

The Lake Lothing (Lowestoft) Third Crossing Order 201[*]

THIRD CROSSING

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Appendix 12B

Interpretative Environmental Ground Investigation Report

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LAKE LOTHING THIRD CROSSING

Interim Interpretative Environmental Ground Investigation Report





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LAKE LOTHING THIRD CROSSING

Interim Interpretative Environmental Ground Investigation Report

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CONTENTS

1	INTRODUCTION	1
1.1	TERMS OF REFERENCE	1
1.2	SCHEME DESCRIPTION	1
1.3	PROJECT SCOPE	2
1.4	LEGISLATIVE CONTEXT AND GUIDANCE	2
1.5	SOURCES OF INFORMATION	3
2	SITE SETTING	4
2.1	SITE DESCRIPTION AND CURRENT USE	4
2.2	SITE HISTORY	5
2.3	SURROUNDING LAND USES	6
2.4	POTENTIAL SOURCES OF CONTAMINATION	6
3	GROUND INVESTIGATION	8
3.1	PRELIMINARY CONCEPTUAL SITE MODEL	8
3.2	RATIONALE AND SCOPE	8
4	GROUND CONDITIONS ASSESSMENT	10
4.1	GROUND CONDITIONS ENCOUNTERED ON-SITE	10
4.2	MARINE SEDIMENT	12
5	HYDROLOGICAL & HYDROGEOLOGICAL CONDITIONS	13
5.1	LOCAL HYDROLOGY	13
5.2	HYDROGEOLOGY	13
6	QUANTITATIVE RISK ASSESSMENT	16
6.1	INTRODUCTION	16
6.2	HUMAN HEALTH RISK ASSESSMENT	16



6.3	CONTROLLED WATERS RISK ASSESSMENT	18
6.4	GROUND GAS ASSESSMENT	20
6.5	MARINE SEDIMENT SAMPLING	21
6.6	PILING RISK ASSESSMENT	22
7	WASTE ASSESSMENT	23
8	REFINED CONCEPTUAL SITE MODEL	24
8.1	INTRODUCTION	24
8.2	PLAUSIBLE CONTAMINANT LINKAGES	24
9	CONCLUSIONS AND RECOMMENDATIONS	25
9.1	GROUND CONDITIONS	25
9.2	ENVIRONMENTAL / CONTAMINATION ASSESSMENT	25
	OUTLINE REMEDIAL MEASURES	26
9.3 9.4		26
	CONSTRUCTION CONSIDERATIONS	26
	CONSTRUCTION CONSIDERATIONS	26
9.3 9.4		26
	CONSTRUCTION CONSIDERATIONS	26
	TABLES Table 1 - Sources of Information Table 2 - Summary of Site Details	3 4
	TABLES Table 1 - Sources of Information Table 2 - Summary of Site Details Table 3 - Areas of Potential Contamination (APC)	3 4 6
	TABLES Table 1 - Sources of Information Table 2 - Summary of Site Details Table 3 - Areas of Potential Contamination (APC) Table 4 - Summary of Ground Investigation Intrusive Works	3 4 6 8
	TABLES Table 1 - Sources of Information Table 2 - Summary of Site Details Table 3 - Areas of Potential Contamination (APC) Table 4 - Summary of Ground Investigation Intrusive Works Table 5 - Summary of VOC Exceedances > 10ppm	3 4 6 8 11
	TABLES Table 1 - Sources of Information Table 2 - Summary of Site Details Table 3 - Areas of Potential Contamination (APC) Table 4 - Summary of Ground Investigation Intrusive Works Table 5 - Summary of VOC Exceedances > 10ppm Table 6 - Summary of Visual and Olfactory Evidence of Contamination	3 4 6 8 11 12
	TABLES Table 1 - Sources of Information Table 2 - Summary of Site Details Table 3 - Areas of Potential Contamination (APC) Table 4 - Summary of Ground Investigation Intrusive Works Table 5 - Summary of VOC Exceedances > 10ppm Table 6 - Summary of Visual and Olfactory Evidence of Contamination Table 7 - Summary of Ground Water Strikes during the Ground Investigation	3 4 6 8 11 12 13
	TABLES Table 1 - Sources of Information Table 2 - Summary of Site Details Table 3 - Areas of Potential Contamination (APC) Table 4 - Summary of Ground Investigation Intrusive Works Table 5 - Summary of VOC Exceedances > 10ppm Table 6 - Summary of Visual and Olfactory Evidence of Contamination Table 7 - Summary of Ground Water Strikes during the Ground Investigation Table 8 - Summary of Ground Water Level Monitoring in the north of the study area	3 4 6 8 11 12 13 14
	TABLES Table 1 - Sources of Information Table 2 - Summary of Site Details Table 3 - Areas of Potential Contamination (APC) Table 4 - Summary of Ground Investigation Intrusive Works Table 5 - Summary of VOC Exceedances > 10ppm Table 6 - Summary of Visual and Olfactory Evidence of Contamination Table 7 - Summary of Ground Water Strikes during the Ground Investigation Table 8 - Summary of Ground Water Level Monitoring in the north of the study area Table 9 - Summary of Ground Water Level Monitoring in the south of the study area	3 4 6 8 11 12 13 14 15
	TABLES Table 1 - Sources of Information Table 2 - Summary of Site Details Table 3 - Areas of Potential Contamination (APC) Table 4 - Summary of Ground Investigation Intrusive Works Table 5 - Summary of VOC Exceedances > 10ppm Table 6 - Summary of Visual and Olfactory Evidence of Contamination Table 7 - Summary of Ground Water Strikes during the Ground Investigation Table 8 - Summary of Ground Water Level Monitoring in the north of the study area	3 4 6 8 11 12 13 14

FIGURES



Figure 1 - Location of the Scheme in Lowestoft

ANNEXES

- Annex A Drawings
- Annex B Scope of Works
- Annex C Land Based Ground Investigation Factual Information
- Annex C.1 Engineers Logs
- Annex C.2 Gas and Groundwater Monitoring
- Annex C.3 Chemical Test Data
- Annex D Marine Sampling Factual Information
- Annex D.1 Sampling Locations
- Annex D.2 Chemical Test Data
- Annex E Human Health Risk Assessment Background Information
- Annex F Chemical Screening



1 INTRODUCTION

1.1 TERMS OF REFERENCE

- 1.1.1. An assessment of contaminated land including associated risks, constraints and liabilities has been undertaken to support a DCO application and design of the Scheme.
- 1.1.2. This interim report has been prepared with the ground investigation information available at the time of reporting. The Engineers logs in Annex C have not been finalised and the groundwater levels in Section 5.2.5 relate to the data collected during the first two groundwater monitoring visits. However, this report (and appendices 12A and 12C and chapter 12 of the ES) take account of the fact that groundwater was encountered during the ground investigation, and the results of sampling of that groundwater. The information to be added to section 5 will provide more detail of the groundwater encountered, but this will not affect the results of the assessment or the recommendations suggested. The report will be updated once this information is available.

1.2 SCHEME DESCRIPTION

- 1.2.1. The scheme involves the construction, operation and maintenance of a new bascule bridge highway crossing linking the areas north and south of Lake Lothing in Lowestoft, hereafter referred to as the Lake Lothing Third Crossing ("the Scheme").
- 1.2.2. The Scheme would provide a new single-carriageway road crossing of Lake Lothing, consisting of a multi-span bridge with associated approach roads, and would comprise:
 - An opening bascule bridge over the Port of Lowestoft, in Lake Lothing;
 - On the north side of Lake Lothing, a bridge over Network Rail's East Suffolk Line, and a reinforced earth embankment joining that bridge, via a new roundabout junction, to the C970 Peto Way, between Rotterdam Road and Barnards Way; and
 - On the south side of Lake Lothing, a bridge over the northern end of Riverside Road including the existing access to commercial property (Nexen Lift Trucks) and a reinforced earth embankment (following the alignment of Riverside Road) joining this bridge to a new roundabout junction with the B1531 Waveney Drive.
- 1.2.3. The Scheme would be approximately 1 kilometre long and would be able to accommodate all types of vehicular traffic as well as non-motorised users, such as cyclists and pedestrians.
- 1.2.4. The opening bascule bridge design would allow large vessels to continue to use the Port of Lowestoft.
- 1.2.5. A new control tower building would be located immediately to the south of Lake Lothing, on the west side of the new highway crossing, to facilitate the operation of the opening section of the new bascule bridge.
- 1.2.6. The Scheme would also entail:-
 - The following changes to the existing highway network:
 - The closure of Durban Road to vehicular traffic at its junction with Waveney Drive;
 - The closure of Canning Road at its junction with Riverside Road, and the construction of a replacement road between Riverside Road and Canning Road to the west of the Registry Office; and
 - A new access road from Waveney Drive west of Riverside Road, to provide access to property at Riverside Business Park;
 - Improvements to Kimberley Road at its junction with Kirkley Run; and
 - Part-signalisation of the junction of the B1531 Victoria Road / B1531 Waveney Drive with Kirkley Run.
 - The provision of a pontoon for use by recreational vessels, located to the east of the new highway crossing, within the Inner Harbour of Lake Lothing; and
 - Works to facilitate the construction, operation and maintenance of the Scheme, including the installation of road drainage systems; landscaping and lighting; accommodation works for accesses to premises; the diversion and installation of utility services; and temporary construction sites and access routes.
- 1.2.7. The works required for the delivery of the Scheme are set out in Schedule 1 to the draft DCO (application document reference 3.1), where they are referred to as "the authorised development", with their key component parts being allocated reference numbers, which correspond to the layout of the numbered works



as shown on the Works Plans (application document reference 2.4). The General Arrangement Plans (application document reference 2.2) illustrate the key features of the Scheme.

