/05/2017	**Asbestos Level Screen**	<0.1%
					16/05/2017	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					16/05/2017	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					16/05/2017	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
17/7789	1	BH16	1.00	37	04/05/2017	**Mass of Dry Sample**	44.7 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil/stones
					10/05/2017	**Asbestos Fibres**	NAD

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/7789	1	BH16	1.00	37	10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH16	2.00	39	04/05/2017	**Mass of Dry Sample**	43.2 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil/stones
					10/05/2017	**Asbestos Fibres**	Fibre Bundles
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos Type**	Chrysotile
					10/05/2017	**Asbestos Level Screen**	<0.1%
17/7789	1	BH17	1.00	41	04/05/2017	**Mass of Dry Sample**	47.8 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil-stones
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH17	3.00	43	04/05/2017	**Mass of Dry Sample**	41.9 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil-stones
					10/05/2017	**Asbestos Fibres**	Fibre Bundles
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos Type**	Chrysotile
					10/05/2017	**Asbestos Level Screen**	<0.1%
					16/05/2017	**Asbestos Gravimetric Quantification**	0.003 (mass %)
					16/05/2017	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					16/05/2017	**Asbestos Gravimetric & PCOM Total**	0.003 (mass %)
17/7789	1	BH18	1.00	45	04/05/2017	**Mass of Dry Sample**	49.5 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil-stones
					10/05/2017	**Asbestos Fibres**	Fibre Bundles
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos Type**	Chrysotile
					10/05/2017	**Asbestos Level Screen**	<0.1%
					16/05/2017	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					16/05/2017	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					16/05/2017	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
17/7789	1	BH18	3.00	47	04/05/2017	**Mass of Dry Sample**	50.7 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil-stones
					10/05/2017	**Asbestos Fibres**	Fibre Bundles
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos Type**	Chrysotile
					10/05/2017	**Asbestos Level Screen**	<0.1%
					16/05/2017	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					16/05/2017	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					16/05/2017	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/7789	1	BH19	1.00	51	04/05/2017	**Mass of Dry Sample**	49.9 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil/stones
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH19	3.00	53	04/05/2017	**Mass of Dry Sample**	49.2 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil/stones
					10/05/2017	**Asbestos Fibres**	Fibre Bundles
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos Type**	Chrysotile
					10/05/2017	**Asbestos Level Screen**	<0.1%
					16/05/2017	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					16/05/2017	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					16/05/2017	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
17/7789	1	BH20	1.00	56	04/05/2017	**Mass of Dry Sample**	48.4 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil/stones
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH20	3.00	59	04/05/2017	**Mass of Dry Sample**	51.0 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil/stones
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH21	1.00	61	04/05/2017	**Mass of Dry Sample**	38.2 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil/stones
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH21	2.00	63	04/05/2017	**Mass of Dry Sample**	37.4 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil/stones
					10/05/2017	**Asbestos Fibres**	NAD

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/7789	1	BH21	2.00	63	10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH21	3.00	65	04/05/2017	**Mass of Dry Sample**	53.2 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil/stones
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH22	1.00	68	04/05/2017	**Mass of Dry Sample**	50.5 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil/stones
					10/05/2017	**Asbestos Fibres**	Fibre Bundles
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos Type**	Chrysotile
					10/05/2017	**Asbestos Level Screen**	<0.1%
					16/05/2017	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					16/05/2017	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					16/05/2017	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
17/7789	1	BH22	3.00	70	04/05/2017	**Mass of Dry Sample**	39.7 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil-stones
					10/05/2017	**Asbestos Fibres**	Fibre Bundles
					10/05/2017	**Asbestos Fibres (2)**	Free Fibres
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	Chrysotile
					10/05/2017	**Asbestos Type (2)**	Amosite
					10/05/2017	**Asbestos Level Screen**	<0.1%
					16/05/2017	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					16/05/2017	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					16/05/2017	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
17/7789	1	BH22	4.00	72	04/05/2017	**Mass of Dry Sample**	40.4 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil-stones
					10/05/2017	**Asbestos Fibres**	Fibre Bundles
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos Type**	Chrysotile
					10/05/2017	**Asbestos Level Screen**	<0.1%
					16/05/2017	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					16/05/2017	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					16/05/2017	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
17/7789	1	BH24	1.00	74	04/05/2017	**Mass of Dry Sample**	44.8 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil-stones
					10/05/2017	**Asbestos Fibres**	Fibre Bundles

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/7789	1	BH24	1.00	74	10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos Type**	Chrysotile
					10/05/2017	**Asbestos Level Screen**	<0.1%
					16/05/2017	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					16/05/2017	**Asbestos PCOM Quantification (Fibres)**	<0.001 (mass %)
					16/05/2017	**Asbestos Gravimetric & PCOM Total**	<0.001 (mass %)
17/7789	1	BH24	2.00	76	04/05/2017	**Mass of Dry Sample**	44.4 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil-stones
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH24	4.00	78	04/05/2017	**Mass of Dry Sample**	45.6 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil/stones
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH25	1.00	81	04/05/2017	**Mass of Dry Sample**	47.0 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil/stones
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH25	2.00	83	04/05/2017	**Mass of Dry Sample**	48.0 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil/stones
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD
					10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD
17/7789	1	BH25	3.00	85	04/05/2017	**Mass of Dry Sample**	40.5 (g)
					10/05/2017	**General Description (Bulk Analysis)**	soil/stones
					10/05/2017	**Asbestos Fibres**	NAD
					10/05/2017	**Asbestos Fibres (2)**	NAD
					10/05/2017	**Asbestos ACM**	NAD
					10/05/2017	**Asbestos ACM (2)**	NAD

Client Name: IGSL
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/7789	1	BH25	3.00	85	10/05/2017	**Asbestos Type**	NAD
					10/05/2017	**Asbestos Type (2)**	NAD
					10/05/2017	**Asbestos Level Screen**	NAD

Client Name: IGSL **Matrix : Solid**
Reference:
Location: Howth
Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
17/7789	1	BH11	1.00	21-22	Asbestos detected in sample
17/7789	1	BH15	1.00	34-35	Asbestos detected in sample
17/7789	1	BH16	2.00	38-39	Asbestos detected in sample
17/7789	1	BH17	3.00	42-43	Asbestos detected in sample
17/7789	1	BH18	1.00	44-45	Asbestos detected in sample
17/7789	1	BH18	3.00	46-47	Asbestos detected in sample
17/7789	1	BH19	3.00	52-53	Asbestos detected in sample
17/7789	1	BH22	1.00	67-68	Asbestos detected in sample
17/7789	1	BH22	3.00	69-70	Asbestos detected in sample
17/7789	1	BH22	4.00	71-72	Asbestos detected in sample
17/7789	1	BH24	1.00	73-74	Asbestos detected in sample

Client Name: IGSL

Matrix : Solid

Reference:

Location: Howth

Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
17/7789	1	BH5	1.00	1-2	All analyses	No sampling date given
17/7789	1	BH5	3.00	3	All analyses	No sampling date given
17/7789	1	BH6	1.00	4-5	All analyses	No sampling date given
17/7789	1	BH6	4.00	6-7	All analyses	No sampling date given
17/7789	1	BH7	2.00	8	All analyses	No sampling date given
17/7789	1	BH7	3.00	9-10	All analyses	No sampling date given
17/7789	1	BH8	2.00	11	All analyses	No sampling date given
17/7789	1	BH9	1.00	12-13	All analyses	No sampling date given
17/7789	1	BH9	2.00	14-16	All analyses	No sampling date given
17/7789	1	BH10	1.00	17-18	All analyses	No sampling date given
17/7789	1	BH10	2.00	19-20	All analyses	No sampling date given
17/7789	1	BH11	1.00	21-22	All analyses	No sampling date given
17/7789	1	BH11	3.00	23	All analyses	No sampling date given
17/7789	1	BH12	1.00	24-25	All analyses	No sampling date given
17/7789	1	BH13	1.00	26-27	All analyses	No sampling date given
17/7789	1	BH13	3.00	28-29	All analyses	No sampling date given
17/7789	1	BH14	1.00	30-31	All analyses	No sampling date given
17/7789	1	BH14	3.00	32-33	All analyses	No sampling date given
17/7789	1	BH15	1.00	34-35	All analyses	No sampling date given
17/7789	1	BH16	1.00	36-37	All analyses	No sampling date given
17/7789	1	BH16	2.00	38-39	All analyses	No sampling date given
17/7789	1	BH17	1.00	40-41	All analyses	No sampling date given
17/7789	1	BH17	3.00	42-43	All analyses	No sampling date given

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

Client Name: IGSL

Matrix : Solid

Reference:

Location: Howth

Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
17/7789	1	BH18	1.00	44-45	All analyses	No sampling date given
17/7789	1	BH18	3.00	46-47	All analyses	No sampling date given
17/7789	1	BH18	4.00	48-49	All analyses	No sampling date given
17/7789	1	BH19	1.00	50-51	All analyses	No sampling date given
17/7789	1	BH19	3.00	52-53	All analyses	No sampling date given
17/7789	1	BH20	1.00	54-57	All analyses	No sampling date given
17/7789	1	BH20	3.00	58-59	All analyses	No sampling date given
17/7789	1	BH21	1.00	60-61	All analyses	No sampling date given
17/7789	1	BH21	2.00	62-63	All analyses	No sampling date given
17/7789	1	BH21	3.00	64-65	All analyses	No sampling date given
17/7789	1	BH21	4.00	66	All analyses	No sampling date given
17/7789	1	BH22	1.00	67-68	All analyses	No sampling date given
17/7789	1	BH22	3.00	69-70	All analyses	No sampling date given
17/7789	1	BH22	4.00	71-72	All analyses	No sampling date given
17/7789	1	BH24	1.00	73-74	All analyses	No sampling date given
17/7789	1	BH24	2.00	75-76	All analyses	No sampling date given
17/7789	1	BH24	4.00	77-78	All analyses	No sampling date given
17/7789	1	BH24	5.00	79	All analyses	No sampling date given
17/7789	1	BH25	1.00	80-81	All analyses	No sampling date given
17/7789	1	BH25	2.00	82-83	All analyses	No sampling date given
17/7789	1	BH25	3.00	84-85	All analyses	No sampling date given
17/7789	1	BH25	5.00	86-87	All analyses	No sampling date given

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

Client Name: IGSL

Matrix : CEN 10:1 1 Batch

Reference:

Location: Howth

Contact: Darren Keogh

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
17/7789	1	BH14	1.00	30-31	TDS	Sample holding time exceeded
17/7789	1	BH14	3.00	32-33	TDS	Sample holding time exceeded
17/7789	1	BH15	1.00	34-35	TDS	Sample holding time exceeded
17/7789	1	BH16	1.00	36-37	TDS	Sample holding time exceeded
17/7789	1	BH16	2.00	38-39	TDS	Sample holding time exceeded
17/7789	1	BH17	1.00	40-41	TDS	Sample holding time exceeded
17/7789	1	BH17	3.00	42-43	TDS	Sample holding time exceeded
17/7789	1	BH18	1.00	44-45	TDS	Sample holding time exceeded
17/7789	1	BH18	3.00	46-47	TDS	Sample holding time exceeded
17/7789	1	BH22	1.00	67-68	TDS	Sample holding time exceeded
17/7789	1	BH22	3.00	69-70	TDS	Sample holding time exceeded

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

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NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/7789

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution
AB	x6 Dilution
AC	x10 Dilution

JE Job No: 17/7789

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	Yes
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes

JE Job No: 17/7789

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM20	Modified BS 1377-3: 1990/USEPA 160.3 Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.	Yes		AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.	Yes		AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.	Yes		AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes

JE Job No: 17/7789

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	Dried and ground solid sample is boiled with dilute hydrochloric acid, the resulting liquor is then analysed.	Yes		AD	Yes
TM50	Acid soluble sulphate (Total Sulphate) analysed by ICP-OES	PM29	Dried and ground solid sample is boiled with dilute hydrochloric acid, the resulting liquor is then analysed.			AR	Yes
TM60	Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR).	PM0	No preparation is required.			AR	Yes
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	Yes

JE Job No: 17/7789

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM61	As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP.			AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes		AR	Yes
TM106	Determination of Sulphide by Skalar Continuous Flow Analyser	PM119	As received solid samples are extracted with 1M NaOH by orbital shaker for Sulphide and Thiocyanate analysis.			AR	Yes
TM108	Determination of Elemental Sulphur by Reversed Phase High Performance Liquid Chromatography with Ultra Violet spectroscopy.	PM114	End over end extraction of dried and crushed soil samples for organic analysis. The solvent mix varies depending on analysis required			AD	Yes
TM108	Determination of Elemental Sulphur by Reversed Phase High Performance Liquid Chromatography with Ultra Violet spectroscopy.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.			AR	Yes

JE Job No: 17/7789

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
NONE	No Method Code	NONE	No Method Code			AR	Yes
NONE	No Method Code	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.			AR	
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.			AR	

Appendix - Methods used for WAC (2003/33/EC)

Leachate tests	
10l/kg; 4mm	I.S. EN 12457-2:2002 Specified particle size; water added to L/S ratio; capped; agitated for 24 ± 0.5 hours; eluate settled and filtered over 0.45 µm membrane filter.
Eluate analysis	
As	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Ba	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cd	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cr total	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cu	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Hg	I.S. EN 13370 rec. EN 1483 (CVAAS)
Mo	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Ni	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Pb	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Sb	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Se	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Zn	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Chloride	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Fluoride	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Sulphate	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Phenol index	I.S. EN 13370 rec. ISO 6439 (4-Aminoantipyrine spectrometic methods after distillation)* (BY HPLC - Jones Env)
DOC	I.S. EN 1484
TDS	I.S. EN 15216
Compositional analysis	
TOC	I.S. EN 13137 Method B: carbonates removed with acid; TOC by combustion.
BTEX	GC-FID
PCB7**	I.S. EN 15308 analysis by GC-ECD.
Mineral oil	I.S. EN 14039 C10 to C40 analysis by GC-FID.
PAH17***	I.S. EN 15527 PAH17 analysis by GC-MS
Metals	I.S. EN 13657 - Aqua regia digestion: EN ISO 11885 (ICP-OES)
Other	
Dry matter	I.S. EN 14346 sample is dried to a constant mass in an oven at 105 ± 3 °C; Method B Water content by direct Karl-Fischer-titration and either volumetric or coulometric detection.
LOI	I.S. EN 15169 Difference in mass after heating in a furnace up to 550 ± 25 °C.
ANC	CEN/TS 15364 Determined by amounts of acid or base needed to cover the pH range

Notes:

*If not suitable due to LOD, precision, etc., any other suitable method can be used, e.g. AFS, ICP-MS

**PCB-28, PCB-52, PCB-101, PCB-118, PCB-138, PCB-153 and PCB-180

***Naphthalene, Acenaphthylene, Acenaphthene, Anthracene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(g,h,i)perylene, Benzo(a)pyrene, Chrysene, Coronene, Dibenzo(a,h)anthracene, Fluorene, Fluoranthene, Indeno(1,2,3-c,d)pyrene, Phenanthrene and Pyrene.

Appendix 8

As-Surveyed Site Plan

19956 Techrete Howth
Site Investigation Locations
Legend
Borehole
Trial Pit
BH24
BH22
TP107
BH17
TP115
TP105
BH20
BH14
TP109
BH23
BH11
TP103
BH09
BH25
BH18
BH30
BH12
BH31
BH06
TP108
BH21
BH19
BH16
BH08
TP104
BH15
BH13
BH10
TP102
BH07
BH04
BH05
BH03
BH02
Howth Rd
Bóthar Bhinn Eadair
R105
N
100 m
Google earth

golder.com

REPORT

Human Health Risk Assessment

Claremont Development Site, Howth

Submitted to:

Atlas GP Limited

Claremont,
Howth
Co. Dublin

Submitted by:

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19128243.R02.A1

October 2019

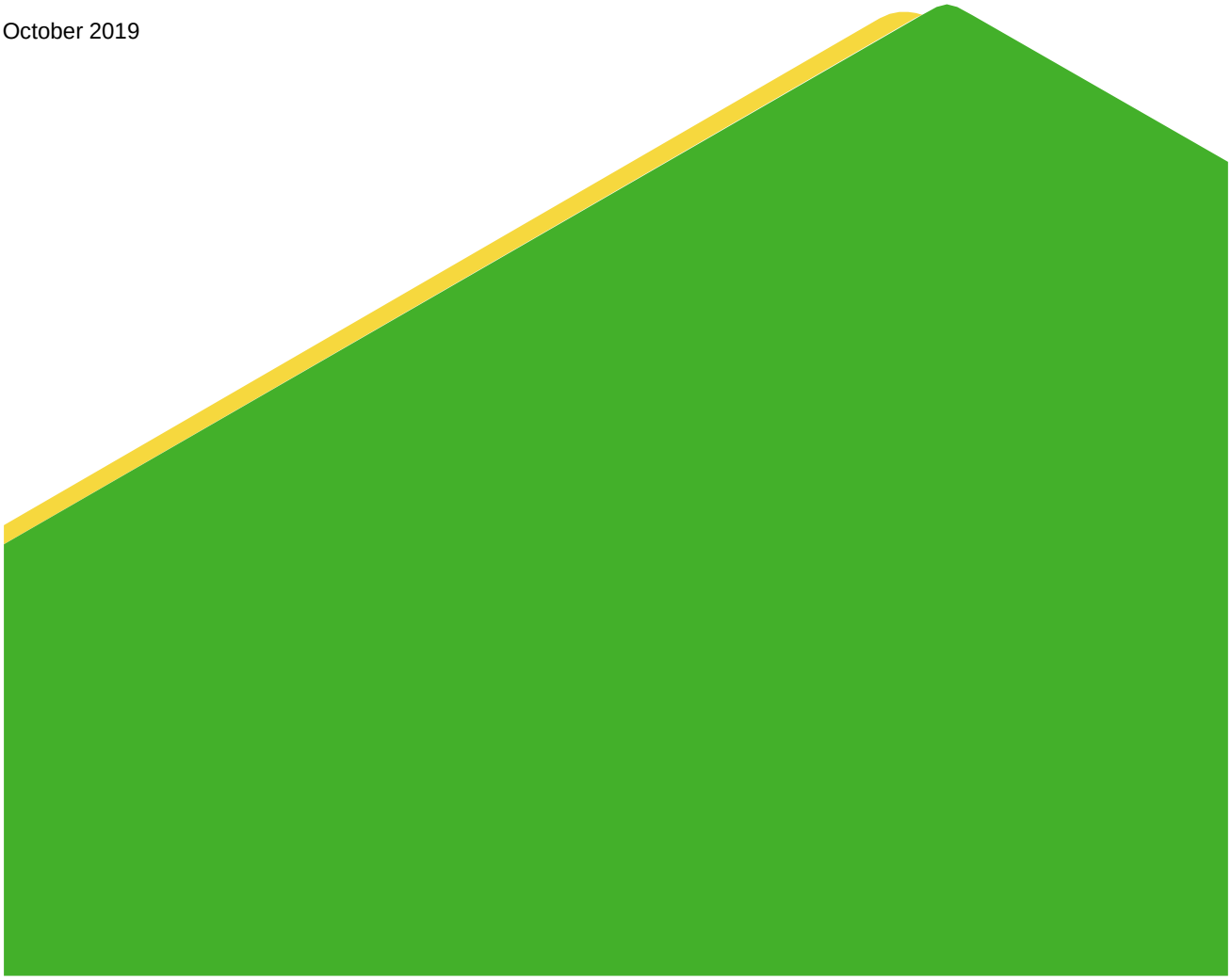

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Figure 1: Proposed development layout (Henry J Lyons, 2019 2

APPENDICES

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Drawings

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Soil Screening Against RWOHG GACs

APPENDIX C
Results of ESI Statistics Calculator Against RWOHG GAC

APPENDIX D
Soil Screening and Results of ESI Statistics Calculator Against POS Residential GAC

1.0 INTRODUCTION

Golder Associates Ireland Limited (Golder) has been appointed by Atlas GP Limited (Atlas) to carry out a Human Health Risk Assessment (HHRA) using quantitative methods where appropriate, to support the planning application and the Environmental Impact Assessment Report for the Claremont development site located at the former Techrete site, Claremont, Howth, Co. Dublin (the Site).

The objective of this report is to assess the risk to human health and identify any remedial requirement necessary to satisfy planning as part of the redevelopment proposed for the project. References and standards employed to produce this report are held in Section 7.0 to the rear of this report.

2.0 SITE SETTING

2.1 Site Setting and Surrounding Land Use

The Site is made up of three separate areas identifiable from their former uses, a precast manufacturing plant (formerly Techrete), Teeling Motors Garage and a garden centre (on site of former vehicle filling station).

The Site is situated on the western side of Howth, Co. Dublin, approximately 400 m west of Howth Harbour. The Site borders Howth road to the south and the DART railway line to the north, with Claremont beach located north of the railway line. A former Fingal County Council pumping plant and associated lands are located adjacent to the west of site and there are residential and commercial properties adjoining the eastern site boundary. The Site is located approximately one mile from Howth town centre. Drawing 01 – Site Layout Plan contained in Appendix A presents the current layout of the site prior to development and in context with the surrounding environment.

Further information about the historical land uses (including current land uses), the environmental setting of the Site and its sensitivity, including the geological, hydrogeological and hydrological description and sensitive designated receptors associated with the Site is provided in the Interpretative Ground Investigation Report, Claremont Development Site, Howth, Golder (September 2019) and has not been reproduced in this report.

3.0 PROPOSED LAND USE

For the benefit of this HHRA report a summary of the proposed redevelopment is provided below (more detail is provided in the Interpretative Ground Investigation Report, Claremont Development Site, Howth, Golder (October 2019).

The proposed development will include the demolition of all structures on the Site and excavation of a basement (single and double under croft), which will provide car parking, plant, waste storage and ancillary uses. The overall layout of the proposed development is depicted in . The proposed development comprises the provision of a mixed-use development of residential, retail/non-retail uses and a childcare facility in 4 no. blocks (A to D), over part basement. Blocks A, B, C and D with a height up to a maximum of seven storeys of apartments over lower ground floor and basement car parking levels (a total of eight storeys over basement level).. The residential component will consist of 512 no. residential units.

A civic plaza will be provided between Blocks D and C, and a landscaped park to the west of Block A. A channel to the sea for the Bloody Stream (daylighting of existing culvert) with associated riparian strip shall be opened up between Blocks A and B. Communal gardens (assuming no home-grown edible produce) will be provided for Blocks A, B, and C.

Figure 1: Proposed development layout (Henry J Lyons, 2019

4.0 SCREENING CRITERIA AND ASSESSMENT

IGSL Limited (IGSL) conducted a ground investigation at the Site from March to May 2017. The investigation included drilling and sampling which consisted of 26 boreholes, 9 trial pits, and groundwater monitoring at 8 borehole locations (IGSL, 2017). In August 2019, Golder carried out further intrusive investigation to supplement existing IGSL data, followed by three rounds of surface, groundwater and gas monitoring. The investigations are summarised in the Interpretative Ground Investigation Report, Claremont Development Site, Howth, Golder (September 2019). Tier 1 screening was carried out against all soil and groundwater analyses retrieved during these investigations. The analytical results from the samples taken as part of IGSL investigation have not been verified but have been screened with the assumption that the data is reliable.

4.1 Soil Screening

4.1.1 Initial Screening

Soils were screened against Generic Assessment Criteria (GAC) predominantly sourced from the following documents (in order of screening value preference):

- The LQM/CIEH Suitable 4 Use Levels (Nathanail *et al*, 2015); and
- EIC/AGS/CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment (EIC/AGS/CL:AIRE, 2010).

To facilitate the presentation of the soil screening, the Site has been divided into three areas based on future land use: Area 1 (Western Parkland), Area 2 (Block A, Block B and Riparian Strip), and Area 3 (Block C, Block D, Basement Parking and Civic Space). The boundary of each area is based on professional judgment and the most recent site plan (Henry J Lyons, 2019). The result of the soil screening is presented in **Appendix A**. The tables only present determinands that were above detection limits in the samples taken.

In addition, the following assumptions were made during the soil risk screening process:

- The 'Residential Without Home Grown Produce' (RWOHG) end use scenario was used to screen the soil data. This scenario assumes a two-storey house built on a ground-bearing slab with a private garden. The exposure pathways include direct soil and indoor dust ingestion, skin contact with soils and indoor dust and inhalation of indoor and outdoor dust and vapours;
- The GACs for organic determinands are dependent on the soil organic matter (SOM), however, the Site's SOM data is highly variable, ranging from 0.82 to 132.65, with an average SOM across the site of 12.18. For the purposes of screening, the soil concentrations were screening against GAC for a SOM content of 1%, which is also the most conservative GAC;

- The GACs were developed assuming that there is no living space below ground, as such this screening does not account for exposure to residents while in the basement car park. The GACs would likely be lower if below ground spaces were considered as it would increase the volume of indoor air that may be contaminated by vapour intrusion;
- The GACs for Lead have been developed as a range of values (130 mg/kg to 330 mg/kg for residential without home grown produce), for the purposes of this assessment, the most conservative GAC value was applied (130 mg/kg). In 2013, Defra published provisional Category 4 Screening Levels (pC4SLs) for lead (Defra, 2013). A range of screening levels for lead were proposed for various land uses. The pC4SLs derived by Defra were based on three different low level of toxicological concern (LLTCs), two different methods of estimating intake leading to blood lead concentrations, and two different sets of exposure parameters. The two GACs presented for lead represent the minimum and maximum pC4SLs derived in Defra (2013) consequently, in the summary tables presented in the report, the range has been presented to provide further context;
- There is currently no readily available GAC values for Total Petroleum Hydrocarbon (TPH) Aliphatic >C35-40 and TPH Aromatic >C35-40; however, there are GAC values for TPH Aliphatic >C35-44 and TPH Aromatic >C35-44 and these have been applied here. It should be noted that this is a less conservative approach, as TPH bands >C35-C40 are a subset of the TPH bands >C35-C44, and is only used to provide a frame of reference for the concentrations; and
- There are no GACs available for overall TPH values. Additive effects of the hydrocarbon fractions are assessed by calculating individual hazard quotients (ratio of the soil concentration and the hydrocarbon fraction GAC) and summing the hazard quotients.

4.1.1.1 Screening of Area 1 Soil Data

After applying the assumptions, 30 exceedances of the RWOHG GACs were identified during the risk screening of Area 1 and are summarised in Table 1. It appears that the sample taken from BH24 from a depth of 1 metre below ground level (m bGL) was re-analysed. The highest soil concentration for each contaminant for this sample has been presented in the table.

The soil sample taken from TP109 at a depth of 0.6 metres below ground level (m bGL) did not have any exceedances of the hydrocarbon bands but the summed TPH fraction hazard quotient for the sample was 1.6 (i.e. greater than one). This indicates a potential risk to human health due to the additive effects of the hydrocarbon fractions.

The Total 7 PCBs soil concentration was screened against the Environment Agency's Soil Guideline Values (SGVs) for dioxins, furans and dioxin-like PCBs in soil (EA, 2009). It is recognised that this screening criteria may not be appropriate for the PCB congeners that were detected in the sample, and this comparison has been included for illustrative purposes only.

The sample taken from BH24 from a depth of 1 m bGL was re-analysed and the re-analysis did not find any detectable concentrations of PCBs. It is likely that the Total 7 PCBs soil concentration of 102 µg/kg in the BH24 (1 m bGL) sample was a laboratory error and can be discounted as an outlier.

Table 1: Exceedances of RWOHG GACs in Area 1

Contaminant	GAC (mg/kg)	Result (mg/kg)	Sample Location	Depth (m bGL)
Arsenic	40	44.4	BH25	3
		47	TP2	2.8
		47	BH24	2
		87.3	BH24	3
Barium	1,300	2,672	BH24	3
Lead	130 – 330	138	TP109	0.6
		250	TP109	1.7
		207	TP109	2.9
		367	BH24	1
		144	BH24	2
		326	BH24	3
		168	BH25	2
		430	BH25	3
		150	TP2	0.1
		390	TP2	2.80 – 3.50
Nickel	180	253.5	BH24	3
Benzo(a)anthracene	11	23.8	TP109	0.6
Benzo(a)pyrene	3.2	21.53	TP109	0.6
		4.55	BH24	1
		3.8	BH25	1
		3.48	BH25	2
Dibenzo(ah)anthracene	0.31	3.21	TP109	0.6
		0.73	BH24	1
		0.44	BH25	1
		0.38	BH25	2
		0.51	BH25	3
Benzo(b)fluoranthene	3.9	27.17	TP109	0.6
		5.51	BH24	1
		4.28	BH25	1
Total 7 PCBs	0.008	0.102	BH24	1

4.1.1.2 Screening of Area 2 Soil Data

After applying the assumptions, 54 exceedances of the RWOHG GACs were identified during the risk screening of Area 2 and are summarised in Table 2. It appears that the sample taken from BH18 at a depth of 1 m bGL has been re-analysed. The highest soil concentration for each contaminant for this sample has been presented in the table.

None of the soil sample taken from Area 2 exceeded the GAC for the hydrocarbon fractions and none of the summed TPH fraction hazard quotients were greater than 1. This indicates a low to very low risk to human health due to TPH.

Table 2: Exceedances of RWOHG GACs in Area 2

Contaminant	GAC (mg/kg)	Result (mg/kg)	Sample Location	Depth (m bGL)
Arsenic	40	61.1	TP105	1.30
		62.2	TP108	1.2
		69.7	BH16	2
		44.5	BH17	1
		53.7	BH18	2
		88	BH21	2
		62.7	BH22	1
		47.5	BH22	3
		66.5	BH23	1
Barium	1,300	2,188	BH14	1
Lead	130 – 330	679	TP106	0.9
		737	TP106	2.1
		163	TP115	2.8
		363	BH16	1
		890	BH16	2
		400	BH18	1
		631	BH18	2
		440	BH18	3
		194	BH20	1
		156	BH20	3
		621	BH21	2
		288	BH22	1
		3,973	BH22	3
		327	BH22	4

Contaminant	GAC (mg/kg)	Result (mg/kg)	Sample Location	Depth (m bGL)
		565	BH23	1
		583	TP1	1.50 – 3.00
		141	TP4	0.00 – 1.50
		156	TP7	0.00 – 1.50
		167	TP7	1.50 – 3.00
		141	TP9	1.50 – 3.00
Benzo(a)anthracene	11	11.9	TP106	0.9
Benzo(a)pyrene	3.2	6.41	TP105	1.30
		9.16	TP106	0.9
		6.39	TP108	1.2
		3.25	BH18	2
		3.29	BH19	1
		7.9	BH22	3
		3.46	BH23	1
Dibenzo(ah)anthracene	0.31	0.87	TP105	1.30
		1.48	TP106	0.9
		0.32	TP106	2.1
		1.2	TP108	1.2
		0.41	BH18	1
		0.53	BH18	2
		0.42	BH18	3
		0.51	BH19	1
		1.13	BH22	3
		0.36	BH23	1
Benzo(b)fluoranthene	3.9	8.25	TP105	1.30
		11.62	TP106	0.9
		7.57	TP108	1.2
		3.92	BH18	2
		9.23	BH22	3
		4.08	BH23	1

4.1.1.3 Screening of Area 3 Soil Data

After applying the assumptions, 49 exceedances of the RWOHG GACs were identified during the risk screening of Area 3 and are summarised in Table 3.

The only exceedance of the hydrocarbon GACs were in the samples taken from TP16. The soil in this location contains a higher concentration of TPH than other locations across the Site, suggesting that this is a hot spot, likely due to the presence of fuel underground storage tanks (USTs) which used to be located in this part of the Site as part of the former vehicle filling station/garage.

Table 3: Exceedances of RWOHG GACs in Area 3

Contaminant	GAC (mg/kg)	Result (mg/kg)	Sample Location	Depth (m bGL)
Arsenic	40	50	BH4	1
		43.9	BH10	1
		177.1	BH30	5
		49.1	TP18	0.00 – 1.50
Lead	130 – 330	247	TP102	0.40
		223	TP103	0.50
		135	TP103	2.50
		369	TP104	2.20
		354	BH7	3
		143	BH9	2
		216	BH10	1
		177	BH11	1
		1314	BH12	1
		690	BH15	1
		266	BH31	1
		190	BH31	2
		424	BH30	1
		196	BH30	2
		507	BH30	5
		310	TP12	0.00-1.50
		371	TP12	1.50-3.00
		213	TP15	1.50-3.00
		446	TP16	0.00-1.50
		179	TP17	0.00-1.50

Contaminant	GAC (mg/kg)	Result (mg/kg)	Sample Location	Depth (m bGL)
Naphthalene	2.3	7.04	TP16	0.00 – 1.50
		25.65	TP16	1.50 – 1.90
Benzo(a)pyrene	3.2	3.35	TP103	2.50
		5.54	TP103	3.50
		15.39	BH12	1
		7.14	BH13	1
Dibenzo(ah)anthracene	0.31	0.54	TP103	2.50
		0.95	TP103	3.50
		1.28	BH12	1
		0.71	BH13	1
		0.36	TP19	0.00 – 0.70
		0.51	TP17	0.00 – 1.50
Benzo(b)fluoranthene	3.9	3.97	TP103	2.50
		6.94	TP103	3.50
		18.09	BH12	1
		8.14	BH13	1
		3.94	TP17	0.00 – 1.50
Aliphatic >C6 – C8	100	178.1	TP16	1.50 – 1.90
Aliphatic >C8 – C10	27	320.2	TP16	1.50 – 1.90
Aliphatic >C10 – C12	130	299.5	TP16	0.00 – 1.50
		1,519.9	TP16	1.50 – 1.90
Aliphatic >C12 – C16	1,100	2,683	TP16	1.50 – 1.90
Aromatic >EC8 – EC10	47	92.1	TP16	1.50 – 1.90
Aromatic >EC10 – EC12	250	335.8	TP16	0.00 – 1.50
		1,324.8	TP16	1.50 – 1.90

4.1.2 Assessment of Exceedances Using Statistical Techniques

To establish whether land is suitable for the land use proposed in the planning application, statistical methods can be applied to determine if it can be confidently assumed that the level of contamination on the land is low relative to an appropriate measure of risk. The method is described in CL:AIRE (2008) and has been applied to the soil data gather across the Site using the ESI Contaminated Land Statistic Calculator v. 2.12.

This method is widely established in the industry as good practice and to establishing the presence or otherwise of a potentially significant contaminant source to be considered for remediation (it does not consider obvious/actual areas of contamination).

The soil concentrations gathered from the Site was divided into two populations based on the key soil types: Made Ground and Natural (Superficial Deposits / Bedrock). The analysis was limited to contaminants where there was an exceedance of the GAC, as presented in Section 4.1.1.1 to 4.1.1.3. The soil data from TP16 was removed from the population as it was identified as a hotspot (see Section 4.1.3) and therefore it is not consistent with the rest of the Site (this hotspot will require remediation). This statistical method should be applied to unbiased sample data through systematic non-targeted sampling. The Golder sampling approach for the Site is non targeted (and appears to be non-targeted in the earlier IGSL 2017 ground investigation), also there is a good distribution of soil samples taken from accessible areas (external to buildings / structures) and strata at the Site which provides confidence in the inferences about the condition of the unsampled accessible areas and strata on the Site from the statistical analysis (i.e. it is considered the samples analysed are representative of the stratum they represent where significant constraints do not exist). It is noted that there is little data available for the soil beneath the footprint of the existing buildings/structures, especially the Techrete site, the condition of the soil beneath the building footprint is unknown; such area will require further investigation and assessment when it is cleared of constraints, however it is assumed that ground conditions are likely to be similar to areas of the site already assessed. The RWOHG GAC with SOM of 1% was used as the critical concentration to assess the soil data.

The interpretation of the statistical test is that if the Null Hypothesis should be rejected, then it is likely (95% probability) that the contaminant concentrations are low relative to the critical concentration (Tier 1 GAC) and that potentially the material is suitable for use in its current condition. The result of this analysis is summarised in Table 4. The outputs from the ESI Contaminated Land Statistic Calculator is provided in **Appendix B**.

Table 4: Results of the statistical technique to assess the soil exceedances

Contaminant	Reject Null Hypothesis?
Made Ground	
Arsenic	Yes
Barium	Yes
Benzo(a)anthracene	Yes
Benzo(a)pyrene	No
Benzo(b)fluoranthene	No
Dibenzo(ah)anthracene	No
Lead	No
Nickel	Yes
Natural (Superficial Deposits / Bedrock)	
Arsenic	Yes
Benzo(a)pyrene	Yes

Contaminant	Reject Null Hypothesis?
Benzo(b)fluoranthene	Yes
Dibenzo(ah)anthracene	Yes
Lead	No – using a GAC of 130 mg/kg Yes – using a GAC of 330 mg/kg

Following this assessment, it appears that Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(ah)anthracene and Lead in the Made Ground remain a concern as a potential risk to human health (there are no concerns with potential contaminants in Natural (superficial / bedrock) soils considering residential exposure pathways). Drawings 2 to 5 illustrate the areas of the Site where the soil concentration for these four potentially significant contaminants are likely to be found to be greater than the RWOHG GAC in the Made Ground.

4.1.3 Summary of Soil Screening

Based on the soil screening and statistical exercise, the following assessment can be made about the soil located on the Site outside of the footprint of the buildings:

- There is likely to be no unacceptable risk to human health from exposure to Natural (superficial / bedrock) soils, assuming residential exposure pathways;
- There is a TPH hot spot in the area of TP16 at a depth of around 1 m and deeper, which is likely attributed to the historical fuel UST in the area, and may pose an unacceptable risk to human health;
- There is a potential concern for overall TPH associated with location TP109/0.6 m due to the hazard quotient assessment, it is considered unlikely that there is an actual TPH issue with soils in this location however this should be confirmed by further exploratory testing to rule this out as a potential hotspot; and
- There are Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(ah)anthracene and Lead hot spots in the Made Ground soils, illustrated in Drawings 2 to 5.

There is no significant soil dataset available in the footprint of the buildings on Site, as such this risk assessment will need to be revisited once soil data is available for these constrained areas of the Site.

Asbestos was found in the Made Ground in various areas of the Site, illustrated in Drawing 6. When materials which contain asbestos are disturbed or damaged, the fibres are released to the air, which when inhaled can have cause serious human health impacts. As such, it is important that soil in the areas indicated in Drawing 6 are managed properly, especially when considering the risks to on-site workers during soil removal and construction; this issue is discussed further in our Materials Management Plan and Remedial Strategy Report, (Golder, October 2019).

4.2 Groundwater Screening

Where concentrations of volatile chemicals are present in both soil and groundwater, these may have an additive effect on soil vapour concentrations if sufficient pore space is available. In order to identify contaminants of interest for the vapour intrusion pathway risk to human health both soil and groundwater concentrations were screened for volatility.

Vapour intrusion from soil risk is considered within the soil GACs adopted in the screening in Section 4.1, which identified an unlikely potential for this pathway to exist.

A review of the groundwater data available shows that volatile contaminants were not present at concentrations above the limits of detection for any of the groundwater monitoring rounds undertaken on the Site. There is unlikely to be a potential for volatile chemicals to migrate into indoor air spaces from the groundwater.

5.0 SUPERFICIAL SOILS FOR RE-USE

An additional screening exercise was carried out for the Superficial Deposits soil data for the Site in order to assess the suitability for the reuse of this material to be recovered from the Site for reuse in a Public Open Space near residential housing (POR_{res}) land use (i.e. reuse as part of capping solution for the landscaped areas). The same assumptions, as outlined in Section 4.0, were used for the screening the superficial soil data with the exception of using POS_{res} GACs instead of RWOHG GACs. CL:AIRE (2010) and EA (2009) do not provide GACs for a POS_{res} scenario, therefore the contaminants were screened against residential GAC.

After applying the assumptions, 9 exceedances of the POS_{res} GACs were identified during the risk screening of superficial soil samples taken across the Site and are summarised in Table 5.

Table 5: Exceedances of POS_{res} GACs in Superficial Soils

Contaminant	GAC (mg/kg)	Result (mg/kg)	Sample Location	Depth (m bGL)
Arsenic	79	177.1	BH30	5
Lead	270 – 760	390	TP2	2.80 – 3.80
		737	TP106	2.1
		440	BH18	3
		583	TP1	1.50 – 3.00
		507	BH30	5
		310	TP12	0.00 – 1.50
		371	TP12	1.50 – 3.00
Dibenzo(ah)anthracene	0.57	0.95	TP103	3.50

The three contaminants that exceeded POS_{res} GACs (Arsenic, Lead, and Dibenzo(ah)anthracene) were assessed using the statistical method, as described in Section 4.1.2, and the results are summarised in Table 6.

Table 6: Results of the statistical technique to assess the soil exceedances against POS_{res}

Contaminant	Reject Null Hypothesis?
Arsenic	Yes
Lead	Yes (for GACs of 270 and 760 mg/kg)
Dibenzo(ah)anthracene	Yes

The soil screening and summary of the statistical assessments are provided in **Appendix C**.

There is likely to be no unacceptable risk to human health from exposure to superficial soils, assuming POS_{res} exposure pathways, if the soil was re-used as part of a capping layer for the landscaped areas on the Site (such material could be used as sub-soils). It is recommended this risk assessment is re-visited for natural soils recovered from beneath building footprints.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Due to the limitations of the available soil data for the Site and the presence of contaminant hot spots, the following recommendations are suggested for the next phases of the project:

- Natural (superficial deposits / bedrock) soils identified external to constrained (buildings/structures) areas have been identified as likely to be suitable for reuse on site as subsoils in a capping system for landscaped areas.
- Potential and actual contaminant hotspots have been identified (refer Drawings 2 to 6 and the TPH hot spot identified around TP16), these areas will require to be addressed via remedial works to either ensure suitability for reuse on site, or if cut/fill materials balance identifies surplus material for removal offsite, these soils should be considered for appropriate waste disposal or treatment at a soils recovery centre;
- There is a potential concern for overall TPH associated with location TP109/0.6m due to the hazard quotient assessment, it is considered unlikely that there is an actual TPH issue with soils in this location however this should be confirmed by further exploratory testing to rule this out as a potential hotspot;
- Reference has been made within this report that further investigation and assessment should be undertaken in constrained (buildings/structures) areas, however the development plan allows for a large basement structure to be placed over this area, thus resulting in a large volume of these soils to be removed off-site, these soils should therefore be considered for the following further works:
  - Natural soils beneath the footprint of the building have the potential to be suitable for reuse (onsite and possibly as a secondary product offsite), further analytical testing and statistical assessment should be undertaken on this material to confirm suitability for reuse as part of systematic sampling strategy; and
  - Made ground soils beneath the footprint of the building have the potential to contain potential contaminants, these should be sampled as part of a systematic hazardous/non-hazardous waste classification and/or Waste Acceptance Criteria Assessment to determine whether some of this material is viable for secondary product reuse offsite or is required be treated as a waste material for disposal offsite.

Following the appropriate completion of recommended works outlined above, it is anticipated there will be no significant residual risk to human health at the Site. These recommendations are taken forward and addressed in more detail in the Materials Management and Remediation Strategy Plan, Golder, October 2019.

7.0 REFERENCES

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- Department for Environment Food and Rural Affairs (Defra). 2013. Development of Category 4 Screening Levels for assessment of land affected by contamination – SP1010. Appendix H – Lead.

Signature Page

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b) Save for Atlas GP Ltd, no duty is undertaken or warranty or representation made to any party in respect of the opinions, advice, recommendations or conclusions herein set out.

c) Regard should be given to the agreement between Golder and Atlas GP Ltd [07 August 2019], when considering this report and reliance to be placed on it.

d) All work carried out in preparing this report has used, and is based upon, Golder's professional knowledge and understanding of the relevant Irish, UK and European Community legislation at the time that the works were undertaken.

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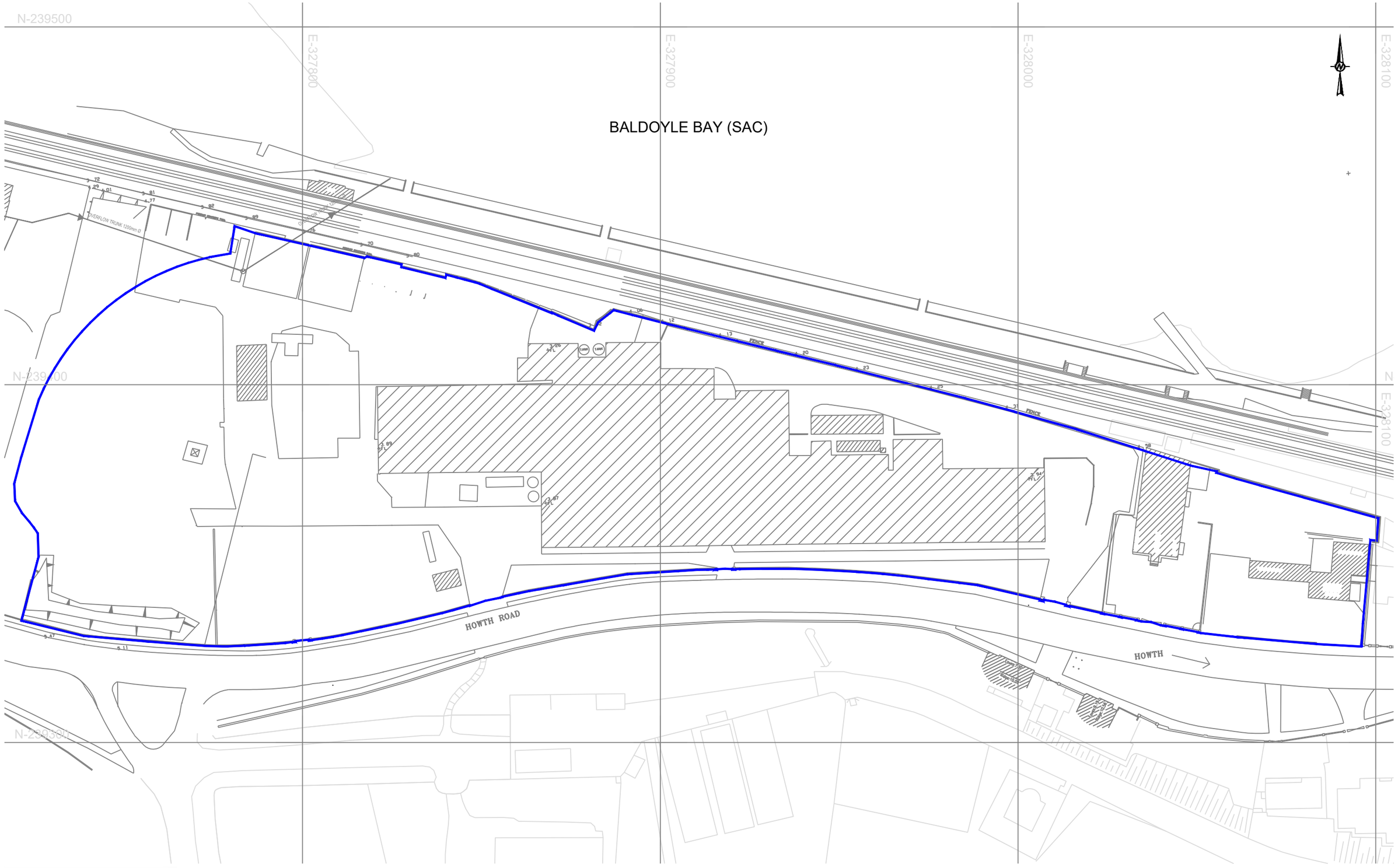
APPENDIX A

Drawings



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LEVELS ARE IN METRES & TO OS DATUM MALIN HEAD.