1.2.8. The figure below provides a diagrammatic representation of the Scheme:



Figure 1 - Location of the Scheme in Lowestoft

1.3 PROJECT SCOPE

- 1.3.1. To assist in meeting the terms of reference at stated in Section 1.1, the scope of the study reported on in this report comprised:
 - Land based site investigation carried out between July 2017 and April 2018.
 - Post site works gas and groundwater monitoring and water sampling.
 - Laboratory chemical analysis of recovered soil samples and groundwater samples.
 - Marine sampling of lake bed sediments and surface water samples from within Lake Lothing.
 - Generic quantitative risk assessment (GQRA) of potentially sensitive receptors with respect to ground and groundwater contamination.
 - Refinement of the preliminary conceptual site model (CSM) that was developed in the WSP Ltd (formerly Mouchel Ltd) Environmental Desk Study Report (presented as Appendix 12A to the Environmental Statement).
 - Piling Works Risk Assessment (presented as Appendix 12C to the Environmental Statement)
 - Provision of recommendations with respect to the management and mitigation of potential ground contamination constraints or liabilities which are identified.
- 1.3.2. A geotechnical assessment has also been undertaken for outline pile foundation and highway design purposes which will be reported separately.

1.4 LEGISLATIVE CONTEXT AND GUIDANCE

- 1.4.1. The project was undertaken in the legislative and policy context of:
 - The Planning Act 2008
 - National Policy Statement for National Networks
 - National Policy Statement for Ports
 - The National Planning Policy Framework (2012)



- 1.4.2. The following good practice and statutory guidance was considered and the contaminated land assessment was undertaken in general accordance with:
 - Environment Agency 'Model Procedures for the Management of Land Contamination', CLR11 (2004)
 - British Standard 'Investigation of Potentially Contaminated Sites Code of Practice', BS EN 10175:2011
 - British Standard 'Code of Practice for Ground Investigations', BS 5930:2015
 - CIRIA 'Contaminated Land Risk Assessment. A guide to good practice', C552 (2001)
 - Defra 'Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance', PB13735 (2012)
 - CIRIA 'Assessing Risks Posed by Hazardous Ground Gases to Buildings', C665 (2007)

1.5 SOURCES OF INFORMATION

1.5.1. The following relevant sources of information were used in the production of this report. Information from these sources relating to the underlying ground conditions has also been included in Sections 2, 3, 4 and 5 of this report, where appropriate:

Table 1 - Sources of Information

Source	Report
Reports	Environmental Desk Study Report dated June 2018 (presented as Appendix 12A to the Environmental Statement)
Public Information British Geological Survey BGS 'Geology of Britain' online viewer. Environment Agency website	
Notes:	The report contains British Geological Survey materials ©NERC 2017 and Environment Agency information ©Environment Agency and database right.



2 SITE SETTING

2.1 SITE DESCRIPTION AND CURRENT USE

- 2.1.1. For the purposes of this report, the site is defined as the order limits as defined in the Application.
- 2.1.2. The site is currently occupied by highways, vacant land and commercial / industrial businesses. Further details are provided in the Environmental Desk Study Report (presented as Appendix 12A of the Environmental Statement).
- 2.1.3. Table 2 below summarises the site details presented in the Environmental Desk Study Report.

Table 2 - Summary of Site Details

Detail	Comment
Site Location	The irregular shaped site is located in the centre of Lowestoft to the north and south of Lake Lothing. The site is bounded to the south by Waveney Drive and to the north by Denmark Road. In the south east, the boundary is marked by the roundabout junction between the A12 and Waveney Drive and also the adjacent dock area. In the south west, the boundary is within a former industrial site immediately to the west of the Waveney District Council offices. In the north east, the boundary is at the end of Commercial Road and in the north west, the boundary is at the roundabout junction between Denmark Road and Peto Way.
National Grid reference	653884, 292755 (centre of the site)
Site Description and Current Use	The southern area of the site comprises highways (including Waveney Drive, Riverside Road and Canning Road); a commercial property, residential properties, hard standing including car parking and areas of derelict land including a dock wall. The northern area of the site comprises highway (including Denmark Road), part of a Wickes DIY store, railway land including track and sidings; hard standing including quayside and areas of derelict land. The centre of the site comprises the Lake Lothing watercourse and docks.
Area	Approximately 21 hectares
Site Setting and Surrounding Area	North; residential properties, small commercial / industrial park and a small play park East; Commercial Park, industrial area associated with the port / quayside, the East Suffolk Rail Lines and residential properties. South; residential properties and a small commercial park. West; derelict land, port / quayside industrial land and commercial properties.
Topography and Ground Cover	The site is generally flat with a slight increase in height at the northern boundary. The ground cover is largely hard standing.
Drainage & Flooding	The Lake Lothing watercourse is recorded as a Primary River and there is a culverted watercourse beneath the south east part of the site. Much of the site is within the Zone 3 and Zone 2 floodplains. The risk of flooding from the river and the sea varies from high in the centre of the site to medium and low towards the edges of the site.
Embankments & Slopes	None of any significance.
Trees & Vegetation (including invasive species)	The only vegetation recorded during the walkover were landscaping hedges and bushes / scrub on the vacant sites. No invasive species were confirmed during the walkover, although due to access restrictions at some locations, not all of the site was accessible. Ecological surveys have been undertaken and are reported in Chapter 11 of the Environmental Statement.



Detail	Comment
Foundations, Retaining Walls & Basements Evident on site There is the significant possibility of foundations, retaining walls and base being present on site due to former buildings, particularly adjacent to the Lothing.	
Visual Observations of Contamination or Ground Subsidence	No visual signs of contamination were noted during the site walkover although the Environmental Desk Study report highlights the adjacent Council offices site was remediated for asbestos prior to construction and the Northumbrian Water offices site had hydrocarbon remediation undertaken, both to the satisfactory of the Regulators.
Geology	The regional BGS 1:50,000 geological map and information available on the BGS on-line Geology of Britain Viewer (www.bgs.ac.uk) indicates the area of the Order Limits occupied by Lake Lothing is underlain by Tidal River or Creek Deposits of clay and silt. Immediately adjacent to the Lake are alluvium deposits comprising clay, silt, sand and gravel. Beyond this towards Denmark Road in the north and Waveney Drive in the south the site is underlain by sand of the Happisburgh Glacigenic Formation. The BGS 1:50,000 geological map indicates that the Crag Group (sand) comprises the underlying geology across the site.
Hydrogeology and Hydrology	Lake Lothing splits the Order Limits in two and is recorded as a Primary River. At this point it is estuarine and is not separated from the sea by any locks. No other surface water features are present. No surface water or potable water abstractions are present within 2km of the Order Limits. The superficial deposits underlying the Order Limits are classified as a Secondary (A) Aquifer with permeable layers. These are defined by the Environment Agency as permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. The underlying bedrock is classified as a Principal Aquifer. These are defined by the Environment Agency as layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. The nearest active groundwater abstraction is approximately 1,300m to the north west of the Order Limits.

2.2 SITE HISTORY

2.2.1. The following site history summary has been taken from the Environmental Desk Study Report which includes a more detailed site history.

NORTHERN SITE AREA

- 2.2.2. The earliest map provided by GroundSure dated 1883 indicates the site to be predominantly agricultural land with some small buildings and a railway line adjacent to the waterfront area.
- 2.2.3. Some industrial development occurred in the early 1900's including a railway and associated land through the centre of the site and timber yard at the western end. However, no significant changes occurred until the 1970's when most of the railways had been dismantled and by 1992, a new road (Peto Way) had been constructed through the site.