BACKGROUND SURVEY INFORMATION IS AS SUPPLIED FROM CLIENT AND IS CIRCA 2007/2008.

LEGEND:

SITE BOUNDARY LINE (Sep. 2011)

0 20 40 60m

1:1,000

CLIENT

ATLAS GP Ltd.

CONSULTANT

GOLDER

PROJECT

CLAREMONT PROJECT

TITLE

SITE LAYOUT PLAN

YYYY-MM-DD	2019-Sep-24
PREPARED	POB
DESIGN	POB
REVIEW	RT
APPROVED	RT

PROJECT No.	DRAWING No.	Rev.	SCALE
19128243	01	A	1:1,000 A3

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BALDOYLE BAY (SAC)

LEGEND:
- SITE BOUNDARY LINE (Sep. 2011)
- TRIAL PIT
- MADE GROUND BOREHOLE
- SUPERFICIAL DEPOSITS BOREHOLE
- BEDROCK BOREHOLE
- SAC SURFACE WATER
- SURFACE WATER SAMPLE (IGSL)
- SURFACE WATER SAMPLE (GOLDER)
- BOREHOLE LOCATIONS (IGSL)
- TRIAL PITS IGSL
- BENZO(a)PYRENE HOT SPOT

N-239500 N-239400 N-239300
E-327800 E-327900 E-328000 E-328100

SW2 SAC SW4 SW3 SW1 SW2

BH_24 4.55 TP_02 TP_01 NA BH_22 7.9 BH_03 BH_17 <GAC TP_107 <GAC TP_08 NA TP_105 6.41 TP_10 NA BH_14 <GAC BH_04 TP_115 <GAC BH_20 <GAC TP_09 NA TP_109 21.53 BH_23 3.46 TP_07 NA BH_25 3.8 TP_04 NA TP_03 NA TP_108 6.39 BH_01 BH_21 <GAC BH_19 3.29 TP_05 NA BH_18 3.25 TP_06 NA TP_106 <GAC TP_20 BH_16 <GAC BH_02 TP_19 TP_104 BH_09 BH_15 <GAC BH_13 <GAC TP_18 BH_10 <GAC TP_102 <GAC BH_11 <GAC TP_12 <GAC BH_09 <GAC BH_05 TP_11 <GAC BH_30 <GAC BH_12 <GAC TP_101 BH_31 <GAC TP_13 <GAC BH_06 <GAC BH_08 <GAC BH_07 <GAC BH_07 TP_14 BH_08 TP_15 <GAC BH_04 <GAC BH_03 TP_17 <GAC BH_05 TP_16 BH_06 BH_02

HOWTH ROAD HOWTH

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1:1,000

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CLIENT: ATLAS GP Ltd.

CONSULTANT: GOLDER

YYYY-MM-DD	2019-Sep-30
PREPARED	JD
DESIGN	JD
REVIEW	RT
APPROVED	RT

PROJECT: CLAREMONT PROJECT / HHRA REPORT

TITLE: **ESTIMATED HOT SPOTS FOR BENZO(A)PYRENE IN THE MADE GROUND**

PROJECT No.	DRAWING No.	Rev.	SCALE
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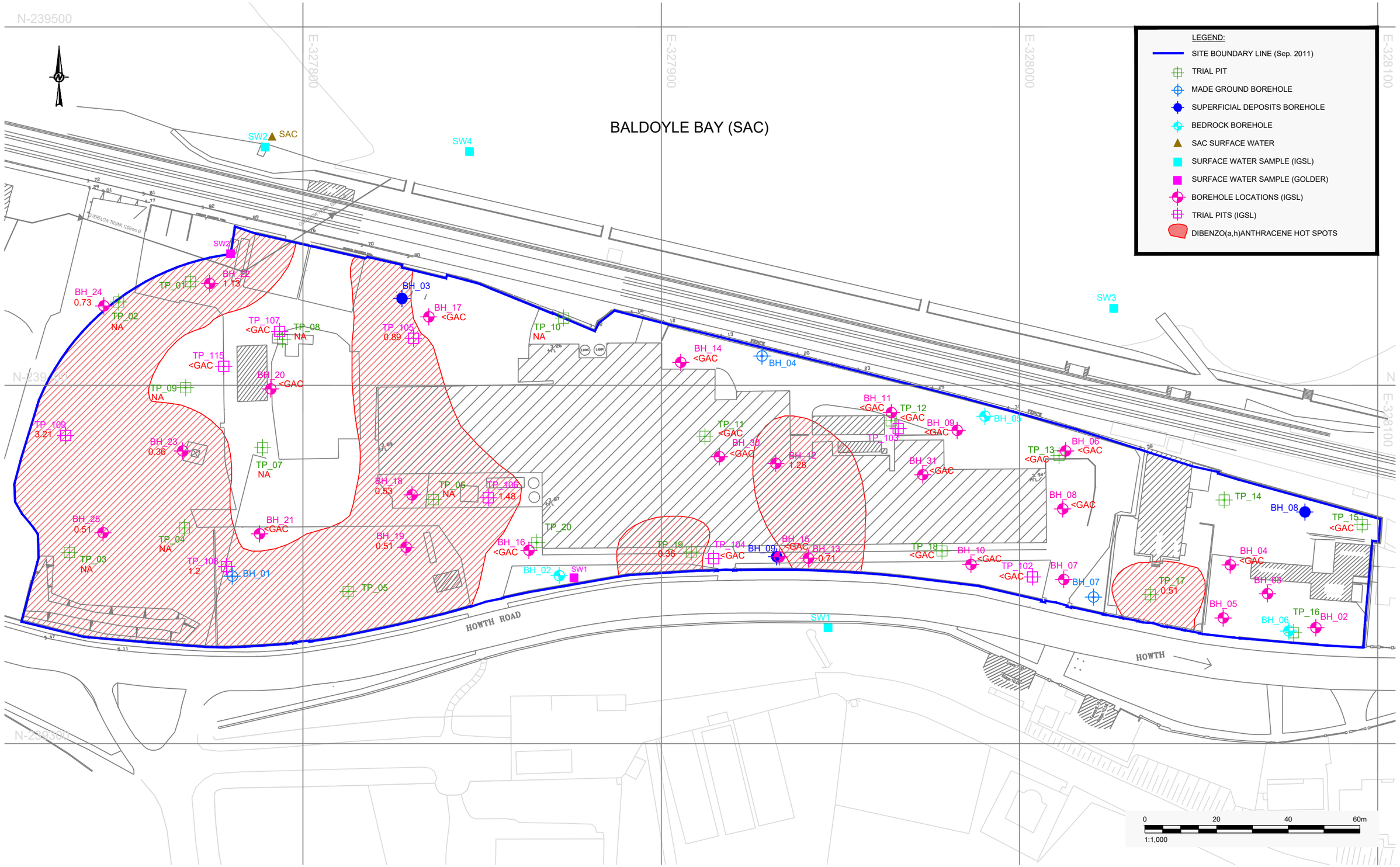

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CLIENT

ATLAS GP Ltd.

CONSULTANT

GOLDER

YYYY-MM-DD	2019-Sep-30
PREPARED	JD
DESIGN	JD
REVIEW	RT
APPROVED	RT

PROJECT

CLAREMONT PROJECT / HHRA REPORT

TITLE

ESTIMATED HOT SPOTS FOR DIBENZO(A,H)ANTHRACENE IN THE MADE GROUND

PROJECT No.	DRAWING No.	Rev.	SCALE
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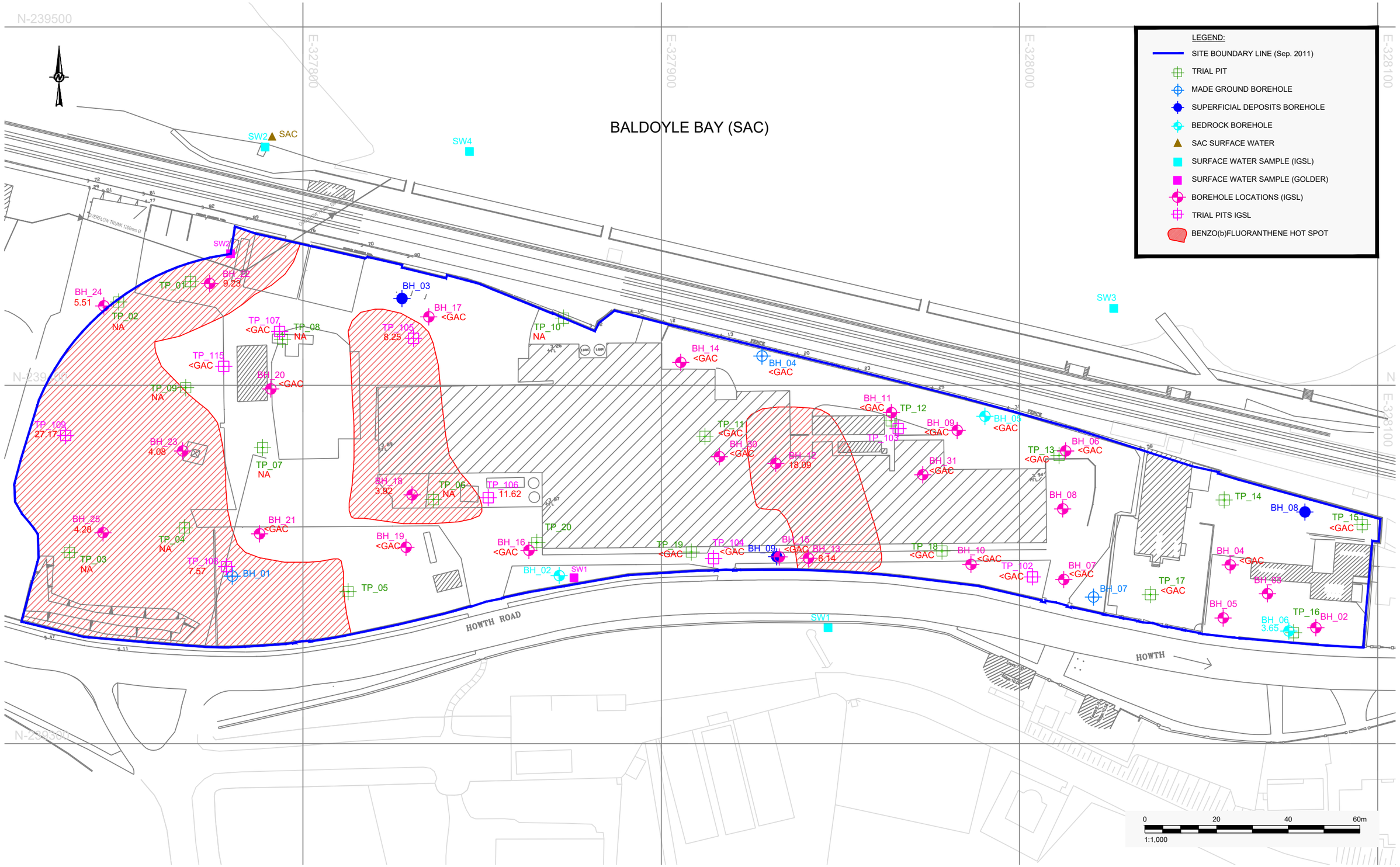

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BACKGROUND SURVEY INFORMATION IS AS SUPPLIED FROM CLIENT AND IS CIRCA 2007/2008.

CLIENT

ATLAS GP Ltd.

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YYYY-MM-DD	2019-Sep-30
PREPARED	JD
DESIGN	JD
REVIEW	RT
APPROVED	RT

PROJECT

CLAREMONT PROJECT / HHRA REPORT

TITLE

ESTIMATED HOT SPOTS FOR BENZO(B)FLUORANTHENE IN THE MADE GROUND

PROJECT No.	DRAWING No.	Rev.	SCALE
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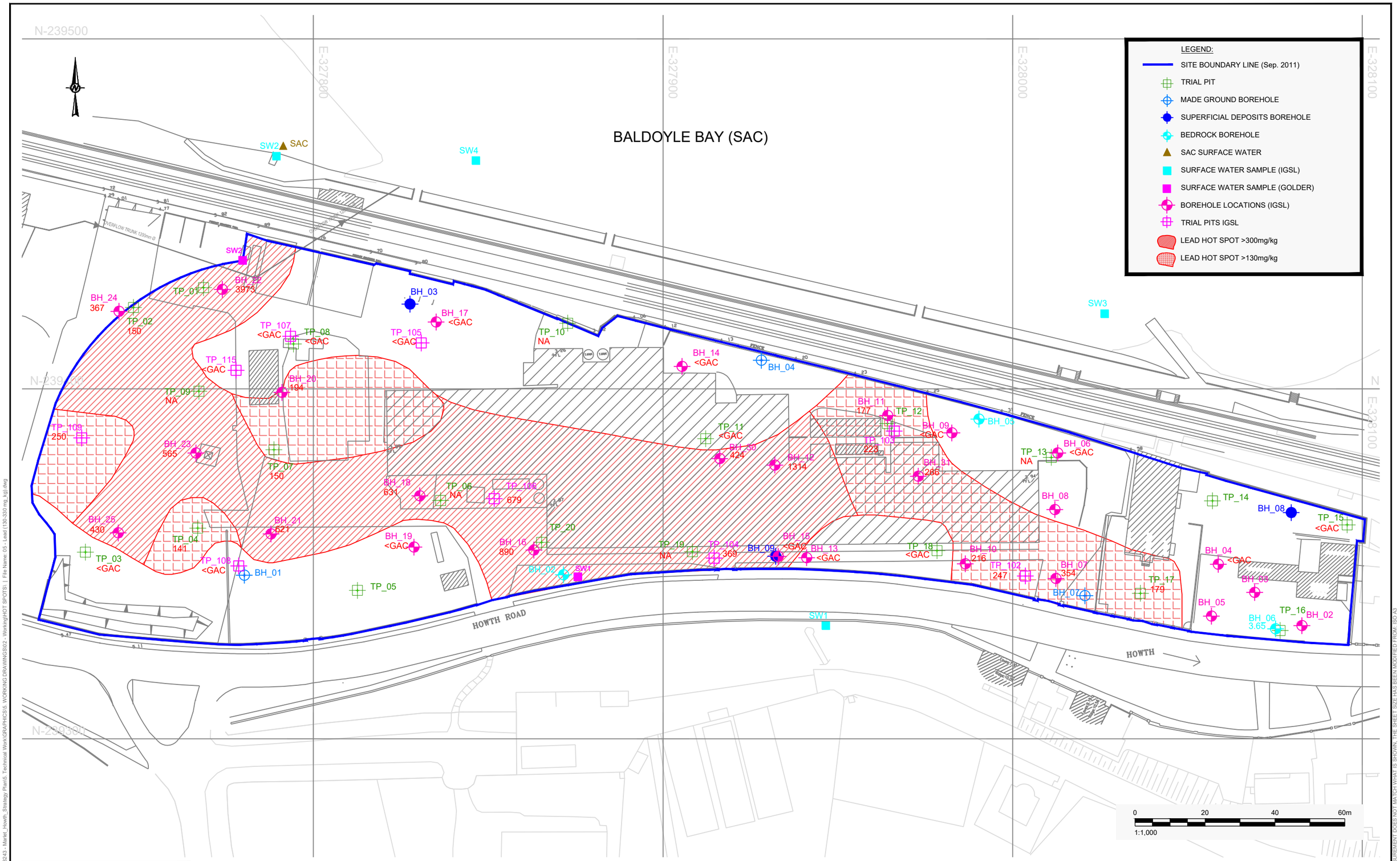

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PROJECT	CLAREMONT PROJECT / HHRA REPORT
CONSULTANT	GOLDER
YYYY-MM-DD	2019-Sep-30
PREPARED	JD
DESIGN	JD
REVIEW	RT
APPROVED	RT
TITLE	ESTIMATED HOT SPOTS FOR LEAD IN THE MADE GROUND AND SUPERFICIAL DEPOSITS
PROJECT No.	19128243
DRAWING No.	05
Rev.	A
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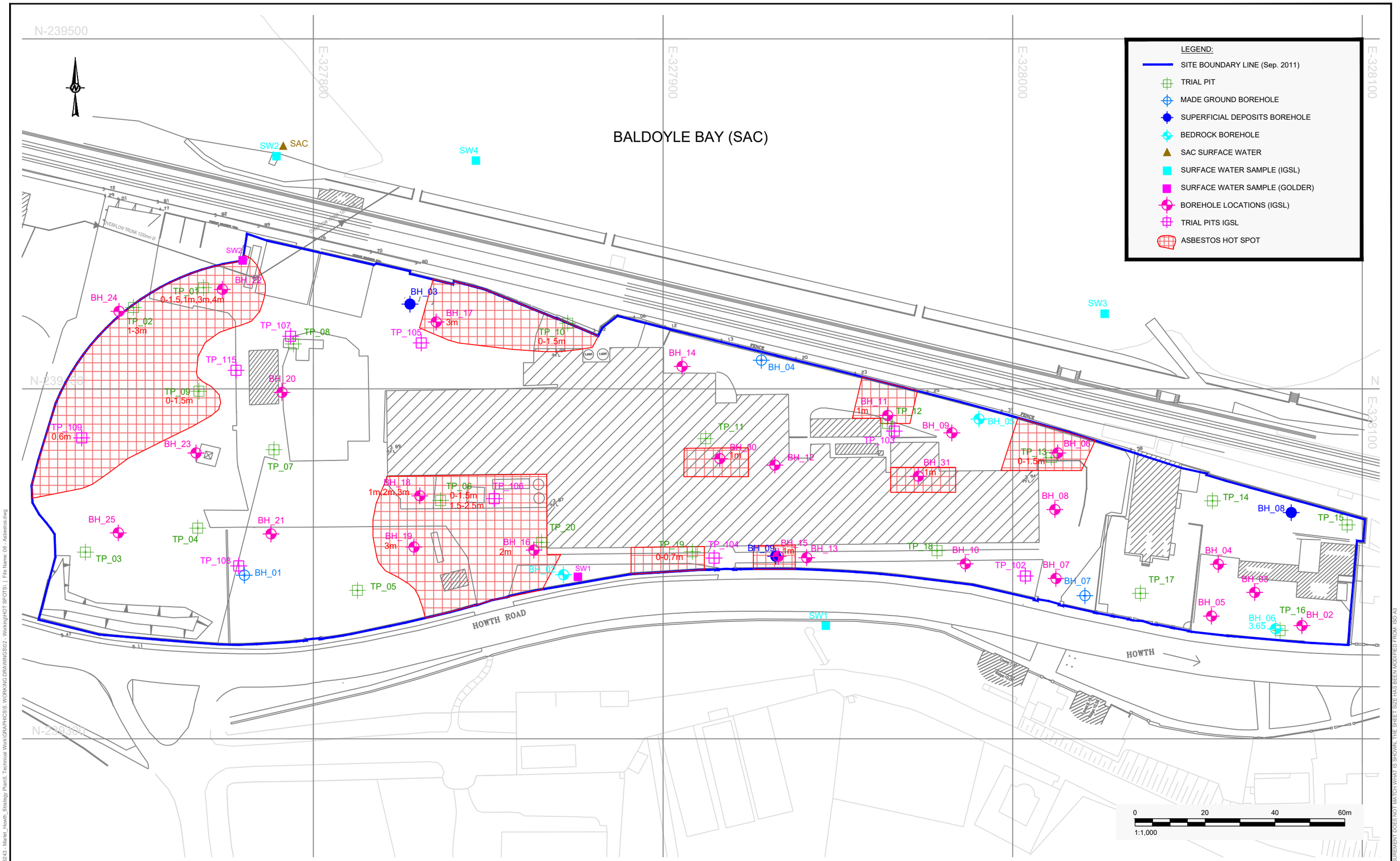

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LEVELS ARE IN METRES & TO OS DATUM MALIN HEAD.

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CLIENT	ATLAS GP Ltd.
CONSULTANT	GOLDER
YYYY-MM-DD	2019-Sep-30
PREPARED	JD
DESIGN	JD
REVIEW	RT
APPROVED	RT
PROJECT	CLAREMONT PROJECT / HHRA REPORT
TITLE	ESTIMATED HOT SPOTS FOR ASBESTOS IN THE MADE GROUND
PROJECT No.	19128243
DRAWING No.	06
Rev.	A
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BALDOYLE BAY (SAC)

N-239500
N-239400
N-239300
E-327800
E-327900
E-328000
E-328100

LEGEND:
- SITE BOUNDARY LINE (Sep. 2011)
- TRIAL PIT
- MADE GROUND BOREHOLE
- SUPERFICIAL DEPOSITS BOREHOLE
- BEDROCK BOREHOLE
- SAC SURFACE WATER
- SURFACE WATER SAMPLE (IGSL)
- SURFACE WATER SAMPLE (GOLDER)
- BOREHOLE LOCATIONS (IGSL)
- TRIAL PITS IGSL
- TPH HOT SPOT

SW2 SAC, SW4, SW2, SW3, SW1
BH_22, BH_24, TP_01, TP_02, BH_03, BH_17, TP_107, TP_08, TP_105, TP_10, BH_14, BH_04, TP_115, BH_20, TP_09, TP_109, BH_23, TP_07, BH_11, TP_12, BH_09, BH_05, TP_11, TP_101, BH_30, BH_12, BH_31, TP_13, BH_06, BH_18, TP_06, TP_106, BH_08, TP_14, BH_25, TP_04, BH_21, BH_19, TP_20, BH_16, TP_19, TP_104, BH_15, BH_09, BH_13, TP_18, BH_10, TP_102, BH_07, TP_17, BH_04, BH_03, BH_05, TP_16, BH_02, TP_15, TP_03, TP_103, BH_01, TP_05, BH_02, SW1
OVERFLOW TRUNK 1200mm Ø
FENCE
HOWTH ROAD
HOWTH
Tower 20.0m
Tower 16.0m

0 20 40 60m
1:1,000

NOTES:

GRID REFERENCES ARE IN METRES & TO IRISH NATIONAL GRID.

LEVELS ARE IN METRES & TO OS DATUM MALIN HEAD.

BACKGROUND SURVEY INFORMATION IS AS SUPPLIED FROM CLIENT AND IS CIRCA 2007/2008.

CLIENT: ATLAS GP Ltd.

CONSULTANT: GOLDER

YYYY-MM-DD	2019-Sep-30
PREPARED	JD
DESIGN	JD
REVIEW	RT
APPROVED	RT

PROJECT: CLAREMONT PROJECT / HHRA REPORT

TITLE: **ESTIMATED HOT SPOTS FOR TPH IN THE MADE GROUND AND SUPERFICIAL DEPOSITS**

PROJECT No.	DRAWING No.	Rev.	SCALE
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APPENDIX B

Soil Screening Against RWOHG GACs

			Sample Location	TP109			BH24								BH25					TP2		TP3		
			Sample Depth	0.6	1.7	2.9	1	1	1	2	3	4	4	5	1	2	2	3	5		2.80-3.50	0.00-1.50	1.50-2.20	2.20-3.80
			Soil Type	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Gravelly Silty SAND	Gravelly Silty SAND	Sandy Gravelly CLAY	Made Ground	Made Ground	Made Ground	Made Ground	Sandy Gravelly CLAY	Made Ground	Sandy Gravelly CLAY	Made Ground	Made Ground	Gravelly Silty SAND
			Lab Receipt Date	31/03/2017	31/03/2017	31/03/2017	11/05/2017	03/04/2017	28/04/2017	28/04/2017	03/04/2017	03/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	11/05/2017	28/04/2017	28/04/2017	13/08/2019	<>	14/08/2019	14/08/2019	14/08/2019
Determinand	Units	RWOHG GAC[23]	Source																					
Antimony	mg/kg	550	CL:AIRE, 2010	4	5	<1	-	7	7	6	6	2	4	-	3	4	-	5	-	-	-	-	-	-
Arsenic	mg/kg	40	LQM, 2014	18.6	10.9	17.8	-	23.9	27.9	87.3	47	10.6	26.8	-	18.8	23.2	-	44.4	-	20.6	47	19.1	11.8	12.7
Barium	mg/kg	1300	CL:AIRE, 2010	142	195	298	-	348	377	176	2672	143	1296	-	188	204	-	454	-	225	564	283	179	80
Cadmium	mg/kg	85	LQM, 2014	1	0.5	0.3	-	1.3	1.7	<0.1	2.2	0.3	0.9	-	0.9	1.1	-	0.4	-	1	1.1	0.6	0.5	0.3
Chromium	mg/kg	-		20.3	126.8	51.9	-	71.1	42	68.2	23	68	46.7	-	40	52.7	-	34.3	-	72.5	68.4	56.5	40.9	80.5
Chromium III	mg/kg	910	LQM, 2014	20.3	126.8	51.9	-	71.1	42	68.2	23	68	46.7	-	40	52.7	-	34.3	-	72.5	68.4	56.5	40.9	80.5
Hexavalent Chromium	mg/kg	6	LQM, 2014	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3	<0.3	-	<0.3	-	<0.006	<0.006	<0.006	<0.006	<0.006
Copper	mg/kg	7100	LQM, 2014	95	49	29	-	176	193	67	229	46	73	-	52	76	-	173	-	82	299	54	46	27
Total Cyanide	mg/kg	-		4.4	0.7	<0.5	-	1	0.7	<0.5	0.8	<0.5	<0.5	-	6.6	15.8	-	0.8	-	-	-	-	-	-
Lead[4]	mg/kg	130	DEFRA, 2013	138	250	207	-	317	367	144	326	51	83	-	94	168	-	430	-	150	390	98	78	49
Mercury[5]	mg/kg	56	LQM, 2014	<0.1	<0.1	0.4	-	0.6	0.8	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	0.2	-	<0.1	0.4	<0.1	<0.1	<0.1
Molybdenum	mg/kg	670	CL:AIRE, 2010	2.2	3.3	2.9	-	4.7	2.4	7.5	13.2	6.6	11.4	-	3.8	4.7	-	12	-	-	-	-	-	-
Nickel	mg/kg	180	LQM, 2014	39.1	55	26.9	-	63.8	74.8	31.8	253.5	27.3	177.7	-	30.3	45.5	-	80.1	-	36.3	109.7	38	35.9	33.6
Selenium	mg/kg	430	LQM, 2014	1	2	1	-	1	<1	2	82	3	59	-	2	2	-	3	-	<1	3	1	1	<1
Total Sulphate as SO4	mg/kg	-		1676	982	1499		786	745	418	1972	734	7153		866	1086		1838						
Sulphate as SO4 (2:1 Ext)	g/l	-		-	-		0.1515							0.0361			0.1046		0.0917	0.1401	0.3381	0.3786	0.4916	0.0568
Elemental Sulphur	mg/kg	-		-	121	60		55	11	21	26	287	708	-	36	63	-	107	9.16	110	954	156	289	38
Sulphide	mg/kg	-		<10	<10	<10	-	<10	<10	<10	<10	<10	<10	-	<10	<10	-	<10	-	<10	30	<10	11	<10
Water Soluble Boron	mg/kg	11000	LQM, 2014	2.9	4.3	4.3	-	2.4	1.9	1	1.8	1.2	1.7	-	2.1	3.2	-	2	-	-	-	-	-	-
Ammoniacal Nitrogen as N	mg/kg	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.9	23.8	6.8	9	12.9
Zinc	mg/kg	40000	LQM, 2014	275	216	102	-	617	712	162	13390	436	3212	-	203	472	-	591	-	-	-	-	-	-
Naphthalene	mg/kg	2.3	LQM, 2014	1.29	<0.04	<0.04	-	0.18	0.1	<0.04	<0.04	<0.04	<0.04	-	0.2	0.13	-	0.14	-	-	-	-	-	-
Acenaphthylene	mg/kg	2900	LQM, 2014	1.26	0.15	0.07	-	1.1	0.42	<0.03	0.05	<0.03	0.07	-	0.26	0.4	-	0.53	-	-	-	-	-	-
Acenaphthene	mg/kg	3000	LQM, 2014	19.72	<0.05	<0.05	-	0.15	0.14	<0.05	<0.05	<0.05	<0.05	-	0.35	0.25	-	0.14	-	-	-	-	-	-
Fluorene	mg/kg	2800	LQM, 2014	15.95	<0.04	<0.04	-	0.19	0.14	<0.04	<0.04	<0.04	<0.04	-	0.28	0.29	-	0.19	-	-	-	-	-	-
Phenanthrene	mg/kg	1300	LQM, 2014	29.76++	0.19	0.24	-	1.57	2.2	<0.03	0.12	<0.03	0.27	-	1.81	2.01	-	2.45	-	-	-	-	-	-
Anthracene	mg/kg	31000	LQM, 2014	14.17	0.15	0.11	-	0.95	0.89	<0.04	0.06	<0.04	0.09	-	0.91	1.04	-	0.72	-	-	-	-	-	-
Fluoranthene	mg/kg	1500	LQM, 2014	55.94++	0.65	0.65	-	5.45	6.03	<0.03	0.32	0.09	0.62	-	5.47	5.27	-	5.08	-	-	-	-	-	-
Pyrene	mg/kg	3700	LQM, 2014	41.96++	0.7	0.57	-	5.21	4.96	<0.03	0.28	0.1	0.51	-	4.65	4.77	-	4.12	-	-	-	-	-	-
Benzo(a)anthracene	mg/kg	11	LQM, 2014	23.8	0.49	0.49	-	3.74	3.12	<0.06	0.26	0.17	0.39	-	2.92	2.77	-	2.66	-	-	-	-	-	-
Chrysene	mg/kg	30	LQM, 2014	20.24	0.49	0.32	-	4.08	2.73	<0.02	0.24	0.12	0.39	-	2.59	2.45	-	2.49	-	-	-	-	-	-
Benzo(bk)fluoranthene	mg/kg	-		37.74	1.13	0.63	-	7.65	5.68	<0.07	0.48	0.19	0.65	-	5.94	5.36	-	4.79	-	-	-	-	-	-
Benzo(a)pyrene	mg/kg	3.2	LQM, 2014	21.53	0.65	0.37	-	4.55	3.45	<0.04	0.27	0.14	0.35	-	3.8	3.48	-	2.88	-	-	-	-	-	-
Indeno(123cd)pyrene	mg/kg	45	LQM, 2014	12.87	0.4	0.22	-	2.53	2.42	<0.04	0.17	<0.04	0.24	-	2.55	2.2	-	1.95	-	-	-	-	-	-
Dibenzo(ah)anthracene	mg/kg	0.31	LQM, 2014	3.21	0.15	0.07	-	0.73	0.43	<0.04	<0.04	<0.04	0.07	-	0.44	0.38	-	0.51	-	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	360	LQM, 2014	11.54	0.43	0.2	-	2.97	1.97	<0.04	0.17	0.1	0.23	-	2.13	1.8	-	1.62	-	-	-	-	-	-
Coronene	mg/kg	-		2.02	0.13	<0.04	-	0.59	0.54	<0.04	<0.04	<0.04	0.07	-	0.5	0.55	-	0.43	-	-	-	-	-	-
PAH 6 Total #	mg/kg	-		139.62	3.26	2.07	-	23.15	19.55	<0.22	1.41	0.52	2.09	-	19.89	18.11	-	16.32	-	-	-	-	-	-
PAH 17 Total	mg/kg	-		313	5.71	3.94	-	41.64	35.22	<0.64	2.42	0.91	3.95	-	34.8	33.15	-	30.7	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	3.9	LQM, 2014	27.17	0.81	0.45	-	5.51	4.09	<0.05	0.35	0.14	0.47	-	4.28	3.86	-	3.45	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	110	LQM, 2014	10.57	0.32	0.18	-	2.14	1.59	<0.02	0.13	0.05	0.18	-	1.66	1.5	-	1.34	-	-	-	-	-	-
Benzo(j)fluoranthene	mg/kg	-		10	<1	<1	-	3	1	<1	<1	<1	<1	-	1	1	-	<1	-	-	-	-	-	-
Mineral Oil (C10 C40)	mg/kg	-		1389	36	<30	-	194	80	<30	30	<30	52	-	176	340	-	113	-	-	-	-	-	-
>C5 C6	mg/kg	42	LQM, 2014	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
>C6 C8	mg/kg	100	LQM, 2014	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
>C8 C10	mg/kg	27	LQM, 2014	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	0.7	0.3	-	<0.1	<0.1	-	1	-	<0.1	<0.1	<0.1	<0.1	<0.1
>C6 C10	mg/kg			<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	0.7	0.3	-	<0.1	<0.1	-	1.1	-	-	-	-	-	-
>C10 C12	mg/kg	130	LQM, 2014	2.1	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2
>C12 C16	mg/kg	1100	LQM, 2014	46	<4	<4	-	<4	<4	<4	<4	<4	<4	-	<4	9	-	<4	-	<4	10	9	12	<4
>C16 C21	mg/kg	-		150	<7	<7	-	<7	<7	<7	<7	<7	<7	-	24	40	-	<7	-	<7	31	23	43	<7
>C10 C25	mg/kg			386	<10	<10	-	16	<10	<10	<10	<10	<10	-	42	55	-	17	-	118	182	272	320	<7
>C21 C35	mg/kg	-		1058	36	<7	-	147	70	<7	30	<7	52	-	120	192	-	77	-					
>C25 C35	mg/kg			815	39	<10	-	128	69	<10	28	<10	42	-	93	162	-	58	-	-	-	-	-	-
>C16 C35	mg/kg	65000	LQM, 2014	1208	43	<14	-	154	77	<14	37	<14	59	-	144	232	-	84	-	<7	31	23	43	<7
>C35 C40	mg/kg	65000	LQM, 2014	133	<7	<7	-	47	10	<7	<7	<7	<7	-	32	99	-	36	-	-	-	-	-	-
Total aliphatics (C5 to 40)	mg/kg	-		1389	36	<26	-	194	80	<26	30	<26	52	-	176	340	-	114	-	-	-	-	-	-
>C5 EC7	mg/kg	370	LQM, 2014	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
>EC7 EC8	mg/kg	860	LQM, 2014	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
>EC8 EC10	mg/kg	47	LQM, 2014	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1
>EC6 EC10	mg/kg		LQM, 2014	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	-	-	-	-	-
>EC10 EC12	mg/kg	250	LQM, 2014	3.9	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<1.0	<1.0	<0.2
>EC12 EC16	mg/kg	1800	LQM, 2014	121	<4	<4	-	8	5	<4	<4	<4	<4	-	<4	8	-	<4	-	11	10	<20	<20	<4
>EC16 EC21	mg/kg	1900	LQM, 2014	553	13	18	-	84	116	<7	<7	<7	17	-	46	77	-	77	-	107	64	<35	<35	<7
>EC10 EC25	mg/kg		LQM, 2014	1005	31	44	-	165	249	<10	<10	<10	42	-	98	134	-	275	-	-	-	-	-	-
>EC21 EC35	mg/kg	1900	LQM, 2014	1776	181	100	-	389	477	<7	44	21	196	-	277	490	-	604	-	668	466	558	578	<7
>EC25 EC35	mg/kg		LQM, 2014	1330	156	90	-	300	364	<10	45	20	118	-	223	414	-	318	-	-	-	-	-	-
>EC35 EC40[6]	mg/kg	1900	LQM, 2014	413	102	48	-	96	93	<7	<7	<7	<7	-	97	252	-	156	-	-	-	-	-	-
Total aromatics (C5 to 40)	mg/kg	-		2867	296	166	-	577	691	<26	44	<26	213	-	420	827	-	837	-	-	-	-	-	-
Total aliphatics and aromatics(C5 to 40)	mg/kg	-		4256	332	166	-	771	771	<52	74	<52	265	-	596	1167	-	951	-	-	-	-	-	-
MTBE	ug/kg	73000	CL:AIRE, 2010	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	-	-	-	-
Benzene	ug/kg	380	LQM, 2014	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	-	-	-	-
Toluene	ug/kg	880000	LQM, 2014	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	-	-	-	-
Ethylbenzene	ug/kg	83000	LQM, 2014	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	-	-	-	-
m/p Xylene	ug/kg	79000	LQM, 2014	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	-	<5	<5	-	7	-	-	-	-	-	-
o Xylene	ug/kg	88000	LQM, 2014	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	-	-	-	-
PCB 28	ug/kg	-		<5	<5	<5	-	10	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5
PCB 52	ug/kg	-		<5	<5	<5	-	34	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5
PCB 101	ug/kg	-		<5	<5	<5	-	25	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5
PCB 118	ug/kg	-		<5	<5	<5	-	16	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5
PCB 138	ug/kg	-		<5	<5	<5	-	10	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5
PCB 153	ug/kg	-		<5	<5	<5	-	7	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5
PCB 180	ug/kg	-		<5	<5	<5	-	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5
Total 7 PCBs[7]	ug/kg	8	EA, 2009	<35	<35	<35	-	102	<35	<35	<35	<35	<35	-	<35	<35	-	<35	-	<35	<35	<35	<35	<35
Phenol	mg/kg	750	LQM, 2014	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	-	-	-	-	-	-
Natural Moisture Content	%			30.4	14.7	21.5	-	20.3	20.8	17.5	28.5	21.6	23.7	-	10.9	18.6	-	30.6	-	22.5	64.2	16.1	12.8	17.5
Moisture Content (% Wet Weight)	%			-	12.8	17.7	-	16.9	-	14.9	-	17.8	19.1	-	9.8	15.7	-	23.4	-	-	-	-	-	-
Total Organic Carbon	%			NDP	2.31	1.51	-	6.65	NDP	9.73	NDP	1.03	6.11	-	3.56	6.85	-	16.65	-	-	-	-	-	-
SOM (Calculated)	%			-	3.98	2.60	-	11.47	-	16.78	-	1.78	10.53	-	6.14	11.81	-	28.71	-					
pH	pH units	-		7.87	8.24	8.59	8.21	7.86	8.15	8.2	7.51	7.75	7.33	8.9	8.4	8.31	8.1	7.99	-					
General Description (Bulk Analysis)	--	-		Soil/Stone/ Brick/Silt	Soil Clay/ Silt/ Brick/ Stone	soil/stones	-	soil/stones	soil stones	soil stones	Soil/Stone/Silt	soil/stones	soil/stones	-	soil/stones	soil/stones	-	soil/stones	-	Soil/Stone	Soil/Stone	soil-stones	soil-stones	soil-stones
Asbestos Fibres	--	-		Fibre Bundles	NAD	NAD	-	NAD	Fibre Bundles	NAD	Fibre Bundles	NAD	NAD	-	NAD	NAD	-	NAD	-	NAD	NAD	NAD	NAD	NAD
Asbestos Fibres (2)	--	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos ACM	--	-		NAD	NAD	NAD	-	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	NAD	-	NAD	-	NAD	NAD	NAD	NAD	NAD
Asbestos Type	--	-		Chrysotile	NAD	NAD	-	NAD	Chrysotile	NAD	Chrysotile	NAD	NAD	-	NAD	NAD	-	NAD	-	NAD	NAD	NAD	NAD	NAD
Asbestos Type (2)	--	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos Level Screen	%	-		<0.1	NAD	NAD	-	NAD	<0.1	NAD	<0.1	NAD	NAD	-	NAD	NAD	-	NAD	-	NAD	NAD	NAD	NAD	NAD
Asbestos Gravimetric Quantification	mass %	-		<0.001	NAD	NAD	-	NAD	<0.001	NAD	<0.001	NAD	NAD	-	NAD	NAD	-	NAD	-	-	-	-	-	-
Asbestos PCOM Quantification (Fibres)	mass %	-		<0.001	NAD	NAD	-	NAD	<0.001	NAD	<0.001	NAD	NAD	-	NAD	NAD	-	NAD	-	-	-	-	-	-
Asbestos Gravimetric & PCOM Total	mass %	-		<0.001	NAD	NAD	-	NAD	<0.001	NAD	<0.001	NAD	NAD	-	NAD	NAD	-	NAD	-	-	-	-	-	-

			Sample Location	TP105	TP105	TP105	TP106	TP106	TP107	TP107	TP108	TP108	TP108	TP115	TP115	BH14	BH14	BH16	BH16	BH16	BH17	BH17	BH17	BH18	BH18	BH18	BH18	BH18	BH18	BH18
			Sample Depth	0.70	1.30	2.2	0.9	2.1	0.6	1.5	1.2	2.5	3.7	0.8	2.8	1	3	1	1	2	1	1	3	1	1	2	3	3	4	4
			Soil Type	Made Ground	Made Ground	Made Ground	Made Ground	Clayey Sandy GRAVEL	Made Ground	Made Ground	Made Ground	Sandy Gravelly CLAY	Gravelly Silty SAND	Made Ground	Gravelly Silty SAND	Made Ground	Sandy SILT	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Sandy Gravelly CLAY	Sandy Gravelly CLAY
			Lab Receipt Date	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	11/04/2017	11/04/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	28/04/2017	28/04/2017	11/05/2017	28/04/2017	28/04/2017	11/05/2017	28/04/2017	28/04/2017	03/04/2017	28/04/2017	03/04/2017	03/04/2017	28/04/2017	03/04/2017	28/04/2017
Determinand	Units	RWOHG GAC[2,3]	Source																											
Antimony	mg/kg	550	CL:AIRE, 2010	2	4	3	5	9	2	2	4	3	2	2	6	4	2	-	8	9	-	4	<1	3	6	6	7	8	-	-
Arsenic	mg/kg	40	LQM, 2014	13.9	61.1	17.5	18.2	34.3	17.2	26.5	52.2	16.2	14.5	19.3	23.8	2.5	9.8	-	8.8	69.7	-	44.5	6.5	26.9	19.8	53.7	23.4	16.1	-	-
Barium	mg/kg	1300	CL:AIRE, 2010	117	65	140	416	458	126	99	126	74	60	106	177	2188	464	-	201	263	-	132	663	150	229	256	218	123	-	-
Cadmium	mg/kg	85	LQM, 2014	0.5	0.8	0.4	0.4	0.3	0.2	0.2	0.6	0.6	0.5	0.4	0.4	<0.1	<0.1	-	0.1	0.2	-	0.2	<0.1	0.4	0.5	0.7	1.2	0.5	-	-
Chromium	mg/kg	-		80	164.3	57	57.5	111.5	44.5	49.3	76.8	70.9	64.5	56	56	92.2	45.6	-	82.3	21.7	-	54.3	10.5	102.2	20.8	25.1	35.1	23.6	-	-
Chromium III	mg/kg	910	LQM, 2014	80	164.3	57	57.5	111.5	44.5	49.3	76.8	70.9	64.5	56	56	92.2	45.6	-	82.3	21.7	-	54.3	10.5	102.2	20.8	25.1	35.1	23.6	-	-
Hexavalent Chromium	mg/kg	6	LQM, 2014	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3	<0.3	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	-
Copper	mg/kg	7100	LQM, 2014	55	24	45	176	934	14	35	64	28	28	36	103	47	38	-	111	181	-	46	88	163	137	168	178	76	-	-
Total Cyanide	mg/kg	-		<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	<0.5	-	-
Lead[4]	mg/kg	130	DEFRA, 2013	96	74	99	679	737	36	65	125	37	43	77	163	<5	49	-	363	890	-	108	34	257	400	631	440	198	-	-
Mercury[5]	mg/kg	56	LQM, 2014	<0.1	<0.1	<0.1	1	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	0.4	1	-	<0.1	<0.1	0.3	0.9	0.6	0.9	0.2	-	-
Molybdenum	mg/kg	670	CL:AIRE, 2010	5.7	1.3	2.4	6.8	8.4	3.6	3.8	7.3	3.9	3.1	3.6	3.5	12.7	5.1	-	6.1	3.1	-	3.3	2.7	6.7	2.8	3	2.8	2.1	-	-
Nickel	mg/kg	180	LQM, 2014	24.3	55.7	33.6	48.1	60.9	28.5	20.5	45.2	66.5	32.7	22.5	22.1	78.8	48.8	-	41.5	36.5	-	39.4	26.7	70.1	43.7	46.7	58.8	32.9	-	-
Selenium	mg/kg	430	LQM, 2014	1	2	1	1	1	<1	<1	1	1	2	1	1	3	2	-	2	<1	-	2	<1	2	1	2	5	2	-	-
Total Sulphate as SO4	mg/kg	-		1485	300	980	863	434	707	637	315	266	780	1235	586	1198	294	-	547	743	-	554	550	619	655	831	2348	3515	-	-
Sulphate as SO4 (2:1 Ext)	g/l	-																0.1462			0.1464									
Elemental Sulphur	mg/kg	-		12	19	145	23	10	7	115	27	15	38	84	20	24	20	-	35	5	-	35	3	17	5	8	14	14	-	-
Sulphide	mg/kg	-		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	-	<10	<10	<10	<10	<10	<10	<10	-	-
Water Soluble Boron	mg/kg	11000	LQM, 2014	0.5	1	1	1.3	0.7	0.6	0.9	0.5	0.9	1.3	1.8	1.3	0.7	0.6	-	0.6	0.7	-	1.4	0.5	1.3	1	1.6	2.1	1.3	-	-
Ammoniacal Nitrogen as N	mg/kg	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	mg/kg	40000	LQM, 2014	95	146	98	211	236	108	184	200	140	79	200	310	150	31	-	144	258	-	152	37	743	189	519	276	158	-	-
Naphthalene	mg/kg	2.3	LQM, 2014	0.07	0.18	<0.04	0.38	0.13	<0.04	0.05	0.17	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	-	0.22	0.24	-	<0.04	<0.04	0.31	0.46	0.39	0.23	<0.04	-	-
Acenaphthylene	mg/kg	2900	LQM, 2014	0.09	0.45	<0.03	0.9	0.24	<0.03	0.1	2.3	<0.03	<0.03	0.08	0.12	<0.03	<0.03	-	0.34	0.22	-	<0.03	<0.03	0.52	0.54	0.57	0.37	0.07	-	-
Acenaphthene	mg/kg	3000	LQM, 2014	<0.05	0.54	<0.05	0.94	0.07	<0.05	<0.05	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	0.07	0.07	-	<0.05	<0.05	0.3	0.15	0.32	0.16	<0.05	-	-
Fluorene	mg/kg	2800	LQM, 2014	0.07	0.79	<0.04	2.03	0.1	<0.04	0.05	0.17	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	-	0.16	0.14	-	<0.04	<0.04	0.56	0.25	0.48	0.19	<0.04	-	-
Phenanthrene	mg/kg	1300	LQM, 2014	0.51	6.97	0.16	17	0.86	<0.03	0.36	1.02	<0.03	<0.03	0.25	0.45	0.21	0.04	-	1.64	1.25	-	0.24	<0.03	3.19	2.68	3.44	1.62	0.18	-	-
Anthracene	mg/kg	31000	LQM, 2014	0.2	2.88	0.09	6.04	0.45	<0.04	0.19	0.91	<0.04	<0.04	0.14	0.21	<0.04	<0.04	-	0.66	0.39	-	0.07	<0.04	1.44	1.07	1.38	0.68	0.1	-	-
Fluoranthene	mg/kg	1500	LQM, 2014	0.97	14.21	0.32	21.84	2.11	0.08	1.29	3.17	0.04	<0.03	0.76	1.57	0.2	<0.03	-	3.38	1.89	-	0.36	<0.03	5.02	4.33	5.57	3.68	0.72	-	-
Pyrene	mg/kg	3700	LQM, 2014	0.89	11.59	0.28	17.12	1.98	0.08	1.11	3.08	<0.03	<0.03	0.72	1.53	0.2	<0.03	-	2.89	1.59	-	0.29	<0.03	4.36	3.79	4.89	3.37	0.62	-	-
Benzo(a)anthracene	mg/kg	11	LQM, 2014	0.78	7.95	0.27	11.9	1.31	0.09	0.74	4.23	<0.06	<0.06	0.48	1.01	0.2	<0.06	-	1.79	1.03	-	0.23	<0.06	2.71	2.4	3.16	1.8	0.43	-	-
Chrysene	mg/kg	30	LQM, 2014	0.61	6.81	0.18	10.29	1.35	0.06	0.71	3.05	0.02	<0.02	0.4	0.97	0.2	0.04	-	1.67	1.02	-	0.21	<0.02	2.73	2.43	3.19	2.36	0.43	-	-
Benzo(bk)fluoranthene	mg/kg	-		1.09	11.46	0.34	16.14	2.57	0.08	1.35	10.52	<0.07	<0.07	1.03	1.91	0.22	<0.07	-	2.9	1.77	-	0.34	<0.07	4.37	4.21	5.44	4.33	0.86	-	-
Benzo(a)pyrene	mg/kg	3.2	LQM, 2014	0.58	6.41	0.2	9.16	1.5	0.05	0.78	6.39	<0.04	<0.04	0.56	1.09	0.1	<0.04	-	1.72	1.03	-	0.19	<0.04	2.61	2.49	3.25	2.22	0.45	-	-
Indeno(123cd)pyrene	mg/kg	45	LQM, 2014	0.35	3.83	0.13	4.96	0.99	<0.04	0.47	4.6	<0.04	<0.04	0.38	0.67	0.09	<0.04	-	1.08	0.66	-	0.14	<0.04	1.33	1.57	1.69	1.43	0.34	-	-
Dibenzo(ah)anthracene	mg/kg	0.31	LQM, 2014	0.11	0.87	<0.04	1.48	0.32	<0.04	0.13	1.2	<0.04	<0.04	0.07	0.12	<0.04	<0.04	-	0.17	0.11	-	<0.04	<0.04	0.41	0.25	0.53	0.42	<0.04	-	-
Benzo(ghi)perylene	mg/kg	360	LQM, 2014	0.4	3.81	0.12	4.77	1.12	<0.04	0.44	5.08	<0.04	<0.04	0.35	0.61	0.1	<0.04	-	0.95	0.59	-	0.12	<0.04	1.44	1.4	1.71	1.59	0.27	-	-
Coronene	mg/kg	-		0.1	0.79	<0.04	0.96	0.26	<0.04	0.08	1.2	<0.04	<0.04	0.09	0.15	<0.04	<0.04	-	0.24	0.15	-	<0.04	<0.04	0.24	0.28	0.34	0.33	0.06	-	-
PAH 6 Total #	mg/kg	-		3.39	39.72	1.11	56.87	8.29	<0.22	4.33	29.76	<0.22	<0.22	3.08	5.85	0.71	<0.22	-	10.03	5.94	-	1.15	<0.22	14.77	14	17.66	13.25	2.64	-	-
PAH 17 Total	mg/kg	-		6.82	79.54	2.09	125.91	15.36	<0.64	7.85	47.21	<0.64	<0.64	5.31	10.41	1.52	<0.64	-	19.88	12.15	-	2.19	<0.64	31.54	28.3	36.35	24.78	4.53	-	-
Benzo(b)fluoranthene	mg/kg	3.9	LQM, 2014	0.78	8.25	0.24	11.62	1.85	0.06	0.97	7.57	<0.05	<0.05	0.74	1.38	0.16	<0.05	-	2.09	1.27	-	0.24	<0.05	3.15	3.03	3.92	3.12	0.62	-	-
Benzo(k)fluoranthene	mg/kg	110	LQM, 2014	0.31	3.21	0.1	4.52	0.72	0.02	0.38	2.95	<0.02	<0.02	0.29	0.53	0.06	<0.02	-	0.81	0.5	-	0.1	<0.02	1.22	1.18	1.52	1.21	0.24	-	-
Benzo(j)fluoranthene	mg/kg	-		<1	3	<1	5	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	<1	1	1	1	<1	<1	-	-
Mineral Oil (C10 C40)	mg/kg	-		<30	136	48	39	369	<30	415	<30	<30	<30	289	260	<30	<30	-	124	97	-	41	<30	42	<30	33	33	168	-	-
>C5 C6	mg/kg	42	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
>C6 C8	mg/kg	100	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
>C8 C10	mg/kg	27	LQM, 2014	<0.1	0.2	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
>C10 C12	mg/kg	130	LQM, 2014	1.5	<0.2	3.8	<0.2	<0.2	<0.2	5.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-
>C12 C16	mg/kg	1100	LQM, 2014	<4	<4	<4	<4	<4	<4	45	<4	<4	<4	23	<4	<4	<4	-	<4	<4	-	<4	<4	<4	<4	<4	<4	<4	-	-
>C16 C21	mg/kg	-		<7	12	<7	<7	40	<7	87	<7	<7	<7	79	<7	<7	<7	-	14	10	-	<7	<7	<7	<7	<7	<7	13	-	-
>C21 C35	mg/kg	-		9	108	34	39	267	<7	210	18	<7	<7	145	173	12	<7	-	91	75	-	41	<7	42	28	33	33	114	-	-
>C16 C35	mg/kg	65000	LQM, 2014	16	120	41	46	307	<14	297	25	<14	<14	224	180	19	<14	-	105	85	-	48	<14	49	35	40	40	127	-	-
>C35 C40	mg/kg	65000	LQM, 2014	<7	**16**	**10**	<7	**62**	<7	**67**	<7	<7	<7	**42**	**87**	<7	<7	-	**19**	**12**	-	<7	<7	<7	<7	<7	<7	**41**	-	-
Total aliphatics (C5 to 40)	mg/kg	-		<26	136	49	39	369	<26	415	<26	<26	<26	289	260	<26	<26	-	124	97	-	41	<26	42	28	33	33	168	-	-
>C5 EC7	mg/kg	370	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
>EC7 EC8	mg/kg	860	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
>EC8 EC10	mg/kg	47	LQM, 2014	<0.1	0.3	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
>EC10 EC12	mg/kg	250	LQM, 2014	0.7	<0.2	2.9	<0.2	<0.2	<0.2	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	0.8	<0.2	<0.2	<0.2	<0.2	-	-
>EC12 EC16	mg/kg	1800	LQM, 2014	<4	<4	<4	<4	12	<4	39	<4	<4	<4	6	<4	<4	<4	-	10	9	-	<4	<4	<4	<4	8	<4	<4	-	-
>EC16 EC21	mg/kg	1900	LQM, 2014	<7	49	<7	27	95	<7	146	29	<7	<7	44	33	<7	<7	-	77	62	-	<7	<7	21	18	47	<7	42	-	-
>EC21 EC35	mg/kg	1900	LQM, 2014	45	246	61	136	510	60	609	298	<7	<7	258	269	36	<7	-	235	280	-	84	<7	21	131	197	131	283	-	-
>EC35 EC40[6]	mg/kg	1900	LQM, 2014	<7	46	20	31	145	52	234	73	<7	<7	96	106	21	<7	-	56	75	-	34	<7	<7	27	49	56	91	-	-
Total aromatics (C5 to 40)	mg/kg	-		46	341	84	194	762	112	1029	400	<26	<26	404	408	57	<26	-	378	426	-	118	<26	43	176	301	187	416	-	-
Total aliphatics and aromatics(C5 to 40)	mg/kg	-		<52	477	133	233	1131	112	1444	400	<52	<52	693	668	57	<52	-	502	523	-	159	<52	85	204	334	220	584	-	-
MTBE	ug/kg	73000	CL:AIRE, 2010	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	-	-
Benzene	ug/kg	380	LQM, 2014	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	-	-	-	-	<5	<5	-	-	-	<5	-	-	-
Toluene	ug/kg	880000	LQM, 2014	<5	<5	<5	<5	<5	8	<5	<5	<5	<5	<5	<5	-	<5	-	-	-	-	<5	<5	-	-	-	<5	-	-	-
Ethylbenzene	ug/kg	83000	LQM, 2014	<5	58	13	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	-	-	-	-	12	<5	-	-	-	<5	-	-	-
m/p Xylene	ug/kg	79000	LQM, 2014	40	188	136	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	-	-	-	-	164	44	-	-	-	<5	-	-	-
o Xylene	ug/kg	88000	LQM, 2014	<5	43	25	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	-	-	-	-	30	<5	-	-	-	<5	-	-	-
PCB 28	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	-	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	-	-
PCB 52	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	-	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	-	-
PCB 101	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	-	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	-	-
PCB 118	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	-	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	-	-
PCB 138	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	-	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	-	-
PCB 153	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	-	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	-	-
PCB 180	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<30	<5	-	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	-	-
Total 7 PCBs[7]	ug/kg	8	EA, 2009	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<210	<35	-	<35	<35	-	<35	<35	<35	<35	<35	<35	<35	-	-
Phenol	mg/kg	750	LQM, 2014	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
Natural Moisture Content	%			10.20	8.50	18.70	19.50	26.80	14.10	15.90	20.10	14.80	24.30	14.30	13.20	7.10	13.40	-	10.50	24.60	-	15.40	30.70	9.30	13.90	14.80	134.10	20.80	-	-
Moisture Content (% Wet Weight)	%			9.20	7.80	15.80	16.30	21.10	12.40	13.70	16.70	12.90	19.60	12.50	11.60	6.60	11.90	-	9.50	-	-	13.30	-	8.50	-	-	-	-	-	-
Total Organic Carbon	%			3.57	0.47	2.93	19.53	19.81	0.14	3.53	5.24	1.15	4.88	3.92	1.80	3.93	5.70	-	8.79	NDP	-	3.32	NDP	6.70	NDP	NDP	NDP	NDP	-	-
SOM (Calculated)	%			6.16	0.81	5.05	33.67	34.16	0.24	6.09	9.03	1.98	8.41	6.76	3.10	6.78	9.83	-	15.16	-	-	5.72	-	11.55	-	-	-	-	-	-
pH	pH units	-		8.13	8.26	7.88	8.14	8.14	8.19	8.09	8.32	7.87	7.76	7.95	8.00	7.99	8.59	8.18	8.48	8.42	8.22	8.27	8.20	8.15	8.24	8.12	7.99	7.97	8.71	8.71
General Description (Bulk Analysis)	--	-		Soil/Stone	Soil/Stones	Soil/Stones	Soil/Stones	Soil/Stones	Soil/Stone	Soil/Stone	Soil/Stones	Soil Clay/Silt/Brick/S	soil/stones	soil/stones	soil/stones	soil/stones	soil/stones	-	soil/stones	soil/stones	-	soil stones	soil stones	soil/stones	soil stones	Soil/Stone/Sil	Soil/Stone	soil stones	-	-
Asbestos Fibres	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	Fibre Bundles	-	NAD	Fibre Bundle	NAD	Fibre Bundle	Fibre Bundle	Fibre Bundle	Fibre Bundle	-	-
Asbestos Fibres (2)	--	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos ACM	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	NAD	-	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	-
Asbestos Type	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	Chrysotile	-	NAD	Chrysotile	NAD	Chrysotile	Chrysotile	Chrysotile	Chrysotile	-	-
Asbestos Type (2)	--	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos Level Screen	%	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	<0.1%	-	NAD	<0.1	NAD	<0.1	<0.1	<0.1	<0.1	-	-
Asbestos Gravimetric Quantification	mass %	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	-	-	NAD	0.003	NAD	<0.001	<0.001	<0.001	<0.001	-	-
Asbestos PCOM Quantification (Fibres)	mass %	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	-	-	NAD	<0.001	NAD	<0.001	<0.001	<0.001	<0.001	-	-
Asbestos Gravimetric & PCOM Total	mass %	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	-	-	NAD	0.003	NAD	<0.001	<0.001	<0.001	<0.001	-	-

Determinand	Units	RWOHG GAC[2,3]	Source	Sample Location	BH19	BH19	BH19	BH20	BH20	BH20	BH21	BH21	BH21	BH21	BH21	BH22	BH22	BH22	BH22	BH22	BH23	BH23	TP1	TP1	TP4	TP4	TP5	TP5	TP6	TP6
				Sample Depth	1	2	3	1	1	3	1	1	2	3	4	Gravelly CLAY	1	2	3	4	5	1	4	0.00-1.50	1.50-3.00	0.00-1.50	1.50-2.50	0.00-1.50	1.50-2.50	0.00-1.50	1.50-2.60
				Soil Type	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Gravelly CLAY	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Sandy Gravelly CLAY	Made Ground	Sandy Gravelly CLAY	Made Ground	Sandy Gravelly CLAY	Sandy Gravelly CLAY	Silty Gravel	Made Ground	Made Ground
				Lab Receipt Date	28/04/2017	11/05/2017	28/04/2017	11/05/2017	28/04/2017	28/04/2017	11/05/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	11/05/2017	28/04/2017	28/04/2017	11/05/2017	21/04/2017	21/04/2017	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019
Antimony	mg/kg	550	CL:AIRE, 2010		2	-	2	-	3	4	-	2	12	2	-	2	-	35	4	-	10	-	-	-	-	-	-	-	-	-
Arsenic	mg/kg	40	LQM, 2014		35.2	-	16.8	-	26.4	21.9	-	10.3	88	13.6	-	62.7	-	47.5	31.3	-	66.5	-	NDP	25.4	28.4	16.1	9.3	5.5	NDP	NDP
Barium	mg/kg	1300	CL:AIRE, 2010		99	-	113	-	175	202	-	322	585	43	-	189	-	842	297	-	821	-	NDP	470	183	111	168	69	NDP	NDP
Cadmium	mg/kg	85	LQM, 2014		0.3	-	0.6	-	0.4	0.5	-	0.2	0.4	0.2	-	0.5	-	1.3	0.7	-	1.1	-	NDP	4.4	0.6	0.3	0.8	1.2	NDP	NDP
Chromium	mg/kg	-			30	-	24.2	-	41.8	49.8	-	46.5	54.7	59.7	-	30.7	-	45.4	23.8	-	43.4	-	NDP	55.6	54.1	34.4	47.9	30.4	NDP	NDP
Chromium III	mg/kg	910	LQM, 2014		30	-	24.2	-	41.8	49.8	-	46.5	54.7	59.7	-	30.7	-	45.4	23.8	-	43.4	-	27.8	55.6	54.1	34.4	47.9	30.4	18	26.5
Hexavalent Chromium	mg/kg	6	LQM, 2014		<0.3	-	<0.3	-	<0.3	<0.3	-	<0.3	<0.3	<0.3	-	<0.3	-	<0.3	<0.3	-	<0.3	-	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	-
Copper	mg/kg	7100	LQM, 2014		100	-	42	-	48	55	-	30	248	18	-	69	-	208	95	-	3517	-	NDP	1528	83	43	58	30	NDP	NDP
Total Cyanide	mg/kg	-			<0.5	-	<0.5	-	<0.5	<0.5	-	1.1	0.8	<0.5	-	<0.5	-	1.7	0.8	-	11.9	-	-	-	-	-	-	-	-	-
Lead[4]	mg/kg	130	DEFRA, 2013		116	-	67	-	194	156	-	107	621	36	-	288	-	3973	327	-	565	-	NDP	583	141	78	77	15	NDP	NDP
Mercury[5]	mg/kg	56	LQM, 2014		<0.1	-	<0.1	-	<0.1	0.1	-	<0.1	1.2	<0.1	-	<0.1	-	0.7	0.3	-	0.3	-	NDP	<0.1	<0.1	<0.1	<0.1	<0.1	NDP	NDP
Molybdenum	mg/kg	670	CL:AIRE, 2010		3.2	-	1.6	-	4.5	6	-	5	14.6	3.7	-	3.1	-	6.9	4.8	-	10.6	-	-	-	-	-	-	-	-	-
Nickel	mg/kg	180	LQM, 2014		26.5	-	39.7	-	23.3	27.4	-	20.1	94	28.3	-	42.2	-	64.8	43.5	-	49.1	-	NDP	46.1	31.4	17.2	27.9	17.4	NDP	NDP
Selenium	mg/kg	430	LQM, 2014		2	-	2	-	2	2	-	1	4	1	-	2	-	3	1	-	4	-	NDP	<1	<1	<1	<1	<1	NDP	NDP
Total Sulphate as SO4	mg/kg	-			187		460		874	781		679	2455	1197	-	777		3508	5105		2121	-								
Sulphate as SO4 (2:1 Ext)	g/l	-				0.0995		0.1379			0.1758				-		0.0761			0.2677	-	0.1413	0.4449	0.0917	0.0977	0.0423	0.0191	0.0172	0.0391
Elemental Sulphur	mg/kg	-			14	-	4	-	38	72	-	9	56	15	-	14	-	58	63	-	474	-	37	475	41	41	45	6	3	<1
Sulphide	mg/kg	-			<10	-	<10	-	<10	<10	-	<10	<10	<10	-	<10	-	<10	<10	-	<10	-	<10	<10	<10	<10	<10	<10	<10	<10
Water Soluble Boron	mg/kg	11000	LQM, 2014		0.9	-	1	-	1.4	1.7	-	1.4	1.8	0.5	-	2	-	7.2	6.2	-	1.5	-	2.5	-	-	-	-	-	1.5	1.5
Ammoniacal Nitrogen as N	mg/kg	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18.3	28.3	<0.6	6	<0.6	<0.6	<0.6	<0.6
Zinc	mg/kg	40000	LQM, 2014		483	-	96	-	268	357	-	97	649	51	-	255	-	786	400	-	690	-	264	-	-	-	-	-	740	519
Naphthalene	mg/kg	2.3	LQM, 2014		0.47	-	<0.04	-	0.1	0.06	-	0.08	0.12	<0.04	-	0.06	-	0.16	0.07	-	0.14	-	-	-	-	-	-	-	-	-
Acenaphthylene	mg/kg	2900	LQM, 2014		0.59	-	<0.03	-	0.11	0.15	-	0.23	0.27	<0.03	-	0.32	-	0.75	0.13	-	0.53	-	-	-	-	-	-	-	-	-
Acenaphthene	mg/kg	3000	LQM, 2014		0.5	-	<0.05	-	0.15	<0.05	-	<0.05	<0.05	<0.05	-	0.08	-	0.24	<0.05	-	0.1	-	-	-	-	-	-	-	-	-
Fluorene	mg/kg	2800	LQM, 2014		0.7	-	<0.04	-	0.17	0.07	-	<0.04	0.09	<0.04	-	0.11	-	0.27	0.07	-	0.15	-	-	-	-	-	-	-	-	-
Phenanthrene	mg/kg	1300	LQM, 2014		4.08	-	0.13	-	1.53	0.69	-	0.73	1.91	<0.03	-	1.26	-	3.81	0.48	-	2.27	-	-	-	-	-	-	-	-	-
Anthracene	mg/kg	31000	LQM, 2014		1.82	-	0.05	-	0.42	0.27	-	0.3	0.36	<0.04	-	0.59	-	1.84	0.21	-	0.91	-	-	-	-	-	-	-	-	-
Fluoranthene	mg/kg	1500	LQM, 2014		6.84	-	0.28	-	2.43	1.55	-	2.56	2.37	0.07	-	4.49	-	13.53	1.51	-	6.44	-	-	-	-	-	-	-	-	-
Pyrene	mg/kg	3700	LQM, 2014		5.4	-	0.26	-	1.99	1.34	-	2.09	1.91	0.06	-	3.62	-	10.61	1.25	-	5.06	-	-	-	-	-	-	-	-	-
Benzo(a)anthracene	mg/kg	11	LQM, 2014		3.59	-	0.18	-	1.32	0.93	-	1.59	1.15	0.09	-	2.8	-	8.14	0.97	-	3.57	-	-	-	-	-	-	-	-	-
Chrysene	mg/kg	30	LQM, 2014		3.4	-	0.18	-	1.35	0.94	-	1.56	1.17	0.06	-	2.46	-	6.91	0.88	-	3.53	-	-	-	-	-	-	-	-	-
Benzo(bk)fluoranthene	mg/kg	-			5.32	-	0.33	-	2.27	1.61	-	2.92	1.74	0.09	-	4.74	-	12.82	1.71	-	5.66	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	mg/kg	3.2	LQM, 2014		3.29	-	0.18	-	1.35	0.95	-	1.64	1	0.06	-	2.9	-	7.9	1	-	3.46	-	-	-	-	-	-	-	-	-
Indeno(123cd)pyrene	mg/kg	45	LQM, 2014		2.11	-	0.15	-	0.95	0.73	-	1.14	0.67	0.06	-	1.85	-	4.91	0.73	-	2.07	-	-	-	-	-	-	-	-	-
Dibenzo(ah)anthracene	mg/kg	0.31	LQM, 2014		0.51	-	<0.04	-	0.21	0.18	-	0.3	0.17	<0.04	-	0.25	-	1.13	0.15	-	0.36	-	-	-	-	-	-	-	-	-
Benzo(ghi)perylene	mg/kg	360	LQM, 2014		1.76	-	0.12	-	0.81	0.65	-	0.94	0.53	0.05	-	1.41	-	3.76	0.56	-	1.98	-	-	-	-	-	-	-	-	-
Coronene	mg/kg	-			0.51	-	0.05	-	0.31	0.2	-	0.24	0.15	<0.04	-	0.29	-	1.01	0.15	-	0.48	-	-	-	-	-	-	-	-	-
PAH 6 Total #	mg/kg	-			19.32	-	1.06	-	7.81	5.49	-	9.2	6.31	0.33	-	15.39	-	42.92	5.51	-	19.61	-	-	-	-	-	-	-	-	-
PAH 17 Total	mg/kg	-			40.89	-	1.91	-	15.47	10.32	-	16.32	13.61	<0.04	-	27.23	-	77.79	9.87	-	36.71	-	-	-	-	-	-	-	-	-
Benzo(b)fluoranthene	mg/kg	3.9	LQM, 2014		3.83	-	0.24	-	1.63	1.16	-	2.1	1.25	0.06	-	3.41	-	9.23	1.23	-	4.08	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene	mg/kg	110	LQM, 2014		1.49	-	0.09	-	0.64	0.45	-	0.82	0.49	0.03	-	1.33	-	3.59	0.48	-	1.58	-	-	-	-	-	-	-	-	-
Benzo(j)fluoranthene	mg/kg	-			1	-	<1	-	<1	<1	-	<1	<1	<1	-	1	-	3	<1	-	<1	-	<1	-	-	-	-	-	-	-
Mineral Oil (C10 C40)	mg/kg	-			159	-	37	-	<30	<30	-	<30	<30	<30	-	84	-	51	32	-	<30	-	-	-	-	-	-	-	-	-
>C5 C6	mg/kg	42	LQM, 2014		<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<1.0	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C6 C8	mg/kg	100	LQM, 2014		<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<1.0	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C8 C10	mg/kg	27	LQM, 2014		<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<1.0	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C10 C12	mg/kg	130	LQM, 2014		<0.2	-	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>C12 C16	mg/kg	1100	LQM, 2014		<4	-	<4	-	<4	<4	-	<4	<4	<4	-	<4	-	<4	<4	-	<4	-	<4	<4	<4	7	<4	<4	<4	<4
>C16 C21	mg/kg	-			<7	-	<7	-	<7	<7	-	<7	<7	<7	-	<7	-	<7	<7	-	<7	-	<7	<7	11	12	14	<7	29	29
>C21 C35	mg/kg	-			110	-	20	-	15	<7	-	<7	<7	<7	-	66	-	51	32	-	15	-	-	-	-	-	-	-	-	-
>C16 C35	mg/kg	65000	LQM, 2014		117	-	27	-	22	<14	-	<14	<14	<14	-	73	-	58	39	-	22	-	<7	<7	11	12	14	<7	29	29
>C35 C40	mg/kg	65000	LQM, 2014		**49**	-	**17**	-	<7	<7	-	<7	<7	<7	-	**18**	-	<7	<7	-	<7	-								
Total aliphatics (C5 to 40)	mg/kg	-			159	-	37	-	<26	<26	-	<26	<26	<26	-	84	-	51	32	-	<26	-	-	-	-	-	-	-	-	-
>C5 EC7	mg/kg	370	LQM, 2014		<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<1.0	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC7 EC8	mg/kg	860	LQM, 2014		<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<1.0	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC8 EC10	mg/kg	47	LQM, 2014		<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<1.0	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC10 EC12	mg/kg	250	LQM, 2014		<0.2	-	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>EC12 EC16	mg/kg	1800	LQM, 2014		<4	-	<4	-	<4	<4	-	<4	<4	<4	-	<4	-	<4	<4	-	<4	-	<4	6	5	7	8	<4	<4	<4
>EC16 EC21	mg/kg	1900	LQM, 2014		22	-	<7	-	9	42	-	12	24	<7	-	28	-	35	14	-	11	-	19	54	39	44	85	13	25	37
>EC21 EC35	mg/kg	1900	LQM, 2014		205	-	86	-	99	150	-	142	146	<7	-	235	-	224	128	-	127	-	146	336	259	240	500	113	242	318
>EC35 EC40[6]	mg/kg	1900	LQM, 2014		108	-	55	-	37	35	-	38	38	<7	-	83	-	43	29	-	50	-	-	-	-	-	-	-	-	-
Total aromatics (C5 to 40)	mg/kg	-			335	-	141	-	145	227	-	192	208	<26	-	346	-	302	171	-	188	-	-	-	-	-	-	-	-	-
Total aliphatics and aromatics(C5 to 40)	mg/kg	-			494	-	178	-	145	227	-	192	208	<52	-	430	-	353	203	-	188	-	-	-	-	-	-	-	-	-
MTBE	ug/kg	73000	CL:AIRE, 2010		<5	-	<5	-	<5	<5	-	<5	<5	<5	-	<5	-	<5	<5	-	<50	-	-	-	-	-	-	-	-	-
Benzene	ug/kg	380	LQM, 2014		-	-	-	-	<5	-	-	-	-	<5	-	<5	-	<5	<5	-	<50	-	-	-	-	-	-	-	-	-
Toluene	ug/kg	880000	LQM, 2014		-	-	-	-	<5	-	-	-	-	<5	-	<5	-	<5	<5	-	<50	-	-	-	-	-	-	-	-	-
Ethylbenzene	ug/kg	83000	LQM, 2014		-	-	-	-	<5	-	-	-	-	<5	-	<5	-	<5	<5	-	<50	-	-	-	-	-	-	-	-	-
m/p Xylene	ug/kg	79000	LQM, 2014		-	-	-	-	<5	-	-	-	-	<5	-	<5	-	<5	<5	-	<50	-	-	-	-	-	-	-	-	-
o Xylene	ug/kg	88000	LQM, 2014		-	-	-	-	<5	-	-	-	-	<5	-	<5	-	<5	<5	-	<50	-	-	-	-	-	-	-	-	-
PCB 28	ug/kg	-			<5	-	<5	-	<5	<5	-	<5	<5	<5	-	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5
PCB 52	ug/kg	-			<5	-	<5	-	<5	<5	-	<5	<5	<5	-	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5
PCB 101	ug/kg	-			<5	-	<5	-	<5	<5	-	<5	<5	<5	-	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5
PCB 118	ug/kg	-			<5	-	<5	-	<5	<5	-	<5	<5	<5	-	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5
PCB 138	ug/kg	-			<5	-	<5	-	<5	<5	-	<5	<5	<5	-	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5
PCB 153	ug/kg	-			<5	-	<5	-	<5	<5	-	<5	<5	<5	-	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5
PCB 180	ug/kg	-			<5	-	<5	-	<5	<5	-	<5	<5	<5	-	<5	-	<5	<5	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5
Total 7 PCBs[7]	ug/kg	8	EA, 2009		<35	-	<35	-	<35	<35	-	<35	<35	<35	-	<35	-	<35	<35	-	<35	-	<35	<35	<35	<35	<35	<35	<35	<35
Phenol	mg/kg	750	LQM, 2014		<0.01	-	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	-	<0.01	<0.01	-	<0.01	-								
Natural Moisture Content	%				7.60		22.60		12.80	19.80		17.80	47.00	8.90		17.60		41.80	40.20		31.80		18.3	27.7	14.3	16.7	9.2	12.1	13	35.9
Moisture Content (% Wet Weight)	%				7.10		-		11.30	16.50		15.10	32.00	8.20		-		-	-		24.10		-	-	-	-	-	-	-	-
Total Organic Carbon	%				3.43		NDP		2.50	4.00		29.68	27.81	0.67		NDP		NDP	NDP		15.63		NDP	-	-	-	-	-	-	-
SOM (Calculated)	%				5.91		-		4.31	6.90		51.17	47.95	1.16		-		-	-		26.95									
pH	pH units	-			7.95	8.11	8.00	8.22	7.99	7.76	8.19	8.02	7.83	7.98	9.39	7.90	8.08	7.74	7.73	8.28	8.18	9.25								
General Description (Bulk Analysis)	--	-			soil/stones	-	soil/stones	-	soil/stones	soil/stones	-	soil/stones	soil/stones	soil/stones	-	soil/stones	-	soil stones	soil stones	-	Soil/Stones	-	Soil/Stone	Soil/Stone	soil-stones	Soil/Stone	Soil/Stone	Soil/Stone	Soil/Stone	soil.stones
Asbestos Fibres	--	-			NAD	-	Fibre Bundles	-	NAD	NAD	-	NAD	NAD	NAD	-	Fibre Bundles	-	Fibre Bundles	Fibre Bundles	-	NAD	-	Fibre Bundles	NAD	NAD	NAD	NAD	NAD	Fibre Bundles	Fibre Bundles
Asbestos Fibres (2)	--	-			-	-	-	-	-	-	-	-	-	-	-	-	-	Free Fibres	NAD	-	-	-	-	-	-	-	-	-	-	NAD
Asbestos ACM	--	-			NAD	-	NAD	-	NAD	NAD	-	NAD	NAD	NAD	-	NAD	-	NAD	-	-	NAD	-	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Type	--	-			NAD	-	Chrysotile	-	NAD	NAD	-	NAD	NAD	NAD	-	Chrysotile	-	Chrysotile	Chrysotile	-	NAD	-	Chrysotile	NAD	NAD	NAD	NAD	NAD	Chrysotile	Chrysotile
Asbestos Type (2)	--	-			-	-	-	-	-	-	-	-	-	-	-	-	-	Amosite	-	-	-	-	-	-	-	-	-	-	-	Amosite
Asbestos Level Screen	%	-			NAD	-	<0.1	-	NAD	NAD	-	NAD	NAD	NAD	-	<0.1	-	<0.1	<0.1	-	NAD	-	less than 0.1%	NAD	NAD	NAD	NAD	NAD	less than 0.1%	less than 0.1%
Asbestos Gravimetric Quantification	mass %	-			NAD	-	<0.001	-	NAD	NAD	-	NAD	NAD	NAD	-	<0.001	-	<0.001	<0.001	-	NAD	-	<0.001	-	-	-	-	-	<0.001	<0.001
Asbestos PCOM Quantification (Fibres)	mass %	-			NAD	-	<0.001	-	NAD	NAD	-	NAD	NAD	NAD	-	<0.001	-	<0.001	<0.001	-	NAD	-	<0.001	-	-	-	-	-	<0.001	<0.001
Asbestos Gravimetric & PCOM Total	mass %	-			NAD	-	<0.001	-	NAD	NAD	-	NAD	NAD	NAD	-	<0.001	-	<0.001	<0.001	-	NAD	-	<0.001	-	-	-	-	-	<0.001	0.001

Determinand	Units	RWOHG GAC[2,3]	Source	Sample Location	TP7	TP7	TP8	TP8	TP9	TP9	TP10	TP10	TP20
				Sample Depth	0.00-1.50	1.50-3.00	1.60-2.50	2.50-3.50	0.00-1.50	1.50-3.00	0.00-1.50	1.50-2.80	0.00-0.75
				Soil Type	Made Ground	Sandy Gravelly CLAY	Made Ground	Made Ground	Made Ground	Silty Gravel	Made Ground	Sandy Gravelly CLAY	Sandy Gravelly CLAY
				Lab Receipt Date	14/08/2019	14/08/2019	13/08/2019	13/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	
Antimony	mg/kg	550	CL:AIRE, 2010	-	-	-	-	-	-	-	-	3
Arsenic	mg/kg	40	LQM, 2014	21.7	12.6	17	10.3	NDP	27.7	NDP	8.7	7.9
Barium	mg/kg	1300	CL:AIRE, 2010	216	92	94	57	NDP	259	NDP	85	107
Cadmium	mg/kg	85	LQM, 2014	0.5	0.3	0.3	0.2	NDP	0.5	NDP	0.6	0.6
Chromium	mg/kg	-		58.9	64.7	42.6	41	NDP	57.3	NDP	56	88.8
Chromium III	mg/kg	910	LQM, 2014	58.9	64.7	42.6	41	15.6	57.3	21	56	88.8
Hexavalent Chromium	mg/kg	6	LQM, 2014	-	-							<0.3
Copper	mg/kg	7100	LQM, 2014	80	300	42	14	NDP	133	NDP	26	45
Total Cyanide	mg/kg	-		-	-	-	-	-	-	-	-	<0.5
Lead[4]	mg/kg	130	DEFRA, 2013	156	167	43	20	NDP	141	NDP	15	94
Mercury[5]	mg/kg	56	LQM, 2014	0.5	<0.1	<0.1	<0.1	NDP	<0.1	NDP	<0.1	<0.1
Molybdenum	mg/kg	670	CL:AIRE, 2010	-	-	-	-	-	-	-	-	5.6
Nickel	mg/kg	180	LQM, 2014	29.7	16.9	17.2	11.3	NDP	37.4	NDP	31.4	23.7
Selenium	mg/kg	430	LQM, 2014	1	<1	<1	<1	NDP	<1	NDP	<1	<1
Total Sulphate as SO4	mg/kg	-										2175
Sulphate as SO4 (2:1 Ext)	g/l	-		0.1973	0.1853	0.2251	0.1033	0.118	0.3174	0.0223	0.0562	
Elemental Sulphur	mg/kg	-		55	28	49	36	32	118	<1	106	6
Sulphide	mg/kg	-		<10	<10	<10	<10	<10	<10	<10	<10	<10
Water Soluble Boron	mg/kg	11000	LQM, 2014	-	-	-	-	1.4	-	1.2	-	0.7
Ammoniacal Nitrogen as N	mg/kg	-		4.4	2.5	2.4	2.3	5.1	6.8	<0.6	<0.6	2.6
Zinc	mg/kg	40000	LQM, 2014	-	-	-	-	223	-	191	-	105
Naphthalene	mg/kg	2.3	LQM, 2014	-	-	-	-	-	-	-	-	0.08
Acenaphthylene	mg/kg	2900	LQM, 2014	-	-	-	-	-	-	-	-	0.06
Acenaphthene	mg/kg	3000	LQM, 2014	-	-	-	-	-	-	-	-	<0.05
Fluorene	mg/kg	2800	LQM, 2014	-	-	-	-	-	-	-	-	<0.04
Phenanthrene	mg/kg	1300	LQM, 2014	-	-	-	-	-	-	-	-	0.35
Anthracene	mg/kg	31000	LQM, 2014	-	-	-	-	-	-	-	-	0.11
Fluoranthene	mg/kg	1500	LQM, 2014	-	-	-	-	-	-	-	-	0.78
Pyrene	mg/kg	3700	LQM, 2014	-	-	-	-	-	-	-	-	0.7
Benzo(a)anthracene	mg/kg	11	LQM, 2014	-	-	-	-	-	-	-	-	0.5
Chrysene	mg/kg	30	LQM, 2014	-	-	-	-	-	-	-	-	0.41
Benzo(bk)fluoranthene	mg/kg	-		-	-	-	-	-	-	-	-	1.09
Benzo(a)pyrene	mg/kg	3.2	LQM, 2014	-	-	-	-	-	-	-	-	0.56
Indeno(123cd)pyrene	mg/kg	45	LQM, 2014	-	-	-	-	-	-	-	-	0.39
Dibenzo(ah)anthracene	mg/kg	0.31	LQM, 2014	-	-	-	-	-	-	-	-	0.11
Benzo(ghi)perylene	mg/kg	360	LQM, 2014	-	-	-	-	-	-	-	-	0.37
Coronene	mg/kg	-		-	-	-	-	-	-	-	-	0.08
PAH 6 Total #	mg/kg	-		-	-	-	-	-	-	-	-	3.19
PAH 17 Total	mg/kg	-		-	-	-	-	-	-	-	-	5.59
Benzo(b)fluoranthene	mg/kg	3.9	LQM, 2014	-	-	-	-	-	-	-	-	0.78
Benzo(k)fluoranthene	mg/kg	110	LQM, 2014	-	-	-	-	-	-	-	-	0.31
Benzo(j)fluoranthene	mg/kg	-		-	-	-	-	-	-	-	-	<1
Mineral Oil (C10 C40)	mg/kg	-		-	-	-	-	-	-	-	-	186
>C5 C6	mg/kg	42	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C6 C8	mg/kg	100	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C8 C10	mg/kg	27	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C10 C12	mg/kg	130	LQM, 2014	<0.2	<0.2	3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>C12 C16	mg/kg	1100	LQM, 2014	<4	<4	26	<4	<4	<4	<4	<4	6
>C16 C21	mg/kg	-		<7	<7	33	<7	<7	21	<7	<7	14
>C21 C35	mg/kg	-		-	-	-	-	-	-	-	-	166
>C16 C35	mg/kg	65000	LQM, 2014	<7	<7	33	<7	<7	21	<7	<7	180
>C35 C40	mg/kg	65000	LQM, 2014	-	-	-	-	-	-	-	-	<7
Total aliphatics (C5 to 40)	mg/kg	-		-	-	-	-	-	-	-	-	186
>C5 EC7	mg/kg	370	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC7 EC8	mg/kg	860	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC8 EC10	mg/kg	47	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC10 EC12	mg/kg	250	LQM, 2014	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>EC12 EC16	mg/kg	1800	LQM, 2014	<4	<4	20	<4	<4	<4	<4	<4	<4
>EC16 EC21	mg/kg	1900	LQM, 2014	25	25	59	12	22	16	<7	<7	12
>EC21 EC35	mg/kg	1900	LQM, 2014	182	120	321	103	181	145	<7	<7	92
>EC35 EC40[6]	mg/kg	1900	LQM, 2014	-	-	-	-	-	-	-	-	<7
Total aromatics (C5 to 40)	mg/kg	-		-	-	-	-	-	-	-	-	104
Total aliphatics and aromatics(C5 to 40)	mg/kg	-		-	-	-	-	-	-	-	-	290
MTBE	ug/kg	73000	CL:AIRE, 2010	-	-	-	-	-	-	-	-	<5
Benzene	ug/kg	380	LQM, 2014	-	-	-	-	-	-	-	-	<5
Toluene	ug/kg	880000	LQM, 2014	-	-	-	-	-	-	-	-	8
Ethylbenzene	ug/kg	83000	LQM, 2014	-	-	-	-	-	-	-	-	15
m/p Xylene	ug/kg	79000	LQM, 2014	-	-	-	-	-	-	-	-	26
o Xylene	ug/kg	88000	LQM, 2014	-	-	-	-	-	-	-	-	<5
PCB 28	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 52	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 101	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 118	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 138	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 153	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 180	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5
Total 7 PCBs[7]	ug/kg	8	EA, 2009	<35	<35	<35	<35	<35	<35	<35	<35	<35
Phenol	mg/kg	750	LQM, 2014	-	-	-	-	-	-	-	-	<0.01
Natural Moisture Content	%			15	18	11	13.3	11.5	21	28.2	16.4	16.8
Moisture Content (% Wet Weight)	%			-	-	-	-	-	-	-	-	14.4
Total Organic Carbon	%			-	-	-	-	-	-	-	-	3.64
SOM (Calculated)	%											
pH	pH units	-										12.08
General Description (Bulk Analysis)	--	-		soil.stones	soil.stones	soil.stones	soil/stones	soil/stones	soil/stones	soil/stones	soil/stones	soil.stones
Asbestos Fibres	--	-		NAD	NAD	NAD	NAD	Fibre Bundles	NAD	Fibre Bundles	NAD	NAD
Asbestos Fibres (2)	--	-		-	-	-	NAD	-	NAD	-	-	
Asbestos ACM	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Type	--	-		NAD	NAD	NAD	NAD	Chrysotile	NAD	Chrysotile	NAD	NAD
Asbestos Type (2)	--	-		-	-	-	NAD	-	NAD	-	-	
Asbestos Level Screen	%	-		NAD	NAD	NAD	NAD	less than 0.1%	NAD	less than 0.1%	NAD	NAD
Asbestos Gravimetric Quantification	mass %	-		-	-	-	-	<0.001	-	<0.001	-	-
Asbestos PCOM Quantification (Fibres)	mass %	-		-	-	-	-	<0.001	-	<0.001	-	-
Asbestos Gravimetric & PCOM Total	mass %	-		-	-	-	-	<0.001	-	<0.001	-	-