SOUTHERN SITE AREA

2.2.4. The earliest map provided by GroundSure dated 1883 indicates the site to be predominantly agricultural land with marsh and mudflats. By the early 1900's, many of the mudflats are no longer marked and formal waterfront wharfs appear to be present in the waterside area. Some industry is present including unlabelled

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works. By 1926 industrial development including a railway spur line had occurred across a large part of the site. The site remained largely industrial, including canning and processing works, ice works and boatbuilding until circa 2002 when the access roads for Riverside Business Park were constructed.

2.3 SURROUNDING LAND USES

- 2.3.1. Surrounding the northern site area are;
 - The North Quay Retail Park,
 - An industrial estate, containing numerous depots and factories,
 - Unspecified tanks and depot facilities are recorded on the north shore of Lake Lothing,
 - Hopper silos
 - Residential housing
- 2.3.2. Surrounding the southern site area are;
 - Unspecified factories or works
 - Dock and wharf facilities
 - Hopper silos
 - Pumping station
 - Petrol stations
 - Residential housing

2.4 POTENTIAL SOURCES OF CONTAMINATION ON-SITE CONTAMINATION SOURCES

2.4.1. The following potential historical on-site sources of contamination have been identified with anticipated contaminants derived in accordance with site-specific interpretation of Department of Environment Industry Profiles:

Table 3 - Areas of Potential Contamination (APC)

APC No.	APC Type	Anticipated Contaminants in Soil & / or Groundwater			
APC1	Former railway lines, sidings and depots	Metals and metalloids, cyanides, ammonia, nitrates, sulphates and sulphides involved in a range of chemical processes formerly taking			
APC2	Former timber yard	place on site. It is likely these contaminants are present within the soil although some compounds are soluble and therefore may also be			
APC3	Former ship yards and dock works including above ground storage tanks	present with the groundwater and soil leachate samples. Petroleum hydrocarbons (TPH), PCBs, benzene, toluene, ethylbenzene, xylene (BTEX), polyaromatic hydrocarbons (PAH), Volatile Organic Compounds (VOC) and semi-VOC (SVOC), phenolic compounds, resins arising from fuel spillages and former onsite chemical processes. It is likely these compounds if present will be found within groundwater and leachate samples. Some of the volatile compounds such as solvents			
APC4	Former coal yard and depot				
APC5	Former Raglan preservatives and ice works	may be present as mobile gases. Made ground associated with the development of the site for its former industrial uses resulting in potential ground gas contaminants (methane			
APC6	Former allotments	and carbon dioxide). Ground gases are considered likely in the former landfill areas.			
APC7	Former landfill/refuse tip and spoil areas	Made ground also has the potential to contain asbestos. The presence of buried former structures and foundations may also be accuracy of contaminants.			
APC8	Former depots	source of contaminants.			
APC9	Potentially contaminated silts				



OFF-SITE CONTAMINATION SOURCES

- 2.4.2. Within the surrounding area, the following potential sources of contamination are identified in the GroundSure report (Annex B of the Environmental Desk Study Report) that could migrate onto the site are:
 - Former and current shipbuilding and dock works surrounding Lake Lothing
 - Former oil mill to the east of the site
 - Former electric light works to the north of the site
 - Former tram depot to the north of the site
 - Former coal yard to the west of the site
 - Former creosoting factory to the west of the site
 - Former iron works east of the site
 - Contaminated silts within Lake Lothing
 - Former bus building factory to the north of the site
 - Former gasworks to the south east.



3 GROUND INVESTIGATION

3.1 PRELIMINARY CONCEPTUAL SITE MODEL

- 3.1.1. The preliminary conceptual site model (CSM) from the Environmental Desk Study Report identified a number of potential contaminant sources which are summarised in Section 2.4. The preliminary CSM also identified a number of plausible contaminant linkages (PCLs) that, without necessary protection and/or remediation, could put the following identified receptors at risk of significant exposure:-
 - Site users Future site users, visitors and maintenance workers.
 - Adjacent site users Residents and users of nearby properties
 - Controlled waters Principal and Secondary (A) aquifers and surface watercourses
 - On site infrastructure Buildings, foundations and buried services.
 - Marine Ecology Vertebrates and invertebrates within Lake Lothing

3.2 RATIONALE AND SCOPE

- 3.2.1. The rationale for the site investigation scope was to provide geotechnical and geo-environmental information for design and to inform the DCO process. The scope was developed to also provide information to refine the preliminary Conceptual Site Model outlined in the Environmental Desk Study Report presented as Appendix 12A to the Environmental Statement.
- 3.2.2. The main ground investigation works were land based but some water and sediment sampling works were also carried out in Lake Lothing itself and for distinction are referred to as marine investigation works.
- 3.2.3. Further details on the scope of works are presented in Annex B.

LAND BASED GROUND INVESTIGATION

- 3.2.4. The land based ground investigation was undertaken by the Applicants appointed contractor, Geosphere Ltd between 24th July 2017 and 25th April 2018. The geo-environmental aspects of the investigation are reported here for the purposes of the design and the DCO process and comprised the following:-
 - Cable percussion boreholes
 - Machine excavated trial pits
 - Window Samples
 - Hand dug trial pits / inspection pits
 - Installation of gas and groundwater monitoring wells in selected boreholes
 - Soil sampling from the boreholes, trial pits and window samples for the purpose of chemical testing
 - Gas and groundwater monitoring and groundwater sampling and chemical testing following completion of the intrusive works
- 3.2.5. In addition to the above, cone penetration testing and CBR (California Bearing Ratio) testing was also undertaken for the purposes of geotechnical assessment and will be reported separately by the WSP Ltd Geotechnical team.
- 3.2.6. The as-built exploratory hole locations are presented on Drawing 1069948-WSP-ENG-LL-SK-LE-0020 Sampling Locations Regulations 5(2)(a) Figure 12.2. Table 4 presents the scope of geo-environmental intrusive works undertaken.

Table 4 - Summary of Ground Investigation Intrusive Works

Exploratory Hole Type	Reference	Depth	Purpose
29 Cable Percussion Borehole	ВНС	2.9m – 50m	General site conditions and also targeting deeper ground conditions.
17 Machine excavated Trial Pits	TPC	1.5m - 3.2m	General site conditions where deep ground condition information is not required.
14 Window Samples	WSC	0.75m - 5.0m	Window samples were added during the works at locations where boreholes were to be drilled at a later date for the



Exploratory Hole Type	Reference	Depth	Purpose
			purpose of gaining information from the shallow ground conditions earlier in the programme.
5 Hand Dug Trial Pits	IPC	1.2m - 1.5m	Inspection pit extended from 1.2m depth with hand auger equipment to avoid the use of percussive equipment in areas where buried services were suspected.

3.2.7. The scope of the field works and chemical testing suites are discussed in further detail in Annex B. The findings of the ground investigation are discussed in Sections 4 to 7 and inform the refined conceptual site model which is presented in Section 8.

MARINE BASED SAMPLING

- 3.2.8. The marine based sampling was carried out by CMS-Geotech Ltd between 9th April 2018 and 23rd April 2018 as a separate contract to the land based ground investigation. This work was primarily to inform the sediment modelling assessment undertaken by WSP Ltd and is reported separately (Appendix 17C to the Environmental Statement), but the following aspects were included to support this Interpretative Environmental Ground Investigation Report for the purposes of assessing whether the lake bed sediments are contaminated and to assess potential offshore or onshore disposal routes for any excavated sediments. The marine sampling comprised the following:-
 - Surface water sampling at four locations from Lake Lothing waterbody,
 - Sampling of sediments from below the lake bed level at nominal 1m intervals to 4m depth from 12 vibrocore locations,
 - 48 grab samples from the top layer of lake bed sediments.
- 3.2.9. The scope of the marine based sampling works and chemical testing suites are discussed in further detail in Annex B. Factual information provided by CMS-Geotech Ltd comprising chemical test results and vibrocore logs is presented in Annex D. The assessment of the chemical test results is discussed in Section 6 and is used to inform the refined conceptual site model which is presented in Section 7.



4 GROUND CONDITIONS ASSESSMENT

4.1 GROUND CONDITIONS ENCOUNTERED ON-SITE

- 4.1.1. The exploratory hole locations are presented on Drawing 1069948-WSP-ENG-LL-SK-LE-0020 Sampling Locations Regulations 5(2)(a) Figure 12.2 presented in Annex A and the exploratory logs are provided in Annex C.1.
- 4.1.2. The findings summarised below generally confirm the anticipated strata identified in the Environmental Desk Study Report (presented as Appendix 12A to the Environmental Statement).