			Sample Location	TP102				TP103			TP104			BH2	BH3			BH4			BH5		BH6		BH7	
			Sample Depth	0.40	0.80	1.50	4.30	0.50	2.50	3.50	0.5	1.5	2.20	1	1	3	4	1	2	3	1	3	1	4	2	3
			Soil Type	Made Ground	Made Ground	Sandy Gravelly CLAY	Soil	Made Ground	Sandy Gravelly SILT	SILT	Made Ground	Made Ground	Made Ground	Silty SAND	SAND	SILT	SILT	Made Ground	Silty SAND	Silty SAND	Silty SAND	Sandy SILT	Made Ground	Sandy SILT	Made Ground	Made Ground
			Lab Receipt Date	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	31/03/2017	11/04/2017	11/04/2017	31/03/2017	21/04/2017	11/05/2017	11/05/2017	11/05/2017	21/04/2017	21/04/2017	21/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017
Determinand	Units	RWOHG GAC[2,3]	Source																								
Antimony	mg/kg	550	CL:AIRE, 2010	4	3	2	1	3	2	1	1	3	3	1	3	2	1	7	-	<1	1	-	2	-	-	4
Arsenic	mg/kg	40	LQM, 2014	11.6	19.7	10	10.2	33.7	17.4	12.5	3.7	24.5	39	9.9	16	12.1	10.7	50	-	6.6	8.1	-	12.4	-	-	38.5
Barium	mg/kg	1300	CL:AIRE, 2010	132	83	49	55	201	77	72	60	120	70	39	52	41	236	92	-	30	24	-	83	-	-	165
Cadmium	mg/kg	85	LQM, 2014	0.3	0.4	0.5	0.7	0.3	0.3	0.2	<0.1	0.4	0.7	<0.1	0.7	0.3	<0.1	0.3	-	0.7	<0.1	-	0.4	-	-	0.3
Chromium	mg/kg	-		152.1	68.7	67.7	60.3	71.5	64.6	59.7	85.4	69.7	78	40.6	56.1	55.4	26.9	45.4	-	38.8	39.6	-	56.2	-	-	79.4
Chromium III	mg/kg	910	LQM, 2014	150.7	68.7	67.7	60.3	71.5	64.6	59.7	85.4	69.7	78	40.6	56.1	55.4	26.9	45.4	-	38.8	39.6	-	56.2	-	-	79.4
Hexavalent Chromium	mg/kg	6	LQM, 2014	1.4	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	<0.3	<0.3	-		-	-	<0.3
Copper	mg/kg	7100	LQM, 2014	80	30	17	19	105	43	29	27	47	95	15	18	23	11	24	-	16	11	-	22	-	-	69
Total Cyanide	mg/kg	-		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-		-	-	<0.5
Lead[4]	mg/kg	130	DEFRA, 2013	247	63	13	14	223	135	94	31	120	369	65	39	59	30	80	-	34	27	-	16	-	-	354
Mercury[5]	mg/kg	56	LQM, 2014	<0.1	<0.1	<0.1	<0.1	0.5	<0.1	<0.1	<0.1	<0.1	0.8	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	-	0.5
Molybdenum	mg/kg	670	CL:AIRE, 2010	4.6	5.5	4.8	4.6	4.6	5.7	4.3	8	4.9	7.4	1.6	4.6	3.1	1	12.1	-	3.2	2.5	-	3	-	-	3.8
Nickel	mg/kg	180	LQM, 2014	90.8	41.6	28.3	41.5	27.1	28.2	26.5	10.6	27	30.3	23	23.8	25.6	10.3	14	-	11.4	11.5	-	41.4	-	-	35.9
Selenium	mg/kg	430	LQM, 2014	2	2	1	1	<1	1	1	<1	<1	3	<1	1	1	<1	2	-	<1	<1	-	2	-	-	2
Total Sulphate as SO4	mg/kg	-		579	289	125	170	675	1212	3479	234	823	4448	516	432	3921	1002	2719	-	417	531	-	181	-	-	1011
Sulphate as SO4 (2:1 Ext)	g/l	-		-	-	-	-	-	-	-	-	-	-	-	0.0112	1.4642	-	-	-	-	-	0.3288		0.3557	0.0492	-
Elemental Sulphur	mg/kg	-		1	3	<1	2	34	170	2287	NDP	120	106	11	21	1994	11	4	-	34	18	-		-	-	57
Sulphide	mg/kg	-		<10	<10	<10	<10	<10	<10	92	<10	<10	<10	<10	<10	110	<10	<10	-	<10	<10	-	-	-	-	<10
Water Soluble Boron	mg/kg	11000	LQM, 2014	0.5	0.8	0.4	0.3	0.6	3.5	5.5	0.8	1.2	5.3	0.3	0.7	7	1.9	0.4	-	0.5	0.6	-	0.5	-	-	2.3
Ammoniacal Nitrogen as N	mg/kg	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	mg/kg	40000	LQM, 2014	118	77	65	47	118	155	102	19	218	336	46	103	101	20	47	-	37	39	-	62	-	-	143
Naphthalene	mg/kg	2.3	LQM, 2014	<0.04	<0.04	<0.04	<0.04	0.21	0.23	0.43	0.16	<0.04	0.4	<0.04	<0.04	<0.04	<0.04	<0.04	-	0.07	<0.04	-	<0.04	-	-	0.12
Acenaphthylene	mg/kg	2900	LQM, 2014	0.05	0.04	<0.03	<0.03	0.35	0.66	1.07	0.2	0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.03	-	<0.03	-	-	0.26
Acenaphthene	mg/kg	3000	LQM, 2014	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	0.17	<0.05	<0.05	1.07	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	-	-	0.15
Fluorene	mg/kg	2800	LQM, 2014	<0.04	<0.04	<0.04	<0.04	0.06	0.43	0.44	<0.04	<0.04	1.34	<0.04	<0.04	<0.04	<0.04	<0.04	-	<0.04	<0.04	-	<0.04	-	-	0.16
Phenanthrene	mg/kg	1300	LQM, 2014	0.13	0.31	<0.03	<0.03	0.62	3.88	4.75	0.45	0.41	2.13	0.07	0.06	0.06	0.03	0.36	-	0.08	0.05	-	<0.03	-	-	1.45
Anthracene	mg/kg	31000	LQM, 2014	0.07	0.12	<0.04	<0.04	0.46	1.43	2.74	0.23	0.22	0.47	<0.04	<0.04	<0.04	<0.04	0.13	-	<0.04	<0.04	-	<0.04	-	-	0.44
Fluoranthene	mg/kg	1500	LQM, 2014	0.27	0.61	<0.03	<0.03	2.84	6.33	11.1	1.13	1.4	1.16	0.15	0.13	0.14	0.04	0.5	-	0.15	0.09	-	<0.03	-	-	2.76
Pyrene	mg/kg	3700	LQM, 2014	0.25	0.66	<0.03	<0.03	2.85	5.56	8.74	1.11	1.1	1.07	0.13	0.11	0.12	0.04	0.38	-	0.15	0.08	-	<0.03	-	-	2.35
Benzo(a)anthracene	mg/kg	11	LQM, 2014	0.18	0.87	<0.06	<0.06	2.44	3.64	8.23	1.09	0.75	0.63	0.13	0.14	0.14	<0.06	0.26	-	0.15	0.11	-	<0.06	-	-	1.6
Chrysene	mg/kg	30	LQM, 2014	0.19	0.91	<0.02	<0.02	1.8	3.38	5.8	0.93	0.59	0.69	0.12	0.1	0.09	0.03	0.22	-	0.13	0.07	-	<0.02	-	-	1.52
Benzo(bk)fluoranthene	mg/kg	-		0.36	1.37	<0.07	<0.07	3.15	5.51	9.64	1.79	1.07	1.26	0.15	0.12	0.13	<0.07	0.3	-	0.17	0.12	-	<0.07	-	-	2.53
Benzo(a)pyrene	mg/kg	3.2	LQM, 2014	0.16	0.58	<0.04	<0.04	1.86	3.35	5.54	1.11	0.58	0.76	0.09	0.08	0.09	<0.04	0.19	-	0.12	0.07	-	<0.04	-	-	1.59
Indeno(123cd)pyrene	mg/kg	45	LQM, 2014	0.12	0.31	<0.04	<0.04	0.98	1.79	2.61	0.77	0.37	0.47	0.06	0.04	<0.04	<0.04	0.1	-	0.07	0.06	-	<0.04	-	-	0.98
Dibenzo(ah)anthracene	mg/kg	0.31	LQM, 2014	<0.04	0.08	<0.04	<0.04	0.28	0.54	0.95	0.18	0.09	0.17	<0.04	<0.04	<0.04	<0.04	<0.04	-	<0.04	<0.04	-	<0.04	-	-	0.21
Benzo(ghi)perylene	mg/kg	360	LQM, 2014	0.15	0.39	<0.04	<0.04	1.09	1.82	2.35	0.76	0.33	0.64	0.05	<0.04	<0.04	<0.04	0.11	-	0.07	0.05	-	<0.04	-	-	0.91
Coronene	mg/kg	-		<0.04	0.08	<0.04	<0.04	0.2	0.32	0.52	0.26	0.07	0.14	<0.04	<0.04	<0.04	<0.04	<0.04	-	<0.04	<0.04	-	<0.04	-	-	0.27
PAH 6 Total #	mg/kg	-		1.06	3.26	<0.22	<0.22	9.92	18.8	31.24	5.56	3.75	4.29	0.5	0.37	0.36	<0.22	1.2	-	0.58	0.39	-	<0.22	-	-	8.77
PAH 17 Total	mg/kg	-		1.93	6.33	<0.64	<0.64	19.19	38.98	65.08	10.17	7.03	12.4	0.95	0.78	0.77	<0.64	2.55	-	1.16	0.7	-	<0.64	-	-	17.3
Benzo(b)fluoranthene	mg/kg	3.9	LQM, 2014	0.26	0.99	<0.05	<0.05	2.27	3.97	6.94	1.29	0.77	0.91	0.11	0.09	0.09	<0.05	0.22	-	0.12	0.09	-	<0.05	-	-	1.82
Benzo(k)fluoranthene	mg/kg	110	LQM, 2014	0.1	0.38	<0.02	<0.02	0.88	1.54	2.7	0.5	0.3	0.35	0.04	0.03	0.04	<0.02	0.08	-	0.05	0.03	-	<0.02	-	-	0.71
Benzo(j)fluoranthene	mg/kg	-		<1	<1	<1	<1	<1	1	3	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	-	<1	-	-	<1
Mineral Oil (C10 C40)	mg/kg	-		70	<30	<30	<30	<30	<30	<30	104	85	91	<30	<30	<30	<30	<30	-	<30	<30	-	<30	-	-	<30
>C5 C6	mg/kg	42	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	-	<0.1
>C6 C8	mg/kg	100	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	-	<0.1
>C8 C10	mg/kg	27	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	-	<0.1	<0.1	-	<0.1	-	-	<0.1
>C10 C12	mg/kg	130	LQM, 2014	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-	-	<0.2
>C12 C16	mg/kg	1100	LQM, 2014	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	-	<4	<4	-	<4	-	-	<4
>C16 C21	mg/kg	-		9	<7	<7	<7	<7	<7	<7	<7	10	30	<7	<7	<7	<7	<7	-	<7	<7	-	<7	-	-	<7
>C21 C35	mg/kg	-		61	<7	<7	<7	<7	<7	<7	72	54	61	<7	<7	<7	<7	<7	-	<7	<7	-	<7	-	-	<7
>C16 C35	mg/kg	65000	LQM, 2014	70	<14	<14	<14	<14	<14	<14	79	64	91	<14	<14	<14	<14	<14	-	<14	<14	-	<14	-	-	<14
>C35 C40	mg/kg	65000	LQM, 2014	<7	<7	<7	<7	<7	<7	<7	32	21	<7	<7	<7	<7	<7	<7	-	<7	<7	-	<7	-	-	<7
Total aliphatics (C5 to 40)	mg/kg	-		70	<26	<26	<26	<26	<26	<26	104	85	91	<26	<26	<26	<26	<26	-	<26	<26	-	<26	-	-	<26
>C5 EC7	mg/kg	370	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	-	<0.1
>EC7 EC8	mg/kg	860	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	-	<0.1
>EC8 EC10	mg/kg	47	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	-	<0.1
>EC10 EC12	mg/kg	250	LQM, 2014	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-	-	<0.2
>EC12 EC16	mg/kg	1800	LQM, 2014	<4	<4	<4	<4	<4	9	7	<4	6	<4	<4	<4	<4	<4	<4	-	<4	<4	-	<4	-	-	<4
>EC16 EC21	mg/kg	1900	LQM, 2014	<7	<7	<7	<7	<7	106	95	11	48	31	<7	<7	19	<7	<7	-	<7	<7	-	<7	-	-	27
>EC21 EC35	mg/kg	1900	LQM, 2014	49	<7	<7	<7	37	328	294	232	279	169	<7	<7	90	<7	<7	-	<7	<7	-	<7	-	-	144
>EC35 EC40[6]	mg/kg	1900	LQM, 2014	<7	<7	<7	<7	<7	54	44	121	107	37	<7	<7	<7	<7	<7	-	<7	<7	-	<7	-	-	27
Total aromatics (C5 to 40)	mg/kg	-		49	<26	<26	<26	37	497	440	364	440	237	<26	<26	109	<26	<26	-	<26	<26	-	<26	-	-	198
Total aliphatics and aromatics(C5 to 40)	mg/kg	-		119	<52	<52	<52	<52	497	440	468	525	328	<52	<52	109	<52	<52	-	<52	<52	-	<52	-	-	198
MTBE	ug/kg	73000	CL:AIRE, 2010	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	<5
Benzene	ug/kg	380	LQM, 2014	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	-
Toluene	ug/kg	880000	LQM, 2014	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	-
Ethylbenzene	ug/kg	83000	LQM, 2014	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	23	<5	-	<5	-	-	-
m/p Xylene	ug/kg	79000	LQM, 2014	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	24	<5	-	<5	-	-	-
o Xylene	ug/kg	88000	LQM, 2014	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	11	<5	-	<5	-	-	-
PCB 28	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	<5
PCB 52	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	<5
PCB 101	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	<5
PCB 118	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	<5
PCB 138	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	<5
PCB 153	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	<5
PCB 180	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	-	<5	-	-	<5
Total 7 PCBs[7]	ug/kg	8	EA, 2009	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	-	<35	<35	-	<35	-	-	<35
Phenol	mg/kg	750	LQM, 2014	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	-	-	-	-	<0.01
Natural Moisture Content	%			13.2	16.7	10.3	11.8	15.1	37.3	44.1	27.5	26	126.5	11.8	9.6	33.7	3.4	15.4	-	19.7	17.4	-	15.9	-	-	17.5
Moisture Content (% Wet Weight)	%			11.7	14.3	9.4	10.6	13.1	27.2	30.6	21.6	20.6	55.8	10.6	8.8	25.2	3.3	13.3	-	16.4	14.8	-	13.7	-	-	14.9
Total Organic Carbon	%			4.58	1.96	0.05	0.08	8.77	12.97	11.34	77.12	2.35	25.91	1.68	0.56	3.24	0.52	0.29	-	0.36	0.36	-	-	-	-	3.17
SOM (Calculated)	%			7.90	3.38	0.09	0.14	15.12	22.36	19.55	132.97	4.05	44.67	2.90	0.97	5.59	0.90	0.50	-	0.62	0.62	-	-	-	-	5.47
pH	pH units	-		9.06	8.61	8.63	8.66	8.42	7.93	8.12	8.48	7.74	7.42	9.24	9.1	8.22	8.44	12.26	10.35	9.67	8.9	8.16	8.46	8.01	8.42	8.03
General Description (Bulk Analysis)	--	-		Soil/ Stone/ Silt	Soil/Stone	Soil Clay/Silt/ Brick/Stone	Soil/Stone	Soil/Stone	Soil/Stone	Soil Clay/ Silt/ Brick/ Stone	Soil/Stone	Soil/Stone	Soil/Stone	Sand/Stones	Sand/Stones	Soil Silt/Stones	soil/stones	Soil/Stones	-	Sand/Stones	Soil/Stone	-	Soil/Stone	-	-	Soil/Stone
Asbestos Fibres	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	NAD	-	NAD	-	-	NAD
Asbestos Fibres (2)	--	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos ACM	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	NAD	-	NAD	-	-	NAD
Asbestos Type	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	NAD	-	NAD	-	-	NAD
Asbestos Type (2)	--	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos Level Screen	%	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	NAD	-	NAD	-	-	NAD
Asbestos Gravimetric Quantification	mass %	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	NAD	-	NAD	-	-	NAD
Asbestos PCOM Quantification (Fibres)	mass %	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	NAD	-	NAD	-	-	NAD
Asbestos Gravimetric & PCOM Total	mass %	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	NAD	NAD	-	NAD	-	-	NAD

				Sample Location	BH8	BH9		BH10			BH11		BH12		BH13		BH15		BH30			BH31			TP12		TP19
				Sample Depth	2	1	2	1	1.5	2	1	3	1	2	1	3	1	1	1	2	5	1	2	2.8	0.00-1.50	1.50-3.00	0.00-0.70
				Soil Type	Sandy SILT	Made Ground	Sandy SILT	Made Ground	Made Ground	Made Ground	Made Ground	Sandy SILT	Made Ground	Sandy Silty GRAVEL	Made Ground	Cobbles and Boulder	Made Ground	Made Ground	Made Ground	Made Ground	Bedrock	Made Ground	Made Ground	Cobbles and Boulder	Sandy GRAVEL	Clayey SAND	Made Ground
				Lab Receipt Date	28/04/2017	28/04/2017	28/04/2017	28/04/2017	11/05/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	11/05/2017	28/04/2017	28/04/2017	11/05/2017	28/04/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	11/05/2017	14/08/2019	14/08/2019	14/08/2019
Determinand	Units	RWOHG GAC[2,3]	Source																								
Antimony	mg/kg	550	CL:AIRE, 2010	-	1	2	6	-	2	2	-	7	-	3	2	-	7	5	3	8	2	2	2	3	4	NDP
Arsenic	mg/kg	40	LQM, 2014	-	6.2	14.2	43.9	-	9.2	21.3	-	21.6	-	5.9	18.7	-	13.3	24.3	18.2	177.1	33.3	19	8.8	10	25.2	NDP
Barium	mg/kg	1300	CL:AIRE, 2010	-	76	60	178	-	70	117	-	973	-	144	60	-	242	159	97	336	137	113	76	350	186	NDP
Cadmium	mg/kg	85	LQM, 2014	-	0.2	0.1	0.1	-	0.4	0.1	-	2.1	-	<0.1	0.3	-	0.5	0.6	0.6	1.6	0.6	0.7	0.1	0.3	0.4	NDP
Chromium	mg/kg	-		-	52.1	35.4	55.3	-	58.5	25.8	-	75.7	-	76.7	58.7	-	22	24.9	58.4	69.5	20	49.3	65	92.5	122.3	NDP
Chromium III	mg/kg	910	LQM, 2014	-	52.1	35.4	55.3	-	58.5	25.8	-	75.7	-	76.7	58.7	-	22	24.9	58.4	69.5	20	49.3	65	92.5	122.3	37.9
Hexavalent Chromium	mg/kg	6	LQM, 2014	-	<0.3	<0.3	<0.3	-	<0.3	<0.3	-	<0.3	-	<0.3	<0.3	-	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3			
Copper	mg/kg	7100	LQM, 2014	-	16	21	56	-	17	52	-	248	-	102	28	-	154	178	68	96	86	62	5	71	103	NDP
Total Cyanide	mg/kg	-		-	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	16.6	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lead[4]	mg/kg	130	DEFRA, 2013	-	10	143	216	-	14	177	-	1314	-	52	80	-	690	424	196	507	266	190	8	310	371	NDP
Mercury[5]	mg/kg	56	LQM, 2014	-	<0.1	<0.1	0.4	-	<0.1	0.7	-	2.7	-	<0.1	0.2	-	1.2	1.9	0.6	0.6	2.5	1.4	<0.1	0.4	0.5	NDP
Molybdenum	mg/kg	670	CL:AIRE, 2010	-	4.4	2	3.5	-	3.1	2.6	-	5.1	-	7.4	2.8	-	1.9	3.2	4.4	12.4	2.8	3.3	3.4	6.1	7.9	NDP
Nickel	mg/kg	180	LQM, 2014	-	19.1	24	38.5	-	34.5	25.1	-	43.3	-	52.9	28.8	-	32.5	43.9	29.1	63.3	28.2	33	26.1	44.8	35.8	NDP
Selenium	mg/kg	430	LQM, 2014	-	1	1	2	-	2	1	-	3	-	1	2	-	1	<1	2	7	<1	2	2	<1	1	NDP
Total Sulphate as SO4	mg/kg	-		-	126	3388	537	-	386	1299	-	1202	-	292	3816	-	692	978	779	2501	580	725	104	403	709	NDP
Sulphate as SO4 (2:1 Ext)	g/l	-		0.0957	-	-	-	0.0388	-	-	-	-	0.0233	-	-	0.171	-	0.1465	-	-	0.0365	-	-	-	-	-
Elemental Sulphur	mg/kg	-		-	3	3873	22	-	4	-	-	59	-	12	2824	-	5	<1	19	259	1	11	13	38	37	10
Sulphide	mg/kg	-		-	<10	59	<10	-	<10	<10	-	<10	-	<10	45	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Water Soluble Boron	mg/kg	11000	LQM, 2014	-	0.4	6.9	0.9	-	0.4	0.9	-	2.1	-	0.7	9	-	0.6	1.6	1.1	3	1.6	1	0.4	-	-	0.7
Ammoniacal Nitrogen as N	mg/kg	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.3	0.9	1.2
Zinc	mg/kg	40000	LQM, 2014	-	26	102	147	-	58	151	-	929	-	39	143	-	267	180	138	2175	203	178	42	-	-	641
Naphthalene	mg/kg	2.3	LQM, 2014	-	<0.04	<0.04	0.16	-	<0.04	0.05	-	0.51	-	0.59	<0.04	-	0.74	<0.04	<0.04	<0.04	0.05	<0.04	<0.04	0.2	0.25	0.46
Acenaphthylene	mg/kg	2900	LQM, 2014	-	<0.03	0.18	0.85	-	<0.03	0.1	-	2.92	-	0.65	0.16	-	0.43	<0.03	0.06	<0.03	0.11	0.08	<0.03	0.33	0.16	0.4
Acenaphthene	mg/kg	3000	LQM, 2014	-	<0.05	<0.05	0.13	-	<0.05	<0.05	-	<0.25	-	0.53	<0.05	-	0.31	<0.05	<0.05	<0.05	0.17	<0.05	<0.05	<0.05	0.08	0.12
Fluorene	mg/kg	2800	LQM, 2014	-	<0.04	0.08	0.2	-	<0.04	0.05	-	<0.20	-	0.59	0.09	-	0.41	<0.04	<0.04	<0.04	0.18	<0.04	<0.04	0.06	0.1	0.16
Phenanthrene	mg/kg	1300	LQM, 2014	-	0.06	0.68	1.33	-	<0.03	0.45	-	3.32	-	5.4	0.77	-	3.3	0.19	0.28	0.45	2.26	0.65	<0.03	0.63	0.72	2.21
Anthracene	mg/kg	31000	LQM, 2014	-	<0.04	0.27	0.53	-	<0.04	0.21	-	2.02	-	1.88	0.29	-	0.94	0.06	0.09	0.14	0.72	0.3	<0.04	0.38	0.22	0.82
Fluoranthene	mg/kg	1500	LQM, 2014	-	0.06	1.23	2.28	-	<0.03	0.85	-	17.74	-	10.56	1.58	-	4.1	0.3	0.64	0.65	2.84	0.81	0.05	1.5	1.19	3.64
Pyrene	mg/kg	3700	LQM, 2014	-	0.05	0.97	2.16	-	<0.03	0.71	-	16.07	-	8.57	1.17	-	3.36	0.27	0.63	0.58	2.19	0.83	0.04	1.55	1.18	3.09
Benzo(a)anthracene	mg/kg	11	LQM, 2014	-	<0.06	0.7	1.47	-	<0.06	0.55	-	12.39	-	6.08	0.93	-	2.22	0.24	0.48	0.35	1.29	0.95	0.07	1.12	0.76	2.02
Chrysene	mg/kg	30	LQM, 2014	-	0.03	0.62	1.59	-	<0.02	0.46	-	11.94	-	5.53	0.84	-	2.1	0.16	0.47	0.31	1.18	0.67	0.04	1.19	0.8	1.9
Benzo(bk)fluoranthene	mg/kg	-		-	<0.07	0.9	2.75	-	<0.07	0.75	-	25.12	-	11.31	1.29	-	3.41	0.24	0.92	0.53	1.58	1.09	<0.07	2.45	1.61	3.82
Benzo(a)pyrene	mg/kg	3.2	LQM, 2014	-	<0.04	0.56	1.92	-	<0.04	0.44	-	15.39	-	7.14	0.8	-	1.91	0.17	0.56	0.36	0.96	0.71	<0.04	1.3	0.81	1.7
Indeno(123cd)pyrene	mg/kg	45	LQM, 2014	-	<0.04	0.31	1.06	-	<0.04	0.26	-	10.26	-	4.49	0.51	-	1.14	0.09	0.39	0.21	0.47	0.34	<0.04	0.93	0.59	1.68
Dibenzo(ah)anthracene	mg/kg	0.31	LQM, 2014	-	<0.04	0.08	0.31	-	<0.04	0.07	-	1.28	-	0.71	0.09	-	<0.20	<0.04	0.08	0.06	0.12	0.12	<0.04	0.21	0.16	0.36
Benzo(ghi)perylene	mg/kg	360	LQM, 2014	-	<0.04	0.23	1.23	-	<0.04	0.21	-	9.21	-	3.96	0.41	-	1.14	0.09	0.53	0.25	0.44	0.37	<0.04	1	0.64	1.64
Coronene	mg/kg	-		-	<0.04	0.08	0.35	-	<0.04	0.06	-	2.22	-	0.91	0.1	-	0.26	<0.04	0.14	0.06	0.12	0.12	<0.04	0.19	0.13	0.32
PAH 6 Total #	mg/kg	-		-	<0.22	3.23	9.24	-	<0.22	2.51	-	77.72	-	37.46	4.59	-	11.7	0.89	3.04	2	6.29	3.32	<0.22	7.18	4.84	12.48
PAH 17 Total	mg/kg	-		-	<0.64	6.89	18.32	-	<0.64	5.22	-	130.39	-	68.9	9.03	-	25.77	1.81	5.27	3.95	14.68	7.04	<0.64	13.04	9.4	24.34
Benzo(b)fluoranthene	mg/kg	3.9	LQM, 2014	-	<0.05	0.65	1.98	-	<0.05	0.54	-	18.09	-	8.14	0.93	-	2.46	0.17	0.66	0.38	1.14	0.78	<0.05	1.76	1.16	2.75
Benzo(k)fluoranthene	mg/kg	110	LQM, 2014	-	<0.02	0.25	0.77	-	<0.02	0.21	-	7.03	-	3.17	0.36	-	0.95	0.07	0.26	0.15	0.44	0.31	<0.02	0.69	0.45	1.07
Benzo(j)fluoranthene	mg/kg	-		-	<1	<1	<1	-	<1	<1	-	6	-	4	<1	-	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1
Mineral Oil (C10 C40)	mg/kg	-		-	<30	<30	34	-	<30	<30	-	277	-	89	<30	-	183	<30	<30	<30	<30	<30	<30	237	97	212
>C5 C6	mg/kg	42	LQM, 2014	-	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C6 C8	mg/kg	100	LQM, 2014	-	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	0.4	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C8 C10	mg/kg	27	LQM, 2014	-	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C10 C12	mg/kg	130	LQM, 2014	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>C12 C16	mg/kg	1100	LQM, 2014	-	<4	<4	<4	-	<4	<4	-	23	-	<4	<4	-	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
>C16 C21	mg/kg	-		-	<7	<7	<7	-	<7	<7	-	95	-	<7	<7	-	16	<7	<7	<7	<7	<7	<7	26	35	15
>C21 C35	mg/kg	-		-	<7	<7	34	-	<7	<7	-	159	-	69	<7	-	142	<7	29	<7	<7	<7	<7	<7	<7	25
>C16 C35	mg/kg	65000	LQM, 2014	-	<14	<14	41	-	<14	<14	-	254	-	76	<14	-	158	<14	36	<14	<14	<14	<14	33	42	40
>C35 C40	mg/kg	65000	LQM, 2014	-	<7	<7	<7	-	<7	<7	-	<7	-	20	<7	-	25	<7	<7	<7	<7	<7	<7	<7	<7	25
Total aliphatics (C5 to 40)	mg/kg	-		-	<26	<26	34	-	<26	<26	-	277	-	89	<26	-	183	<26	29	<26	<26	<26	<26	237	97	212
>C5 EC7	mg/kg	370	LQM, 2014	-	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC7 EC8	mg/kg	860	LQM, 2014	-	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC8 EC10	mg/kg	47	LQM, 2014	-	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC10 EC12	mg/kg	250	LQM, 2014	-	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>EC12 EC16	mg/kg	1800	LQM, 2014	-	<4	<4	5	-	<4	<4	-	6	-	<4	<4	-	<4	<4	<4	<4	<4	<4	<4	7	14	<4
>EC16 EC21	mg/kg	1900	LQM, 2014	-	<7	14	45	-	<7	15	-	104	-	72	26	-	42	<7	25	<7	<7	19	<7	136	69	27
>EC21 EC35	mg/kg	1900	LQM, 2014	-	<7	70	266	-	<7	72	-	587	-	430	117	-	249	<7	260	71	76	106	<7	930	296	270
>EC35 EC40[6]	mg/kg	1900	LQM, 2014	-	<7	<7	48	-	<7	<7	-	90	-	99	38	-	72	<7	47	17	21	34	<7	88	30	58
Total aromatics (C5 to 40)	mg/kg	-		-	<26	84	364	-	<26	87	-	787	-	601	181	-	363	<26	332	88	97	159	<26	1161	409	355
Total aliphatics and aromatics(C5 to 40)	mg/kg	-		-	<52	84	398	-	<52	87	-	1064	-	690	181	-	546	<52	361	88	97	159	<52	1398	506	567
MTBE	ug/kg	73000	CL:AIRE, 2010	-	<5	<5	<5	-	<5	<5	-	<5	-	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Benzene	ug/kg	380	LQM, 2014	-	<5	<5	<5	-	<5	<5	-	-	-	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene	ug/kg	880000	LQM, 2014	-	<5	<5	<5	-	<5	<5	-	-	-	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	ug/kg	83000	LQM, 2014	-	<5	<5	<5	-	<5	<5	-	-	-	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
m/p Xylene	ug/kg	79000	LQM, 2014	-	<5	<5	<5	-	<5	<5	-	-	-	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
o Xylene	ug/kg	88000	LQM, 2014	-	<5	<5	<5	-	<5	<5	-	-	-	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 28	ug/kg	-		-	<5	<5	<5	-	<5	<5	-	<25	-	<25	<5	-	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 52	ug/kg	-		-	<5	<5	<5	-	<5	<5	-	<25	-	<25	<5	-	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 101	ug/kg	-		-	<5	<5	<5	-	<5	<5	-	<25	-	<25	<5	-	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 118	ug/kg	-		-	<5	<5	<5	-	<5	<5	-	<25	-	<25	<5	-	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 138	ug/kg	-		-	<5	<5	<5	-	<5	<5	-	<25	-	<25	<5	-	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 153	ug/kg	-		-	<5	<5	<5	-	<5	<5	-	<25	-	<25	<5	-	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 180	ug/kg	-		-	<5	<5	<5	-	<5	<5	-	<25	-	<25	<5	-	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total 7 PCBs[7]	ug/kg	8	EA, 2009	-	<35	<35	<35	-	<35	<35	-	<175	-	<175	<35	-	<350	<35	<35	<35	<35	<35	<35	<35	<35	<35
Phenol	mg/kg	750	LQM, 2014	-	<0.01	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01
Natural Moisture Content	%			-	7.5	42.9	14.5	-	12.9	24.7	-	23.9	-	11.2	49.7	-	23.5	24.4	20.7	36.3	21.4	17.8	<0.1	23.9	31.1	15.7
Moisture Content (% Wet Weight)	%			-	7	30	12.6	-	11.4	-	-	19.3	-	10	33.2	-	-	-	17.2	26.6		15.1	<0.1	19.3	23.7	13.6
Total Organic Carbon	%			-	0.39	2.09	3.53	-	0.14	NDP	-	12.75	-	25.11	1.81	-	NDP	NDP	11.63	13.75	NDP	1.86	0.69	12.07	5.86	NDP
SOM (Calculated)	%			-	0.67	3.60	6.09	-	0.24	-	-	21.98	-	43.29	3.12	-	-	-	20.05	23.71	-	3.21	1.19			
pH	pH units	-		10.57	8.22	7.84	8.62	8.64	8.7	7.75	8.1	8.3	8.76	8.68	7.85	8.18	8.43	8.62	8.4	7.99	8.43	8.39	8.37			
General Description (Bulk Analysis)	--	-		-	Soil/Stone	Soil/Stone	Soil/Stone	-	Soil/Stone	Soil/Stone	-	soil/stones	-	soil/stones	soil/stones	-	soil/stones	soil stones	Soil Silt/ Stones	Soil/Stones/ Concrete	soil stones	soil stones	soil stones	soil/stones	soil/stones	soil/stones
Asbestos Fibres	--	-		-	NAD	NAD	NAD	-	NAD	Fibre Bundles	-	NAD	-	NAD	NAD	-	Fibre Bundles	Fibre Bundles	NAD	NAD	Fibre Bundles	NAD	NAD	NAD	NAD	Fibre Bundles
Asbestos Fibres (2)	--	-		-	-	-	-	-	-	-	-	-	-	-	-	-	Fibre Bundles	-	-	-	-	-	-	-	NAD	-
Asbestos ACM	--	-		-	NAD	NAD	NAD	-	NAD	NAD	-	NAD	-	NAD	NAD	-	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Type	--	-		-	NAD	NAD	NAD	-	NAD	Chrysotile	-	NAD	-	NAD	NAD	-	Chrysotile	Chrysotile	NAD	NAD	Chrysotile	NAD	NAD	NAD	NAD	Chrysotile
Asbestos Type (2)	--	-		-	-	-	-	-	-	-	-	-	-	-	-	-	Amosite	-	-	-	-	-	-	-	NAD	-
Asbestos Level Screen	%	-		-	NAD	NAD	NAD	-	NAD	<0.1	-	NAD	-	NAD	NAD	-	<0.1	<0.1	NAD	NAD	<0.1	NAD	NAD	NAD	NAD	less than 0.1%
Asbestos Gravimetric Quantification	mass %	-		-	NAD	NAD	NAD	-	NAD	<0.001	-	NAD	-	NAD	NAD	-	<0.001	<0.001	NAD	NAD	<0.001	NAD	NAD	-	-	<0.001
Asbestos PCOM Quantification (Fibres)	mass %	-		-	NAD	NAD	NAD	-	NAD	<0.001	-	NAD	-	NAD	NAD	-	<0.001	<0.001	NAD	NAD	<0.001	NAD	NAD	-	-	<0.001
Asbestos Gravimetric & PCOM Total	mass %	-		-	NAD	NAD	NAD	-	NAD	<0.001	-	NAD	-	NAD	NAD	-	<0.001	<0.001	NAD	NAD	<0.001	NAD	NAD	-	-	<0.001

		Sample Location		TP11		TP13		TP14		TP15		TP16		TP17		TP18	
		Sample Depth		0.00-1.50	1.50-2.70	0.00-1.50	1.50-2.70	0.00-1.50	1.50-3.00	0.00-1.50	1.50-3.00	0.00-1.50	1.50-1.90	0.00-1.50	1.50-1.90	0.00-1.50	1.50-2.70
		Soil Type		Made Ground	Made Ground	Made Ground	Gravelly Clayey SAND	Gravel	SAND and CLAY	Made Ground	Sand and Clay	Made Ground	Sand	Made Ground	Sand	Made Ground	Sand and Clay
		Lab Receipt Date															
Determinand	Units	RWOHG GAC[2,3]	Source														
Antimony	mg/kg	550	CL:AIRE, 2010	1	<1	NDP	<1	1	<1	2	<1	6	2	3	2	3	1
Arsenic	mg/kg	40	LQM, 2014	24.7	3.6	NDP	6	11.3	6.1	14.3	15.1	22.2	13.1	21.5	16.5	49.1	11.1
Barium	mg/kg	1300	CL:AIRE, 2010	519	821	NDP	24	46	14	114	45	95	91	190	63	100	69
Cadmium	mg/kg	85	LQM, 2014	<0.1	<0.1	NDP	<0.1	0.2	<0.1	0.6	0.2	4.4	0.2	0.1	<0.1	<0.1	0.4
Chromium	mg/kg	-		138	138.5	NDP	141.9	56.4	44.7	48.1	37.3	96.1	148.1	104	130.2	110.6	114
Chromium III	mg/kg	910	LQM, 2014	138	138.5	NDP	141.9	56.4	44.7	48.1	37.3	96.1	148.1	104	130.2	110.6	114
Hexavalent Chromium	mg/kg	6	LQM, 2014	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Copper	mg/kg	7100	LQM, 2014	122	119	NDP	7	36	7	28	14	417	49	59	23	41	18
Total Cyanide	mg/kg	-		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lead[4]	mg/kg	130	DEFRA, 2013	57	14	NDP	17	26	15	53	213	446	126	179	70	120	18
Mercury[5]	mg/kg	56	LQM, 2014	<0.1	<0.1	NDP	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	mg/kg	670	CL:AIRE, 2010	11.3	12	NDP	8.8	1.3	0.6	1.7	1.3	8.7	9.5	6.5	8.5	7	5.6
Nickel	mg/kg	180	LQM, 2014	49.3	66.9	NDP	10.7	19.5	10.3	21.5	15.9	16.8	42.2	36.5	17.8	27.1	48.8
Selenium	mg/kg	430	LQM, 2014	<1	<1	NDP	<1	1	<1	1	<1	<1	<1	<1	<1	<1	<1
Total Sulphate as SO4	mg/kg	-		1137	247	NDP	622	355	1030	397	1946	923	801	523	570	417	362
Sulphate as SO4 (2:1 Ext)	g/l	-															
Elemental Sulphur	mg/kg	-		6	8	3	29	10	24	13	1243	148	331	26	36	21	98
Sulphide	mg/kg	-		<10	<10	<10	<10	<10	<10	<10	42	<10	<10	<10	<10	<10	<10
Water Soluble Boron	mg/kg	11000	LQM, 2014	0.9	0.7	NDP	0.9	0.4	0.9	0.5	4	1	1.2	0.9	0.7	0.7	1.6
Ammoniacal Nitrogen as N	mg/kg	-		<0.3	<0.3	3.3	7.3	0.8	1.2	0.3	0.4	<0.3	<0.3	0.6	0.5	0.5	1.4
Zinc	mg/kg	40000	LQM, 2014	36	21	NDP	29	127	33	149	64	341	126	231	64	122	70
Naphthalene	mg/kg	2.3	LQM, 2014	0.11	<0.04	0.06	<0.04	<0.04	<0.04	0.11	0.05	7.04	25.65	0.15	0.05	0.08	<0.04
Acenaphthylene	mg/kg	2900	LQM, 2014	0.07	<0.03	0.1	<0.03	<0.03	<0.03	0.04	0.06	0.26	0.68	0.18	0.04	<0.03	<0.03
Acenaphthene	mg/kg	3000	LQM, 2014	0.12	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	<0.05	0.19	<0.50	0.37	<0.05	<0.05	<0.05
Fluorene	mg/kg	2800	LQM, 2014	0.16	<0.04	<0.04	<0.04	<0.04	<0.04	0.11	0.08	0.74	2.25	0.25	<0.04	<0.04	<0.04
Phenanthrene	mg/kg	1300	LQM, 2014	1.73	0.12	0.2	0.17	0.06	0.11	0.81	0.43	1.22	3.33	3.26	0.27	0.22	<0.03
Anthracene	mg/kg	31000	LQM, 2014	0.42	<0.04	0.1	0.05	0.04	0.05	0.26	0.23	0.19	<0.40	0.69	0.06	0.07	<0.04
Fluoranthene	mg/kg	1500	LQM, 2014	1.47	0.07	0.68	0.17	0.19	0.23	0.79	0.94	0.55	0.48	4.97	0.57	0.48	<0.03
Pyrene	mg/kg	3700	LQM, 2014	1.2	0.07	0.64	0.15	0.23	0.21	0.84	0.77	0.72	1	4.68	0.54	0.42	<0.03
Benzo(a)anthracene	mg/kg	11	LQM, 2014	0.67	0.09	0.51	0.1	0.15	0.2	0.46	0.57	0.23	<0.60	2.51	0.25	0.37	<0.06
Chrysene	mg/kg	30	LQM, 2014	0.78	0.07	0.53	0.09	0.13	0.14	0.45	0.63	0.27	0.26	3.4	0.3	0.18	<0.02
Benzo(bk)fluoranthene	mg/kg	-		1.01	<0.07	0.72	0.13	0.22	0.21	0.74	1.04	0.47	<0.70	5.47	0.72	0.73	<0.07
Benzo(a)pyrene	mg/kg	3.2	LQM, 2014	0.51	<0.04	0.45	0.08	0.11	0.14	0.32	0.59	0.21	<0.40	3.2	0.39	0.37	<0.04
Indeno(123cd)pyrene	mg/kg	45	LQM, 2014	0.31	<0.04	0.25	<0.04	0.08	0.07	0.25	0.36	0.18	<0.40	2.32	0.27	0.26	<0.04
Dibenzo(ah)anthracene	mg/kg	0.31	LQM, 2014	0.09	<0.04	0.06	<0.04	<0.04	<0.04	0.06	0.09	<0.04	<0.40	0.51	0.08	0.08	<0.04
Benzo(ghi)perylene	mg/kg	360	LQM, 2014	0.28	<0.04	0.2	<0.04	0.09	0.06	0.25	0.25	0.18	<0.40	2.44	0.3	0.25	<0.04
Coronene	mg/kg	-		0.06	<0.04	<0.04	<0.04	<0.04	<0.04	0.06	0.05	<0.04	<0.40	0.44	0.07	0.06	<0.04
PAH 6 Total #	mg/kg	-		3.58	<0.22	2.3	0.38	0.69	0.71	2.35	3.18	1.59	<2.20	18.4	2.25	2.09	<0.22
PAH 17 Total	mg/kg	-		8.99	<0.64	4.5	0.94	1.3	1.42	5.66	6.14	12.45	33.65	34.84	3.91	3.57	<0.64
Benzo(b)fluoranthene	mg/kg	3.9	LQM, 2014	0.73	<0.05	0.52	0.09	0.16	0.15	0.53	0.75	0.34	<0.50	3.94	0.52	0.53	<0.05
Benzo(k)fluoranthene	mg/kg	110	LQM, 2014	0.28	<0.02	0.2	0.04	0.06	0.06	0.21	0.29	0.13	<0.20	1.53	0.2	0.2	<0.02
Benzo(j)fluoranthene	mg/kg	-		<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	1	<1	<1	<1
Mineral Oil (C10 C40)	mg/kg	-		67	<30	37	<30	281	<30	1161	<30	1726	7473	65	<30	<30	<30
>C5 C6	mg/kg	42	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.2	<0.1	<0.1	<0.1	<0.1
>C6 C8	mg/kg	100	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.9	178.1	<0.1	<0.1	<0.1	<0.1
>C8 C10	mg/kg	27	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	12.9	320.2	<0.1	<0.1	<0.1	<0.1
>C10 C12	mg/kg	130	LQM, 2014	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	8.1	<0.2	299.5	1519.9	<0.2	<0.2	<0.2	<0.2
>C12 C16	mg/kg	1100	LQM, 2014	<4	<4	<4	<4	29	<4	12	<4	603	2683	<4	<4	<4	<4
>C16 C21	mg/kg	-		<7	<7	<7	<7	17	<7	23	<7	630	2565	<7	<7	<7	<7
>C21 C35	mg/kg	-		67	24	37	<7	235	<7	1043	<7	193	705	65	<7	<7	<7
>C16 C35	mg/kg	65000	LQM, 2014	74	31	44	<14	252	<14	1066	<14	823	3270	72	<14	<14	<14
>C35 C40	mg/kg	65000	LQM, 2014	<7	<7	<7	<7	<7	<7	75	<7	<7	<7	<7	<7	<7	<7
Total aliphatics (C5 to 40)	mg/kg	-		67	<26	37	<26	281	<26	1162	<26	1739	7982	65	<26	<26	<26
>C5 EC7	mg/kg	370	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1
>EC7 EC8	mg/kg	860	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1
>EC8 EC10	mg/kg	47	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	3.2	92.1	<0.1	<0.1	<0.1	<0.1
>EC10 EC12	mg/kg	250	LQM, 2014	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	6.5	<0.2	335.8	1324.8	<0.2	<0.2	<0.2	<0.2
>EC12 EC16	mg/kg	1800	LQM, 2014	<4	<4	<4	<4	<4	<4	13	<4	345	1491	4	<4	<4	<4
>EC16 EC21	mg/kg	1900	LQM, 2014	<7	<7	<7	<7	<7	<7	28	24	345	1249	45	9	11	<7
>EC21 EC35	mg/kg	1900	LQM, 2014	51	<7	93	<7	82	<7	435	84	202	325	450	74	59	<7
>EC35 EC40[6]	mg/kg	1900	LQM, 2014	<7	<7	27	<7	<7	<7	38	<7	28	<7	44	<7	<7	<7
Total aromatics (C5 to 40)	mg/kg	-		51	<26	120	<26	82	<26	521	108	1259	4482	543	83	70	<26
Total aliphatics and aromatics(C5 to 40)	mg/kg	-		118	<52	157	<52	363	<52	1683	108	2998	12464	608	83	70	<52
MTBE	ug/kg	73000	CL:AIRE, 2010	<5	<5	<5	<5	<5	<5	<5	<5	<5	5100	<5	<5	<5	<5
Benzene	ug/kg	380	LQM, 2014	<5	<5	<5	<5	<5	<5	<5	<5	19	<50	<5	<5	<5	<5
Toluene	ug/kg	880000	LQM, 2014	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	<5
Ethylbenzene	ug/kg	83000	LQM, 2014	12	<5	<5	<5	9	11	31	<5	123	47207	22	7	9	<5
m/p Xylene	ug/kg	79000	LQM, 2014	19	<5	<5	<5	13	19	45	<5	3019	40552	20	16	<5	<5
o Xylene	ug/kg	88000	LQM, 2014	<5	<5	<5	<5	<5	<5	46	<5	115	4296	<5	<5	<5	<5
PCB 28	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<25	<25	<5	<5	<5	<5
PCB 52	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<25	<25	<5	<5	<5	<5
PCB 101	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<25	<25	<5	<5	<5	<5
PCB 118	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<25	<25	<5	<5	<5	<5
PCB 138	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<25	<25	<5	<5	<5	<5
PCB 153	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<25	<25	<5	<5	<5	<5
PCB 180	ug/kg	-		<5	<5	<5	<5	<5	<5	<5	<5	<25	<25	<5	<5	<5	<5
Total 7 PCBs[7]	ug/kg	8	EA, 2009	<35	<35	<35	<35	<35	<35	<35	<35	<175	<175	<35	<35	<35	<35
Phenol	mg/kg	750	LQM, 2014	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Natural Moisture Content	%			11.2	44.1	11.8	28.4	7.7	23.5	10.3	25.8	11.5	25.5	11.9	16.7	13.4	20.9
Moisture Content (% Wet Weight)	%			10.1	30.6	10.5	22.1	7.1	19.1	9.3	20.5	10.3	20.3	10.7	14.3	11.8	17.3
Total Organic Carbon	%			22.09	31.39	NDP	2.9	0.41	0.53	1.02	2.46	1.55	2.06	1.55	0.98	0.95	0.47
SOM (Calculated)	%																
pH	pH units	-		9.24	8.38	8.72	8.62	8.74	8.56	8.69	8.52	8.24	8.52	8.66	8.83	8.75	8.29
General Description (Bulk Analysis)	--	-		Soil	Soil	Soil	Soil/Stone	soil/stones	soil/stones	soil/stones	soil/stones	Soil/Stones	Soil/Stones	Soil/Stones	Soil/Stone	soil.stones	soil.stones
Asbestos Fibres	--	-		NAD	NAD	Fibre Bundles	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Fibres (2)	--	-															
Asbestos ACM	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Type	--	-		NAD	NAD	Chrysotile	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Type (2)	--	-															
Asbestos Level Screen	%	-		NAD	NAD	less than 0.1%	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Gravimetric Quantification	mass %	-		-	-	<0.001	-	-	-	-	-	-	-	-	-	-	-
Asbestos PCOM Quantification (Fibres)	mass %	-		-	-	<0.001	-	-	-	-	-	-	-	-	-	-	-
Asbestos Gravimetric & PCOM Total	mass %	-		-	-	<0.001	-	-	-	-	-	-	-	-	-	-	-

Soil Screening Notes:

nnn Indicate where the Residential GAC is exceeded/ asbestos fibres encountered

Numbers in **BOLD** text show where results are above the LOD

[1] 'LOD' = Laboratory limit of detection

[2] 'GAC' = 'Generic Assessment Criteria'; Residential GACs without home grown produce

[3] For some PAH and TPH bands, the GAC exceeds the contaminant's solubility or vapour saturation limit.

[4] Most conservative GAC value applied from a range of 130 to 330 mg/kg.

[5] GAC value for inorganic mercury was applied, as it is more likely to be present on site than the other forms.

[6] Screening values for this band are not available; GAC for band >35-44 has been applied

[7] GAC value is for a sum of PCDDs, PCDFs and dioxin-like PCBs and may not be appropriate for direct comparison against the sum of these 7 PCB cogeners

- = No available GAC or individual constituents already assessed

Soil Concentrations

Sample ID				TP109	TP109	TP109	BH24	BH24	BH24	BH24	BH24	BH24	BH25	BH25	BH25	TP2	TP2	TP3	TP3	TP3
	Depth (m bGL)			0.6	1.7	2.9	1	1	2	3	4	4	1	2	3		2.80-3.50	0.00-1.50	1.50-2.20	2.20-3.80
Determinand	Units	LOD[1]	Residential GAC[2]	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Gravelly Silty SAND	Gravelly Silty SAND	Made Ground	Made Ground	Made Ground	Made Ground	Sandy Gravelly CLAY	Made Ground	Made Ground	Gravelly Silty SAND
TPH CWG																				
Aliphatics																				
>C5 C6	mg/kg	<0.1	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C6 C8	mg/kg	<0.1	100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C8 C10	mg/kg	<0.1	27	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.7	0.3	<0.1	<0.1	1	<0.1	<0.1	<0.1	<0.1	<0.1
>C10 C12	mg/kg	<0.2	130	2.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>C12 C16	mg/kg	<4	1100	46	<4	<4	<4	<4	<4	<4	<4	<4	<4	9	<4	<4	10	9	12	<4
>C16 C21	mg/kg	<7	-	150	<7	<7	<7	<7	<7	<7	<7	<7	24	40	<7	<7	31	23	43	<7
>C21 C35	mg/kg	<7	-	1058	36	<7	147	70	<7	30	<7	52	120	192	77	-	-	-	-	-
>C16 C35	mg/kg	<14	65000	1208	43	<14	154	77	<14	37	<14	59	144	232	84	<7	31	23	43	<7
>C35 C40	mg/kg	<7	65000	133	<7	<7	47	10	<7	<7	<7	<7	32	99	36	-	-	-	-	-
Total aliphatics (C5 to 40)	mg/kg	<26	-	1389	36	<26	194	80	<26	30	<26	52	176	340	114	-	-	-	-	-
Aromatics																				
>C5 EC7	mg/kg	<0.1	370	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC7 EC8	mg/kg	<0.1	860	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC8 EC10	mg/kg	<0.1	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC10 EC12	mg/kg	<0.2	250	3.9	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1.0	<1.0	<0.2
>EC12 EC16	mg/kg	<4	1800	121	<4	<4	8	5	<4	<4	<4	<4	<4	8	<4	11	10	<20	<20	<4
>EC16 EC21	mg/kg	<7	1900	553	13	18	84	116	<7	<7	<7	17	46	77	77	107	64	<35	<35	<7
>EC21 EC35	mg/kg	<7	1900	1776	181	100	389	477	<7	44	21	196	277	490	604	668	466	558	578	<7
>EC35 EC40[3]	mg/kg	<7	1900	413	102	48	96	93	<7	<7	<7	<7	97	252	156	-	-	-	-	-

Hazard Quotients

Sample ID				TP109	TP109	TP109	BH24	BH24	BH24	BH24	BH24	BH24	BH25	BH25	BH25	TP2	TP2	TP3	TP3	TP3
Depth (m bGL)				0.6	1.7	2.9	1	1	2	3	4	4	1	2	3		2.80-3.50	0.00-1.50	1.50-2.20	2.20-3.80
Determinand	Units	LOD[1]	Residential GAC[2]	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Gravelly Silty SAND	Gravelly Silty SAND	Made Ground	Made Ground	Made Ground	Made Ground	Sandy Gravelly CLAY	Made Ground	Made Ground	Gravelly Silty SAND
TPH CWG																				
Aliphatics																				
>C5 C6	mg/kg	<0.1	42	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024
>C6 C8	mg/kg	<0.1	100	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010	0.0010
>C8 C10	mg/kg	<0.1	27	0.0037	0.0037	0.0037	0.0037	0.0037	0.0037	0.0037	0.0259	0.0111	0.0037	0.0037	0.0370	0.0037	0.0037	0.0037	0.0037	0.0037
>C10 C12	mg/kg	<0.2	130	0.0162	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015	0.0015
>C12 C16	mg/kg	<4	-	0.0418	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036	0.0036	0.0082	0.0036	0.0036	0.0091	0.0082	0.0109	0.0036
>C16 C35	mg/kg	<14	65000	0.0186	0.0007	0.0002	0.0024	0.0012	0.0002	0.0006	0.0002	0.0009	0.0022	0.0036	0.0013	0.0001	0.0005	0.0004	0.0007	0.0001
>C35 C40	mg/kg	<7	6500	0.0020	0.0001	0.0001	0.0007	0.0002	0.0001	0.0001	0.0001	0.0001	0.0005	0.0015	0.0006	-	-	-	-	-
Aromatics																				
>C5 EC7	mg/kg	<0.1	370	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003
>EC7 EC8	mg/kg	<0.1	860	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
>EC8 EC10	mg/kg	<0.1	47	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021	0.0021
>EC10 EC12	mg/kg	<0.2	250	0.0156	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0040	0.0040	0.0008
>EC12 EC16	mg/kg	<4	1800	0.0672	0.0022	0.0022	0.0044	0.0028	0.0022	0.0022	0.0022	0.0022	0.0022	0.0044	0.0022	0.0061	0.0056	0.0111	0.0111	0.0022
>EC16 EC21	mg/kg	<7	1900	0.2911	0.0068	0.0095	0.0442	0.0611	0.0037	0.0037	0.0037	0.0089	0.0242	0.0405	0.0405	0.0563	0.0337	0.0184	0.0184	0.0037
>EC21 EC35	mg/kg	<7	1900	0.9347	0.0953	0.0526	0.2047	0.2511	0.0037	0.0232	0.0111	0.1032	0.1458	0.2579	0.3179	0.3516	0.2453	0.2937	0.3042	0.0037
>EC35 EC40°	mg/kg	<7	1900	0.2174	0.0537	0.0253	0.0505	0.0489	0.0037	0.0037	0.0037	0.0037	0.0511	0.1326	0.0821	-	-	-	-	-
Sum of Hazard Quotient				1.6142	**0.1744**	**0.1055**	**0.3226**	**0.3807**	**0.0292**	**0.0490**	**0.0588**	**0.1420**	**0.2416**	**0.4607**	**0.4935**	**0.4297**	**0.3060**	**0.3469**	**0.3605**	**0.0253**

Soil Concentrations

Sample ID				TP105	TP105	TP105	TP106	TP106	TP107	TP107	TP108	TP108	TP108	TP115	TP115	BH14	BH14	BH16	BH16
	Depth (m bGL)			0.70	1.30	2.2	0.9	2.1	0.6	1.5	1.2	2.5	3.7	0.8	2.8	1	3	1	2
Determinand	Units	LOD[1]	Residential GAC[2]	Made Ground	Made Ground	Made Ground	Made Ground	Clayey Sandy GRAVEL	Made Ground	Made Ground	Made Ground	Sandy Gravelly CLAY	Gravelly Silty SAND	Made Ground	Gravelly Silty SAND	Made Ground	Sandy SILT	Made Ground	Made Ground
TPH CWG																			
Aliphatics																			
>C5 C6	mg/kg	<0.1	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C6 C8	mg/kg	<0.1	100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C8 C10	mg/kg	<0.1	27	<0.1	**0.2**	0.7	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C10 C12	mg/kg	<0.2	130	1.5	<0.2	3.8	<0.2	<0.2	<0.2	5.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>C12 C16	mg/kg	<4	1100	<4	<4	<4	<4	<4	<4	45	<4	<4	<4	23	<4	<4	<4	<4	<4
>C16 C21	mg/kg	<7	-	<7	12	<7	<7	40	<7	87	<7	<7	<7	79	<7	<7	<7	14	10
>C21 C35	mg/kg	<7	-	9	108	34	39	267	<7	210	18	<7	<7	145	173	12	<7	91	75
>C16 C35	mg/kg	<14	65000	16	120	41	46	307	<14	297	25	<14	<14	224	180	19	<14	105	85
>C35 C40	mg/kg	<7	65000	<7	16	10	<7	62	<7	67	<7	<7	<7	42	87	<7	<7	19	12
Aromatics																			
>C5 EC7	mg/kg	<0.1	370	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC7 EC8	mg/kg	<0.1	860	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC8 EC10	mg/kg	<0.1	47	<0.1	0.3	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC10 EC12	mg/kg	<0.2	250	0.7	<0.2	2.9	<0.2	<0.2	<0.2	1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>EC12 EC16	mg/kg	<4	1800	<4	<4	<4	<4	12	<4	39	<4	<4	<4	6	<4	<4	<4	10	9
>EC16 EC21	mg/kg	<7	1900	<7	49	<7	27	95	<7	146	29	<7	<7	44	33	<7	<7	77	62
>EC21 EC35	mg/kg	<7	1900	45	246	61	136	510	60	609	298	<7	<7	258	269	36	<7	235	280
>EC35 EC40[3]	mg/kg	<7	1900	<7	46	20	31	145	52	234	73	<7	<7	96	106	21	<7	56	75

Hazard Quotients

Sample ID				TP105	TP105	TP105	TP106	TP106	TP107	TP107	TP108	TP108	TP108	TP115	TP115	BH14	BH14	BH16	BH16
Depth (m bGL)				0.70	1.30	2.2	0.9	2.1	0.6	1.5	1.2	2.5	3.7	0.8	2.8	1	3	1	2
Determinand	Units	LOD[1]	Residential GAC[2]	Made Ground	Made Ground	Made Ground	Made Ground	Clayey Sandy GRAVEL	Made Ground	Made Ground	Made Ground	Sandy Gravelly CLAY	Gravelly Silty SAND	Made Ground	Gravelly Silty SAND	Made Ground	Sandy SILT	Made Ground	Made Ground
TPH CWG																			
Aliphatics																			
>C5 C6	mg/kg	<0.1	42	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381
>C6 C8	mg/kg	<0.1	100	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
>C8 C10	mg/kg	<0.1	27	0.003704	0.007407	0.025926	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704
>C10 C12	mg/kg	<0.2	130	0.011538	0.001538	0.029231	0.001538	0.001538	0.001538	0.043846	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538
>C12 C16	mg/kg	<4	1100	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.040909	0.003636	0.003636	0.003636	0.020909	0.003636	0.003636	0.003636	0.003636	0.003636
>C16 C35	mg/kg	<14	65000	0.000246	0.001846	0.000631	0.000708	0.004723	0.000215	0.004569	0.000385	0.000215	0.000215	0.003446	0.002769	0.000292	0.000215	0.001615	0.001308
>C35 C40	mg/kg	<7	6500	0.000108	0.000246	0.000154	0.000108	0.000954	0.000108	0.001031	0.000108	0.000108	0.000108	0.000646	0.001338	0.000108	0.000108	0.000292	0.000185
Aromatics																			
>C5 EC7	mg/kg	<0.1	370	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027
>EC7 EC8	mg/kg	<0.1	860	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116
>EC8 EC10	mg/kg	<0.1	47	0.002128	0.006383	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128
>EC10 EC12	mg/kg	<0.2	250	0.0028	0.0008	0.0116	0.0008	0.0008	0.0008	0.004	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008
>EC12 EC16	mg/kg	<4	1800	0.002222	0.002222	0.002222	0.002222	0.006667	0.002222	0.021667	0.002222	0.002222	0.002222	0.003333	0.002222	0.002222	0.002222	0.005556	0.005
>EC16 EC21	mg/kg	<7	1900	0.003684	0.025789	0.003684	0.014211	0.05	0.003684	0.076842	0.015263	0.003684	0.003684	0.023158	0.017368	0.003684	0.003684	0.040526	0.032632
>EC21 EC35	mg/kg	<7	1900	0.023684	0.129474	0.032105	0.071579	0.268421	0.031579	0.320526	0.156842	0.003684	0.003684	0.135789	0.141579	0.018947	0.003684	0.123684	0.147368
>EC35 EC40[3]	mg/kg	<7	1900	0.003684	0.024211	0.010526	0.016316	0.076316	0.027368	0.123158	0.038421	0.003684	0.003684	0.050526	0.055789	0.011053	0.003684	0.029474	0.039474
Sum of Hazard Quotient				0.061202	0.207321	0.125611	0.120717	0.422654	0.080751	0.646147	0.228815	0.029172	0.029172	0.249746	0.23664	0.05188	0.029172	0.216721	0.24154

Soil Concentrations

Sample ID				BH17	BH17	BH18	BH18	BH18	BH18	BH18	BH19	BH19	BH20	BH20	BH21	BH21	BH21	BH22	BH22	BH22	BH23	TP1	TP1	TP4	TP4
	Depth (m bGL)			1	3	1	1	2	3	3	1	3	1	3	1	2	3	1	3	4	1	0.00-1.50	1.50-3.00	0.00-1.50	1.50-2.50
Determinand	Units	LOD[1]	Residential GAC[2]	Made Ground	SILT/CLAY	Made Ground	Made Ground	Made Ground	Silty Gravel	Silty Gravel	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Sandy Gravelly CLAY	Made Ground	Sandy Gravelly CLAY
TPH CWG																									
Aliphatics																									
>C5 C6	mg/kg	<0.1	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1
>C6 C8	mg/kg	<0.1	100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1
>C8 C10	mg/kg	<0.1	27	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1
>C10 C12	mg/kg	<0.2	130	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>C12 C16	mg/kg	<4	1100	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	7
>C16 C21	mg/kg	<7	-	<7	<7	<7	<7	<7	<7	13	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	11	12
>C21 C35	mg/kg	<7	-	41	<7	42	28	33	33	114	110	20	15	<7	<7	<7	<7	66	51	32	15	-	-	-	-
>C16 C35	mg/kg	<14	65000	48	<14	49	35	40	40	127	117	27	22	<14	<14	<14	<14	73	58	39	22	<7	<7	11	12
>C35 C40	mg/kg	<7	65000	<7	<7	<7	<7	<7	<7	41	49	17	<7	<7	<7	<7	<7	18	<7	<7	<7	-	-	-	-
Aromatics																									
>C5 EC7	mg/kg	<0.1	370	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1
>EC7 EC8	mg/kg	<0.1	860	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1
>EC8 EC10	mg/kg	<0.1	47	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1
>EC10 EC12	mg/kg	<0.2	250	<0.2	<0.2	0.8	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>EC12 EC16	mg/kg	<4	1800	<4	<4	<4	<4	8	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	6	5	7
>EC16 EC21	mg/kg	<7	1900	<7	<7	21	18	47	<7	42	22	<7	9	42	12	24	<7	28	35	14	11	19	54	39	44
>EC21 EC35	mg/kg	<7	1900	84	<7	21	131	197	131	283	205	86	99	150	142	146	<7	235	224	128	127	146	336	259	240
>EC35 EC40[3]	mg/kg	<7	1900	34	<7	<7	27	49	56	91	108	55	37	35	38	38	<7	83	43	29	50	-	-	-	-

Hazard Quotients

Sample ID				BH17	BH17	BH18	BH18	BH18	BH18	BH18	BH19	BH19	BH20	BH20	BH21	BH21	BH21	BH22	BH22	BH22	BH23	TP1	TP1	TP4	TP4
	Depth (m bGL)			1	3	1	1	2	3	3	1	3	1	3	1	2	3	1	3	4	1	0.00-1.50	1.50-3.00	0.00-1.50	1.50-2.50
Determinand	Units	LOD[1]	Residential GAC[2]	Made Ground	SILT/CLAY	Made Ground	Made Ground	Made Ground	Silty Gravel	Silty Gravel	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Sandy Gravelly CLAY	Made Ground	Sandy Gravelly CLAY
TPH CWG																									
Aliphatics																									
>C5 C6	mg/kg	<0.1	42	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.02381	0.002381	0.002381	0.002381	0.002381
>C6 C8	mg/kg	<0.1	100	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.01	0.001	0.001	0.001	0.001
>C8 C10	mg/kg	<0.1	27	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.037037	0.003704	0.003704	0.003704	0.003704
>C10 C12	mg/kg	<0.2	130	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538
>C12 C16	mg/kg	<4	1100	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.006364
>C16 C35	mg/kg	<14	65000	0.000738	0.000215	0.000754	0.000538	0.000615	0.000615	0.001954	0.0018	0.000415	0.000338	0.000215	0.000215	0.000215	0.000215	0.001123	0.000892	0.0006	0.000338	0.000108	0.000108	0.000169	0.000185
>C35 C40	mg/kg	<7	6500	0.000108	0.000108	0.000108	0.000108	0.000108	0.000108	0.000631	0.000754	0.000262	0.000108	0.000108	0.000108	0.000108	0.000108	0.000277	0.000108	0.000108	0.000108	-	-	-	-
Aromatics																									
>C5 EC7	mg/kg	<0.1	370	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.002703	0.00027	0.00027	0.00027	0.00027
>EC7 EC8	mg/kg	<0.1	860	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.001163	0.000116	0.000116	0.000116	0.000116
>EC8 EC10	mg/kg	<0.1	47	0.004255	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.021277	0.002128	0.002128	0.002128	0.002128
>EC10 EC12	mg/kg	<0.2	250	0.0008	0.0008	0.0032	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008
>EC12 EC16	mg/kg	<4	1800	0.002222	0.002222	0.002222	0.002222	0.004444	0.002222	0.002222	0.002222	0.002222	0.002222	0.002222	0.002222	0.002222	0.002222	0.002222	0.002222	0.002222	0.002222	0.002222	0.003333	0.002778	0.003889
>EC16 EC21	mg/kg	<7	1900	0.003684	0.003684	0.011053	0.009474	0.024737	0.003684	0.022105	0.011579	0.003684	0.004737	0.022105	0.006316	0.012632	0.003684	0.014737	0.018421	0.007368	0.005789	0.01	0.028421	0.020526	0.023158
>EC21 EC35	mg/kg	<7	1900	0.044211	0.003684	0.011053	0.068947	0.103684	0.068947	0.148947	0.107895	0.045263	0.052105	0.078947	0.074737	0.076842	0.003684	0.123684	0.117895	0.067368	0.066842	0.076842	0.176842	0.136316	0.126316
>EC35 EC40[3]	mg/kg	<7	1900	0.017895	0.003684	0.003684	0.014211	0.025789	0.029474	0.047895	0.056842	0.028947	0.019474	0.018421	0.02	0.02	0.003684	0.043684	0.022632	0.015263	0.026316	-	-	-	-
Sum of Hazard Quotient				0.086559	0.029172	0.046847	0.111074	0.174952	0.120624	0.239328	0.196666	0.096368	0.094558	0.137593	0.119172	0.127593	0.029172	0.201301	0.177743	0.108504	0.203579	0.104746	0.224278	0.175363	0.171848

Soil Concentrations

Sample ID				TP5	TP5	TP6	TP6	TP7	TP7	TP8	TP8	TP9	TP9	TP10	TP10	TP20
	Depth (m bGL)			0.00-1.50	1.50-2.50	0.00-1.50	1.50-2.60	0.00-1.50	1.50-3.00	1.60-2.50	2.50-3.50	0.00-1.50	1.50-3.00	0.00-1.50	1.50-2.80	0.00-0.75
Determinand	**Units**	**LOD[1]**	**Residential GAC[2]**	Sandy Gravelly CLAY	Silty Gravel	Made Ground	Made Ground	Made Ground	Sandy Gravelly CLAY	Made Ground	Made Ground	Made Ground	Silty Gravel	Made Ground	Sandy Gravelly CLAY	Sandy Gravelly CLAY
TPH CWG																
Aliphatics																
>C5 C6	mg/kg	<0.1	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C6 C8	mg/kg	<0.1	100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C8 C10	mg/kg	<0.1	27	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C10 C12	mg/kg	<0.2	130	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>C12 C16	mg/kg	<4	1100	<4	<4	<4	<4	<4	<4	26	<4	<4	<4	<4	<4	6
>C16 C21	mg/kg	<7	-	14	<7	29	29	<7	<7	33	<7	<7	21	<7	<7	14
>C21 C35	mg/kg	<7	-	-	-	-	-	-	-	-	-	-	-	-	-	166
>C16 C35	mg/kg	<14	65000	14	<7	29	29	<7	<7	33	<7	<7	21	<7	<7	180
>C35 C40	mg/kg	<7	65000	-	-	-	-	-	-	-	-	-	-	-	-	<7
Aromatics																
>C5 EC7	mg/kg	<0.1	370	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC7 EC8	mg/kg	<0.1	860	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC8 EC10	mg/kg	<0.1	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC10 EC12	mg/kg	<0.2	250	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>EC12 EC16	mg/kg	<4	1800	8	<4	<4	<4	<4	<4	20	<4	<4	<4	<4	<4	<4
>EC16 EC21	mg/kg	<7	1900	85	13	25	37	25	25	59	12	22	16	<7	<7	12
>EC21 EC35	mg/kg	<7	1900	500	113	242	318	182	120	321	103	181	145	<7	<7	92
>EC35 EC40[3]	mg/kg	<7	1900	-	-	-	-	-	-	-	-	-	-	-	-	<7

Hazard Quotients

Sample ID				TP5	TP5	TP6	TP6	TP7	TP7	TP8	TP8	TP9	TP9	TP10	TP10	TP20
	Depth (m bGL)			0.00-1.50	1.50-2.50	0.00-1.50	1.50-2.60	0.00-1.50	1.50-3.00	1.60-2.50	2.50-3.50	0.00-1.50	1.50-3.00	0.00-1.50	1.50-2.80	0.00-0.75
Determinand	**Units**	**LOD[1]**	**Residential GAC[2]**	Sandy Gravelly CLAY	Silty Gravel	Made Ground	Made Ground	Made Ground	Sandy Gravelly CLAY	Made Ground	Made Ground	Made Ground	Silty Gravel	Made Ground	Sandy Gravelly CLAY	Sandy Gravelly CLAY
TPH CWG																
Aliphatics																
>C5 C6	mg/kg	<0.1	42	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381
>C6 C8	mg/kg	<0.1	100	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
>C8 C10	mg/kg	<0.1	27	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704
>C10 C12	mg/kg	<0.2	130	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.023077	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538
>C12 C16	mg/kg	<4	1100	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.023636	0.003636	0.003636	0.003636	0.003636	0.003636	0.005455
>C16 C35	mg/kg	<14	65000	0.000215	0.000108	0.000446	0.000446	0.000108	0.000108	0.000508	0.000108	0.000108	0.000323	0.000108	0.000108	0.002769
>C35 C40	mg/kg	<7	6500	-	-	-	-	-	-	-	-	-	-	-	-	0.000108
Aromatics																
>C5 EC7	mg/kg	<0.1	370	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027
>EC7 EC8	mg/kg	<0.1	860	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116
>EC8 EC10	mg/kg	<0.1	47	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128
>EC10 EC12	mg/kg	<0.2	250	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008
>EC12 EC16	mg/kg	<4	1800	0.004444	0.002222	0.002222	0.002222	0.002222	0.002222	0.011111	0.002222	0.002222	0.002222	0.002222	0.002222	0.002222
>EC16 EC21	mg/kg	<7	1900	0.044737	0.006842	0.013158	0.019474	0.013158	0.013158	0.031053	0.006316	0.011579	0.008421	0.003684	0.003684	0.006316
>EC21 EC35	mg/kg	<7	1900	0.263158	0.059474	0.127368	0.167368	0.095789	0.063158	0.168947	0.054211	0.095263	0.076316	0.003684	0.003684	0.048421
>EC35 EC40[3]	mg/kg	<7	1900	-	-	-	-	-	-	-	-	-	-	-	-	0.003684
Sum of Hazard Quotient				0.328128	0.084219	0.158768	0.205084	0.126851	0.094219	0.268731	0.07843	0.124746	0.102856	0.025272	0.025272	0.080912

Soil Concentrations

Sample ID				TP102	TP102	TP102	TP102	TP103	TP103	TP103	TP104	TP104	TP104	BH2	BH3	BH3	BH3	BH4	BH4
Depth (m bGL)				0.40	0.80	1.50	4.30	0.50	2.50	3.50	0.5	1.5	2.20	1	1	3	4	1	3
Determinand	Units	LOD[1]	Residential GAC[2]	Made Ground	Made Ground	Sandy Gravelly CLAY	Soil	Made Ground	Sandy Gravelly SILT	SILT	Made Ground	Made Ground	Made Ground	Silty SAND	SAND	SILT	SILT	Made Ground	Silty SAND
TPH CWG																			
Aliphatics																			
>C5 C6	mg/kg	<0.1	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C6 C8	mg/kg	<0.1	100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C8 C10	mg/kg	<0.1	27	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1
>C10 C12	mg/kg	<0.2	130	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>C12 C16	mg/kg	<4	1100	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
>C16 C21	mg/kg	<7	-	9	<7	<7	<7	<7	<7	<7	<7	10	30	<7	<7	<7	<7	<7	<7
>C21 C35	mg/kg	<7	-	61	<7	<7	<7	<7	<7	<7	72	54	61	<7	<7	<7	<7	<7	<7
>C16 C35	mg/kg	<14	65000	70	<14	<14	<14	<14	<14	<14	79	64	91	<14	<14	<14	<14	<14	<14
>C35 C40	mg/kg	<7	65000	<7	<7	<7	<7	<7	<7	<7	32	21	<7	<7	<7	<7	<7	<7	<7
Aromatics																			
>C5 EC7	mg/kg	<0.1	370	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC7 EC8	mg/kg	<0.1	860	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC8 EC10	mg/kg	<0.1	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC10 EC12	mg/kg	<0.2	250	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>EC12 EC16	mg/kg	<4	1800	<4	<4	<4	<4	<4	9	7	<4	6	<4	<4	<4	<4	<4	<4	<4
>EC16 EC21	mg/kg	<7	1900	<7	<7	<7	<7	<7	106	95	11	48	31	<7	<7	19	<7	<7	<7
>EC21 EC35	mg/kg	<7	1900	49	<7	<7	<7	37	328	294	232	279	169	<7	<7	90	<7	<7	<7
>EC35 EC40[3]	mg/kg	<7	1900	<7	<7	<7	<7	<7	54	44	121	107	37	<7	<7	<7	<7	<7	<7

Hazard Quotients

Sample ID				TP102	TP102	TP102	TP102	TP103	TP103	TP103	TP104	TP104	TP104	BH2	BH3	BH3	BH3	BH4	BH4
Depth (m bGL)				0.40	0.80	1.50	4.30	0.50	2.50	3.50	0.5	1.5	2.20	1	1	3	4	1	3
Determinand	Units	LOD[1]	Residential GAC[2]	Made Ground	Made Ground	Sandy Gravelly CLAY	Soil	Made Ground	Sandy Gravelly SILT	SILT	Made Ground	Made Ground	Made Ground	Silty SAND	SAND	SILT	SILT	Made Ground	Silty SAND
TPH CWG																			
Aliphatics																			
>C5 C6	mg/kg	<0.1	42	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381
>C6 C8	mg/kg	<0.1	100	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
>C8 C10	mg/kg	<0.1	27	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704
>C10 C12	mg/kg	<0.2	130	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538
>C12 C16	mg/kg	<4	1100	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636
>C16 C35	mg/kg	<14	65000	0.001077	0.000215	0.000215	0.000215	0.000215	0.000215	0.000215	0.001215	0.000985	0.0014	0.000215	0.000215	0.000215	0.000215	0.000215	0.000215
>C35 C40	mg/kg	<7	6500	0.000108	0.000108	0.000108	0.000108	0.000108	0.000108	0.000108	0.000492	0.000323	0.000108	0.000108	0.000108	0.000108	0.000108	0.000108	0.000108
Aromatics																			
>C5 EC7	mg/kg	<0.1	370	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027
>EC7 EC8	mg/kg	<0.1	860	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116
>EC8 EC10	mg/kg	<0.1	47	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128
>EC10 EC12	mg/kg	<0.2	250	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008
>EC12 EC16	mg/kg	<4	1800	0.002222	0.002222	0.002222	0.002222	0.002222	0.005	0.003889	0.002222	0.003333	0.002222	0.002222	0.002222	0.002222	0.002222	0.002222	0.002222
>EC16 EC21	mg/kg	<7	1900	0.003684	0.003684	0.003684	0.003684	0.003684	0.055789	0.05	0.005789	0.025263	0.016316	0.003684	0.003684	0.01	0.003684	0.003684	0.003684
>EC21 EC35	mg/kg	<7	1900	0.025789	0.003684	0.003684	0.003684	0.019474	0.172632	0.154737	0.122105	0.146842	0.088947	0.003684	0.003684	0.047368	0.003684	0.003684	0.003684
>EC35 EC40[3]	mg/kg	<7	1900	0.003684	0.003684	0.003684	0.003684	0.003684	0.028421	0.023158	0.063684	0.056316	0.019474	0.003684	0.003684	0.003684	0.003684	0.003684	0.003684
Sum of Hazard Quotient				0.052138	0.029172	0.029172	0.029172	0.044961	0.277739	0.24768	0.211083	0.248636	0.14404	0.029172	0.029172	0.079172	0.029172	0.029172	0.029172

Soil Concentrations

Sample ID				BH5	BH6	BH7	BH9	BH9	BH10	BH10	BH11	BH12	BH13	BH13	BH15	BH31	BH31	BH31	BH30	BH30	BH30	TP12	TP12	TP19
	Depth (m bGL)			1	1	3	1	2	1	2	1	1	1	3	1	1	2	2.8	1	2	5	0.00-1.50	1.50-3.00	0.00-0.70
Determinand	Units	LOD[1]	Residential GAC[2]	Silty SAND	Made Ground	Made Ground	Made Ground	Sandy SILT	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Cobbles and Boulder	Made Ground	Made Ground	Made Ground	Cobbles and Boulder	Made Ground	Made Ground	Bedrock	Sandy GRAVEL	Clayey SAND	Made Ground
TPH CWG																								
Aliphatics																								
>C5 C6	mg/kg	<0.1	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C6 C8	mg/kg	<0.1	100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C8 C10	mg/kg	<0.1	27	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C10 C12	mg/kg	<0.2	130	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>C12 C16	mg/kg	<4	1100	<4	<4	<4	<4	<4	<4	<4	<4	23	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
>C16 C21	mg/kg	<7	-	<7	<7	<7	<7	<7	<7	<7	<7	95	<7	<7	16	<7	<7	<7	<7	<7	<7	26	35	15
>C21 C35	mg/kg	<7	-	<7	<7	<7	<7	<7	34	<7	<7	159	69	<7	142	<7	<7	<7	<7	29	<7	<7	<7	25
>C16 C35	mg/kg	<14	65000	<14	<14	<14	<14	<14	41	<14	<14	254	76	<14	158	<14	<14	<14	<14	36	<14	33	42	40
>C35 C40	mg/kg	<7	65000	<7	<7	<7	<7	<7	<7	<7	<7	<7	20	<7	25	<7	<7	<7	<7	<7	<7	<7	<7	25
Aromatics																								
>C5 EC7	mg/kg	<0.1	370	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC7 EC8	mg/kg	<0.1	860	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC8 EC10	mg/kg	<0.1	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC10 EC12	mg/kg	<0.2	250	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>EC12 EC16	mg/kg	<4	1800	<4	<4	<4	<4	<4	5	<4	<4	6	<4	<4	<4	<4	<4	<4	<4	<4	<4	7	14	<4
>EC16 EC21	mg/kg	<7	1900	<7	<7	27	<7	14	45	<7	15	104	72	26	42	<7	19	<7	<7	25	<7	136	69	27
>EC21 EC35	mg/kg	<7	1900	<7	<7	144	<7	70	266	<7	72	587	430	117	249	76	106	<7	<7	260	71	930	296	270
>EC35 EC40[3]	mg/kg	<7	1900	<7	<7	27	<7	<7	48	<7	<7	90	99	38	72	21	34	<7	<7	47	17	88	30	58

Hazard Quotients

Sample ID				BH5	BH6	BH7	BH9	BH9	BH10	BH10	BH11	BH12	BH13	BH13	BH15	BH31	BH31	BH31	BH30	BH30	BH30	TP12	TP12	TP19
	Depth (m bGL)			1	1	3	1	2	1	2	1	1	1	3	1	1	2	2.8	1	2	5	0.00-1.50	1.50-3.00	0.00-0.70
Determinand	Units	LOD[1]	Residential GAC[2]	Silty SAND	Made Ground	Made Ground	Made Ground	Sandy SILT	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Cobbles and Boulder	Made Ground	Made Ground	Made Ground	Cobbles and Boulder	Made Ground	Made Ground	Bedrock	Sandy GRAVEL	Clayey SAND	Made Ground
TPH CWG																								
Aliphatics																								
>C5 C6	mg/kg	<0.1	42	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381
>C6 C8	mg/kg	<0.1	100	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.004	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
>C8 C10	mg/kg	<0.1	27	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704
>C10 C12	mg/kg	<0.2	130	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538
>C12 C16	mg/kg	<4	1100	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.020909	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636	0.003636
>C16 C35	mg/kg	<14	65000	0.000215	0.000215	0.000215	0.000215	0.000215	0.000631	0.000215	0.000215	0.003908	0.001169	0.000215	0.002431	0.000215	0.000215	0.000215	0.000215	0.000554	0.000215	0.000508	0.000646	0.000615
>C35 C40	mg/kg	<7	6500	0.000108	0.000108	0.000108	0.000108	0.000108	0.000108	0.000108	0.000108	0.000108	0.000308	0.000108	0.000385	0.000108	0.000108	0.000108	0.000108	0.000108	0.000108	0.000108	0.000108	0.000385
Aromatics																								
>C5 EC7	mg/kg	<0.1	370	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027
>EC7 EC8	mg/kg	<0.1	860	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116
>EC8 EC10	mg/kg	<0.1	47	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128
>EC10 EC12	mg/kg	<0.2	250	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008
>EC12 EC16	mg/kg	<4	1800	0.002222	0.002222	0.002222	0.002222	0.002222	0.002778	0.002222	0.002222	0.003333	0.002222	0.002222	0.002222	0.002222	0.002222	0.002222	0.002222	0.002222	0.002222	0.003889	0.007778	0.002222
>EC16 EC21	mg/kg	<7	1900	0.003684	0.003684	0.014211	0.003684	0.007368	0.023684	0.003684	0.007895	0.054737	0.037895	0.013684	0.022105	0.003684	0.01	0.003684	0.003684	0.013158	0.003684	0.071579	0.036316	0.014211
>EC21 EC35	mg/kg	<7	1900	0.003684	0.003684	0.075789	0.003684	0.036842	0.14	0.003684	0.037895	0.308947	0.226316	0.061579	0.131053	0.04	0.055789	0.003684	0.003684	0.136842	0.037368	0.489474	0.155789	0.142105
>EC35 EC40[3]	mg/kg	<7	1900	0.003684	0.003684	0.014211	0.003684	0.003684	0.025263	0.003684	0.003684	0.047368	0.052105	0.02	0.037895	0.011053	0.017895	0.003684	0.003684	0.024737	0.008947	0.046316	0.015789	0.030526
Sum of Hazard Quotient				0.029172	0.029172	0.12233	0.029172	0.066014	0.208037	0.029172	0.067593	0.454248	0.335589	0.113382	0.211664	0.072856	0.101803	0.029172	0.029172	0.193194	0.068119	0.627446	0.232	0.205638

Soil Concentrations

Sample ID				TP11	TP11	TP13	TP13	TP14	TP14	TP15	TP15	TP16	TP16	TP17	TP17	TP18	TP18
	Depth (m bGL)			0.00-1.50	1.50-2.70	0.00-1.50	1.50-2.70	0.00-1.50	1.50-3.00	0.00-1.50	1.50-3.00	0.00-1.50	1.50-1.90	0.00-1.50	1.50-1.90	0.00-1.50	1.50-2.70
Determinand	**Units**	**LOD[1]**	**Residential GAC[2]**	Made Ground	Made Ground	Made Ground	Gravelly Clayey SAND	Gravel	SAND and CLAY	Made Ground	Sand and Clay	Made Ground	Sand	Made Ground	Sand	Made Ground	Sand and Clay
TPH CWG																	
Aliphatics																	
>C5 C6	mg/kg	<0.1	42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	11.2	<0.1	<0.1	<0.1	<0.1
>C6 C8	mg/kg	<0.1	100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.9	178.1	<0.1	<0.1	<0.1	<0.1
>C8 C10	mg/kg	<0.1	27	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	12.9	320.2	<0.1	<0.1	<0.1	<0.1
>C10 C12	mg/kg	<0.2	130	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	8.1	<0.2	299.5	1519.9	<0.2	<0.2	<0.2	<0.2
>C12 C16	mg/kg	<4	1100	<4	<4	<4	<4	29	<4	12	<4	603	2683	<4	<4	<4	<4
>C16 C21	mg/kg	<7	-	<7	<7	<7	<7	17	<7	23	<7	630	2565	<7	<7	<7	<7
>C21 C35	mg/kg	<7	-	67	24	37	<7	235	<7	1043	<7	193	705	65	<7	<7	<7
>C16 C35	mg/kg	<14	65000	74	31	44	<14	252	<14	1066	<14	823	3270	72	<14	<14	<14
>C35 C40	mg/kg	<7	65000	<7	<7	<7	<7	<7	<7	75	<7	<7	<7	<7	<7	<7	<7
Aromatics																	
>C5 EC7	mg/kg	<0.1	370	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1
>EC7 EC8	mg/kg	<0.1	860	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1.0	<0.1	<0.1	<0.1	<0.1
>EC8 EC10	mg/kg	<0.1	47	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	3.2	92.1	<0.1	<0.1	<0.1	<0.1
>EC10 EC12	mg/kg	<0.2	250	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	6.5	<0.2	335.8	1324.8	<0.2	<0.2	<0.2	<0.2
>EC12 EC16	mg/kg	<4	1800	<4	<4	<4	<4	<4	<4	13	<4	345	1491	4	<4	<4	<4
>EC16 EC21	mg/kg	<7	1900	<7	<7	<7	<7	<7	<7	28	24	345	1249	45	9	11	<7
>EC21 EC35	mg/kg	<7	1900	51	<7	93	<7	82	<7	435	84	202	325	450	74	59	<7
>EC35 EC40[3]	mg/kg	<7	1900	<7	<7	27	<7	<7	<7	38	<7	28	<7	44	<7	<7	<7

Hazard Quotients

			Sample ID	TP11	TP11	TP13	TP13	TP14	TP14	TP15	TP15	TP16	TP16	TP17	TP17	TP18	TP18
			Depth (m bGL)	0.00-1.50	1.50-2.70	0.00-1.50	1.50-2.70	0.00-1.50	1.50-3.00	0.00-1.50	1.50-3.00	0.00-1.50	1.50-1.90	0.00-1.50	1.50-1.90	0.00-1.50	1.50-2.70
Determinand	**Units**	**LOD[1]**	**Residential GAC[2]**	Made Ground	Made Ground	Made Ground	Gravelly Clayey SAND	Gravel	SAND and CLAY	Made Ground	Sand and Clay	Made Ground	Sand	Made Ground	Sand	Made Ground	Sand and Clay
TPH CWG																	
Aliphatics																	
>C5 C6	mg/kg	<0.1	42	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.002381	0.266667	0.002381	0.002381	0.002381	0.002381
>C6 C8	mg/kg	<0.1	100	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.009	1.781	0.001	0.001	0.001	0.001
>C8 C10	mg/kg	<0.1	27	0.003704	0.003704	0.003704	0.003704	0.003704	0.003704	0.014815	0.003704	0.477778	11.85926	0.003704	0.003704	0.003704	0.003704
>C10 C12	mg/kg	<0.2	130	0.001538	0.001538	0.001538	0.001538	0.001538	0.001538	0.062308	0.001538	2.303846	11.69154	0.001538	0.001538	0.001538	0.001538
>C12 C16	mg/kg	<4	1100	0.003636	0.003636	0.003636	0.003636	0.026364	0.003636	0.010909	0.003636	0.548182	2.439091	0.003636	0.003636	0.003636	0.003636
>C16 C35	mg/kg	<14	65000	0.001138	0.000477	0.000677	0.000215	0.003877	0.000215	0.0164	0.000215	0.012662	0.050308	0.001108	0.000215	0.000215	0.000215
>C35 C40	mg/kg	<7	6500	0.000108	0.000108	0.000108	0.000108	0.000108	0.000108	0.001154	0.000108	0.000108	0.000108	0.000108	0.000108	0.000108	0.000108
Aromatics																	
>C5 EC7	mg/kg	<0.1	370	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.00027	0.002703	0.00027	0.00027	0.00027	0.00027
>EC7 EC8	mg/kg	<0.1	860	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.000116	0.001163	0.000116	0.000116	0.000116	0.000116
>EC8 EC10	mg/kg	<0.1	47	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.002128	0.068085	1.959574	0.002128	0.002128	0.002128	0.002128
>EC10 EC12	mg/kg	<0.2	250	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.026	0.0008	1.3432	5.2992	0.0008	0.0008	0.0008	0.0008
>EC12 EC16	mg/kg	<4	1800	0.002222	0.002222	0.002222	0.002222	0.002222	0.002222	0.007222	0.002222	0.191667	0.828333	0.002222	0.002222	0.002222	0.002222
>EC16 EC21	mg/kg	<7	1900	0.003684	0.003684	0.003684	0.003684	0.003684	0.003684	0.014737	0.012632	0.181579	0.657368	0.023684	0.004737	0.005789	0.003684
>EC21 EC35	mg/kg	<7	1900	0.026842	0.003684	0.048947	0.003684	0.043158	0.003684	0.228947	0.044211	0.106316	0.171053	0.236842	0.038947	0.031053	0.003684
>EC35 EC40[3]	mg/kg	<7	1900	0.003684	0.003684	0.014211	0.003684	0.003684	0.003684	0.02	0.003684	0.014737	0.003684	0.023158	0.003684	0.003684	0.003684
Sum of Hazard Quotient				0.053253	0.029433	0.085423	0.029172	0.095034	0.029172	0.408387	0.078645	5.259926	37.01105	0.302696	0.065487	0.058645	0.029172

Soil Screening Notes:

nnn Indicate where the Residential GAC is exceeded/ Hazard Quotient > 1

Numbers in gray text show where results are below the LOD

[1] 'LOD' = Laboratory limit of detection

[2] 'GAC' = 'Generic Assessment Criteria'; Residential GACs without home grown produce

[3] Screening values for this band are not available; GAC for band >35-44 has been applied

APPENDIX C

Results of ESI Statistics Calculator Against RWOHG GAC

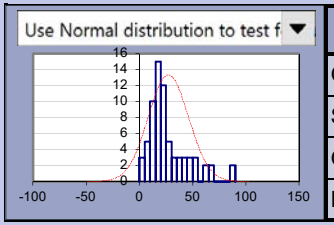
Test Results

Arsenic (mg/kg)

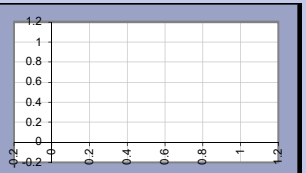
Client/client ref: Atlas GP Ltd | Site ref: Claremont, Howth Development | Date: 24-Sep-2019

Project ref: 19128243 | Data description: Made Ground for Site | User details: WLai

Dataset:	Arsenic (mg/kg)
Sample mean (mg/kg), $\bar{x}$	27.172
Sample standard deviation, s	18.884
Sample size, n	71
Critical concentration, Cc (mg/kg)	40



Outliers & non-detects	
Outliers present?	**Yes**
Significance level	5%
Outliers excluded	0
Non-detects	0

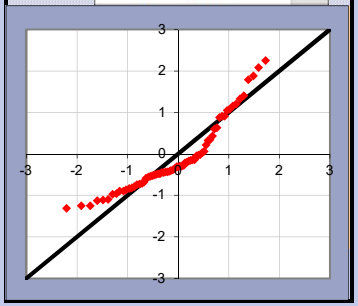


Normality test

Significance level: 5%

Non-normal distribution

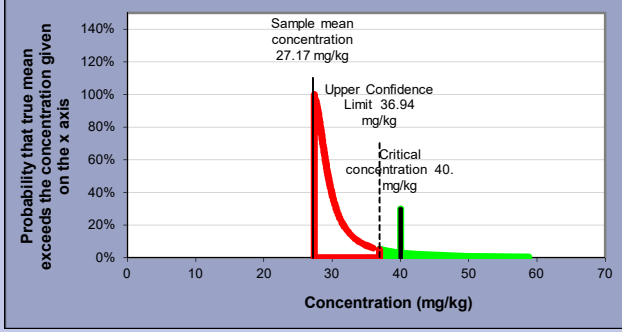
Use: Auto: Chebychev



Test scenario:

Planning: is true mean lower than critical concentration (μ < Cc)?

Null hypothesis:	The true mean concentration is equal to or greater than the critical concentration: μ≥ Cc
Alternative hypothesis	The true mean concentration is less than the critical concentration: μ < Cc



Evidence against Null hypothesis:	**97%**
Base decision on:	evidence level
Evidence level required:	**95%**
Balance of probability?	N/A
Reject Null Hypothesis?	Yes

μ < Cc (re this dataset)

Back to data | Back to summary | Go to outlier test | Go to normality test

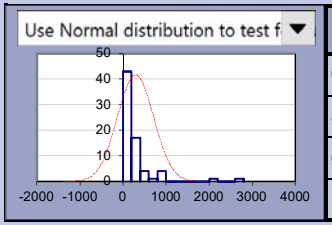
Test Results

Barium (mg/kg)

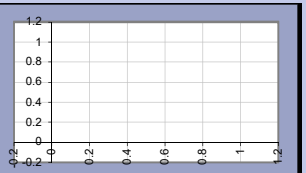
Client/client ref: Atlas GP Ltd | Site ref: Claremont, Howth Development | Date: 24-Sep-2019

Project ref: 19128243 | Data description: Made Ground for Site | User details: WLai

Dataset: Barium (mg/kg)	
Sample mean (mg/kg), $\bar{X}$	290.89
Sample standard deviation, s	418.52
Sample size, n	71
Critical concentration, Cc (mg/kg)	1300



Outliers & non-detects	
Outliers present?	**Yes**
Significance level	5%
Outliers excluded	0
Non-detects	0

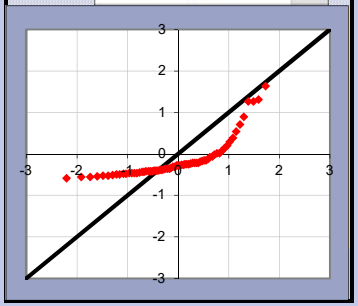


Normality test

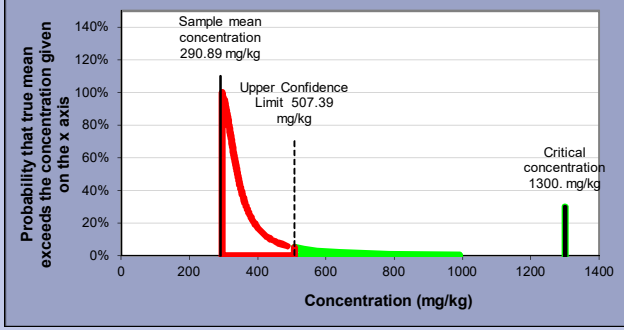
Significance level: 5%

Non-normal distribution

Use: Auto: Chebychev



Test scenario:	Planning: is true mean lower than critical concentration (μ < Cc)?
Null hypothesis:	The true mean concentration is equal to or greater than the critical concentration: μ≥ Cc
Alternative hypothesis	The true mean concentration is less than the critical concentration: μ < Cc



Evidence against Null hypothesis:	**100%**
Base decision on:	evidence level
Evidence level required:	**95%**
Balance of probability?	N/A
Reject Null Hypothesis?	Yes

μ < Cc (re this dataset)

Back to data | Back to summary | Go to outlier test | Go to normality test

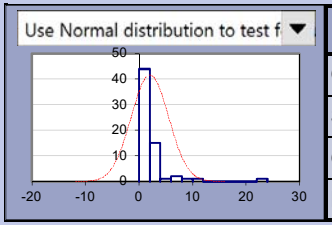
Test Results

Benzo(a)anthracene (mg/kg)

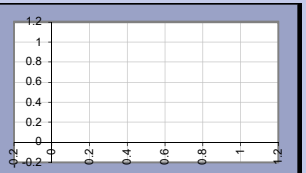
Client/client ref: Atlas GP Ltd | Site ref: Claremont, Howth Development | Date: 24-Sep-2019

Project ref: 19128243 | Data description: Made Ground for Site | User details: WLai

Dataset: Benzo(a)anthracene (mg/kg)	
Sample mean (mg/kg), $\bar{x}$	2.0408
Sample standard deviation, s	3.4814
Sample size, n	65
Critical concentration, Cc (mg/kg)	11



Outliers & non-detects	
Outliers present?	**Yes**
Significance level	5%
Outliers excluded	0
Non-detects	5

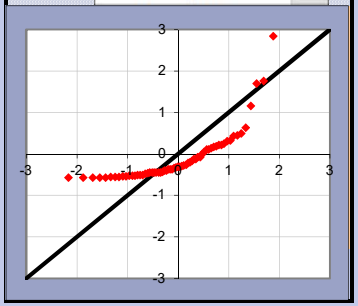


Normality test

Significance level: 5%

Non-normal distribution

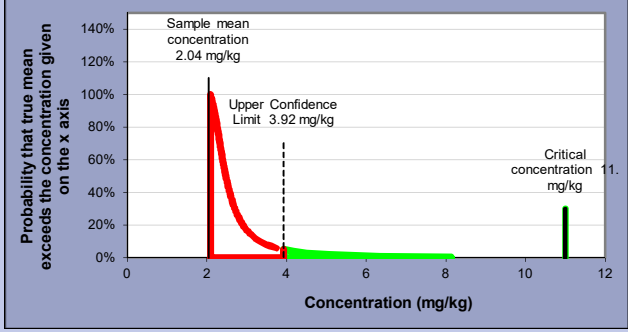
Use: Auto: Chebychev



Test scenario:

Planning: is true mean lower than critical concentration (μ < Cc)?