MADE GROUND NORTHERN SITE AREA

- 4.1.3. Made ground was recorded at all exploratory hole locations and varied in thickness from 0.6m to 3.6m, although the base of the made ground in BHC06A was not found at 2.9m depth and may therefore be deeper. The made ground was generally granular and heterogeous in nature and was composed of detritus including concrete, charcoal, clinker, brick, tile, metal (including reinforcing bar), ash, asphalt, glass, wood, soot, pottery and cast iron.
- 4.1.4. The thickness of made ground varied across the site with no particular areas recording thicker made ground than others. It was expected that the thickest made ground would be encountered closest to the Lake Lothing quay walls where ground levels were expected to have been raised to create the quayside but this was not indicated on the Draft Engineers logs.

MADE GROUND SOUTHERN SITE AREA

- 4.1.5. Made ground was recorded at all exploratory hole locations and varied in thickness from 0.75m to at least 3.7m, although this same location (BHC13 located close to the southern side of Lake Lothing) recorded possible made ground to in excess of 6.0m depth). The made ground was generally granular and heterogeous in nature and was composed of detritus including concrete, charcoal, clinker, brick, tile, metal (including reinforcing bar), ash, asphalt, glass, wood, soot, pottery and cast iron. Fragments of potential asbestos containing materials were recorded at TPC23 close to the Council offices.
- 4.1.6. The thickness of made ground varied across the southern site area although made ground was generally thickest closer to the Lake Lothing quay walls where ground levels are expected to have been raised historically to create the quayside.

CONCRETE & UNDERGROUND STRUCTURES

- 4.1.7. Solid concrete up to at least 0.6m thick (maximum thickness recorded in BHC27 located close to the southern side of Lake Lothing) and asphalt / flexible surfacing up to 0.2m thick was recorded at a number of locations both at and below the surface. BHC101 located close to the southern side of Lake Lothing recorded concrete 2.0m thick where it varied from crumbling degraded concrete to solid layers. Three disused six inch pipes were located in the inspection pit for this borehole at a depth of 0.7m.
- 4.1.8. A small diameter clay pipe (possibly a redundant land drain) was encountered at WS101 and was infilled with clay with a hydrocarbon odour.
- 4.1.9. Another redundant pipe was recorded in TPC06 but no details of any infilling were provided.
- 4.1.10.

NATURAL STRATA

Alluvium Deposits

- 4.1.11. Alluvial deposits have been encountered predominantly to the north of the Lake encountered as both granular and cohesive material.
- 4.1.12. The Granular Alluvium was generally recorded as dark grey, brown and yellow silty, clayey, gravely fine to medium Sand with a strong natural organic odour. The gravels are described as angular to rounded flints.
- 4.1.13. The Cohesive Alluvium was generally recorded as dark grey and black sandy and silty Clay with some shell fragments. The material was described to have a strong natural organic odour.



Happisburgh Glacigenic Formation

- 4.1.14. The Happisburgh Glacigenic Formation was encountered across the entire site, generally as medium dense to dense Sands, flint Gravels and gravelly Sand. At the top of the strata the material is described as being light and pale orange and brown but becomes darker and grey at depth.
- 4.1.15. Clay banding was encountered within the Sand matrix at varying depth but usually towards the base of the strata. It is generally light to dark grey laminated silty sometimes sandy Clay, with some incidences of flint gravels.

Crag Group

4.1.16. The Crag Group was encountered underlying the Happisburgh Glacigenic Formation across the entire site and generally comprise dense to very dense dark grey medium grained sand with frequent white fine shell fragments, with some fine gravel and occasional clay layers.

VISUAL AND OLFACTORY EVIDENCE OF CONTAMINATION

4.1.17. The presence of volatile organic compounds was assessed by Geosphere Ltd at each exploratory hole using a Photo-Ionisation Detector (PID). The results are presented on the Draft Engineers logs in Annex C.1. Most results were zero and the maximum concentration of 486ppm was recorded in WSC05.

All results above 10 ppm are presented in the Table below.

Table 5 – Summary of VOC Exceedances > 10ppm

Exploratory Hole reference	Approximate Depth (m)	Strata Type	VOC Reading(s) (ppm)	
BHC06	0.5	Made ground	122	
BHC13	2.0	Made ground	34	
	3.0	Made ground	19	i
BHC17	0.2	Topsoil	12	
	0.4	Made ground	23	
	2.5	Clay	163	
BHC19	2.0	Sand	35	
	3.0	Sand	33	
BHC22	0.3	Made ground	53	
	0.5	Made ground	98	
BHC102	0.3	Concrete	62	
	2.5	Gravel	40	6
	10.5	Sand	33	75
BHC103	4.5	Sand	25	7
	7.0	Sand	13	6
WSC05	2.5	Clay	486	
	3.5	Sand	72	



4.1.18. Other than the man-made detritus recorded within the made ground, visual and olfactory evidence of contamination was recorded by the Geosphere Ltd at the following locations. Further detail is provided on the Draft Engineers logs presented in Annex C.1.

Table 6 - Summary of Visual and Olfactory Evidence of Contamination

Exploratory Hole reference	Comment	Strata Type	Impacted Strata Depth (m bgl)
BHC04	Sulphurous and hydrocarbon odours and black staining.	Made ground	0.6m – 1.3m
BHC06	Hydrocarbon odour and black staining	Possible made ground	0.3m – 1.25m
	Sheen on ground water	Possible made ground	1.0m
BHC13	Hydrocarbon odour and black staining	Made ground and possible made ground	1.2m – 6.0m
BHC101	Hydrocarbon odour	Concrete, made ground and natural sand.	0.2m – 4.0m
	Sheen on groundwater	Made ground	2.1m
BHC102 Hydrocarbon odour		Made ground and natural gravel and sand	0.17m - 12.2m
BHC103 Hydrocarbon odour, sheen and staining		Natural sand	1.5m – 3.5m
WSC101 Hydrocarbon odour		Redundant pipe within made ground	0.6m
WSC103	Hydrocarbon odour	Natural sand	2.4m – 4.0m
TPC103	Sulphurous and hydrocarbon odours	Made ground and natural sand	1.2m – 2.2m

4.1.19. From the information presented in the table above, it would appear that the locations exhibiting hydrocarbon odours are located in two distinct areas of the site. One is in the southern part of the site and is located immediately between Riverside Road and Lake Lothing and is the location of the former East Anglia Ice Works, a tyre depot, a cold store and a boat building yard which was located to the east and may have encroached partly onto this area. The other area is in the north of the site, located between the railway line and Denmark Road and is a former coal depot.

4.2 MARINE SEDIMENT

The CMS-Geotech vibrocore logs presented in Annex D indicate that the shallow sediments within Lake Lothing comprise silt between 0.4m and 1.6m thickness overlying sand. Clay, silt and gravel layers were also recorded within the sand.



5 HYDROLOGICAL & HYDROGEOLOGICAL CONDITIONS

5.1 LOCAL HYDROLOGY

SURFACE WATER FEATURES

- 5.1.1. Lake Lothing splits the site in two and is recorded as a Primary River. The Water Framework Directive Assessment for Lake Lothing presented as Appendix 17A of the Environmental Statement states the following:- 'This estuarine water body is evaluated as having a current overall status of 'Moderate' due to ecological results, based on the 2016 dataset. It has a status of 'poor' for the angiosperm element of the biological results (the cause of this status is unknown) and a status of 'moderate' for dissolved inorganic nitrogen. It has a status of 'Good' for chemical results. It should be noted that this water body catchment is large and encompasses river sub-catchments with differing characteristics, including estuarine and freshwater broads.'
- 5.1.2. No other surface water features are present.

SURFACE WATER ABSTRACTIONS & DISCHARGES

5.1.3. No surface water or potable water abstractions are present within 2km of the site.

5.2 HYDROGEOLOGY

GEOLOGY AND AQUIFER STATUS

- 5.2.1. The superficial deposits underlying the site comprising sand and clay alluvium, and sand and clay of the Happisburgh Formation are classified as a Secondary (A) Aquifer with permeable layers. These are defined by the Environment Agency as permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.
- 5.2.2. The underlying sand (with occasional gravel and clay layers) of the Crag Group bedrock is classified as a Principal Aquifer. These are defined by the Environment Agency as layers of rock or drift deposits that have high intergranular and/or fracture permeability meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.

GROUNDWATER ABSTRACTIONS

5.2.3. The nearest active groundwater abstraction point is approximately 1,300m to the north west.

GROUNDWATER ENCOUNTERED DURING INVESTIGATION

5.2.4. Ground water was recorded at a number of locations during the ground investigation. The details are summarised in the table below.