Null hypothesis:	The true mean concentration is equal to or greater than the critical concentration: μ≥ Cc
Alternative hypothesis	The true mean concentration is less than the critical concentration: μ < Cc



Evidence against Null hypothesis:	**100%**
Base decision on:	evidence level
Evidence level required:	**95%**
Balance of probability?	N/A
Reject Null Hypothesis?	Yes

μ < Cc (re this dataset)

Back to data | Back to summary | Go to outlier test | Go to normality test

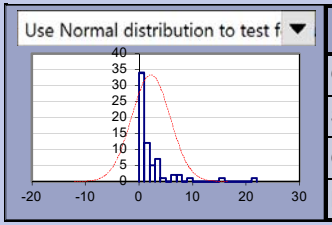
Test Results

Benzo(a)pyrene (mg/kg)

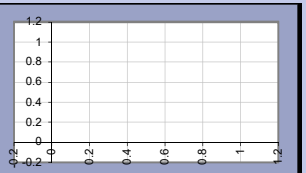
Client/client ref: Atlas GP Ltd | Site ref: Claremont, Howth Development | Date: 24-Sep-2019

Project ref: 19128243 | Data description: Made Ground for Site | User details: WLai

Dataset:	Benzo(a)pyrene (mg/kg)
Sample mean (mg/kg), $\bar{x}$	2.2061
Sample standard deviation, s	3.5753
Sample size, n	66
Critical concentration, Cc (mg/kg)	3.2



Outliers & non-detects	
Outliers present?	**Yes**
Significance level	5%
Outliers excluded	0
Non-detects	6

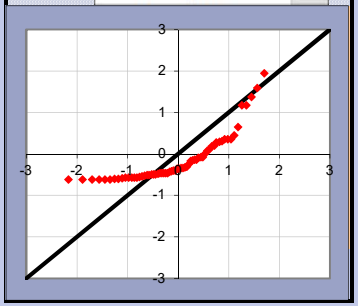


Normality test

Significance level: 5%

Non-normal distribution

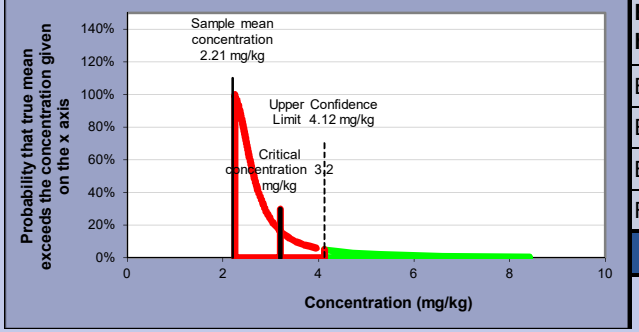
Use: Auto: Chebychev



Test scenario:

Planning: is true mean lower than critical concentration (μ < Cc)?

Null hypothesis:	The true mean concentration is equal to or greater than the critical concentration: μ≥ Cc
Alternative hypothesis	The true mean concentration is less than the critical concentration: μ < Cc



Evidence against Null hypothesis:	**84%**
Base decision on:	evidence level
Evidence level required:	**95%**
Balance of probability?	N/A
Reject Null Hypothesis?	No

Not enough evidence

Back to data | Back to summary | Go to outlier test | Go to normality test

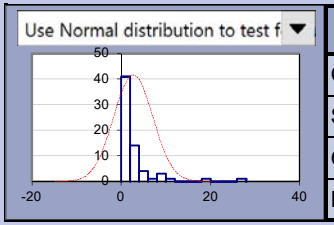
Test Results

Benzo(b)fluoranthene (mg/kg)

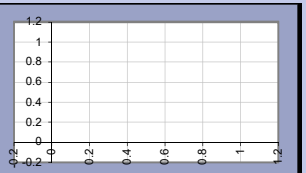
Client/client ref: Atlas GP Ltd | Site ref: Claremont, Howth Development | Date: 24-Sep-2019

Project ref: 19128243 | Data description: Made Ground for Site | User details: WLai

Dataset:	Benzo(b)fluoranthene (mg/kg)
Sample mean (mg/kg), $\overline{x}$	2.6918
Sample standard deviation, s	4.3841
Sample size, n	66
Critical concentration, Cc (mg/kg)	3.9



Outliers & non-detects	
Outliers present?	Yes
Significance level	5%
Outliers excluded	0
Non-detects	6

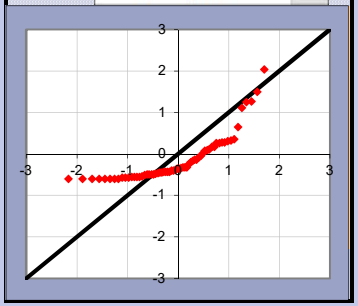


Normality test

Significance level: 5%

Non-normal distribution

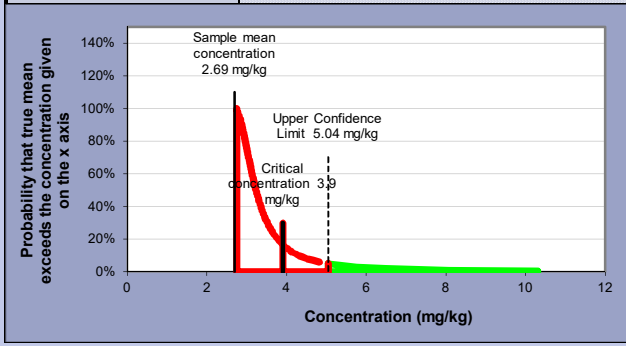
Use: Auto: Chebychev



Test scenario:

Planning: is true mean lower than critical concentration (μ < Cc)?

Null hypothesis:	The true mean concentration is equal to or greater than the critical concentration: μ≥ Cc
Alternative hypothesis	The true mean concentration is less than the critical concentration: μ < Cc



Evidence against Null hypothesis:	**83%**
Base decision on:	evidence level
Evidence level required:	95%
Balance of probability?	N/A
Reject Null Hypothesis?	No

Not enough evidence

Back to data | Back to summary | Go to outlier test | Go to normality test

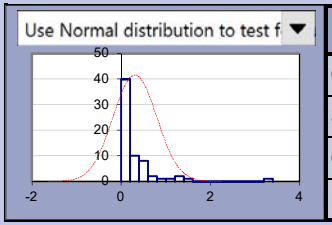
Test Results

Dibenzo(ah)anthracene (mg/kg)

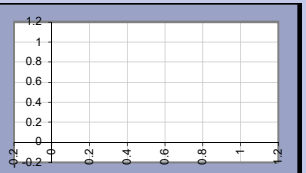
Client/client ref: Atlas GP Ltd | Site ref: Claremont, Howth Development | Date: 24-Sep-2019

Project ref: 19128243 | Data description: Made Ground for Site | User details: WLai

Dataset:	Dibenzo(ah)anthracene (mg/kg)
Sample mean (mg/kg), $\overline{x}$	0.3065
Sample standard deviation, s	0.4875
Sample size, n	66
Critical concentration, Cc (mg/kg)	0.31



Outliers & non-detects	
Outliers present?	**Yes**
Significance level	5%
Outliers excluded	0
Non-detects	18

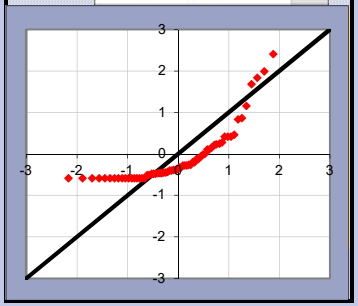


Normality test

Significance level: 5%

Non-normal distribution

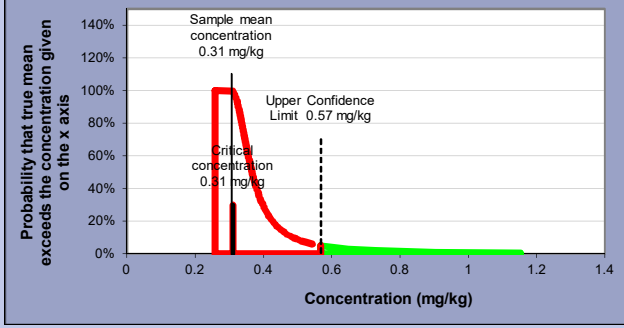
Use: Auto: Chebychev



Test scenario:

Planning: is true mean lower than critical concentration (μ < Cc)?

Null hypothesis:	The true mean concentration is equal to or greater than the critical concentration: μ≥ Cc
Alternative hypothesis	The true mean concentration is less than the critical concentration: μ < Cc



Evidence against Null hypothesis:	**0%**
Base decision on:	evidence level
Evidence level required:	**95%**
Balance of probability?	N/A
Reject Null Hypothesis?	No

μ ≥ Cc

Back to data | Back to summary | Go to outlier test | Go to normality test

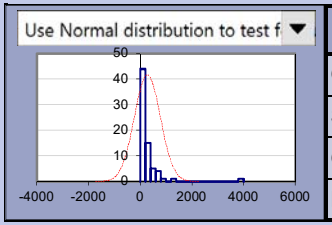
Test Results

Lead_L (mg/kg)

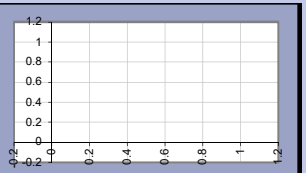
Client/client ref: Atlas GP Ltd | Site ref: Claremont, Howth Development | Date: 24-Sep-2019

Project ref: 19128243 | Data description: Made Ground for Site | User details: WLai

Dataset: Lead_L (mg/kg)	
Sample mean (mg/kg), $\overline{x}$	276.43
Sample standard deviation, s	500.08
Sample size, n	71
Critical concentration, Cc (mg/kg)	130



Outliers & non-detects	
Outliers present?	**Yes**
Significance level	5%
Outliers excluded	0
Non-detects	1

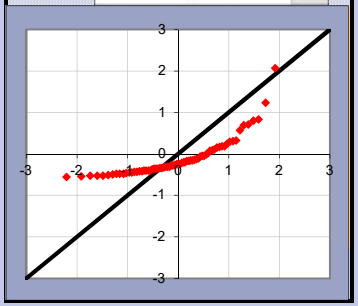


Normality test

Significance level: 5%

Non-normal distribution

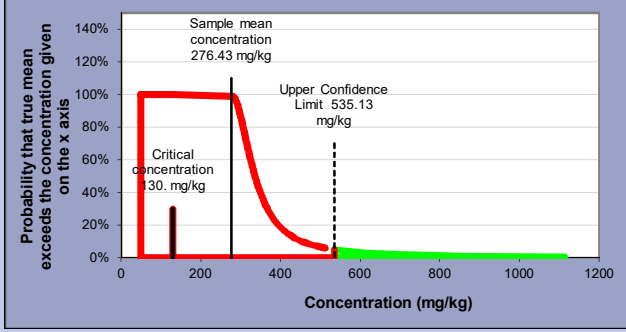
Use: Auto: Chebychev



Test scenario:

Planning: is true mean lower than critical concentration (μ < Cc)?

Null hypothesis:	The true mean concentration is equal to or greater than the critical concentration: μ≥ Cc
Alternative hypothesis	The true mean concentration is less than the critical concentration: μ < Cc



Evidence against Null hypothesis:	**0%**
Base decision on:	evidence level
Evidence level required:	**95%**
Balance of probability?	N/A
Reject Null Hypothesis?	No

μ ≥ Cc

Back to data | Back to summary | Go to outlier test | Go to normality test

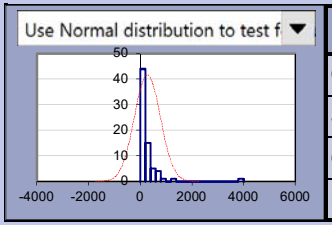
Test Results

Lead_U (mg/kg)

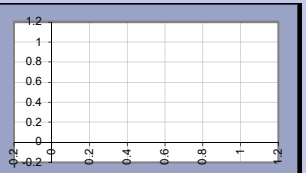
Client/client ref: Atlas GP Ltd | Site ref: Claremont, Howth Development | Date: 24-Sep-2019

Project ref: 19128243 | Data description: Made Ground for Site | User details: WLai

Dataset: Lead_U (mg/kg)	
Sample mean (mg/kg), $\overline{x}$	276.43
Sample standard deviation, s	500.08
Sample size, n	71
Critical concentration, Cc (mg/kg)	330



Outliers & non-detects	
Outliers present?	**Yes**
Significance level	5%
Outliers excluded	0
Non-detects	1

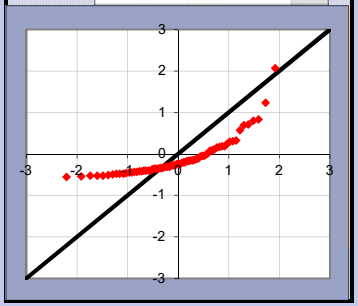


Normality test

Significance level: 5%

Non-normal distribution

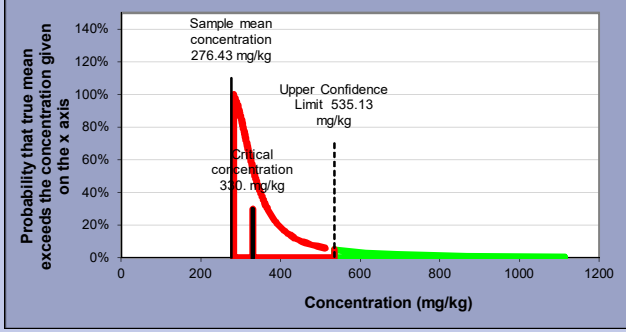
Use: Auto: Chebychev



Test scenario:

Planning: is true mean lower than critical concentration (μ < Cc)?

Null hypothesis:	The true mean concentration is equal to or greater than the critical concentration: μ≥ Cc
Alternative hypothesis	The true mean concentration is less than the critical concentration: μ < Cc



Evidence against Null hypothesis:	**45%**
Base decision on:	evidence level
Evidence level required:	**95%**
Balance of probability?	N/A
Reject Null Hypothesis?	No

μ ≥ Cc

Back to data | Back to summary | Go to outlier test | Go to normality test

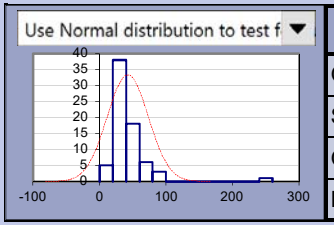
Test Results

Nickel (mg/kg)

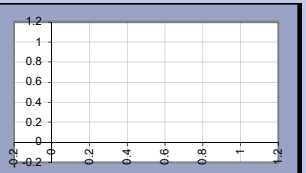
Client/client ref: Atlas GP Ltd | Site ref: Claremont, Howth Development | Date: 24-Sep-2019

Project ref: 19128243 | Data description: Made Ground for Site | User details: WLai

Dataset:	Nickel (mg/kg)
Sample mean (mg/kg), $\overline{x}$	42.438
Sample standard deviation, s	30.969
Sample size, n	71
Critical concentration, Cc (mg/kg)	180



Outliers & non-detects	
Outliers present?	**Yes**
Significance level	5%
Outliers excluded	0
Non-detects	0

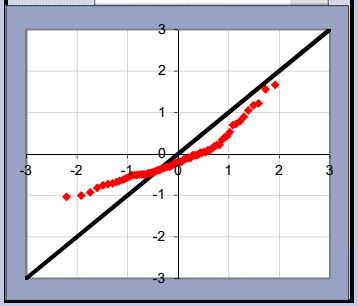


Normality test

Significance level: 5%

Non-normal distribution

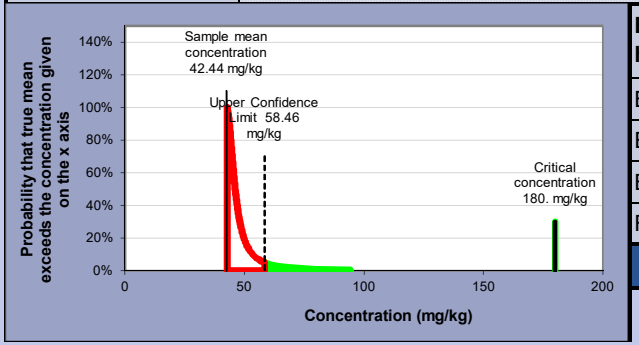
Use: Auto: Chebychev



Test scenario:

Planning: is true mean lower than critical concentration (μ < Cc)?

Null hypothesis:	The true mean concentration is equal to or greater than the critical concentration: μ≥ Cc
Alternative hypothesis	The true mean concentration is less than the critical concentration: μ < Cc



Evidence against Null hypothesis:	**100%**
Base decision on:	evidence level
Evidence level required:	**95%**
Balance of probability?	N/A
Reject Null Hypothesis?	Yes

μ < Cc (re this dataset)

Back to data | Back to summary | Go to outlier test | Go to normality test

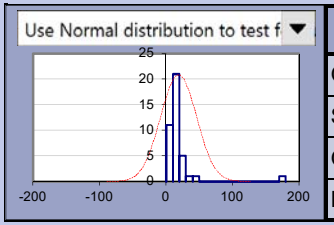
Test Results

Arsenic (mg/kg)

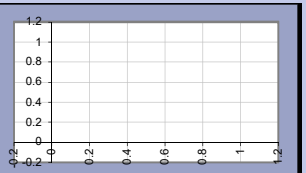
Client/client ref: Atlas GP Ltd | Site ref: Claremont, Howth Development | Date: 17-Sep-2019

Project ref: 19128243 | Data description: Superficial & bedrock for Site. | User details: WLai

Dataset:	Arsenic (mg/kg)
Sample mean (mg/kg), $\overline{x}$	18.89
Sample standard deviation, s	27.002
Sample size, n	40
Critical concentration, Cc (mg/kg)	40



Outliers & non-detects	
Outliers present?	**Yes**
Significance level	5%
Outliers excluded	0
Non-detects	0

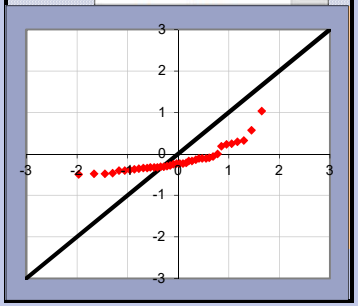


Normality test

Significance level: 5%

Non-normal distribution

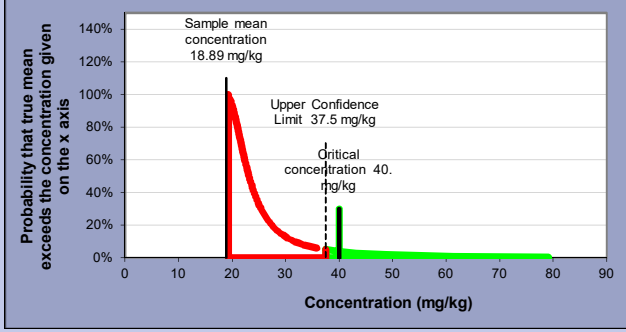
Use: Auto: Chebychev



Test scenario:

Planning: is true mean lower than critical concentration (μ < Cc)?

Null hypothesis:	The true mean concentration is equal to or greater than the critical concentration: μ≥ Cc
Alternative hypothesis	The true mean concentration is less than the critical concentration: μ < Cc



Evidence against Null hypothesis:	**96%**
Base decision on:	evidence level
Evidence level required:	**95%**
Balance of probability?	N/A
Reject Null Hypothesis?	Yes

μ < Cc (re this dataset)

Back to data | Back to summary | Go to outlier test | Go to normality test

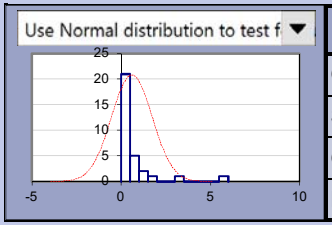
Test Results

Benzo(a)pyrene (mg/kg)

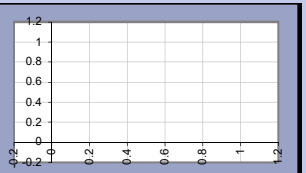
Client/client ref: Atlas GP Ltd | Site ref: Claremont, Howth Development | Date: 17-Sep-2019

Project ref: 19128243 | Data description: Superficial & bedrock for Site. | User details: WLai

Dataset:	Benzo(a)pyrene (mg/kg)
Sample mean (mg/kg), $\bar{X}$	0.5961
Sample standard deviation, s	1.1379
Sample size, n	31
Critical concentration, Cc (mg/kg)	3.2



Outliers & non-detects	
Outliers present?	**Yes**
Significance level	5%
Outliers excluded	0
Non-detects	9

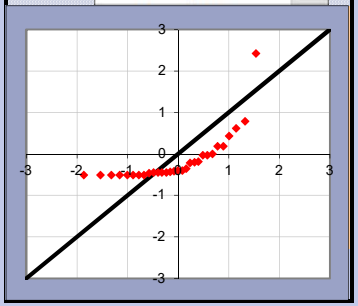


Normality test

Significance level: 5%

Non-normal distribution

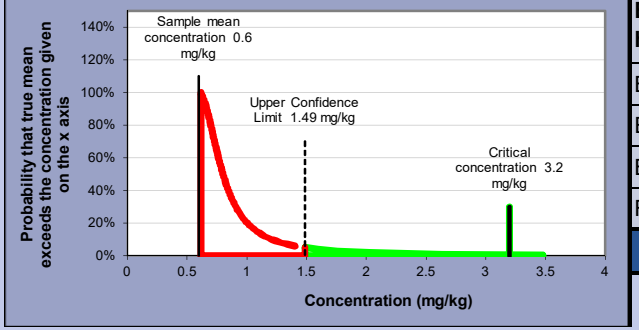
Use: Auto: Chebychev



Test scenario:

Planning: is true mean lower than critical concentration (μ < Cc)?

Null hypothesis:	The true mean concentration is equal to or greater than the critical concentration: μ≥ Cc
Alternative hypothesis	The true mean concentration is less than the critical concentration: μ < Cc



Evidence against Null hypothesis:	**99%**
Base decision on:	evidence level
Evidence level required:	**95%**
Balance of probability?	N/A
Reject Null Hypothesis?	Yes

μ < Cc (re this dataset)

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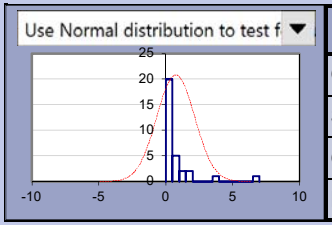
Test Results

Benzo(b)fluoranthene (mg/kg)

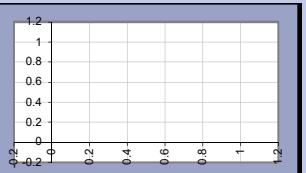
Client/client ref: Atlas GP Ltd | Site ref: Claremont, Howth Development | Date: 17-Sep-2019

Project ref: 19128243 | Data description: Superficial & bedrock for Site. | User details: WLai

Dataset: Benzo(b)fluoranthene (mg/kg)	
Sample mean (mg/kg), $\bar{x}$	0.7429
Sample standard deviation, s	1.4127
Sample size, n	31
Critical concentration, Cc (mg/kg)	3.9



Outliers & non-detects	
Outliers present?	**Yes**
Significance level	5%
Outliers excluded	0
Non-detects	9

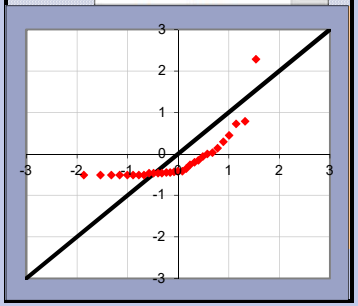


Normality test

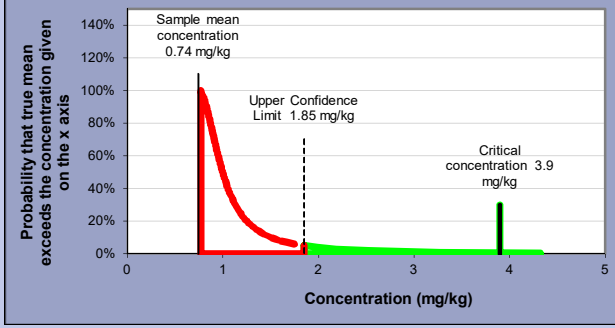
Significance level: 5%

Non-normal distribution

Use: Auto: Chebychev



Test scenario:	Planning: is true mean lower than critical concentration (μ < Cc)?
Null hypothesis:	The true mean concentration is equal to or greater than the critical concentration: μ≥ Cc
Alternative hypothesis	The true mean concentration is less than the critical concentration: μ < Cc



Evidence against Null hypothesis:	**99%**
Base decision on:	evidence level
Evidence level required:	**95%**
Balance of probability?	N/A
Reject Null Hypothesis?	Yes

μ < Cc (re this dataset)

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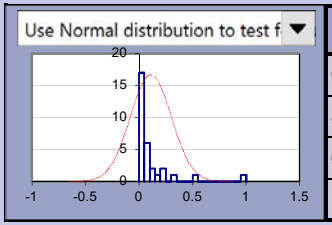
Test Results

Dibenzo(ah)anthracene (mg/kg)

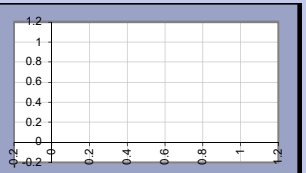
Client/client ref: Atlas GP Ltd | Site ref: Claremont, Howth Development | Date: 17-Sep-2019

Project ref: 19128243 | Data description: Superficial & bedrock for Site. | User details: WLai

Dataset:	Dibenzo(ah)anthracene (mg/kg)
Sample mean (mg/kg), $\overline{x}$	0.1103
Sample standard deviation, s	0.1915
Sample size, n	31
Critical concentration, Cc (mg/kg)	0.31



Outliers & non-detects	
Outliers present?	**Yes**
Significance level	5%
Outliers excluded	0
Non-detects	18

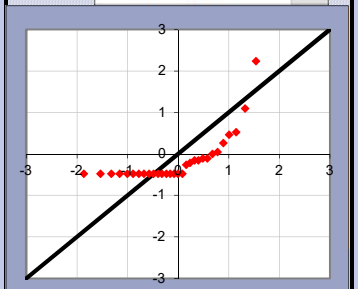


Normality test

Significance level: 5%

Non-normal distribution

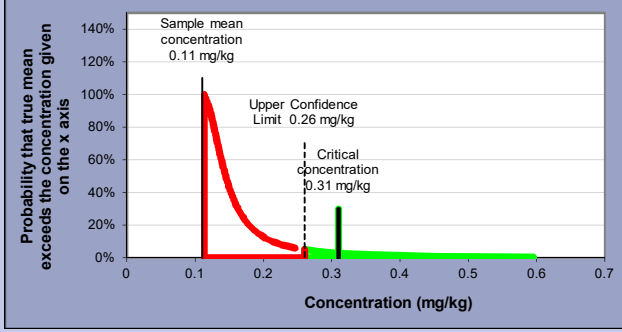
Use: Auto: Chebychev



Test scenario:

Planning: is true mean lower than critical concentration (μ < Cc)?

Null hypothesis:	The true mean concentration is equal to or greater than the critical concentration: μ≥ Cc
Alternative hypothesis	The true mean concentration is less than the critical concentration: μ < Cc



Evidence against Null hypothesis:	**97%**
Base decision on:	evidence level
Evidence level required:	**95%**
Balance of probability?	N/A
Reject Null Hypothesis?	Yes

μ < Cc (re this dataset)

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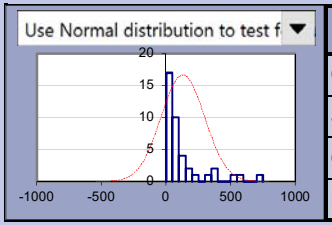
Test Results

Lead_L (mg/kg)

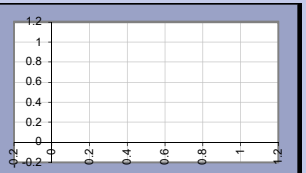
Client/client ref: Atlas GP Ltd | Site ref: Claremont, Howth Development | Date: 17-Sep-2019

Project ref: 19128243 | Data description: Superficial & bedrock for Site. | User details: WLai

Dataset: Lead_L (mg/kg)	
Sample mean (mg/kg), $\bar{x}$	129.65
Sample standard deviation, s	168
Sample size, n	40
Critical concentration, Cc (mg/kg)	130



Outliers & non-detects	
Outliers present?	Yes
Significance level	5%
Outliers excluded	0
Non-detects	0

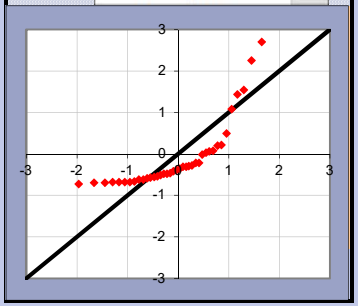


Normality test

Significance level: 5%

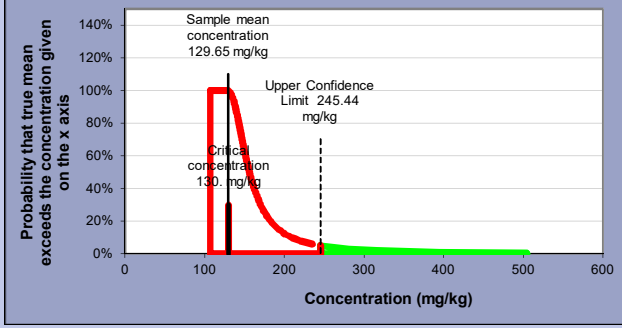
Non-normal distribution

Use: Auto: Chebychev



Test scenario: Planning: is true mean lower than critical concentration (μ < Cc)?

Null hypothesis:	The true mean concentration is equal to or greater than the critical concentration: μ≥ Cc
Alternative hypothesis	The true mean concentration is less than the critical concentration: μ < Cc



Evidence against Null hypothesis:	**0%**
Base decision on:	evidence level
Evidence level required:	95%
Balance of probability?	N/A
Reject Null Hypothesis?	No

μ ≥ Cc

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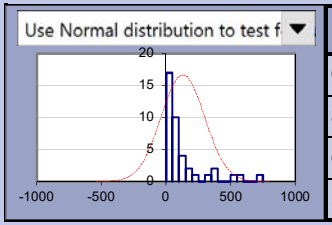
Test Results

Lead_U (mg/kg)

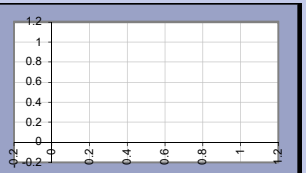
Client/client ref: Atlas GP Ltd | Site ref: Claremont, Howth Development | Date: 17-Sep-2019

Project ref: 19128243 | Data description: Superficial & bedrock for Site. | User details: WLai

Dataset:	Lead_U (mg/kg)
Sample mean (mg/kg), $\bar{x}$	129.65
Sample standard deviation, s	168
Sample size, n	40
Critical concentration, Cc (mg/kg)	330



Outliers & non-detects	
Outliers present?	**Yes**
Significance level	5%
Outliers excluded	0
Non-detects	0

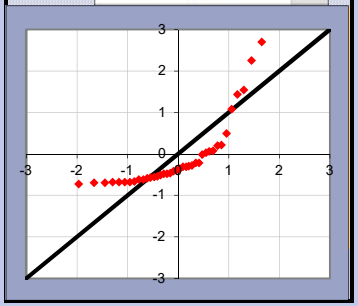


Normality test

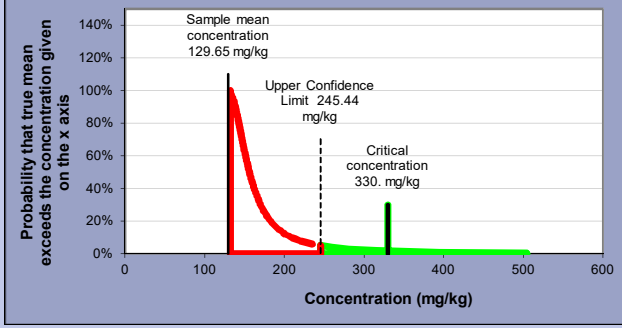
Significance level: 5%

Non-normal distribution

Use: Auto: Chebychev



Test scenario:	Planning: is true mean lower than critical concentration (μ < Cc)?
Null hypothesis:	The true mean concentration is equal to or greater than the critical concentration: μ≥ Cc
Alternative hypothesis	The true mean concentration is less than the critical concentration: μ < Cc



Evidence against Null hypothesis:	**98%**
Base decision on:	evidence level
Evidence level required:	**95%**
Balance of probability?	N/A
Reject Null Hypothesis?	Yes

μ < Cc (re this dataset)

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APPENDIX D

Soil Screening and Results of ESI Statistics Calculator Against POS Residential GAC

Determinand	Units	LOD	POS_{res} GAC[2,3]	Source	Sample Location	BH24	BH24	BH24	BH25	TP2	TP3	TP106	TP108	TP108	TP115	BH14	BH18	BH18
					Sample Depth	4	4	5	5	2.80-3.50	2.20-3.80	2.1	2.5	3.7	2.8	3	4	4
					Soil Type	Gravelly Silty SAND	Gravelly Silty SAND	Sandy Gravelly CLAY	Sandy Gravelly CLAY	**Sandy Gravelly CLAY**	**Gravelly Silty SAND**	Clayey Sandy GRAVEL	Sandy Gravelly CLAY	Gravelly Silty SAND	Gravelly Silty SAND	Sandy SILT	Sandy Gravelly CLAY	Sandy Gravelly CLAY
					Lab Receipt Date	03/04/2017	28/04/2017	28/04/2017	28/04/2017	<>	14/08/2019	31/03/2017	31/03/2017	31/03/2017	31/03/2017	28/04/2017	03/04/2017	28/04/2017
Antimony	mg/kg	<1	550	CL:AIRE, 2010		2	4	-	-	-	-	9	3	2	6	2	-	-
Arsenic	mg/kg	<0.5	79	LQM, 2014		10.6	26.8	-	-	47	12.7	34.3	16.2	14.5	23.8	9.8	-	-
Barium	mg/kg	<1	1300	CL:AIRE, 2010		143	1296	-	-	564	80	458	74	60	177	464	-	-
Cadmium	mg/kg	<0.1	120	LQM, 2014		0.3	0.9	-	-	1.1	0.3	0.3	0.6	0.5	0.4	<0.1	-	-
Chromium	mg/kg	<0.5	-			68	46.7	-	-	68.4	80.5	111.5	70.9	64.5	56	45.6	-	-
Chromium III	mg/kg	<0.5	1500	LQM, 2014		68	46.7	-	-	68.4	80.5	111.5	70.9	64.5	56	45.6	-	-
Hexavalent Chromium	mg/kg	<0.3	7.7	LQM, 2014		<0.3	<0.3	-	-	<0.006	<0.006	<0.3	<0.3	<0.3	<0.3	<0.3	-	-
Copper	mg/kg	<1	12000	LQM, 2014		46	73	-	-	299	27	934	28	28	103	38	-	-
Total Cyanide	mg/kg	<0.5	-			<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
Lead[4]	mg/kg	<5	270	DEFRA, 2013		51	83	-	-	390	49	737	37	43	163	49	-	-
Mercury[5]	mg/kg	<0.1	120	LQM, 2014		<0.1	<0.1	-	-	0.4	<0.1	0.5	<0.1	<0.1	<0.1	<0.1	-	-
Molybdenum	mg/kg	<0.1	670	CL:AIRE, 2010		6.6	11.4	-	-	-	-	8.4	3.9	3.1	3.5	5.1	-	-
Nickel	mg/kg	<0.7	230	LQM, 2014		27.3	177.7	-	-	109.7	33.6	60.9	66.5	32.7	22.1	48.8	-	-
Selenium	mg/kg	<1	1100	LQM, 2014		3	59	-	-	3	<1	1	1	2	1	2	-	-
Total Sulphate as SO4	mg/kg	<50	-			734	7153	-	-	-	-	434	266	780	586	294	-	-
Sulphate as SO4 (2:1 Ext)	g/l	<0.0015	-			-	-	0.0361	0.0917	0.3381	0.0568	-	-	-	-	-	-	-
Elemental Sulphur	mg/kg	<1	-			287	708	-	9.16	954	38	10	15	38	20	20	-	-
Sulphide	mg/kg	<10	-			<10	<10	-	-	30	<10	<10	<10	<10	<10	<10	-	-
Water Soluble Boron	mg/kg	<0.1	21000	LQM, 2014		1.2	1.7	-	-	-	-	0.7	0.9	1.3	1.3	0.6	-	-
Ammoniacal Nitrogen as N	mg/kg	<0.6	-			-	-	-	-	23.8	12.9	-	-	-	-	-	-	-
Zinc	mg/kg	<5	81000	LQM, 2014		436	3212	-	-	-	-	236	140	79	310	31	-	-
Polycyclic Aromatic Hydrocarbons (PAHs)																		
Naphthalene	mg/kg	<0.04	4900	LQM, 2014		<0.04	<0.04	-	-	-	-	0.13	<0.04	<0.04	<0.04	<0.04	-	-
Acenaphthylene	mg/kg	<0.03	15000	LQM, 2014		<0.03	0.07	-	-	-	-	0.24	<0.03	<0.03	0.12	<0.03	-	-
Acenaphthene	mg/kg	<0.05	15000	LQM, 2014		<0.05	<0.05	-	-	-	-	0.07	<0.05	<0.05	<0.05	<0.05	-	-
Fluorene	mg/kg	<0.04	9900	LQM, 2014		<0.04	<0.04	-	-	-	-	0.1	<0.04	<0.04	<0.04	<0.04	-	-
Phenanthrene	mg/kg	<0.03	3100	LQM, 2014		<0.03	0.27	-	-	-	-	0.86	<0.03	<0.03	0.45	0.04	-	-
Anthracene	mg/kg	<0.04	74000	LQM, 2014		<0.04	0.09	-	-	-	-	0.45	<0.04	<0.04	0.21	<0.04	-	-
Fluoranthene	mg/kg	<0.03	3100	LQM, 2014		0.09	0.62	-	-	-	-	2.11	0.04	<0.03	1.57	<0.03	-	-
Pyrene	mg/kg	<0.03	7400	LQM, 2014		0.1	0.51	-	-	-	-	1.98	<0.03	<0.03	1.53	<0.03	-	-
Benzo(a)anthracene	mg/kg	<0.06	29	LQM, 2014		0.17	0.39	-	-	-	-	1.31	<0.06	<0.06	1.01	<0.06	-	-
Chrysene	mg/kg	<0.02	57	LQM, 2014		0.12	0.39	-	-	-	-	1.35	0.02	<0.02	0.97	0.04	-	-
Benzo(bk)fluoranthene	mg/kg	<0.07	-			0.19	0.65	-	-	-	-	2.57	<0.07	<0.07	1.91	<0.07	-	-
Benzo(a)pyrene	mg/kg	<0.04	5.7	LQM, 2014		0.14	0.35	-	-	-	-	1.5	<0.04	<0.04	1.09	<0.04	-	-
Indeno(123cd)pyrene	mg/kg	<0.04	82	LQM, 2014		<0.04	0.24	-	-	-	-	0.99	<0.04	<0.04	0.67	<0.04	-	-
Dibenzo(ah)anthracene	mg/kg	<0.04	0.57	LQM, 2014		<0.04	0.07	-	-	-	-	0.32	<0.04	<0.04	0.12	<0.04	-	-
Benzo(ghi)perylene	mg/kg	<0.04	640	LQM, 2014		0.1	0.23	-	-	-	-	1.12	<0.04	<0.04	0.61	<0.04	-	-
Coronene	mg/kg	<0.04	-			<0.04	0.07	-	-	-	-	0.26	<0.04	<0.04	0.15	<0.04	-	-
PAH 6 Total #	mg/kg	<0.22	-			0.52	2.09	-	-	-	-	8.29	<0.22	<0.22	5.85	<0.22	-	-
PAH 17 Total	mg/kg	<0.64	-			0.91	3.95	-	-	-	-	15.36	<0.64	<0.64	10.41	<0.64	-	-
Benzo(b)fluoranthene	mg/kg	<0.05	7.1	LQM, 2014		0.14	0.47	-	-	-	-	1.85	<0.05	<0.05	1.38	<0.05	-	-
Benzo(k)fluoranthene	mg/kg	<0.02	190	LQM, 2014		0.05	0.18	-	-	-	-	0.72	<0.02	<0.02	0.53	<0.02	-	-
Benzo(j)fluoranthene	mg/kg	<1	-			<1	<1	-	-	-	-	<1	<1	<1	<1	<1	-	-
Mineral Oil (C10 C40)	mg/kg	<30	-			<30	52	-	-	-	-	369	<30	<30	260	<30	-	-