Table 7 - Summary of Ground Water Strikes during the Ground Investigation

Exploratory Hole Location	Ground Water Level at Strike (mOD)	Strata Type	Observations
BHC03	1.51	Possible Made Ground	-
BHC04	0.048	Sand	-
BHC04	-7.152	Sand	Rose to -2.152 after 60 minutes
BHC06	1.416	Possible Made Ground	Sheen on ground water.
BHC06A	1.282	Made Ground	No change after 20 minutes
BHC06B	1.465	Made Ground	No change after 20 minutes
BHC07	1.62	Sand	-
BHC13	1.88	Made Ground	-
BHC17	0.284	Clay	Rose to 1.114m after 20 minutes

LAKE LOTHING THIRD CROSSING

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Suffolk County Council



Exploratory Hole Location	Ground Water Level at Strike (mOD)	Strata Type	Observations
BHC101	0.995	Made Ground	Sheen on groundwater.
WSC05	1.213	Sand	-
WSC17	-0.267	Clay	Rose to 0.533m after 10 minutes
WSC19a	0.594	Sand	-
WSC19A(1)	0.298	Sand	-
WSC21	0.725	Sand	-
WSC22	-0.964	Sand	-
WSC23	0.791	Clay	Rose to -0.912m after 15 minutes.
WSC28	-0.902	Possible made ground and sand	-
WSC103	0.375	Sand	-
TPC101	0.912	Made Ground	-
TPC102	1.477	Sand	-
TPC103	1.109	Made Ground	-
TPC02A	1.028	Sand	-
TPC03	1.602	Sand	-
TPC05	1.318 and 0.618	Clay	-
TPC06	0.512	Clay	-
TPC07	1.39	Made Ground	-
TPC08	1.065	Made Ground	-
TPC09	1.12	Clay	-
TPC21	1.31 and 0.31	Clay	-

MONITORED GROUNDWATER LEVELS

5.2.5. Monitoring of groundwater levels in relation to Ordnance Datum was undertaken on two occasions following the completion of the intrusive ground investigation works. The details are provided in Annex C.2 and are summarised in Tables 8 and 9 below.

Table 8 - Summary of Ground Water Level Monitoring in the north of the study area

Stratum	Minimum (mOD)	Maximum (mOD)	Observations
Made Ground	1.232 (BHC02)	1.302 (BHC02)	-
Natural Ground	0.633 (BHC09	1.4 (BHC07)	-



Table 9 - Summary of Ground Water Level Monitoring in the south of the study area

Stratum	Minimum (mOD)	Maximum (mOD)	Observations
Made Ground	0.495 (BHC101)	1.644 (BHC24 PP)	-
Natural Ground	-1.09 (BHC102)	1.754 (BHC24 GG)	-

HYDRAULIC GRADIENT

5.2.6. Whilst not conclusive, the monitoring data appears to indicate the hydraulic gradient is towards Lake Lothing from both the southern study area and the northern study area as would be expected. However, it should be noted that the groundwater monitoring data may be subject to tidal fluctuations which could affect the recorded levels.



6 QUANTITATIVE RISK ASSESSMENT

6.1 INTRODUCTION

- 6.1.1. In the United Kingdom, the presence of contamination within soil or groundwater at a site is generally only of concern if an actual or potentially unacceptable risk to a sensitive receptor exists.
- 6.1.2. The risk assessment process begins with screening chemical concentrations in soil or groundwater against conservative screening values, a process called Generic Quantitative Risk Assessment (GQRA). GQRA's are performed to assess the potential risks to human health and controlled waters and to identify the presence of contaminants of concern (CoC), which may require further more detailed assessment.
- 6.1.3. Annex C.3 presents the chemical test data and Annex F presents the screening spreadsheets.

6.2 HUMAN HEALTH RISK ASSESSMENT

- 6.2.1. Following the tiered approach which is described in Model Procedures for the Management of Land Contamination (CLR11) published by DEFRA and the Environment Agency, this Section provides a Generic Quantitative Risk Assessment (GQRA) of those contaminant linkages that were determined to be plausible in the refined CSM.
- 6.2.2. Defra and the EA have published a limited number of Soil Guideline Values (SGVs) for a series of generic land use scenarios which follow the Contaminated Land Exposure Assessment (CLEA) methodology. Where SGVs are not available, WSP has derived a set of Generic Assessment Criteria (GAC) for the CLEA generic land use scenarios using the CLEA Workbook v1.071 Excel modelling tool. The CLEA workbook does not currently have the capacity to derive criteria to assess risks from the inhalation of vapours derived from contaminants dissolved in groundwater. Therefore, a set of groundwater GACs has also been derived using the Johnson & Ettinger (J&E) approach.
- 6.2.3. The chemical test results have been assessed against screening values for both commercial / industrial and public open space land use scenarios. Further details in the methodologies adopted by WSP Ltd are provided in Annex E. These land use scenarios are also defined in the Environment Agency document 'Updated Technical Background to the CLEA Model' Report SC050021/SR3, January 2009.
- 6.2.4. These two scenarios are most appropriate for the proposed highway and landscaping end uses, although both are considered to be reasonably conservative as it is unlikely anyone will be on-site for the duration that either scenario assumes.
- 6.2.5. The soil chemical data has been compared against end use GAC's for a conservative 1% soil organic matter (SOM) content. The average SOM concentration is 1.48% and therefore the nearest appropriate concentration is 1%. Samples that exceed the screen are identified as contaminants of concern (CoC) and are carried forward for further discussion.
- 6.2.6. For an initial assessment, the data has been split into made ground and natural ground averaging areas and then split again into northern site area and southern site area.
- 6.2.7. For some CoC, direct contact will be the dominant pathway for exposure. Due to the unknown nature of soil excavation and reuse at this stage of the design, it is possible that materials from any depth could be excavated and placed at or near the surface in the final design. In order to support with development options, human exposure to all unsaturated soils, irrespective of depth, was assumed possible for the purpose of this assessment. This will maximise the information available to the design team on the suitability of all unsaturated material and can support with their materials management options.
- 6.2.8. Potential risks to human health from soil gases are assessed in Section 6.4.

ASSESSMENT OF RESULTS – PUBLIC OPEN SPACE LAND USE SCENARIO

6.2.9. Hydrocarbon odours and / or sheens were identified at a number of locations during the ground investigation as detailed in Section 4.2.10, Table 5 above. All except two of these locations were targeted for chemical testing and none of the results exceed the hydrocarbon GAC's.

Natural Ground (Southern Site Area)

6.2.10. The following contaminants of concern (CoC) have been identified from the screening of natural ground in the southern site area:-



- Alkaline pH at one location BHC20 10.4 compared to a screening value of 9.5,
- Acid pH at one location BHC26 4.8 compared to a screening value of 5.5.

Natural Ground (Northern Site Area)

6.2.11. No CoC were identified in natural ground within the northern site area.

Made Ground (Southern Site Area)

- 6.2.12. The following contaminants of concern (CoC) have been identified from the screening of made ground in the southern site area:-
 - Asbestos was recorded by the chemical testing laboratory in one sample (and potential asbestos is recorded on the Engineers logs in TPC23):-
 - BH102 at 0.3m depth as fibres and clumps of chrysotile.
 - Benzo-a-pyrene at two locations WSC23 (26mg/kg) and BHC31 (12mg/kg) exceeded the GAC of 11mg/kg.
 - Alkaline pH at five locations TPC21 (9.6), BHC102 (11.2), BHC101 (10.3) and WSC16 (10.5) exceeded the GAC of 9.5,
 - Lead at one location BHC31 1500mg/kg compared to a screening value of 808mg/kg.

Made Ground (Northern Site Area)

- 6.2.13. The following contaminants of concern (COC) have been identified from the screening of made ground in the southern site area:-
 - Asbestos was recorded by the chemical testing laboratory in one sample:-
 - TPC02 at 0.3m depth as cement bound chrysotile,
 - Benzo-a-pyrene at one location IPC01 (12mg/kg compared to a GAC of 11mg/kg,
 - Alkaline pH at six locations TPC101 (9.9), TPC04 (9.8), BHC02 (11), TPC02 (11.8), BHC08 (10.10) and BHC10 (10) values exceeded the GAC of 9.5.

ASSESSMENT OF RESULTS - COMMERCIAL / INDUSTRIAL LAND USE SCENARIO

6.2.14. Hydrocarbon odours and / or sheens were identified at a number of locations during the ground investigation as detailed in Section 4.1.17, Table 6 above. All except two of these locations were targeted for chemical testing and none of the results exceed the hydrocarbon GAC's.

Natural Ground (Southern Site Area)

- 6.2.15. The following contaminants of concern (CoC) have been identified from the screening of natural ground in the southern site area:-
 - Alkaline pH at one location BHC20 10.4 compared to a screening value of 9.5,
 - Acid pH at one location BHC26 4.8 compared to a screening value of 5.5.