				Sample Location	BH24	BH24	BH24	BH25	TP2	TP3	TP106	TP108	TP108	TP115	BH14	BH18	BH18
				Sample Depth	4	4	5	5	2.80-3.50	2.20-3.80	2.1	2.5	3.7	2.8	3	4	4
				Soil Type	Gravelly Silty SAND	Gravelly Silty SAND	Sandy Gravelly CLAY	Sandy Gravelly CLAY	**Sandy Gravelly CLAY**	**Gravelly Silty SAND**	Clayey Sandy GRAVEL	Sandy Gravelly CLAY	Gravelly Silty SAND	Gravelly Silty SAND	Sandy SILT	Sandy Gravelly CLAY	Sandy Gravelly CLAY
				Lab Receipt Date	03/04/2017	28/04/2017	28/04/2017	28/04/2017	<>	14/08/2019	31/03/2017	31/03/2017	31/03/2017	31/03/2017	28/04/2017	03/04/2017	28/04/2017
Determinand	**Units**	**LOD**	**POS_{res} GAC[2,3]**	**Source**													
TPH CWG																	
Aliphatics																	
>C5 C6	mg/kg	<0.1	570000	LQM, 2014	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
>C6 C8	mg/kg	<0.1	600000	LQM, 2014	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
>C8 C10	mg/kg	<0.1	13000	LQM, 2014	0.7	0.3	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
>C6 C10	mg/kg	<0.1			0.7	0.3	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
>C10 C12	mg/kg	<0.2	13000	LQM, 2014	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-
>C12 C16	mg/kg	<4	13000	LQM, 2014	<4	<4	-	-	10	<4	<4	<4	<4	<4	<4	-	-
>C16 C21	mg/kg	<7	-		<7	<7	-	-	31	<7	40	<7	<7	<7	<7	-	-
>C10 C25	mg/kg	<10			<10	<10	-	-	182	<7	73	<10	<10	19	<10	-	-
>C21 C35	mg/kg	<7	-		<7	52	-	-	-	-	267	<7	<7	173	<7	-	-
>C25 C35	mg/kg	<10			<10	42	-	-	-	-	206	<10	<10	148	<10	-	-
>C16 C35	mg/kg	<14	250000	LQM, 2014	<14	59	-	-	31	<7	307	<14	<14	180	<14	-	-
>C35 C40	mg/kg	<7	250000	LQM, 2014	<7	<7	-	-	-	-	62	<7	<7	87	<7	-	-
Total aliphatics (C5 to 40)	mg/kg	<26	-		<26	52	-	-	-	-	369	<26	<26	260	<26	-	-
Aromatics																	
>C5 EC7	mg/kg	<0.1	56000	LQM, 2014	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
>EC7 EC8	mg/kg	<0.1	56000	LQM, 2014	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
>EC8 EC10	mg/kg	<0.1	5000	LQM, 2014	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
>EC6 EC10	mg/kg	<0.1		LQM, 2014	<0.1	<0.1	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
>EC10 EC12	mg/kg	<0.2	5000	LQM, 2014	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-
>EC12 EC16	mg/kg	<4	5100	LQM, 2014	<4	<4	-	-	10	<4	12	<4	<4	<4	<4	-	-
>EC16 EC21	mg/kg	<7	3800	LQM, 2014	<7	17	-	-	64	<7	95	<7	<7	33	<7	-	-
>EC10 EC25	mg/kg	<10		LQM, 2014	<10	42	-	-	-	-	174	<10	<10	55	<10	-	-
>EC21 EC35	mg/kg	<7	3800	LQM, 2014	21	196	-	-	466	<7	510	<7	<7	269	<7	-	-
>EC25 EC35	mg/kg	<10		LQM, 2014	20	118	-	-	-	-	393	<10	<10	204	<10	-	-
>EC35 EC40[6]	mg/kg	<7	3800	LQM, 2014	<7	<7	-	-	-	-	145	<7	<7	106	<7	-	-
Total aromatics (C5 to 40)	mg/kg	<26	-		<26	213	-	-	-	-	762	<26	<26	408	<26	-	-
Total aliphatics and aromatics(C5 to 40)	mg/kg	<52	-		<52	265	-	-	-	-	1131	<52	<52	668	<52	-	-
MTBE	ug/kg	<5	73000	CL:AIRE, 2010	<5	<5	-	-	-	-	<5	<5	<5	<5	<5	-	-
Benzene	ug/kg	<5	72000	LQM, 2014	<5	<5	-	-	-	-	<5	<5	<5	<5	-	-	-
Toluene	ug/kg	<5	56000000	LQM, 2014	<5	<5	-	-	-	-	<5	<5	<5	<5	-	-	-
Ethylbenzene	ug/kg	<5	24000000	LQM, 2014	<5	<5	-	-	-	-	<5	<5	<5	<5	-	-	-
m/p Xylene	ug/kg	<5	41000000	LQM, 2014	<5	<5	-	-	-	-	<5	<5	<5	<5	-	-	-
o Xylene	ug/kg	<5	41000000	LQM, 2014	<5	<5	-	-	-	-	<5	<5	<5	<5	-	-	-
Polychlorinated Biphenyls (PCBs)																	
PCB 28	ug/kg	<5	-		<5	<5	-	-	<5	<5	<5	<5	<5	<5	<30	-	-
PCB 52	ug/kg	<5	-		<5	<5	-	-	<5	<5	<5	<5	<5	<5	<30	-	-
PCB 101	ug/kg	<5	-		<5	<5	-	-	<5	<5	<5	<5	<5	<5	<30	-	-
PCB 118	ug/kg	<5	-		<5	<5	-	-	<5	<5	<5	<5	<5	<5	<30	-	-
PCB 138	ug/kg	<5	-		<5	<5	-	-	<5	<5	<5	<5	<5	<5	<30	-	-
PCB 153	ug/kg	<5	-		<5	<5	-	-	<5	<5	<5	<5	<5	<5	<30	-	-
PCB 180	ug/kg	<5	-		<5	<5	-	-	<5	<5	<5	<5	<5	<5	<30	-	-
Total 7 PCBs[7]	ug/kg	<35	8	EA, 2009	<35	<35	-	-	<35	<35	<35	<35	<35	<35	<210	-	-
Phenol	mg/kg	<0.01	760	LQM, 2014	<0.01	<0.01	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01		-
Natural Moisture Content	%	<0.1			21.6	23.7	-	-	64.2	17.5	26.80	14.80	24.30	13.20	7.10	-	-
Moisture Content (% Wet Weight)	%	<0.1			17.8	19.1	-	-	-	-	21.10	12.90	19.60	11.60	6.60	-	-
Total Organic Carbon	%	<0.02			1.03	6.11	-	-	-	-	19.81	1.15	4.88	1.80	3.93	-	-
SOM (Calculated)	%	--			1.775862069	10.53448276	-	-			34.16	1.98	8.41	3.10	6.78	-	-
pH	pH units	<0.01	-		7.75	7.33	8.9	-			8.14	7.87	7.76	8.00	7.99	8.71	8.71

				Sample Location	BH24	BH24	BH24	BH25	TP2	TP3	TP106	TP108	TP108	TP115	BH14	BH18	BH18
				Sample Depth	4	4	5	5	2.80-3.50	2.20-3.80	2.1	2.5	3.7	2.8	3	4	4
				Soil Type	Gravelly Silty SAND	Gravelly Silty SAND	Sandy Gravelly CLAY	Sandy Gravelly CLAY	**Sandy Gravelly CLAY**	**Gravelly Silty SAND**	Clayey Sandy GRAVEL	Sandy Gravelly CLAY	Gravelly Silty SAND	Gravelly Silty SAND	Sandy SILT	Sandy Gravelly CLAY	Sandy Gravelly CLAY
				Lab Receipt Date	03/04/2017	28/04/2017	28/04/2017	28/04/2017	<>	14/08/2019	31/03/2017	31/03/2017	31/03/2017	31/03/2017	28/04/2017	03/04/2017	28/04/2017
Determinand	**Units**	**LOD**	**POS_{res} GAC[2,3]**	**Source**													
Asbestos																	
General Description (Bulk Analysis)	--	--	-		soil/stones	soil/stones	-	-	Soil/Stone	soil-stones	Soil/Stones	Soil Clay/Silt/	soil/stones	soil/stones	soil/stones	-	-
Asbestos Fibres	--	--	-		NAD	NAD	-	-	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	-
Asbestos Fibres (2)	--	--	-		-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos ACM	--	--	-		NAD	NAD	-	-	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	-
Asbestos Type	--	--	-		NAD	NAD	-	-	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	-
Asbestos Type (2)	--	--	-		-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos Level Screen	%	<0.1	-		NAD	NAD	-	-	NAD	NAD	NAD	NAD	NAD	NAD	NAD	-	-
Asbestos Gravimetric Quantification	mass %	<0.001	-		NAD	NAD	-	-	-	-	NAD	NAD	NAD	NAD	NAD	-	-
Asbestos PCOM Quantification (Fibres)	mass %	<0.001	-		NAD	NAD	-	-	-	-	NAD	NAD	NAD	NAD	NAD	-	-
Asbestos Gravimetric & PCOM Total	mass %	<0.001	-		NAD	NAD	-	-	-	-	NAD	NAD	NAD	NAD	NAD	-	-

				Sample Location	BH21	BH23	TP1	TP4	TP5	TP5	TP7	TP9	TP10	TP20	TP102	TP102	TP103	TP103
				Sample Depth	4	4	1.50-3.00	1.50-2.50	0.00-1.50	1.50-2.50	1.50-3.00	1.50-3.00	1.50-2.80	0.00-0.75	1.50	4.30	2.50	3.50
				Soil Type	Gravelly CLAY	Sandy Gravelly CLAY	**Sandy Gravelly CLAY**	**Sandy Gravelly CLAY**	**Sandy Gravelly CLAY**	**Silty Gravel**	**Sandy Gravelly CLAY**	**Silty Gravel**	**Sandy Gravelly CLAY**	**Sandy Gravelly CLAY**	Sandy Gravelly CLAY	Sandy Gravelly CLAY	Sandy Gravelly SILT	SILT
				Lab Receipt Date	28/04/2017	21/04/2017	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019		31/03/2017	31/03/2017	31/03/2017	31/03/2017
Determinand	**Units**	**LOD**	**POS_{res} GAC[2,3]**	**Source**														
Antimony	mg/kg	<1	550	CL:AIRE, 2010	-	-	-	-	-	-	-	-	-	3	2	1	2	1
Arsenic	mg/kg	<0.5	79	LQM, 2014	-	-	25.4	16.1	9.3	5.5	12.6	27.7	8.7	7.9	10	10.2	17.4	12.5
Barium	mg/kg	<1	1300	CL:AIRE, 2010	-	-	470	111	168	69	92	259	85	107	49	55	77	72
Cadmium	mg/kg	<0.1	120	LQM, 2014	-	-	4.4	0.3	0.8	1.2	0.3	0.5	0.6	0.6	0.5	0.7	0.3	0.2
Chromium	mg/kg	<0.5	-		-	-	55.6	34.4	47.9	30.4	64.7	57.3	56	88.8	67.7	60.3	64.6	59.7
Chromium III	mg/kg	<0.5	1500	LQM, 2014	-	-	55.6	34.4	47.9	30.4	64.7	57.3	56	88.8	67.7	60.3	64.6	59.7
Hexavalent Chromium	mg/kg	<0.3	7.7	LQM, 2014	-	-	<0.006	<0.006	<0.006	<0.006	-			<0.3	<0.3	<0.3	<0.3	<0.3
Copper	mg/kg	<1	12000	LQM, 2014	-	-	1528	43	58	30	300	133	26	45	17	19	43	29
Total Cyanide	mg/kg	<0.5	-		-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
Lead[4]	mg/kg	<5	270	DEFRA, 2013	-	-	583	78	77	15	167	141	15	94	13	14	135	94
Mercury[5]	mg/kg	<0.1	120	LQM, 2014	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	mg/kg	<0.1	670	CL:AIRE, 2010	-	-	-	-	-	-	-	-	-	5.6	4.8	4.6	5.7	4.3
Nickel	mg/kg	<0.7	230	LQM, 2014	-	-	46.1	17.2	27.9	17.4	16.9	37.4	31.4	23.7	28.3	41.5	28.2	26.5
Selenium	mg/kg	<1	1100	LQM, 2014	-	-	<1	<1	<1	<1	<1	<1	<1	<1	1	1	1	1
Total Sulphate as SO4	mg/kg	<50	-		-	-	-	-	-	-	-	-	-	2175	125	170	1212	3479
Sulphate as SO4 (2:1 Ext)	g/l	<0.0015	-		-	-	0.4449	0.0977	0.0423	0.0191	0.1853	0.3174	0.0562		-	-	-	-
Elemental Sulphur	mg/kg	<1	-		-	-	475	41	45	6	28	118	106	6	<1	2	170	2287
Sulphide	mg/kg	<10	-		-	-	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	92
Water Soluble Boron	mg/kg	<0.1	21000	LQM, 2014	-	-	-	-	-	-	-	-	-	0.7	0.4	0.3	3.5	5.5
Ammoniacal Nitrogen as N	mg/kg	<0.6	-		-	-	28.3	6	<0.6	<0.6	2.5	6.8	<0.6	2.6	-	-	-	-
Zinc	mg/kg	<5	81000	LQM, 2014	-	-	-	-	-	-	-	-	-	105	65	47	155	102
Polycyclic Aromatic Hydrocarbons (PAHs)																		
Naphthalene	mg/kg	<0.04	4900	LQM, 2014	-	-	-	-	-	-	-	-	-	0.08	<0.04	<0.04	0.23	0.43
Acenaphthylene	mg/kg	<0.03	15000	LQM, 2014	-	-	-	-	-	-	-	-	-	0.06	<0.03	<0.03	0.66	1.07
Acenaphthene	mg/kg	<0.05	15000	LQM, 2014	-	-	-	-	-	-	-	-	-	<0.05	<0.05	<0.05	0.11	0.17
Fluorene	mg/kg	<0.04	9900	LQM, 2014	-	-	-	-	-	-	-	-	-	<0.04	<0.04	<0.04	0.43	0.44
Phenanthrene	mg/kg	<0.03	3100	LQM, 2014	-	-	-	-	-	-	-	-	-	0.35	<0.03	<0.03	3.88	4.75
Anthracene	mg/kg	<0.04	74000	LQM, 2014	-	-	-	-	-	-	-	-	-	0.11	<0.04	<0.04	1.43	2.74
Fluoranthene	mg/kg	<0.03	3100	LQM, 2014	-	-	-	-	-	-	-	-	-	0.78	<0.03	<0.03	6.33	11.1
Pyrene	mg/kg	<0.03	7400	LQM, 2014	-	-	-	-	-	-	-	-	-	0.7	<0.03	<0.03	5.56	8.74
Benzo(a)anthracene	mg/kg	<0.06	29	LQM, 2014	-	-	-	-	-	-	-	-	-	0.5	<0.06	<0.06	3.64	8.23
Chrysene	mg/kg	<0.02	57	LQM, 2014	-	-	-	-	-	-	-	-	-	0.41	<0.02	<0.02	3.38	5.8
Benzo(bk)fluoranthene	mg/kg	<0.07	-		-	-	-	-	-	-	-	-	-	1.09	<0.07	<0.07	5.51	9.64
Benzo(a)pyrene	mg/kg	<0.04	5.7	LQM, 2014	-	-	-	-	-	-	-	-	-	0.56	<0.04	<0.04	3.35	5.54
Indeno(123cd)pyrene	mg/kg	<0.04	82	LQM, 2014	-	-	-	-	-	-	-	-	-	0.39	<0.04	<0.04	1.79	2.61
Dibenzo(ah)anthracene	mg/kg	<0.04	0.57	LQM, 2014	-	-	-	-	-	-	-	-	-	0.11	<0.04	<0.04	0.54	0.95
Benzo(ghi)perylene	mg/kg	<0.04	640	LQM, 2014	-	-	-	-	-	-	-	-	-	0.37	<0.04	<0.04	1.82	2.35
Coronene	mg/kg	<0.04	-		-	-	-	-	-	-	-	-	-	0.08	<0.04	<0.04	0.32	0.52
PAH 6 Total #	mg/kg	<0.22	-		-	-	-	-	-	-	-	-	-	3.19	<0.22	<0.22	18.8	31.24
PAH 17 Total	mg/kg	<0.64	-		-	-	-	-	-	-	-	-	-	5.59	<0.64	<0.64	38.98	65.08
Benzo(b)fluoranthene	mg/kg	<0.05	7.1	LQM, 2014	-	-	-	-	-	-	-	-	-	0.78	<0.05	<0.05	3.97	6.94
Benzo(k)fluoranthene	mg/kg	<0.02	190	LQM, 2014	-	-	-	-	-	-	-	-	-	0.31	<0.02	<0.02	1.54	2.7
Benzo(j)fluoranthene	mg/kg	<1	-		-	-	-	-	-	-	-	-	-	<1	<1	<1	1	3
Mineral Oil (C10 C40)	mg/kg	<30	-		-	-	-	-	-	-	-	-	-	186	<30	<30	<30	<30

				Sample Location	BH21	BH23	TP1	TP4	TP5	TP5	TP7	TP9	TP10	TP20	TP102	TP102	TP103	TP103
				Sample Depth	4	4	1.50-3.00	1.50-2.50	0.00-1.50	1.50-2.50	1.50-3.00	1.50-3.00	1.50-2.80	0.00-0.75	1.50	4.30	2.50	3.50
				Soil Type	Gravelly CLAY	Sandy Gravelly CLAY	**Sandy Gravelly CLAY**	**Sandy Gravelly CLAY**	**Sandy Gravelly CLAY**	**Silty Gravel**	**Sandy Gravelly CLAY**	**Silty Gravel**	**Sandy Gravelly CLAY**	**Sandy Gravelly CLAY**	Sandy Gravelly CLAY	Sandy Gravelly CLAY	Sandy Gravelly SILT	SILT
				Lab Receipt Date	28/04/2017	21/04/2017	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019		31/03/2017	31/03/2017	31/03/2017	31/03/2017
Determinand	**Units**	**LOD**	**POS_{res} GAC[2,3]**	**Source**														
TPH CWG																		
Aliphatics																		
>C5 C6	mg/kg	<0.1	570000	LQM, 2014	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C6 C8	mg/kg	<0.1	600000	LQM, 2014	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C8 C10	mg/kg	<0.1	13000	LQM, 2014	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C6 C10	mg/kg	<0.1			-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
>C10 C12	mg/kg	<0.2	13000	LQM, 2014	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>C12 C16	mg/kg	<4	13000	LQM, 2014	-	-	<4	7	<4	<4	<4	<4	<4	6	<4	<4	<4	<4
>C16 C21	mg/kg	<7	-		-	-	<7	12	14	<7	<7	21	<7	14	<7	<7	<7	<7
>C10 C25	mg/kg	<10			-	-	38	49	105	<7	72	106	<7	49	<10	<10	<10	<10
>C21 C35	mg/kg	<7	-		-	-	-	-	-	-	-	-	-	166	<7	<7	<7	<7
>C25 C35	mg/kg	<10			-	-	-	-	-	-	-	-	-	120	<10	<10	<10	<10
>C16 C35	mg/kg	<14	250000	LQM, 2014	-	-	<7	12	14	<7	<7	21	<7	180	<14	<14	<14	<14
>C35 C40	mg/kg	<7	250000	LQM, 2014	-	-	-	-	-	-	-	-	-	<7	<7	<7	<7	<7
Total aliphatics (C5 to 40)	mg/kg	<26	-		-	-	-	-	-	-	-	-	-	186	<26	<26	<26	<26
Aromatics																		
>C5 EC7	mg/kg	<0.1	56000	LQM, 2014	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC7 EC8	mg/kg	<0.1	56000	LQM, 2014	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC8 EC10	mg/kg	<0.1	5000	LQM, 2014	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC6 EC10	mg/kg	<0.1		LQM, 2014	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1
>EC10 EC12	mg/kg	<0.2	5000	LQM, 2014	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>EC12 EC16	mg/kg	<4	5100	LQM, 2014	-	-	6	7	8	<4	<4	<4	<4	<4	<4	<4	9	7
>EC16 EC21	mg/kg	<7	3800	LQM, 2014	-	-	54	44	85	13	25	16	<7	12	<7	<7	106	95
>EC10 EC25	mg/kg	<10		LQM, 2014	-	-	-	-	-	-	-	-	-	30	<10	<10	162	168
>EC21 EC35	mg/kg	<7	3800	LQM, 2014	-	-	336	240	500	113	120	145	<7	92	<7	<7	328	294
>EC25 EC35	mg/kg	<10		LQM, 2014	-	-	-	-	-	-	-	-	-	74	<10	<10	206	193
>EC35 EC40[6]	mg/kg	<7	3800	LQM, 2014	-	-	-	-	-	-	-	-	-	<7	<7	<7	54	44
Total aromatics (C5 to 40)	mg/kg	<26	-		-	-	-	-	-	-	-	-	-	104	<26	<26	497	440
Total aliphatics and aromatics(C5 to 40)	mg/kg	<52	-		-	-	-	-	-	-	-	-	-	290	<52	<52	497	440
MTBE	ug/kg	<5	73000	CL:AIRE, 2010	-	-	-	-	-	-	-	-	-	<5	<5	<5	<5	<5
Benzene	ug/kg	<5	72000	LQM, 2014	-	-	-	-	-	-	-	-	-	<5	<5	<5	<5	<5
Toluene	ug/kg	<5	56000000	LQM, 2014	-	-	-	-	-	-	-	-	-	8	<5	<5	<5	<5
Ethylbenzene	ug/kg	<5	24000000	LQM, 2014	-	-	-	-	-	-	-	-	-	15	<5	<5	<5	<5
m/p Xylene	ug/kg	<5	41000000	LQM, 2014	-	-	-	-	-	-	-	-	-	26	<5	<5	<5	<5
o Xylene	ug/kg	<5	41000000	LQM, 2014	-	-	-	-	-	-	-	-	-	<5	<5	<5	<5	<5
Polychlorinated Biphenyls (PCBs)																		
PCB 28	ug/kg	<5	-		-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 52	ug/kg	<5	-		-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 101	ug/kg	<5	-		-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 118	ug/kg	<5	-		-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 138	ug/kg	<5	-		-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 153	ug/kg	<5	-		-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 180	ug/kg	<5	-		-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total 7 PCBs[7]	ug/kg	<35	8	EA, 2009	-	-	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35
Phenol	mg/kg	<0.01	760	LQM, 2014	-	-	-	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01
Natural Moisture Content	%	<0.1			-	-	27.7	16.7	9.2	12.1	18	21	16.4	16.8	10.3	11.8	37.3	44.1
Moisture Content (% Wet Weight)	%	<0.1			-	-	-	-	-	-	-	-	-	14.4	9.4	10.6	27.2	30.6
Total Organic Carbon	%	<0.02			-	-	-	-	-	-	-	-	-	3.64	0.05	0.08	12.97	11.34
SOM (Calculated)	%	--			-	-									0.086206897	0.137931034	22.36206897	19.55172414
pH	pH units	<0.01	-		9.39	9.25								12.08	8.63	8.66	7.93	8.12

				Sample Location	BH21	BH23	TP1	TP4	TP5	TP5	TP7	TP9	TP10	TP20	TP102	TP102	TP103	TP103
				Sample Depth	4	4	1.50-3.00	1.50-2.50	0.00-1.50	1.50-2.50	1.50-3.00	1.50-3.00	1.50-2.80	0.00-0.75	1.50	4.30	2.50	3.50
				Soil Type	Gravelly CLAY	Sandy Gravelly CLAY	**Sandy Gravelly CLAY**	**Sandy Gravelly CLAY**	**Sandy Gravelly CLAY**	**Silty Gravel**	**Sandy Gravelly CLAY**	**Silty Gravel**	**Sandy Gravelly CLAY**	**Sandy Gravelly CLAY**	Sandy Gravelly CLAY	Sandy Gravelly CLAY	Sandy Gravelly SILT	SILT
				Lab Receipt Date	28/04/2017	21/04/2017	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019	14/08/2019		31/03/2017	31/03/2017	31/03/2017	31/03/2017
Determinand	**Units**	**LOD**	**POS_{res} GAC[2,3]**	**Source**														
Asbestos																		
General Description (Bulk Analysis)	--	--	-		-	-	Soil/Stone	Soil/Stone	Soil/Stone	Soil/Stone	soil.stones	soil/stones	soil/stones	soil.stones	Soil Clay/Silt	Soil/Stone	Soil/Stone	Soil Clay/Silt
Asbestos Fibres	--	--	-		-	-	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Fibres (2)	--	--	-		-	-	-	-	-	-	-	NAD	-		-	-	-	-
Asbestos ACM	--	--	-		-	-	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Type	--	--	-		-	-	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Type (2)	--	--	-		-	-	-	-	-	-	-	NAD	-		-	-	-	-
Asbestos Level Screen	%	<0.1	-		-	-	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Gravimetric Quantification	mass %	<0.001	-		-	-	-	-	-	-	-	-	-	-	NAD	NAD	NAD	NAD
Asbestos PCOM Quantification (Fibres)	mass %	<0.001	-		-	-	-	-	-	-	-	-	-	-	NAD	NAD	NAD	NAD
Asbestos Gravimetric & PCOM Total	mass %	<0.001	-		-	-	-	-	-	-	-	-	-	-	NAD	NAD	NAD	NAD

Determinand	Units	LOD	POS_{res} GAC[2,3]	Source	Sample Location	BH2	BH3	BH3	BH3	BH4	BH4	BH5	BH5	BH6	BH8	BH9	BH11	BH12
					Sample Depth	1	1	3	4	2	3	1	3	4	2	2	3	2
					Soil Type	Silty SAND	SAND	SILT	SILT	Silty SAND	Silty SAND	Silty SAND	Sandy SILT	Sandy SILT	Sandy SILT	Sandy SILT	Sandy SILT	Sandy Silty GRAVEL
					Lab Receipt Date	21/04/2017	11/05/2017	11/05/2017	11/05/2017	21/04/2017	21/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	11/05/2017
Antimony	mg/kg	<1	550	CL:AIRE, 2010		1	3	2	1	-	<1	1	-	-	-	2	-	-
Arsenic	mg/kg	<0.5	79	LQM, 2014		9.9	16	12.1	10.7	-	6.6	8.1	-	-	-	14.2	-	-
Barium	mg/kg	<1	1300	CL:AIRE, 2010		39	52	41	236	-	30	24	-	-	-	60	-	-
Cadmium	mg/kg	<0.1	120	LQM, 2014		<0.1	0.7	0.3	<0.1	-	0.7	<0.1	-	-	-	0.1	-	-
Chromium	mg/kg	<0.5	-			40.6	56.1	55.4	26.9	-	38.8	39.6	-	-	-	35.4	-	-
Chromium III	mg/kg	<0.5	1500	LQM, 2014		40.6	56.1	55.4	26.9	-	38.8	39.6	-	-	-	35.4	-	-
Hexavalent Chromium	mg/kg	<0.3	7.7	LQM, 2014		<0.3	<0.3	<0.3	<0.3	-	<0.3	<0.3	-	-	-	<0.3	-	-
Copper	mg/kg	<1	12000	LQM, 2014		15	18	23	11	-	16	11	-	-	-	21	-	-
Total Cyanide	mg/kg	<0.5	-			<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	-	-	-	<0.5	-	-
Lead[4]	mg/kg	<5	270	DEFRA, 2013		65	39	59	30	-	34	27	-	-	-	143	-	-
Mercury[5]	mg/kg	<0.1	120	LQM, 2014		<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	-	-	<0.1	-	-
Molybdenum	mg/kg	<0.1	670	CL:AIRE, 2010		1.6	4.6	3.1	1	-	3.2	2.5	-	-	-	2	-	-
Nickel	mg/kg	<0.7	230	LQM, 2014		23	23.8	25.6	10.3	-	11.4	11.5	-	-	-	24	-	-
Selenium	mg/kg	<1	1100	LQM, 2014		<1	1	1	<1	-	<1	<1	-	-	-	1	-	-
Total Sulphate as SO4	mg/kg	<50	-			516	432	3921	1002	-	417	531	-	-	-	3388	-	-
Sulphate as SO4 (2:1 Ext)	g/l	<0.0015	-			-	0.0112	1.4642	-	-	-	-	0.3288	0.3557	0.0957	-	-	0.0233
Elemental Sulphur	mg/kg	<1	-			11	21	1994	11	-	34	18	-	-	-	3873	-	-
Sulphide	mg/kg	<10	-			<10	<10	110	<10	-	<10	<10	-	-	-	59	-	-
Water Soluble Boron	mg/kg	<0.1	21000	LQM, 2014		0.3	0.7	7	1.9	-	0.5	0.6	-	-	-	6.9	-	-
Ammoniacal Nitrogen as N	mg/kg	<0.6	-			-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	mg/kg	<5	81000	LQM, 2014		46	103	101	20	-	37	39	-	-	-	102	-	-
Polycyclic Aromatic Hydrocarbons (PAHs)																		
Naphthalene	mg/kg	<0.04	4900	LQM, 2014		<0.04	<0.04	<0.04	<0.04	-	0.07	<0.04	-	-	-	<0.04	-	-
Acenaphthylene	mg/kg	<0.03	15000	LQM, 2014		<0.03	<0.03	<0.03	<0.03	-	<0.03	<0.03	-	-	-	0.18	-	-
Acenaphthene	mg/kg	<0.05	15000	LQM, 2014		<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	-	-	-	<0.05	-	-
Fluorene	mg/kg	<0.04	9900	LQM, 2014		<0.04	<0.04	<0.04	<0.04	-	<0.04	<0.04	-	-	-	0.08	-	-
Phenanthrene	mg/kg	<0.03	3100	LQM, 2014		0.07	0.06	0.06	0.03	-	0.08	0.05	-	-	-	0.68	-	-
Anthracene	mg/kg	<0.04	74000	LQM, 2014		<0.04	<0.04	<0.04	<0.04	-	<0.04	<0.04	-	-	-	0.27	-	-
Fluoranthene	mg/kg	<0.03	3100	LQM, 2014		0.15	0.13	0.14	0.04	-	0.15	0.09	-	-	-	1.23	-	-
Pyrene	mg/kg	<0.03	7400	LQM, 2014		0.13	0.11	0.12	0.04	-	0.15	0.08	-	-	-	0.97	-	-
Benzo(a)anthracene	mg/kg	<0.06	29	LQM, 2014		0.13	0.14	0.14	<0.06	-	0.15	0.11	-	-	-	0.7	-	-
Chrysene	mg/kg	<0.02	57	LQM, 2014		0.12	0.1	0.09	0.03	-	0.13	0.07	-	-	-	0.62	-	-
Benzo(bk)fluoranthene	mg/kg	<0.07	-			0.15	0.12	0.13	<0.07	-	0.17	0.12	-	-	-	0.9	-	-
Benzo(a)pyrene	mg/kg	<0.04	5.7	LQM, 2014		0.09	0.08	0.09	<0.04	-	0.12	0.07	-	-	-	0.56	-	-
Indeno(123cd)pyrene	mg/kg	<0.04	82	LQM, 2014		0.06	0.04	<0.04	<0.04	-	0.07	0.06	-	-	-	0.31	-	-
Dibenzo(ah)anthracene	mg/kg	<0.04	0.57	LQM, 2014		<0.04	<0.04	<0.04	<0.04	-	<0.04	<0.04	-	-	-	0.08	-	-
Benzo(ghi)perylene	mg/kg	<0.04	640	LQM, 2014		0.05	<0.04	<0.04	<0.04	-	0.07	0.05	-	-	-	0.23	-	-
Coronene	mg/kg	<0.04	-			<0.04	<0.04	<0.04	<0.04	-	<0.04	<0.04	-	-	-	0.08	-	-
PAH 6 Total #	mg/kg	<0.22	-			0.5	0.37	0.36	<0.22	-	0.58	0.39	-	-	-	3.23	-	-
PAH 17 Total	mg/kg	<0.64	-			0.95	0.78	0.77	<0.64	-	1.16	0.7	-	-	-	6.89	-	-
Benzo(b)fluoranthene	mg/kg	<0.05	7.1	LQM, 2014		0.11	0.09	0.09	<0.05	-	0.12	0.09	-	-	-	0.65	-	-
Benzo(k)fluoranthene	mg/kg	<0.02	190	LQM, 2014		0.04	0.03	0.04	<0.02	-	0.05	0.03	-	-	-	0.25	-	-
Benzo(j)fluoranthene	mg/kg	<1	-			<1	<1	<1	<1	-	<1	<1	-	-	-	<1	-	-
Mineral Oil (C10 C40)	mg/kg	<30	-			<30	<30	<30	<30	-	<30	<30	-	-	-	<30	-	-

Determinand	Units	LOD	POS_{res} GAC[2,3]	Source	Sample Location	BH2	BH3	BH3	BH3	BH4	BH4	BH5	BH5	BH6	BH8	BH9	BH11	BH12
					Sample Depth	1	1	3	4	2	3	1	3	4	2	2	3	2
					Soil Type	Silty SAND	SAND	SILT	SILT	Silty SAND	Silty SAND	Silty SAND	Sandy SILT	Sandy SILT	Sandy SILT	Sandy SILT	Sandy SILT	Sandy Silty GRAVEL
					Lab Receipt Date	21/04/2017	11/05/2017	11/05/2017	11/05/2017	21/04/2017	21/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	11/05/2017
TPH CWG																		
Aliphatics																		
>C5 C6	mg/kg	<0.1	570000	LQM, 2014	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	-	-	<0.1	-	-	
>C6 C8	mg/kg	<0.1	600000	LQM, 2014	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	-	-	<0.1	-	-	
>C8 C10	mg/kg	<0.1	13000	LQM, 2014	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	-	-	<0.1	-	-	
>C6 C10	mg/kg	<0.1			<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	-	-	<0.1	-	-	
>C10 C12	mg/kg	<0.2	13000	LQM, 2014	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	-	-	<0.2	-	-	
>C12 C16	mg/kg	<4	13000	LQM, 2014	<4	<4	<4	<4	-	<4	<4	-	-	-	<4	-	-	
>C16 C21	mg/kg	<7	-		<7	<7	<7	<7	-	<7	<7	-	-	-	<7	-	-	
>C10 C25	mg/kg	<10			<10	<10	<10	<10	-	<10	<10	-	-	-	<10	-	-	
>C21 C35	mg/kg	<7	-		<7	<7	<7	<7	-	<7	<7	-	-	-	<7	-	-	
>C25 C35	mg/kg	<10			<10	<10	<10	<10	-	<10	<10	-	-	-	<10	-	-	
>C16 C35	mg/kg	<14	250000	LQM, 2014	<14	<14	<14	<14	-	<14	<14	-	-	-	<14	-	-	
>C35 C40	mg/kg	<7	250000	LQM, 2014	<7	<7	<7	<7	-	<7	<7	-	-	-	<7	-	-	
Total aliphatics (C5 to 40)	mg/kg	<26	-		<26	<26	<26	<26	-	<26	<26	-	-	-	<26	-	-	
Aromatics																		
>C5 EC7	mg/kg	<0.1	56000	LQM, 2014	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	-	-	<0.1	-	-	
>EC7 EC8	mg/kg	<0.1	56000	LQM, 2014	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	-	-	<0.1	-	-	
>EC8 EC10	mg/kg	<0.1	5000	LQM, 2014	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	-	-	<0.1	-	-	
>EC6 EC10	mg/kg	<0.1		LQM, 2014	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	-	-	<0.1	-	-	
>EC10 EC12	mg/kg	<0.2	5000	LQM, 2014	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	-	-	<0.2	-	-	
>EC12 EC16	mg/kg	<4	5100	LQM, 2014	<4	<4	<4	<4	-	<4	<4	-	-	-	<4	-	-	
>EC16 EC21	mg/kg	<7	3800	LQM, 2014	<7	<7	19	<7	-	<7	<7	-	-	-	14	-	-	
>EC10 EC25	mg/kg	<10		LQM, 2014	<10	<10	30	<10	-	<10	<10	-	-	-	25	-	-	
>EC21 EC35	mg/kg	<7	3800	LQM, 2014	<7	<7	90	<7	-	<7	<7	-	-	-	70	-	-	
>EC25 EC35	mg/kg	<10		LQM, 2014	<10	<10	68	<10	-	<10	<10	-	-	-	56	-	-	
>EC35 EC40[6]	mg/kg	<7	3800	LQM, 2014	<7	<7	<7	<7	-	<7	<7	-	-	-	<7	-	-	
Total aromatics (C5 to 40)	mg/kg	<26	-		<26	<26	109	<26	-	<26	<26	-	-	-	84	-	-	
Total aliphatics and aromatics(C5 to 40)	mg/kg	<52	-		<52	<52	109	<52	-	<52	<52	-	-	-	84	-	-	
MTBE	ug/kg	<5	73000	CL:AIRE, 2010	<5	<5	<5	<5	-	<5	<5	-	-	-	<5	-	-	
Benzene	ug/kg	<5	72000	LQM, 2014	<5	<5	<5	<5	-	<5	<5	-	-	-	<5	-	-	
Toluene	ug/kg	<5	56000000	LQM, 2014	<5	<5	<5	<5	-	<5	<5	-	-	-	<5	-	-	
Ethylbenzene	ug/kg	<5	24000000	LQM, 2014	<5	<5	<5	<5	-	23	<5	-	-	-	<5	-	-	
m/p Xylene	ug/kg	<5	41000000	LQM, 2014	<5	<5	<5	<5	-	24	<5	-	-	-	<5	-	-	
o Xylene	ug/kg	<5	41000000	LQM, 2014	<5	<5	<5	<5	-	11	<5	-	-	-	<5	-	-	
Polychlorinated Biphenyls (PCBs)																		
PCB 28	ug/kg	<5	-		<5	<5	<5	<5	-	<5	<5	-	-	-	<5	-	-	
PCB 52	ug/kg	<5	-		<5	<5	<5	<5	-	<5	<5	-	-	-	<5	-	-	
PCB 101	ug/kg	<5	-		<5	<5	<5	<5	-	<5	<5	-	-	-	<5	-	-	
PCB 118	ug/kg	<5	-		<5	<5	<5	<5	-	<5	<5	-	-	-	<5	-	-	
PCB 138	ug/kg	<5	-		<5	<5	<5	<5	-	<5	<5	-	-	-	<5	-	-	
PCB 153	ug/kg	<5	-		<5	<5	<5	<5	-	<5	<5	-	-	-	<5	-	-	
PCB 180	ug/kg	<5	-		<5	<5	<5	<5	-	<5	<5	-	-	-	<5	-	-	
Total 7 PCBs[7]	ug/kg	<35	8	EA, 2009	<35	<35	<35	<35	-	<35	<35	-	-	-	<35	-	-	
Phenol	mg/kg	<0.01	760	LQM, 2014	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	-	-	-	<0.01	-	-	
Natural Moisture Content	%	<0.1			11.8	9.6	33.7	3.4	-	19.7	17.4	-	-	-	42.9	-	-	
Moisture Content (% Wet Weight)	%	<0.1			10.6	8.8	25.2	3.3	-	16.4	14.8	-	-	-	30	-	-	
Total Organic Carbon	%	<0.02			1.68	0.56	3.24	0.52	-	0.36	0.36	-	-	-	2.09	-	-	
SOM (Calculated)	%	--			2.896551724	0.965517241	5.586206897	0.896551724	-	0.620689655	0.620689655	-	-	-	3.603448276	-	-	
pH	pH units	<0.01	-		9.24	9.1	8.22	8.44	10.35	9.67	8.9	8.16	8.01	10.57	7.84	8.1	8.76	

				Sample Location	BH2	BH3	BH3	BH3	BH4	BH4	BH5	BH5	BH6	BH8	BH9	BH11	BH12
				Sample Depth	1	1	3	4	2	3	1	3	4	2	2	3	2
				Soil Type	Silty SAND	SAND	SILT	SILT	Silty SAND	Silty SAND	Silty SAND	Sandy SILT	Sandy SILT	Sandy SILT	Sandy SILT	Sandy SILT	Sandy Silty GRAVEL
				Lab Receipt Date	21/04/2017	11/05/2017	11/05/2017	11/05/2017	21/04/2017	21/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017	11/05/2017
Determinand	**Units**	**LOD**	**POS_{res} GAC[2,3]**	**Source**													
Asbestos																	
General Description (Bulk Analysis)	--	--	-		Sand/Stones	Sand/Stones	Soil Silt/Ston	soil/stones	-	Sand/Stones	Soil/Stone	-	-	-	Soil/Stone	-	-
Asbestos Fibres	--	--	-		NAD	NAD	NAD	NAD	-	NAD	NAD	-	-	-	NAD	-	-
Asbestos Fibres (2)	--	--	-		-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos ACM	--	--	-		NAD	NAD	NAD	NAD		NAD	NAD	-	-	-	NAD	-	-
Asbestos Type	--	--	-		NAD	NAD	NAD	NAD	-	NAD	NAD	-	-	-	NAD	-	-
Asbestos Type (2)	--	--	-		-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos Level Screen	%	<0.1	-		NAD	NAD	NAD	NAD	-	NAD	NAD	-	-	-	NAD	-	-
Asbestos Gravimetric Quantification	mass %	<0.001	-		NAD	NAD	NAD	NAD	-	NAD	NAD	-	-	-	NAD	-	-
Asbestos PCOM Quantification (Fibres)	mass %	<0.001	-		NAD	NAD	NAD	NAD	-	NAD	NAD	-	-	-	NAD	-	-
Asbestos Gravimetric & PCOM Total	mass %	<0.001	-		NAD	NAD	NAD	NAD	-	NAD	NAD	-	-	-	NAD	-	-

				Sample Location	BH13	BH31	BH30	TP12	TP12	TP13	TP14	TP14	TP15	TP17	TP18
				Sample Depth	3	2.8	5	0.00-1.50	1.50-3.00	1.50-2.70	0.00-1.50	1.50-3.00	1.50-3.00	1.50-1.90	1.50-2.70
				Soil Type	Cobbles and Boulder	Cobbles and Boulder	Bedrock	Sandy GRAVEL	Clayey SAND	Gravelly Clayey SAND	Gravel	SAND and CLAY	Sand and Clay	Sand	Sand and Clay
				Lab Receipt Date	28/04/2017	11/05/2017	11/05/2017	14/08/2019	14/08/2019						
Determinand	**Units**	**LOD**	**POS_{res} GAC[2,3]**	**Source**											
Antimony	mg/kg	<1	550	CL:AIRE, 2010	2	2	8	3	4	<1	1	<1	<1	2	1
Arsenic	mg/kg	<0.5	79	LQM, 2014	18.7	8.8	177.1	10	25.2	6	11.3	6.1	15.1	16.5	11.1
Barium	mg/kg	<1	1300	CL:AIRE, 2010	60	76	336	350	186	24	46	14	45	63	69
Cadmium	mg/kg	<0.1	120	LQM, 2014	0.3	0.1	1.6	0.3	0.4	<0.1	0.2	<0.1	0.2	<0.1	0.4
Chromium	mg/kg	<0.5	-		58.7	65	69.5	92.5	122.3	141.9	56.4	44.7	37.3	130.2	114
Chromium III	mg/kg	<0.5	1500	LQM, 2014	58.7	65	69.5	92.5	122.3	141.9	56.4	44.7	37.3	130.2	114
Hexavalent Chromium	mg/kg	<0.3	7.7	LQM, 2014	<0.3	<0.3	<0.3			<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Copper	mg/kg	<1	12000	LQM, 2014	28	5	96	71	103	7	36	7	14	23	18
Total Cyanide	mg/kg	<0.5	-		<0.5	<0.5	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Lead[4]	mg/kg	<5	270	DEFRA, 2013	80	8	507	310	371	17	26	15	213	70	18
Mercury[5]	mg/kg	<0.1	120	LQM, 2014	0.2	<0.1	0.6	0.4	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	mg/kg	<0.1	670	CL:AIRE, 2010	2.8	3.4	12.4	6.1	7.9	8.8	1.3	0.6	1.3	8.5	5.6
Nickel	mg/kg	<0.7	230	LQM, 2014	28.8	26.1	63.3	44.8	35.8	10.7	19.5	10.3	15.9	17.8	48.8
Selenium	mg/kg	<1	1100	LQM, 2014	2	2	7	<1	1	<1	1	<1	<1	<1	<1
Total Sulphate as SO4	mg/kg	<50	-		3816	104	2501	403	709	622	355	1030	1946	570	362
Sulphate as SO4 (2:1 Ext)	g/l	<0.0015	-		-	-	-	-	-						
Elemental Sulphur	mg/kg	<1	-		2824	13	259	38	37	29	10	24	1243	36	98
Sulphide	mg/kg	<10	-		45	<10	<10	<10	<10	<10	<10	<10	42	<10	<10
Water Soluble Boron	mg/kg	<0.1	21000	LQM, 2014	9	0.4	3	-	-	0.9	0.4	0.9	4	0.7	1.6
Ammoniacal Nitrogen as N	mg/kg	<0.6	-		-	-	-	<0.3	0.9	7.3	0.8	1.2	0.4	0.5	1.4
Zinc	mg/kg	<5	81000	LQM, 2014	143	42	2175	-	-	29	127	33	64	64	70
Polycyclic Aromatic Hydrocarbons (PAHs)															
Naphthalene	mg/kg	<0.04	4900	LQM, 2014	<0.04	<0.04	<0.04	0.2	0.25	<0.04	<0.04	<0.04	0.05	0.05	<0.04
Acenaphthylene	mg/kg	<0.03	15000	LQM, 2014	0.16	<0.03	<0.03	0.33	0.16	<0.03	<0.03	<0.03	0.06	0.04	<0.03
Acenaphthene	mg/kg	<0.05	15000	LQM, 2014	<0.05	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fluorene	mg/kg	<0.04	9900	LQM, 2014	0.09	<0.04	<0.04	0.06	0.1	<0.04	<0.04	<0.04	0.08	<0.04	<0.04
Phenanthrene	mg/kg	<0.03	3100	LQM, 2014	0.77	<0.03	0.45	0.63	0.72	0.17	0.06	0.11	0.43	0.27	<0.03
Anthracene	mg/kg	<0.04	74000	LQM, 2014	0.29	<0.04	0.14	0.38	0.22	0.05	0.04	0.05	0.23	0.06	<0.04
Fluoranthene	mg/kg	<0.03	3100	LQM, 2014	1.58	0.05	0.65	1.5	1.19	0.17	0.19	0.23	0.94	0.57	<0.03
Pyrene	mg/kg	<0.03	7400	LQM, 2014	1.17	0.04	0.58	1.55	1.18	0.15	0.23	0.21	0.77	0.54	<0.03
Benzo(a)anthracene	mg/kg	<0.06	29	LQM, 2014	0.93	0.07	0.35	1.12	0.76	0.1	0.15	0.2	0.57	0.25	<0.06
Chrysene	mg/kg	<0.02	57	LQM, 2014	0.84	0.04	0.31	1.19	0.8	0.09	0.13	0.14	0.63	0.3	<0.02
Benzo(bk)fluoranthene	mg/kg	<0.07	-		1.29	<0.07	0.53	2.45	1.61	0.13	0.22	0.21	1.04	0.72	<0.07
Benzo(a)pyrene	mg/kg	<0.04	5.7	LQM, 2014	0.8	<0.04	0.36	1.3	0.81	0.08	0.11	0.14	0.59	0.39	<0.04
Indeno(123cd)pyrene	mg/kg	<0.04	82	LQM, 2014	0.51	<0.04	0.21	0.93	0.59	<0.04	0.08	0.07	0.36	0.27	<0.04
Dibenzo(ah)anthracene	mg/kg	<0.04	0.57	LQM, 2014	0.09	<0.04	0.06	0.21	0.16	<0.04	<0.04	<0.04	0.09	0.08	<0.04
Benzo(ghi)perylene	mg/kg	<0.04	640	LQM, 2014	0.41	<0.04	0.25	1	0.64	<0.04	0.09	0.06	0.25	0.3	<0.04
Coronene	mg/kg	<0.04	-		0.1	<0.04	0.06	0.19	0.13	<0.04	<0.04	<0.04	0.05	0.07	<0.04
PAH 6 Total #	mg/kg	<0.22	-		4.59	<0.22	2	7.18	4.84	0.38	0.69	0.71	3.18	2.25	<0.22
PAH 17 Total	mg/kg	<0.64	-		9.03	<0.64	3.95	13.04	9.4	0.94	1.3	1.42	6.14	3.91	<0.64
Benzo(b)fluoranthene	mg/kg	<0.05	7.1	LQM, 2014	0.93	<0.05	0.38	1.76	1.16	0.09	0.16	0.15	0.75	0.52	<0.05
Benzo(k)fluoranthene	mg/kg	<0.02	190	LQM, 2014	0.36	<0.02	0.15	0.69	0.45	0.04	0.06	0.06	0.29	0.2	<0.02
Benzo(j)fluoranthene	mg/kg	<1	-		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Mineral Oil (C10 C40)	mg/kg	<30	-		<30	<30	<30	237	97	<30	281	<30	<30	<30	<30

				Sample Location	BH13	BH31	BH30	TP12	TP12	TP13	TP14	TP14	TP15	TP17	TP18
				Sample Depth	3	2.8	5	0.00-1.50	1.50-3.00	1.50-2.70	0.00-1.50	1.50-3.00	1.50-3.00	1.50-1.90	1.50-2.70
				Soil Type	Cobbles and Boulder	Cobbles and Boulder	Bedrock	Sandy GRAVEL	Clayey SAND	Gravelly Clayey SAND	Gravel	SAND and CLAY	Sand and Clay	Sand	Sand and Clay
				Lab Receipt Date	28/04/2017	11/05/2017	11/05/2017	14/08/2019	14/08/2019						
Determinand	**Units**	**LOD**	**POS$_{res}$ GAC[2,3]**	**Source**											
TPH CWG															
Aliphatics															
>C5 C6	mg/kg	<0.1	570000	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C6 C8	mg/kg	<0.1	600000	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C8 C10	mg/kg	<0.1	13000	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C6 C10	mg/kg	<0.1			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>C10 C12	mg/kg	<0.2	13000	LQM, 2014	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>C12 C16	mg/kg	<4	13000	LQM, 2014	<4	<4	<4	<4	<4	<4	29	<4	<4	<4	<4
>C16 C21	mg/kg	<7	-		<7	<7	<7	26	35	<7	17	<7	<7	<7	<7
>C10 C25	mg/kg	<10			<10	<10	<10	211	62	<10	97	<10	<10	<10	<10
>C21 C35	mg/kg	<7	-		<7	<7	<7	<7	<7	<7	235	<7	<7	<7	<7
>C25 C35	mg/kg	<10			<10	<10	<10	150	30	<10	176	<10	<10	<10	<10
>C16 C35	mg/kg	<14	250000	LQM, 2014	<14	<14	<14	33	42	<14	252	<14	<14	<14	<14
>C35 C40	mg/kg	<7	250000	LQM, 2014	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7
Total aliphatics (C5 to 40)	mg/kg	<26	-		<26	<26	<26	237	97	<26	281	<26	<26	<26	<26
Aromatics															
>C5 EC7	mg/kg	<0.1	56000	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC7 EC8	mg/kg	<0.1	56000	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC8 EC10	mg/kg	<0.1	5000	LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC6 EC10	mg/kg	<0.1		LQM, 2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
>EC10 EC12	mg/kg	<0.2	5000	LQM, 2014	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
>EC12 EC16	mg/kg	<4	5100	LQM, 2014	<4	<4	<4	7	14	<4	<4	<4	<4	<4	<4
>EC16 EC21	mg/kg	<7	3800	LQM, 2014	26	<7	<7	136	69	<7	<7	<7	24	9	<7
>EC10 EC25	mg/kg	<10		LQM, 2014	62	<10	15	398	144	<10	<10	<10	53	25	<10
>EC21 EC35	mg/kg	<7	3800	LQM, 2014	117	<7	71	930	296	<7	82	<7	84	74	<7
>EC25 EC35	mg/kg	<10		LQM, 2014	103	<10	61	596	206	<10	72	<10	62	58	<10
>EC35 EC40[6]	mg/kg	<7	3800	LQM, 2014	38	<7	17	88	30	<7	<7	<7	<7	<7	<7
Total aromatics (C5 to 40)	mg/kg	<26	-		181	<26	88	1161	409	<26	82	<26	108	83	<26
Total aliphatics and aromatics(C5 to 40)	mg/kg	<52	-		181	<52	88	1398	506	<52	363	<52	108	83	<52
MTBE	ug/kg	<5	73000	CL:AIRE, 2010	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Benzene	ug/kg	<5	72000	LQM, 2014	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Toluene	ug/kg	<5	56000000	LQM, 2014	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	ug/kg	<5	24000000	LQM, 2014	<5	<5	<5	<5	<5	<5	9	11	<5	7	<5
m/p Xylene	ug/kg	<5	41000000	LQM, 2014	<5	<5	<5	<5	<5	<5	13	19	<5	16	<5
o Xylene	ug/kg	<5	41000000	LQM, 2014	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Polychlorinated Biphenyls (PCBs)															
PCB 28	ug/kg	<5	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 52	ug/kg	<5	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 101	ug/kg	<5	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 118	ug/kg	<5	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 138	ug/kg	<5	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 153	ug/kg	<5	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
PCB 180	ug/kg	<5	-		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Total 7 PCBs[7]	ug/kg	<35	8	EA, 2009	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35
Phenol	mg/kg	<0.01	760	LQM, 2014	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Natural Moisture Content	%	<0.1			49.7	<0.1	36.3	23.9	31.1	28.4	7.7	23.5	25.8	16.7	20.9
Moisture Content (% Wet Weight)	%	<0.1			33.2	<0.1	26.6	19.3	23.7	22.1	7.1	19.1	20.5	14.3	17.3
Total Organic Carbon	%	<0.02			1.81	0.69	13.75	12.07	5.86	2.9	0.41	0.53	2.46	0.98	0.47
SOM (Calculated)	%	--			3.120689655	1.189655172	23.70689655								
pH	pH units	<0.01	-		7.85	8.37	7.99			8.62	8.74	8.56	8.52	8.83	8.29

				Sample Location	BH13	BH31	BH30	TP12	TP12	TP13	TP14	TP14	TP15	TP17	TP18
				Sample Depth	3	2.8	5	0.00-1.50	1.50-3.00	1.50-2.70	0.00-1.50	1.50-3.00	1.50-3.00	1.50-1.90	1.50-2.70
				Soil Type	Cobbles and Boulder	Cobbles and Boulder	Bedrock	Sandy GRAVEL	Clayey SAND	Gravelly Clayey SAND	Gravel	SAND and CLAY	Sand and Clay	Sand	Sand and Clay
				Lab Receipt Date	28/04/2017	11/05/2017	11/05/2017	14/08/2019	14/08/2019						
Determinand	**Units**	**LOD**	**POS_{res} GAC[2,3]**	**Source**											
Asbestos															
General Description (Bulk Analysis)	--	--	-		soil/stones	soil stones	Soil/Stones/C	soil/stones	soil/stones	Soil/Stone	soil/stones	soil/stones	soil/stones	Soil/Stone	soil.stones
Asbestos Fibres	--	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Fibres (2)	--	--	-		-	-	-	-	NAD						
Asbestos ACM	--	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Type	--	--	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Type (2)	--	--	-		-	-	-	-	NAD						
Asbestos Level Screen	%	<0.1	-		NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Gravimetric Quantification	mass %	<0.001	-		NAD	NAD	NAD	-	-	-	-	-	-	-	-
Asbestos PCOM Quantification (Fibres)	mass %	<0.001	-		NAD	NAD	NAD	-	-	-	-	-	-	-	-
Asbestos Gravimetric & PCOM Total	mass %	<0.001	-		NAD	NAD	NAD	-	-	-	-	-	-	-	-

Soil Screening Notes:

nnn Indicate where the Residential GAC is exceeded

Numbers in **BOLD** text show where results are above the LOD

[1] 'LOD' = Laboratory limit of detection

[2] 'GAC' = 'Generic Assessment Criteria'; Public Open Space (residential) for all sources except CL:AIRE (2010) and EA (2009) where only Residential GAC are available.

[3] For some PAH and TPH bands, the GAC exceeds the contaminant's solubility or vapour saturation limit.

[4] Most conservative GAC value applied from a range of 270 to 760 mg/kg.

[5] GAC value for inorganic mercury was applied, as it is more likely to be present on site than the other forms.

[6] Screening values for this band are not available; GAC for band >35-44 has been applied

[7] GAC value is for a sum of PCDDs, PCDFs and dioxin-like PCBs and may not be appropriate for direct comparison against the sum of these 7 PCB cogeners

- = No available GAC or individual constituents already assessed

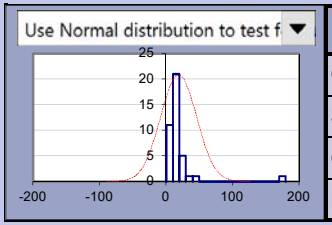
Test Results

Arsenic (mg/kg)

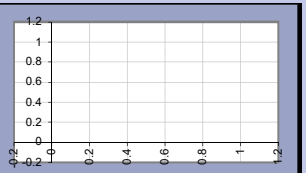
Client/client ref: Atlas GP Ltd | Site ref: Claremont, Howth Development | Date: 17-Sep-2019

Project ref: 19128243 | Data description: Superficial & bedrock data for Sit | User details: WLai

Dataset:	Arsenic (mg/kg)
Sample mean (mg/kg), $\overline{x}$	18.89
Sample standard deviation, s	27.002
Sample size, n	40
Critical concentration, Cc (mg/kg)	79



Outliers & non-detects	
Outliers present?	**Yes**
Significance level	5%
Outliers excluded	0
Non-detects	0

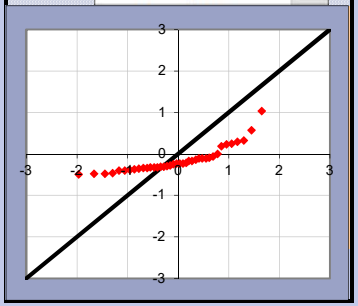


Normality test

Significance level: 5%

Non-normal distribution

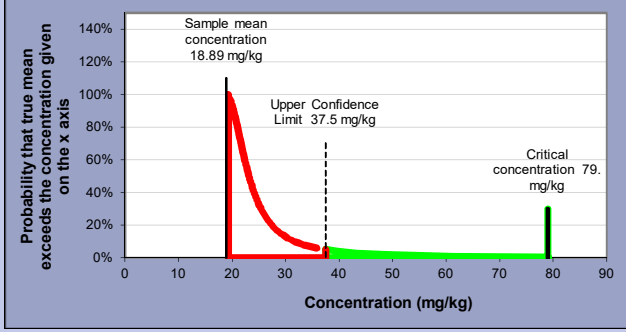
Use: Auto: Chebychev



Test scenario:

Planning: is true mean lower than critical concentration (μ < Cc)?

Null hypothesis:	The true mean concentration is equal to or greater than the critical concentration: μ≥ Cc
Alternative hypothesis	The true mean concentration is less than the critical concentration: μ < Cc



Evidence against Null hypothesis:	**99%**
Base decision on:	evidence level
Evidence level required:	**95%**
Balance of probability?	N/A
Reject Null Hypothesis?	Yes

μ < Cc (re this dataset)

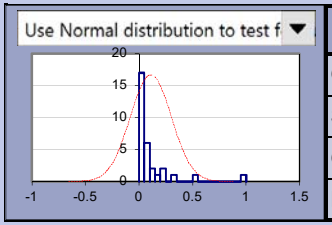
Back to data | Back to summary | Go to outlier test | Go to normality test

Test Results

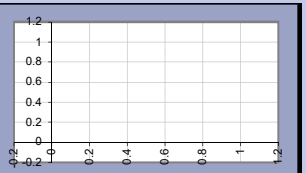
Client/client ref: Atlas GP Ltd | Site ref: Claremont, Howth Development | Date: 17-Sep-2019

Dibenzo(ah)anthracene (mg/kg) | Project ref: 19128243 | Data description: Superficial & bedrock data for Sit | User details: WLai

Dataset:	Dibenzo(ah)anthracene (mg/kg)
Sample mean (mg/kg), $\overline{x}$	0.1103
Sample standard deviation, s	0.1915
Sample size, n	31
Critical concentration, Cc (mg/kg)	0.57



Outliers & non-detects	
Outliers present?	**Yes**
Significance level	5%
Outliers excluded	0
Non-detects	18

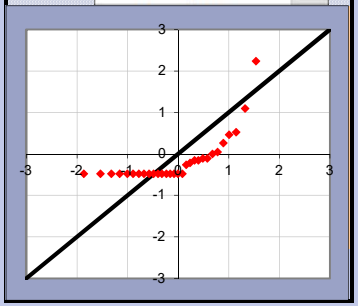


Normality test

Significance level: 5%

Non-normal distribution

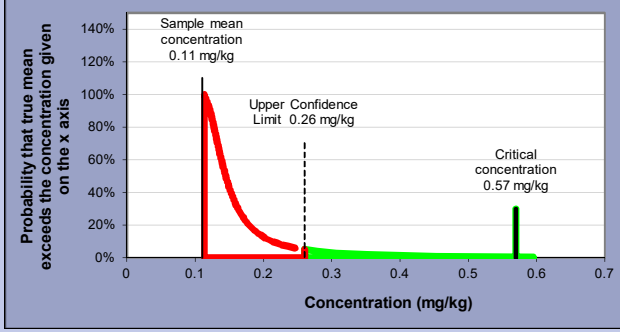
Use: Auto: Chebychev



Test scenario:

Planning: is true mean lower than critical concentration (μ < Cc)?

Null hypothesis:	The true mean concentration is equal to or greater than the critical concentration: μ≥ Cc
Alternative hypothesis	The true mean concentration is less than the critical concentration: μ < Cc



Evidence against Null hypothesis:	**99%**
Base decision on:	evidence level
Evidence level required:	**95%**
Balance of probability?	N/A
Reject Null Hypothesis?	Yes

μ < Cc (re this dataset)

Back to data | Back to summary | Go to outlier test | Go to normality test

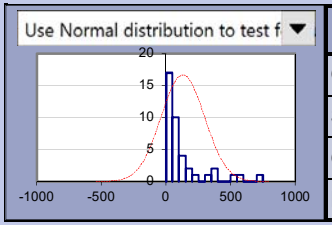
Test Results

Lead_L (mg/kg)

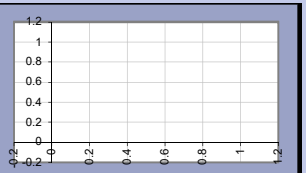
Client/client ref: Atlas GP Ltd | Site ref: Claremont, Howth Development | Date: 17-Sep-2019

Project ref: 19128243 | Data description: Superficial & bedrock data for Sit | User details: WLai

Dataset:	Lead_L (mg/kg)
Sample mean (mg/kg), $\bar{x}$	129.65
Sample standard deviation, s	168
Sample size, n	40
Critical concentration, Cc (mg/kg)	270



Outliers & non-detects	
Outliers present?	**Yes**
Significance level	5%
Outliers excluded	0
Non-detects	0

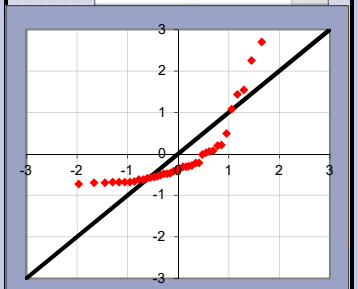


Normality test

Significance level: 5%

Non-normal distribution

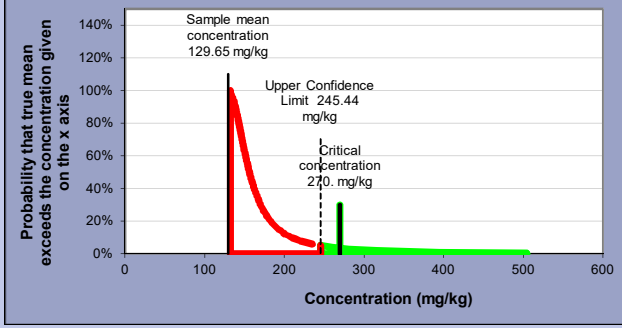
Use: Auto: Chebychev



Test scenario:

Planning: is true mean lower than critical concentration (μ < Cc)?

Null hypothesis:	The true mean concentration is equal to or greater than the critical concentration: μ≥ Cc
Alternative hypothesis	The true mean concentration is less than the critical concentration: μ < Cc



Evidence against Null hypothesis:	**97%**
Base decision on:	evidence level
Evidence level required:	**95%**
Balance of probability?	N/A
Reject Null Hypothesis?	Yes

μ < Cc (re this dataset)

Back to data | Back to summary | Go to outlier test | Go to normality test

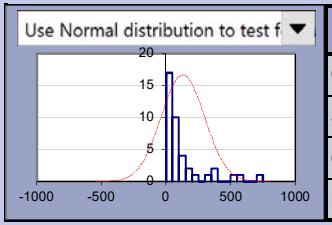
Test Results

Lead_U (mg/kg)

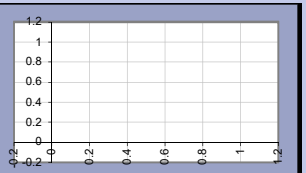
Client/client ref: Atlas GP Ltd | Site ref: Claremont, Howth Development | Date: 17-Sep-2019

Project ref: 19128243 | Data description: Superficial & bedrock data for Sit | User details: WLai

Dataset:	Lead_U (mg/kg)
Sample mean (mg/kg), $\overline{x}$	129.65
Sample standard deviation, s	168
Sample size, n	40
Critical concentration, Cc (mg/kg)	760



Outliers & non-detects	
Outliers present?	**Yes**
Significance level	5%
Outliers excluded	0
Non-detects	0

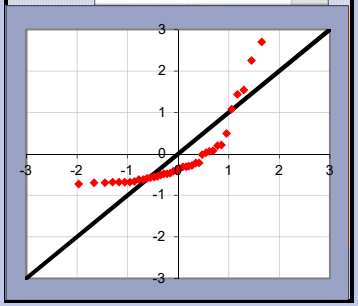


Normality test

Significance level: 5%

Non-normal distribution

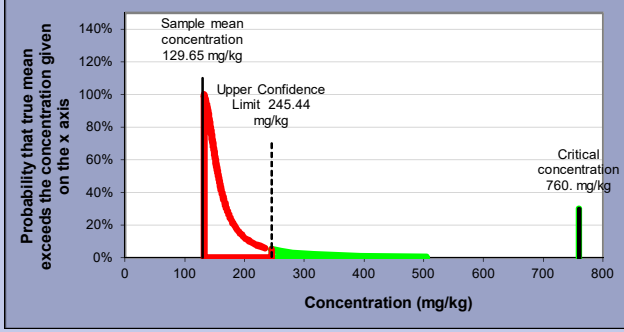
Use: Auto: Chebychev



Test scenario:

Planning: is true mean lower than critical concentration (μ < Cc)?

Null hypothesis:	The true mean concentration is equal to or greater than the critical concentration: μ≥ Cc
Alternative hypothesis	The true mean concentration is less than the critical concentration: μ < Cc



Evidence against Null hypothesis:	**100%**
Base decision on:	evidence level
Evidence level required:	**95%**
Balance of probability?	N/A
Reject Null Hypothesis?	Yes

μ < Cc (re this dataset)

Back to data | Back to summary | Go to outlier test | Go to normality test

golder.com

REPORT

Controlled Waters Risk Assessment

Claremont Development Site, Howth

Submitted to:

Atlas GP Limited

Claremont,
Howth
Co. Dublin

Submitted by:

Golder Associates Ireland Limited

Town Centre House, Dublin Road, Naas,
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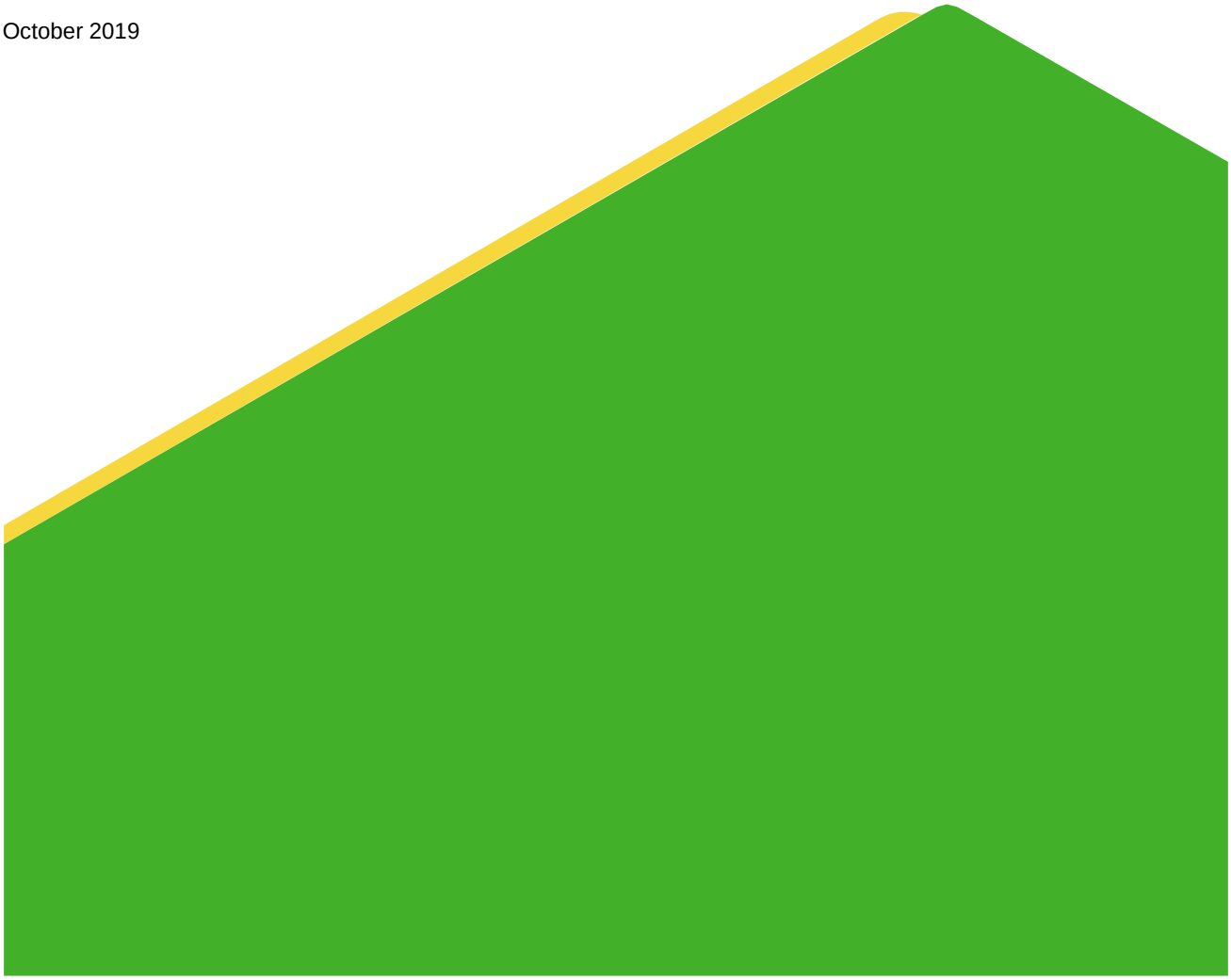
+353 45 81 0200

19128243.R03.A1

October 2019



Distribution List

Atlas GP Limited - 1 copy (pdf)

Golder Associates Ireland Limited - 1 copy (pdf)

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APPENDIX C
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1.0 INTRODUCTION

Golder Associates Ireland Limited (Golder) has been appointed by Atlas GP Limited (Atlas) to carry out a Controlled Waters Risk Assessment (CWRA) to support the planning application (up to construction) for the Claremont development site located at the former Techrete site Claremont, Howth, Co. Dublin (the Site).

The objective of this report is to assess the risk to Controlled Waters receptors and identify any further investigations works, risk assessment or remedial requirement necessary to satisfy planning as part of the redevelopment proposed for the project.

A Tier 1 screening is contained in the Phase II Ground Investigation Report (19128243. R01.A1, Dated October 2019). This report presents a Tier 2/3 detailed quantitative risk assessment for the Claremont Site.

2.0 SITE SETTING

2.1 Site Setting and Surrounding Land Use

The Site is made up of three separate areas, a precast manufacturing plant (formerly Techrete), Teeling Motors Garage and a garden centre (on site of former vehicle filling station).

The Site is situated on the western side of Howth, Co. Dublin, approximately 400 m west of Howth Harbour. The Site borders Howth road to the south and the DART railway line to the north, with Claremont beach located north of the railway line. A Fingal County Council pumping plant and associated lands are located adjacent to the west of site and there are residential and commercial properties adjoining the eastern site boundary. The Site is located approximately one mile from Howth town centre. Drawing 01 – Site Layout Plan contained in Appendix A presents the current layout of the site prior to development and in context with the surrounding environment.

Further information about the environmental setting of the Site, including the geological, hydrogeological and hydrological description of the Site is provided in the Interpretative Ground Investigation Report, Claremont Development Site, Howth, Golder (October 2019) and has not been reproduced in this report. However, it is noted that key summary information pertaining to the hydrogeological site setting and relationship to the site in its current status and proposed redevelopment has been reproduced in Section 4.1 below.

3.0 PROPOSED LAND USE

For the benefit of this CWRA report a summary of the proposed redevelopment is provided below (more detail is provided in the Interpretative Ground Investigation Report, Claremont Development Site, Howth, Golder (October 2019) including historic and current sites uses).

The proposed development will include the demolition of all structures on the Site and excavation of a basement (single and double under croft), which will provide car parking, plant, waste storage and ancillary uses. The overall layout of the proposed development is depicted in . The proposed development comprises the provision of a mixed-use development of residential, retail/non-retail uses and a childcare facility in 4 no. blocks (A to D), over part basement. Blocks A, B, C and D with a height up to a maximum of seven storeys of apartments over lower ground floor and basement car parking levels (a total of eight storeys over basement level). The residential component will consist of 512 no. residential units.

A civic plaza will be provided between Blocks D and C, and a landscaped park to the west of Block A. A channel to the sea for the Bloody Stream (daylighting of existing culvert) with associated riparian strip shall be opened up between Blocks A and B. Communal gardens (assuming no home-grown edible produce) will be provided for Blocks A, B, and C.

Figure 1: Proposed development layout (Henry J Lyons, 2019)

4.0 RISK ASSESSMENT

IGSL Limited (IGSL) conducted a ground investigation at the Site from March to May 2017. The investigation included drilling and sampling which consisted of 26 boreholes, 9 trial pits, and groundwater monitoring at 8 borehole locations (IGSL, 2017). In August 2019, Golder carried out further intrusive investigation to supplement existing IGSL data, followed by three rounds of surface, groundwater and gas monitoring. The investigations are summarised in the Interpretative Ground Investigation Report, Claremont Development Site, Howth, Golder (September 2019) [1]. Tier 1 screening risk assessment was carried out against all soil and groundwater analyses retrieved during these investigations. The factual analytical results from the samples taken as part of IGSL investigation have not been verified but have been screened with the assumption that the data is reliable; the following sections develops this assessment further to Tier 2 and 3 quantitative risk assessment.

It is noted that there is little data available for the soil beneath the footprint of the existing buildings/structures, especially the Techrete site, so there is no confidence in the condition of the soil beneath the building footprint and its potential to impact upon controlled waters; such area will require further investigation and assessment when it is cleared of constraints however, an assumption could be made that the ground conditions beneath the buildings are similar to the conditions on the site that have already been assessed.

4.1 Hydrogeological CSM and Identification of Pollutant Linkages

Made ground at the Site has been commonly described as comprising dark brown/black, slightly silty, gravelly sandy clay and contains fragments of concrete, brick, textiles, plastics and glass. The natural superficial deposits can be split in to two main lithologies: dark grey gravelly, sandy silt; and grey/yellow, gravelly, silty sand. The underlying Waulsortian limestone (bedrock) is described as a pale grey, massive unbedded lime mudstone. It is understood that it is amenable to dissolution and karst development[2].

The key aspects of the hydrogeological conceptual site model are as follows:

i) The contact between the superficial deposits and the underlying limestone is irregular;

ii) The water table lies close to the boundary between the limestone and the superficial deposits;

[1] Golder Associates Ireland Ltd, 2019. Interpretative Ground Investigation Report: Claremont Development Site, Howth, Report reference 19128243.R01.A0, dated October 2019.

[2] Murray, J. and Henry, T. 2018: Waulsortian Limestone: Geology and Hydrogeology.

iii) Groundwater beneath site flows down-gradient to Baldoyle Bay SAC (nearest registered sensitive water body). The groundwater level is fairly flat, noted at an average of approximately 1.56m AOD in up-gradient monitoring wells and 1.4m AOD in down-gradient monitoring wells.

iv) We note that Howth Head SAC is located approximately 1.5km east of the site and beyond Howth Harbour;

v) Groundwater is in hydraulic continuity between the site and Baldoyle Bay (there is no perched groundwater separate from the groundwater body);

vi) The groundwater body beneath the site is tidally influenced and demonstrated with a degree of saline intrusion (as per EC Environmental Obligations (Groundwater) (Amendment) Regulations 2016 screening threshold value for saline intrusion);

vii) The site is underlain by a local important aquifer (classed by Geological Survey Ireland) meaning the bedrock is moderately productive only in local zones, and groundwater vulnerability classed as Extreme (vulnerability is determined on absence of significant thickness of overlying deposits to act as mitigation / prevention to a potential contaminant pathway);

viii) Given the coastal location of the site, brackish groundwater conditions and availability of a public water supply it is unlikely that the underlying groundwater be identified within a Group Scheme or Public Supply Source Protection zone (thus not an identified drinking water supply aquifer or one requiring protection thereof);

ix) The underlying groundwater is identified with Tier 1 (GTV) exceedances of Arsenic, Nickel, total PAH, Sulphate and Ammoniacal Nitrogen (total TPH and Nitrite only exceed once) in the Phase II ground Investigation report (report 19128243.R01.A1), a similar suite (suite deemed as the quantity of exceedances and pollutant types) of contaminants are seen in soils and soil leachates, suggesting there is a pathway from on-site soil sources into groundwater beneath the site. There is not the same suite of pollutants observed within surface water samples taken from Baldoyle Bay SAC with perhaps the exception of Ammoniacal Nitrogen (which could have an alternative biogenic source not untypical of marine environments in urban coastal waters and thus not attributable to a pollutant linkage from the Site);

x) Based on the above the qualitative environmental risk assessment has identified low to low/moderate risk to underlying groundwater due to the observed pollutant suite distributions between groundwater and soils within the site boundary; and

xi) Based on the above the qualitative environmental risk assessment has identified very low to low risk to Baldoyle Bay SAC due to the observed pollutant suite distributions between surface water and groundwater / soils within the site boundary (note we have not specified risks to Howth Head SAC as it is not the nearest SAC, the nearest SAC (Baldoyle Bay) is taken as the more sensitive receptor (thus risks to Howth Head SAC would be even lower due to its distance from source)).

The Conceptual Site Model (CSM) is presented in Figure 2 below.

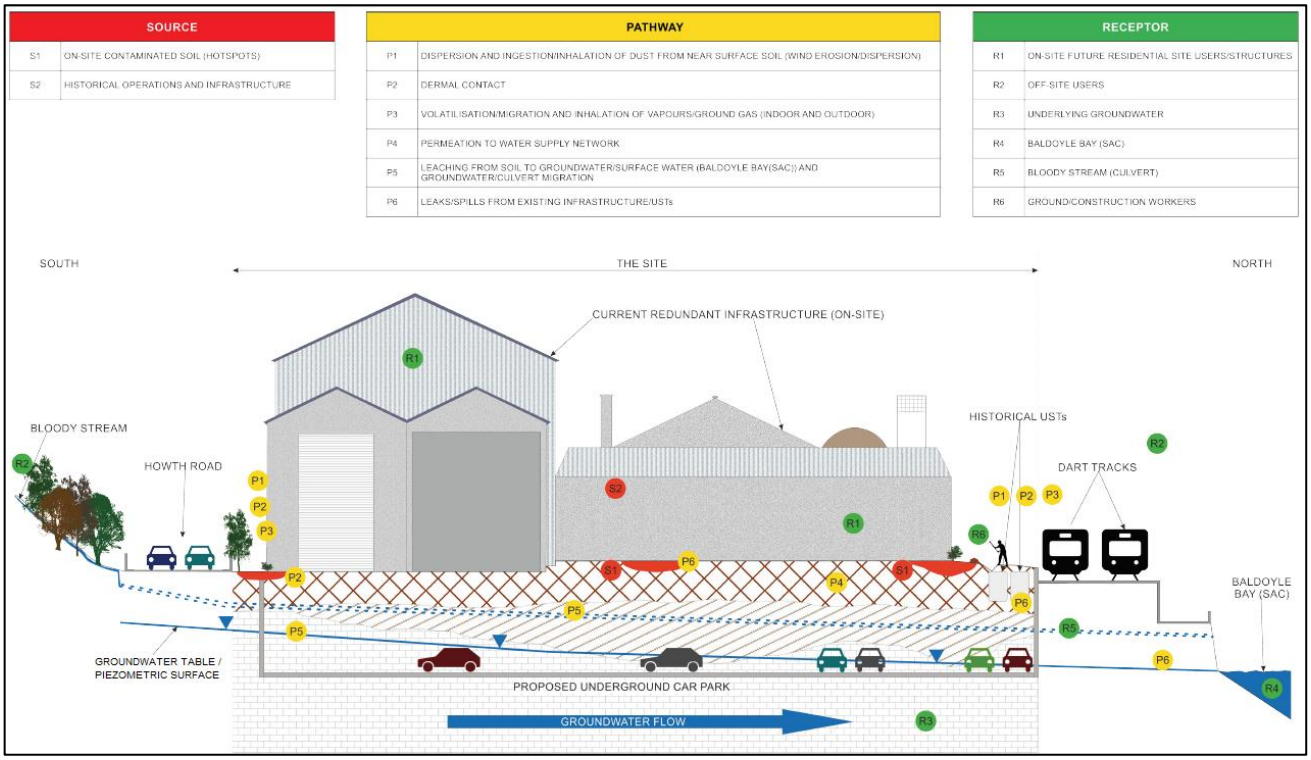

Figure 2: Conceptual Site Model. As presented in the Golder report "Interpretative Ground Investigation Report: Claremont Development Site, Howth, Report reference 19128243.R01.B1, dated September 2019

In relation to the risk posed to Controlled Waters, the source, pathway and receptor model at the Site is as follows (we note the risks to Human Health from Groundwater and Surface Water are addressed in the Human Health Risk Assessment Report, Golder, October 2019):

The **source** is considered to be the potential contaminants of concern within the Made Ground at the Site.

The **pathways** are considered to be:

- Downward vertical migration of dissolved contaminants through the unsaturated zone to limestone groundwater, driven by rainwater infiltration and leaching; and
- Mixing of dissolved contaminants with groundwater and lateral migration through the saturated limestone/superficial deposits to the Irish Sea (Baldoyle Bay SAC).

The **receptors** are considered to be:

- Groundwater beneath the Site; and
- Surface water of the Baldoyle Bay SAC.

For the purposes of this assessment the compliance point for hazardous substances has been selected to be the groundwater in the limestone directly beneath the Site and the compliance point for non-hazardous pollutants has been selected to be the point of entry to the surface water of the Baldoyle Bay

4.2 Tier 1 Assessment - Screening and Identification of Contaminants of Potential Concern (Generic Quantitative Risk Assessment)

A screening and identification of contaminants of potential concern (COPC) has been undertaken at the Site.

The screening and identification process aims to identify those substances with the potential to pose a risk to Controlled Waters and has comprised the following steps:

A desk study review of the Site, considering current and historical land use and associated potential contaminants;

- A review of leach test data from soil samples within the Made Ground of the Site; and
- An assessment of contaminant specific fate and transport properties and water quality standards to select substances representative of the site conditions which are considered to be bounding of the risk to controlled waters.

As a result of the screen the following have been selected as COPCs for the purpose of carrying out the next stage of risk assessment:

- Hazardous Substances – Arsenic, Lead, Mercury and Benzo(a)pyrene; and
- Non-Hazardous Pollutants – Ammoniacal Nitrogen, Chromium and Sulphate.

Note that there are no Benzo(a)pyrene exceedances in soil leachates, however Total PAHs (as sum of six, which includes Benzo(a)pyrene) exceeds on several occasions. Due to the uncharacterisable nature of Total PAHs for Tier 2/3 quantitative modelling, Benzo(a)pyrene has been used as conservative marker for potential concerns regarding Total PAHs. These substances will be considered within Tier 2/3 of the risk assessment.

4.3 Tier 2/3 Assessment - Calculation of Soil Threshold Values for Identified Contaminants of Concern (Detailed Quantitative Risk Assessment)

The Environment Agency Remedial Targets Methodology (RTM) worksheet[3] has been used to calculate threshold soil concentrations for each identified COPC which are protective of Controlled Waters receptors. This is a methodology for deriving site-specific remedial (clean up) objectives for contaminated soils or groundwater to protect the aquatic environment. The methodology applies to soils and groundwater that are already contaminated, where the original surface source of the contamination has stopped. The methodology consists of up to four assessment levels which progressively follow the pathway from the contaminant source through to the receptor. A remedial target is derived at each level, but this is likely to be less stringent at the next level as additional processes such as dilution are taken into account. The methodology has been followed to a level 2 (Tier 2) assessment (leaching from the source and entry into groundwater) for Hazardous Substances. With respect to Hazardous Substances, the Target Concentration for each modelled contaminant was set to the UK Minimum Reporting Values[4] (MRV) where possible. Where no MRV exists for the hazardous substance the laboratory Limit of Detection (LoD) or Groundwater Threshold Value[5] has been used, whichever is lowest. The methodology has been followed to a Level 3 (Tier 3) assessment (leaching from the source, entry into groundwater and transport to the Baldoyle Bay SAC receptor) for Non-Hazardous Pollutants.

With respect to Non-Hazardous Pollutants the Target Concentration for each modelled contaminant was compared to water quality standards protective of the Baldoyle Bay surface water receptor. The water quality standards for non-hazardous pollutants are the marine EQS[6], where possible.

[3] https://www.gov.uk/government/publications/remedial-targets-worksheet-v22a-user-manual

[4] https://www.gov.uk/government/publications/values-for-groundwater-risk-assessments/hazardous-substances-to-groundwater-minimum-reporting-values

[5] Groundwater Regulations 2010 (S.I. No. 9 of 2010) and amendment S.I. No. 366/2016, Schedule 5.

[6] Marine SI No. 268-2009. (EQS - Shellfish marine waters).

Where marine EQS were not available, surface water EQS[7] have been used. Where neither marine EQS or surface water EQS is available, the Groundwater Threshold Values have been used.

Given the non-targeted nature of the investigation works to date a site wide risk assessment has been carried out. The RTM worksheets for each contaminant of concern are presented in Appendix B. The following soil threshold values calculated for each contaminant of concern are presented in Table 1.

Table 1: Calculated Remedial Targets for Identified Potential Contaminants of Concern

Contaminant	Classification	Calculated Remedial Target (mg/kg)
Ammoniacal Nitrogen	Non-hazardous	58.1
Arsenic	Hazardous	153
Benzo(a)pyrene*	Hazardous	41.3
Chromium	Non-hazardous	919
Lead	Hazardous	9,780
Mercury	Hazardous	1.83
Sulphate	Non-hazardous	9,620

Note: * There are no Benzo(a)pyrene exceedances in soil leachates, however Total PAHs (as sum of six, which includes Benzo(a)pyrene) exceeds on several occasions. Due to the uncharacterisable nature of Total PAHs for Tier 2/3 quantitative modelling, Benzo(a)pyrene has been used as conservative marker for potential concerns regarding Total PAHs.

5.0 COMPARISON OF SOIL CONCENTRATIONS WITH CALCULATED THRESHOLD VALUES

The calculated RTM soil remedial target values protective of controlled waters have been compared with the soils data collected across the site from previous ground investigation work (Appendix C).

No exceedances have been identified for chromium, lead, ammoniacal nitrogen, sulphate and benzo(a)pyrene (as a marker for Total PAHs (sum of six)). Soil remedial target values were exceeded on one occasion for arsenic and on three occasions for mercury. All of these exceedances were within two times the soil remedial target value concentration and are presented in Table 2.

[7] S.I. No. 272/2009 - European Communities Environmental Objectives (Surface Waters) Regulations 2009 including amendments S.I. No. 327/2012, S.I. No. 386/2015 and S.I. No. 77/2019. (AA-EQS Other Surface Waters).

Table 2: Soil Remedial Target Exceedances in Soil Samples

Contaminant	Remedial Target Value (mg/kg)	Soil Concentration (mg/kg)	Sample Location and Depth	Sample Lithology
Arsenic	153	177.1	BH30, 5 m depth	Bedrock
Mercury	1.83	2.7	BH12, 1 m depth	Made Ground
		2.5	BH31, 1 m depth	Made Ground
		1.9	BH30, 1 m depth	Made Ground

The location of the mercury and arsenic remedial target value exceedances are presented in Drawings 02 and 03 respectively (Appendix A). Drawings 02 and 03 also present the location of surrounding estimated soil hotspots zones for these contaminants.

With regards to the Arsenic concentration, this is noted for a sample reported as taken from bedrock at 5m depth in BH30 by an earlier consultant's work, however the corresponding borehole log for this location terminates at 3.4m depth and in superficial deposits. All other exceedances in Table 2 correspond to samples depths, sample lithology and log descriptions thus suggesting either the BH30 borehole record is incorrect or the Arsenic sample depth is incorrect. Therefore, the location of this Arsenic exceedance (and whether there really is an exceedance in bedrock or superficial deposits) needs to be treated with caution, it is more likely an exceedance would reside in Made Ground materials or that it is naturally occurring elevated Arsenic in superficial deposits.

6.0 HYDROGEOLOGICAL IMPACT OF BASEMENT DEWATERING

The proposed redevelopment of this Site will require a large excavation of soils and dewatering to facilitate the construction of the basement, the potential hydrogeological impact of this activity with specific reference to nearby SACs is discussed below:

- As there is tidal influence on groundwater beneath the site this has benefit of limiting the pathway for pollutants within underlying groundwater to migrate off-site (tidal push back effect), obviously at lower tides greater off-site migration of pollutants can be expected relative to high tides. As the Site is tidally influenced it is not a simply the situation that groundwater migration of pollutants is one direction offsite all of the time, as a result there is a degree of mitigating against risk to the adjacent SAC arising from this natural process;
- BH2 and BH5 received continuous logging of groundwater levels over a four-day period (16-20 September 2019, refer to Ground Investigation Interpretative Report, Golder, October 2019). BH5 (nearest to Baldoyle Bay) exhibited tidal influence on groundwater level of approximately 7-10 cm, whereas for BH2 (adjacent to Howth Road) exhibited tidal influence on groundwater level of approximately 1-3 cm, between high and low tides. A further clear downward trend in BH5 is evident across the tidal range for the four days of monitoring illustrating peak groundwater level ranging from approximately 1.32 and 1.24 m AOD, whilst in BH2 the peak groundwater level ranged approximately from 1.67 up to 1.69 before dropping down to 1.64 m AOD. The basement excavation is likely to extend to approximately -1 m AOD at its deepest, consequently based on the observations recorded, high tide is likely to be approximately 2.3 m higher than the base of excavation near BH5 and approximately 2.6 m higher near to BH2. It is noted the effects of spring and neap tides have not been considered due to insufficient monitoring data available;

- Construction of a basement and its associated dewatering / soils removal will have the following effects;
  - Contaminant loadings on Site (i.e. mass of pollutants within soils and groundwater noting this CWRA report has identified the only soils to impact upon groundwater at the Site are within the excavation volume to be removed) will decrease due to its excavation and removal off-site, this basement void is expected to remove pollutant bearing soils and a significant volume of pollutant bearing groundwater. Decreased contaminant loadings from Site sources will therefore lower environmental risk from the site to the SAC to below those already qualitatively assessed;
  - Groundwater from the excavation will be pumped and discharged offsite via sewer under a temporary discharge consent only, thus will be taken to local sewerage treatment works for further treatment prior to eventual discharge to sea after treatment. There is no plan to discharge direct to the SAC. It is typical that temporary discharge consents require a level of compliance prior to discharge to sewer from the Site, thus on-site treatment is likely to be required (e.g. typically includes silt-busters, activated carbon, dosing to manage pH levels etc.) which will need to be regularly monitored / tested to evidence no breach of consent;
  - Dewatering could create a draw down risk on the local groundwater table, this will give rise to issues that require to be managed, including temporary/permanent works such as:
    - An integral secant pile wall founded sufficiently deep into bedrock to prevent / significantly reduce groundwater recharge ingress during works (this would significantly limit the zone of influence exerted on the draw-down impact from dewatering external to the basement excavation);
    - Sealing of bedrock / superficial deposits at basement formation level to prevent / significantly reduce groundwater recharge, this may require sectional excavation in a phased manner to undertake work appropriately; and
    - Draw-down effect will likely result in temporary change of the groundwater flow direction locally, to be from the Baldoyle Bay SAC towards the site; temporarily removing the tidal influence effect described above and for the saline intrusion effect to temporarily increase. There is no anticipated alteration to the hydrogeological condition of the adjacent SAC (or Howth Head SAC) anticipated from this work.

Based on the above it is considered dewatering of the basement structure will have no discernible hydrogeological impact on the adjacent Baldoyle Bay SAC (or Howth Head SAC) however it will have impact on the underlying groundwater in the immediate vicinity of the site as described above, albeit temporarily during works. Temporary/permanent works to facilitate the dewatering exercise will require to be designed to ensure appropriate construct, this will include (as is typical standard practice during construction works of a significant nature) a programme of ongoing groundwater and surface water monitoring (including analytical tests) to ensure works are undertaken in accordance with the permitted consents and conditions specified by authorities.

7.0 CONCLUSIONS AND RECOMMENDATIONS

This report presents a Controlled Waters Risk Assessment carried to support the planning application for the Claremont development site located at the former Techrete site Claremont, Howth, Co. Dublin.

A preliminary conceptual site model has been developed and Tier 1 screening undertaken which has identified potential pollutant linkages to the limestone groundwater beneath the Site and the Baldoyle Bay surface water from potential contaminants identified in the soil at the Site. Detailed quantitative risk assessment (Tier 2 and 3) has been carried out to calculate soil threshold values which are protective of Controlled Waters receptors for contaminants located within the soil at the Site.

Due to the limitations of the available soil data due to existing structures/buildings on the Site and the presence of contaminant hot spots, the following recommendations are suggested for the next phases of the project:

- Exceedances of the calculated remedial target values have been identified in a number of samples with respect to arsenic and mercury and illustrated on Drawings 2 and 3. The mercury area (shallow made ground) will require to be addressed via remedial works to either ensure suitability for reuse on site, or if cut/fill materials balance identifies surplus material for removal offsite, these soils should be considered for appropriate waste disposal or treatment at a soils recovery centre. The location of the arsenic exceedance with BH30 appears to be erroneous, however further testing in this area would provide comfort as to its likely provenance and whether it presents a concern or not to be dealt with similarly to mercury and treated as a waste for disposal offsite based on the cut/fill balance;
- Reference has been made within this report that further investigation and assessment should be undertaken in constrained (buildings/structures) areas, however the development plan allows for a large basement structure to be placed over this area, thus resulting in a large volume of these soils to be removed off-site, these soils should therefore be considered for the following further works:
  - Natural soils beneath the footprint of the building have the likely potential to be suitable for reuse (onsite and possibly as a secondary product offsite), further analytical testing and statistical assessment should be undertaken on this material to confirm suitability for reuse (via Tier 2 / 3 risk assessment if required) as part of a systematic sampling strategy; and
  - Made ground soils beneath the footprint of the building have the potential to contain potential contaminants, these should be sampled as part of a systematic and targeted hazardous/non-hazardous waste classification and/or Waste Acceptance Criteria Assessment to determine whether some of this material is viable for secondary product reuse offsite or is required be treated as a waste material for disposal offsite.

Signature Page

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APPENDIX A

Drawings

APPENDIX B

Remedial Target Methodology Worksheets

APPENDIX C

Soil Quality Data Screened Against Soil Threshold Values

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