Natural Ground (Northern Site Area)

6.2.16. No CoC were identified in natural ground within the northern site area.

Made Ground (Southern Site Area)

- 6.2.17. The following contaminants of concern (CoC) have been identified from the screening of made ground in the southern site area:-
 - Asbestos was recorded by the chemical testing laboratory in one sample (and potential asbestos is recorded on the Engineers logs in TPC23):-
 - BH102 at 0.3m depth as fibres and clumps of chrysotile.
 - Alkaline pH at five locations TPC21 (9.6), BHC102 (11.2), BHC101 (10.3) and WSC16 (10.5) exceeded the GAC of 9.5.
 - Lead at one location BHC31 1,500mg/kg compared to a screening value of 1,390mg/kg.

Made Ground (Northern Site Area)

6.2.18. The following contaminants of concern (COC) have been identified from the screening of made ground in the southern site area:-



- Asbestos was recorded by the chemical testing laboratory in one sample:-
 - TPC02 at 0.3m depth as cement bound chrysotile,
- Alkaline pH at six locations TPC101 (9.9), TPC04 (9.8), BHC02 (11), TPC02 (11.8), BHC08 (10.10) and BHC10 (10)values exceeded the GAC of 9.5.

6.3 CONTROLLED WATERS RISK ASSESSMENT

- 6.3.1. The generic controlled waters risk assessment was conducted in accordance with the principles of the Environment Agency publication 'Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination' 2006 (EA 2006) and the 'prevent and limit' approach of the Water Framework Directive (2000/60.EC). Generic controlled waters risk assessments compare directly measured concentrations with standard assessment criteria. In this case the following assessments were undertaken:
 - Level 1 evaluates the concentrations of chemicals within the pore water in the unsaturated zone of source area soil, in this case soil leachate analysis/using theoretical calculations.
 - Level 2 evaluates the concentrations of chemicals within the saturated zone immediately underlying a source area i.e. taking dilution and attenuation into account, in this case groundwater analysis.
- 6.3.2. Appropriate Water Quality Standards (WQS) are selected based on both a hierarchy of relevance to England and Wales and the receptor. In this case, the controlled water receptors identified in the CSM are:-
 - Lake Lothing surface watercourse;
 - The underlying Secondary A Aquifer within the superficial deposits;
 - The underlying Principal Aquifer within the bedrock.
- 6.3.3. The following hierarchies of WQS were therefore considered to be appropriate:

Aquifers

- UK Drinking Water Quality Standards (DWS) from The Water Supply (Water Quality) Regulations 2000 (amended 2004)
- World Health Organisation Guidelines for Drinking Water Quality, Fourth Edition, Volume 1, (2011)
- World Health Organisation Petroleum Products in Drinking Water (2008)

Surface Waters

- Environmental Quality Standards (EQS) from The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015
- 6.3.4. Screening spreadsheets are presented in Annex F.

RISKS TO AQUIFER

Soil Leachability Testing

- 6.3.5. Screening of soil leachate test results from the ground investigation identified the following minor WQS exceedances:-
 - Alkaline pH two locations BHC02 (pH11) and BH102 (pH10.4) compared to a WQS of 10,
 - Arsenic one location BHC05 (25µg/l) compared to a WQS of 10µg/l,
 - Chromium one location BHC08 (52μg/l) compared to a WQS of 50μg/l,
 - Nickel one location BHC08 (65μg/l) compared to a WQS of 20μg/l,
 - Lead three locations, BHC08 (19μg/l), IPC01 (25μg/l) and BH102 (14μg/l) compared to a WQS of 10μg/l,
 - Aliphatic hydrocarbons C12-C16 BHC19 (310μg/l) compared to a WQS of 300μg/l,
 - Aromatic hydrocarbons C12-C16 BHC13 (110μg/l) compared to a WQS of 90μg/l.
- 6.3.6. It should be noted that the limits of detection for benzo(a)pyrene and total PAH are in excess of the screening values.

Groundwater Sampling 4/5th January 2018

- 6.3.7. Screening of two water samples (BHC02 and BHC102) taken by Geosphere on 4th and 5th January 2018 did not identify any WQS exceedances.
- 6.3.8. It should be noted that the limits of detection for total PAH and benzo(a)pyrene are in excess of the screening values.



Groundwater Sampling 1st Monitoring Visit

- 6.3.9. Screening of 8 groundwater samples identified the following minor exceedances of the WQS:-
 - Alkaline pH five locations (BHC09, BHC24(dual well), BHC01 and BHC14) recorded values between pH11.7 and pH13.2 compared to a WQS of pH10,
 - Sulphate one location BHC01 (350μg/l) compared to a WQS of 250μg/l,
 - Arsenic one location BHC27 (17μg/l) compared to a WQS of 10μg/l,
 - Chromium one location BHC01 (160µg/l) compared to a WQS of 50µg/l,
 - Nickel two locations BHC24 (77µg/l) and BHC01 (43µg/l) compared to a WQS of 20µg/l.
- 6.3.10. It should be noted that the limits of detection for total PAH and benzo(a)pyrene are in excess of the screening values.

Groundwater Sampling 2nd Monitoring Visit

Screening of 9 groundwater sampling identified the following exceedances of the WQS:-

- Alkaline pH three locations (BHC24(dual well) and BHC01 recorded values between pH11.4 and pH12.6 compared to a WQS of pH10.
- Nickel two locations BHC24 (41µg/l) and BHC01 (30µg/l) compared to a WQS of 20µg/l.

It should be noted that the limits of detection for total PAH and benzo(a)pyrene are in excess of the screening values.

RISKS TO LAKE LOTHING SURFACE WATER

Soil Leachability Testing

- 6.3.11. Screening of soil leachate test results from the ground investigation identified the following WQS exceedances:-
 - Cadmium one location. 0.21µg/l compared to a WQS of 0.2µg/l,
 - Copper twelve locations. 4.2 μg/l to 32 μg/l compared to a WQS of 3.76 μg/l,
 - Mercury two locations. 0.52 µg/l to 0.53µg/l compared to a WQS of 0.07µg/l,
 - Nickel One location. 65μg/l compared to a WQS of 8.6μg/l,
 - Lead 16 locations. 1.3µg/l to 25µg/l compared to a WQS of 1.3µg/l.
 - Zinc four locations. 7.8µg/l to 190µg/l compared to a WQS of 6.8µg/l,
 - Anthracene two locations. 0.15µg/l and 2.8µg/l compared to a WQS of 0.1µg/l,
 - Fluoranthene two locations. 2.2µg/l and 7.6µg/l compared to a WQS of 0.0063µg/l,
- 6.3.12. It should be noted that the limits of detection for cyanide, mercury, hexavalent chromium, fluoranthene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and benzo(ghi)perylene are in excess of the screening values.

Surface Water Sampling

- 6.3.13. The surface water sampling undertaken by CMS-Geotech at four locations within Lake Lothing on 19th April 2018 (shown on Drawing 1069948-WSP-EGN-LL-C19-SK-LE-000X presented in Annex D) identified the following contaminants in excess of the relevant WQS:-
 - Zinc exceedances in all four samples with concentrations varying from 8.88μg/l to 26.8μg/l compared to a WQS of 6.8μg/l.
- 6.3.14. Lake Lothing is an operating port and it is probable that these results can be attributed to the presence of sacrificial zinc anodes on the hulls of ships using the port.
- 6.3.15. It should be noted that the limits of detection for both cadmium and chromium are in excess of the screening values.

Groundwater Sampling 4/5th January 2018

- 6.3.16. Screening of two water samples (BHC02 and BHC102) taken by Geosphere on 4th and 5th January 2018 identified minor exceedances of the WQS for;-
 - Copper one location BHC102 (8.6µg/l) compared to a WQS of 3.76µg/l.
 - Nickel one location BHC102 (9.9µg/l) compared to a WQS of 8.6µg/l.
 - Zinc two locations BHC102 (24μg/l) and BHC02 (12μg/l) compared to a WQS of 6.8μg/l. .



6.3.17. It should be noted that the limits of detection for cyanide, mercury, hexavalent chromium, fluoranthene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, benzo(ghi)perylene, 2,4-dichlorophenol, 1,2,4-Trichlorobenzene, hexachlorobenzene and total phenols are in excess of the screening values.

Groundwater Sampling 1st Monitoring Visit

- 6.3.18. Screening of 8 groundwater samples identified exceedances of the WQS for:-
 - Copper four locations, 4.8µg/l to 61µg/l compared to a WQS of 3.76µg/l,
 - Nickel five locations, 11µg/l to 77µg/l compared to a WQS of 8.6µg/l,
 - Lead two locations, 1.8μg/l to 5.2μg/l compared to a WQS of 1.3μg/l,
 - Zinc four locations, 7μg/l to 17μg/l compared to a WQS of 6.8μg/l,
 - Hexavalent chromium one location BHC01 (160µg/l) compared to a WQS of 0.6µg/l,
- 6.3.19. It should be noted that the limits of detection for cyanide, mercury, hexavalent chromium, fluoranthene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, benzo(ghi)perylene and total phenols are in excess of the screening values.

Groundwater Sampling 2nd Monitoring Visit

Screening of 9 groundwater samples identified exceedances of the WQS for:-

- Copper two locations, BHC24 (19μg/l) and BHC01 (36μg/l) compared to a WQS of 3.76μg/l,
- Mercury one location, BHC24 (0.68μg/l compared to a WQS of 0.07μg/l,
- Nickel four locations, 8.7μg/l to 41μg/l compared to a WQS of 8.6μg/l,
- Lead one locations, (BHC01) 3.8μg/l compared to a WQS of 1.3μg/l,
- Zinc one location, (BHC02) 11μg/l compared to a WQS of 6.8μg/l,
- Hexavalent chromium one location BHC01 (40μg/l) compared to a WQS of 0.6μg/l,
- 6.3.20. It should be noted that the limits of detection for cyanide, mercury, hexavalent chromium, fluoranthene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, benzo(ghi)perylene and total phenols are in excess of the screening values.

DISCUSSION

- 6.3.21. There is some olfactory/ visual evidence of the presence of hydrocarbons in the vicinity of the exploratory holes CPTC13, BHC13, BHC101, BHC102, BHC103 and WSC103 near the southern bank of Lake Lothing (and in a number of other isolated locations). In addition, there are some associated VOC readings (identified using a PID meter during ground investigation) and minor theoretical hydrocarbon exceedances in soil leachate screening values.
- 6.3.22. Sampling of groundwater from monitoring well installations (adopting best practice of purging) within adjacent boreholes (BHC102, BHC14 and BHC27) do not show any exceedances of groundwater screening values for hydrocarbons. It is therefore concluded that although there is some evidence of hydrocarbon presence in a number of locations on site, particularly near the southern bank of Lake Lothing, the analysis of soil, soil leachate and groundwater samples identify that the concentrations are not significant. It is possible that minor spillages have occurred in the past or that any more significant spillages have dispersed with time due to the generally permeable nature of the sub-strata on site. It is recommended that further groundwater monitoring is undertaken from borehole installations to confirm that no significant exceedances of groundwater screening values are present.

6.4 GROUND GAS ASSESSMENT RESULTS

- 6.4.1. To date, two of six rounds of ground gas monitoring have been undertaken by Geosphere Ltd on the following dates:-
 - 9th to 14th May 2018
 - 23rd to 24th May 2018
- 6.4.2. A control building will be constructed as part of the bridge and therefore this gas assessment will inform the design of that building.



- 6.4.3. Atmospheric pressure during the first monitoring visit varied between 1006mb and 1016mb which was a rising trend and during the second visit varied between 1002mb and 1025mb which is a falling trend. The reading for BHC01 of 1002mb is believed to be a typo as all except one location has atmospheric pressure recorded between 1021 and 1025. The results of the gas monitoring are presented in Annex C.2.
- 6.4.4. Table 9 presents Gas Screening Values (GSV) which have been calculated in accordance with C665 for each gas monitoring well.

Table 10 - Summary of Ground Gas Monitoring results

Exploratory Hole	Max Flow Rate (Ihr-1)	Max Methane (% v/v)	Max Carbon Dioxide (% v/v)	Methane GSV	Carbion Dioxide GSV
BHC01	0.9	<0.1	0.5	0.0009	0.0045
BHC02	<0.1	<0.1	3.6	0.0001	0.0036
BHC07	7.4 (recorded at start)	0.1	0.2	0.0074	0.0148
	Maximum steady flow of 0.1			0.0001	0.0002
BHC08	0.9 (recorded at start)	<0.1	<0.1	0.0009	0.0009
	Maximum steady flow of <0.1			0.0001	0.0001
BHC09	-0.3	0.1	<0.1	0.0003	0.0003
BHC14	-0.3	<0.1	<0.1	0.0003	0.0003
BHC24(P)	50.4 (recorded at the start)	0.1	<0.1	0.0504	0.0504
	Maximum steady flow of 0.3			0.0003	0.0003
BHC24(GG)	-0.3 (recorded at the start)	<0.1	0.6	0.0003	0.0018
	Maximum steady flow of <0.1			0.0001	0.0006
BHC27	-1.6 (recorded at the start)	<0.1	<0.1	0.0016	0.0016
	Maximum steady flow of -0.9			0.0009	0.0009
BHC102	<0.1	<0.1	0.2	0.0001	0.0002

6.4.5. Based on the maximum steady flows, the GSV ranged between 0.0001 and 0.0045. All monitoring wells are therefore classified as Characteristic Situation 1 indicating very low risk from ground gases.

It should be noted that where the maximum flow was recorded at the start of the monitoring (italics in the table above), the GSV ranged from 0.0003 to 0.0504, which does not change the Characteristic Situation.

6.5 MARINE SEDIMENT SAMPLING

6.5.1. The chemical test results from the sediment grab samples and the vibrocore sediment samples have been assessed against the CEFAS (Centre for Environment, Fisheries and Aquaculture Science) criteria for offshore disposal. In addition, the vibrocore samples were also subjected to waste acceptance criteria (WAC) testing to assess potential onshore disposal routes.

CEFAS ASSESSMENT

- 6.5.2. The tables in Annex F presents a comparison of the sample results against the current CEFAS Action Levels, (detailed on the table) and was undertaken to establish the overall concentrations of contamination present.
- 6.5.3. The action levels stated are not 'pass/fail' criteria but, in general, contaminant levels below action level 1 are considered unlikely to influence a decision by the MMO on dredge disposal, pursuant to the Deemed Marine Licence (DML). Dredged material with contaminant levels above action level 2 is generally considered unsuitable for sea disposal. Dredged material with contaminant levels between action levels 1 and 2 may require further testing pursuant to the operation of the DML.



- 6.5.4. Of the 12 grab samples, 11 showed levels of trace metal contaminants for at least one determinant above the CEFAS Action Level 1 values, the most common contaminant being nickel. No samples had levels above the CEFAS Action Level 2 for any determinant.
- 6.5.5. Of the 32 vibrocore samples, 10 showed levels of trace metal contaminants for nickel, cadmium and arsenic above the CEFAS Action Level 1 values, the most common contaminant being nickel. No samples had levels above the CEFAS Action Level 2 for any determinant.
- 6.5.6. It is therefore considered that the sediments are likely to be suitable for offshore disposal subject to approval by the MMO pursuant to the DML. The sediments are also considered unlikely to have an unacceptable impact from a contamination perspective if they are mobilised during and / or after construction.

WASTE ACCEPTANCE CRITERIA ASSESSMENT

- 6.5.7. Waste Acceptance Criteria (WAC) testing of the vibrocore samples indicates that most samples pass the inert waste criteria but a few fail the inert, non-hazardous and hazardous criteria.
- 6.5.8. If onshore disposal of excavated sediment is considered at the construction stage, further assessment will be required once the sediments have been excavated and additional pre-treatment is likely to be required to reduce the moisture content prior to acceptance for disposal at a suitably licenced landfill.

6.6 PILING RISK ASSESSMENT

- 6.6.1. A Piling Works Risk Assessment, reference 1069948-WSP-EGT-LL-RP-LE-0002 has been undertaken by WSP in accordance with the following Environmental Agency guidance and is presented as Appendix 12C to the Environmental Statement:-
 - Piling in layered ground: risks to groundwater and archaeology. Environment Agency (October 2006),
 Science Report SC020074/SR;
 - Piling into contaminated sites. Environment Agency National Groundwater and Contaminated Land Centres (February 2002); and
 - Piling and penetrative ground improvement methods on land affected by contamination: guidance on pollution prevention. Environment Agency (May 2001).



7 WASTE ASSESSMENT

- 7.1.1. A waste classification hazardous properties assessment has been carried out in accordance with the WM3 Technical Guidance, to determine if the site soils contain any hazardous properties and would therefore require disposal as hazardous waste.
- 7.1.2. The soil chemical test results have been assessed and identified hazardous properties in 7 samples;-
 - TPC02 at 0.3m,
 - BHC04 at 0.9m,
 - WSC23 at 0.5m,
 - BHC27 at 0.6m.
 - BHC101 at 2.1m,
 - BHC101 at 3.0m,
 - BHC31 at 0.4m.
- 7.1.3. All of the above are in made ground except BHC101 which is in natural ground and exhibits hazardous properties due to elevated petroleum hydrocarbons.
- 7.1.4. This material cannot be reused in the scheme and will require offsite disposal as hazardous waste under the European Waste Catalogue (EWC) as '17 05 03' Soil and stones containing dangerous substances.
- 7.1.5. No other material was classified as containing hazardous properties. Therefore, the remaining material would be classified under the EWC as '17 05 04 Soil and stones other than those mentioned in 17 05 03'.
- 7.1.6. Waste acceptance criteria (WAC) analysis has been carried out on a number of samples in order to assess the acceptability to landfill should offsite disposal be required. Two samples recording hazardous properties were also subjected to WAC testing and the results indicate these materials are suitable for hazardous waste disposal. The other WAC test results indicate that most samples meet the criteria for inert waste disposal but 4 samples fail the inert criteria and will require disposal as non-hazardous waste;-
 - BHC05 at 0.6m fails the inert criteria for chloride, sulphate and total dissolved solids,
 - WSC14 at 1.7m fails the inert criteria for PAH and antimony,
 - BHC32 at 0.6m fails the inert criteria for total organic carbon,
 - BHC08 at 2.6m fails the inert criteria for chromium and selenium.
- 7.1.7. The construction Contractor will need to make their own assessment of the waste classifications.



8 REFINED CONCEPTUAL SITE MODEL

8.1 INTRODUCTION

- 8.1.1. This Section provides a refinement of the preliminary CSM from the Environmental Desk Study Report (presented as Appendix 12A to the Environmental Statement). From the information identified during the ground investigation and the risk assessments detailed in Section 6 above, plausible source-pathway-receptor contaminant linkages have been refined in line with industry good practice (principally CLR11).
- 8.1.2. The refined CSM provides an updated understanding of the site based on the findings of the site investigation and analytical results and draws on the ground, hydrogeological and contamination models which are presented in Sections 4, 5 and 6. It has been used to inform the quantitative risk assessments undertaken in Section 6 in the context of a future land use comprising a new highway layout, bridge and associated landscaping and hard standing.

8.2 PLAUSIBLE CONTAMINANT LINKAGES

8.2.1. Table 10 provides a revised evaluation of the potential contaminant linkages that were considered to be plausible for the future use of the Site. It uses the current site investigation findings to refine the Phase 1 assessment.

Table 11 - Summary of Plausible Contaminant Linkages

Potential Contaminants	Potential Pathways	Potential Receptors	Comments
Free asbestos fibres in made ground soil	Inhalation of asbestos fibres.	Future site users Future maintenance workers	Extensive hard standing will restrict exposure following construction but exposure during construction and during maintenance works cannot be discounted. The presence of asbestos elsewhere within the made ground cannot be discounted therefore if made ground materials are placed in landscaping areas, a capping layer will also need to be considered to minimise the risk to site users and adjacent site users from inhalation of fibres.
Contaminants in soil	Dermal contact, ingestions and inhalation of contaminated made ground, soil particles and fugitive dust.	Future site users Future maintenance workers	Extensive hard standing will restrict exposure at most locations except where landscaping is proposed. Detected potential contaminants limited to benzo-a-pyrene, pH and lead.
Leachable contaminants and contaminants in groundwater	Vertical leaching from impacted soil and lateral migration of impacted groundwater derived from on-site sources.	Superficial geology Secondary (A) aquifer and bedrock Principal aquifer. Lake Lothing surface water	Shallow groundwater samples appear to have been impacted slightly by metals but this does not appear to have been replicated in the deeper groundwater samples although some minor impact has been identified. There is a theoretical risk to surface waters from leachable contaminants in soil including minor hydrocarbon exceedances. Extensive hard standing will limit rainfall percolation and leachate potential and the identified exceedances of the WQS criteria are generally not significantly elevated. Whilst a contaminant linkage is considered likely to exist, an unacceptable risk to controlled waters is considered unlikely



9 CONCLUSIONS AND RECOMMENDATIONS

9.1 GROUND CONDITIONS

- 9.1.1. The ground investigation confirmed the anticipated geology of made ground overlying alluvial deposits (sand and clay), sand with clay banding of the Happisburgh Formation and sand (with clay layers) of the Crag Group.
- 9.1.2. Made ground was recorded at all exploratory hole locations and varied in thickness from 0.75m to at least 3.7m, although possible made ground was recorded to in excess of 6.0m depth at one location. The made ground was generally sand and gravel and heterogeneous in nature.
- 9.1.3. The thickness of made ground varied across the site. In the southern site area, with no particular areas recording thicker made ground than others.
- 9.1.4. Solid concrete at the surface up to at least 0.6m thick was recorded at a few locations, although a 2m thick layer of crumbling degraded concrete was also encountered at one location. This is not across a large area and is not considered to be a significant constraint to construction.
- 9.1.5. Two small diameter redundant pipes were recorded, one infilled with clay which recorded a hydrocarbon odour.
- 9.1.6. Other than the man-made detritus recorded within the made ground, visual and olfactory evidence of contamination was recorded at a number of locations as hydrocarbon odour, sulphurous odour or hydrocarbon sheen.
- Fragments of potential asbestos containing materials were recorded at one location close to the Council
 offices.
- 9.1.8. The ground investigation confirmed the presence of shallow groundwater which is likely to be in continuity with the Lake Lothing surface water body.

9.2 ENVIRONMENTAL / CONTAMINATION ASSESSMENT

- 9.2.1. The following contamination issues have been identified;-
 - In addition to potential asbestos recorded on the Draft Engineers logs at one location, it was also recorded in two made ground soil samples. The potential for more asbestos containing materials to be present within made ground materials cannot be discounted and the construction Contractor should take necessary precautions to protect their staff, site users and adjacent site users as set out in the interim CoCP.
 - Natural ground within the southern site area recorded exceedances of the human health GAC values for both public open space and commercial / industrial end use screening values for alkaline pH at one location and acid pH at two locations.
 - Natural ground within the northern site area did not record any exceedances of the human health GAC values for either a public open space or commercial / industrial end use.
 - Made ground within the southern site area recorded exceedances of the human health GAC values for both public open space for benzo-a-pyrene (two locations) and for both a public open space and commercial / industrial end use for alkaline pH (five locations) and lead (one location).
 - Made ground within the northern site area recorded exceedances of the human health GAC values for a public open space end use for benzo-a-pyrene (one location) and for both a public open space and commercial / industrial end use for alkaline pH (six locations) and lead (one location).
 - The human health exceedances recorded are not considered likely to constrain a major development scheme of this type and can be managed through placement of an inert subsoil and topsoil cap within any landscaping areas. The identified exceedances are of a low magnitude and it is considered that they can be managed by a competent Contractor using good construction techniques and standard hygiene practices during the construction works.
 - Surface water samples from Lake Lothing have identified minor exceedances of the EQS screening value for zinc.
 - Groundwater samples have identified generally low exceedances of both the EQS and DWS screening values for a number of determinants.



- Risks to controlled waters are therefore considered to be relatively low although there is some evidence of impact to groundwater. Whilst a contaminant linkage is considered likely to exist, an unacceptable risk to controlled waters is considered unlikely.
- From the monitoring data available, ground gas has not been recorded at concentrations that require specific gas protection measures over and above standard construction techniques.
- Marine sediment sampling undertaken within Lake Lothing did not identify any sediments with contaminant concentrations above the CEFAS Level 2 action level. It is therefore considered that marine sediments within Lake Lothing are unlikely to pose an unacceptable risk to the marine environment if disturbed and transported to other areas of the Lake during construction. It is also considered that excavated sediments are suitable for offshore disposal in accordance with a suitable licence.

9.3 OUTLINE REMEDIAL MEASURES

- 9.3.1. Potential risks to future site users from asbestos within made ground has been identified and the possibility of made ground at the site containing further asbestos cannot be ruled out. Depending upon the final design and working methods, further sampling and assessment at these locations may need to be undertaken by the construction Contractor and if necessary, consideration should be given to excavating and removing this material from site.
- 9.3.2. Other potential human health risks were identified for a commercial / industrial end use, but these are mitigated to acceptable levels where construction of the road will break the pathway. However, in areas where landscaping is proposed, if made ground is reused, it is considered that placement of an inert subsoil and topsoil capping underlain by a geotextile (to delineate the made ground capping interface and to minimise mixing of the soils) will be sufficient to minimise the risks to site users and adjacent site users. Discussion with the Regulators at detailed design stage will be required to agree the exact scope of any capping.
- 9.3.3. There is some olfactory/ visual evidence of the presence of hydrocarbons near the southern bank of Lake Lothing (and in a number of other isolated locations). However, sampling of groundwater from monitoring well installations within adjacent boreholes does not show any exceedances of groundwater screening values for hydrocarbons. It is therefore concluded that although there is some evidence of hydrocarbon presence in a number of locations on site, particularly near the southern bank of Lake Lothing, the analysis of soil, soil leachate and groundwater samples suggest that the concentrations are not significant. It is therefore recommended that further groundwater monitoring is undertaken from borehole installations to confirm that no significant exceedances of groundwater screening values are present.

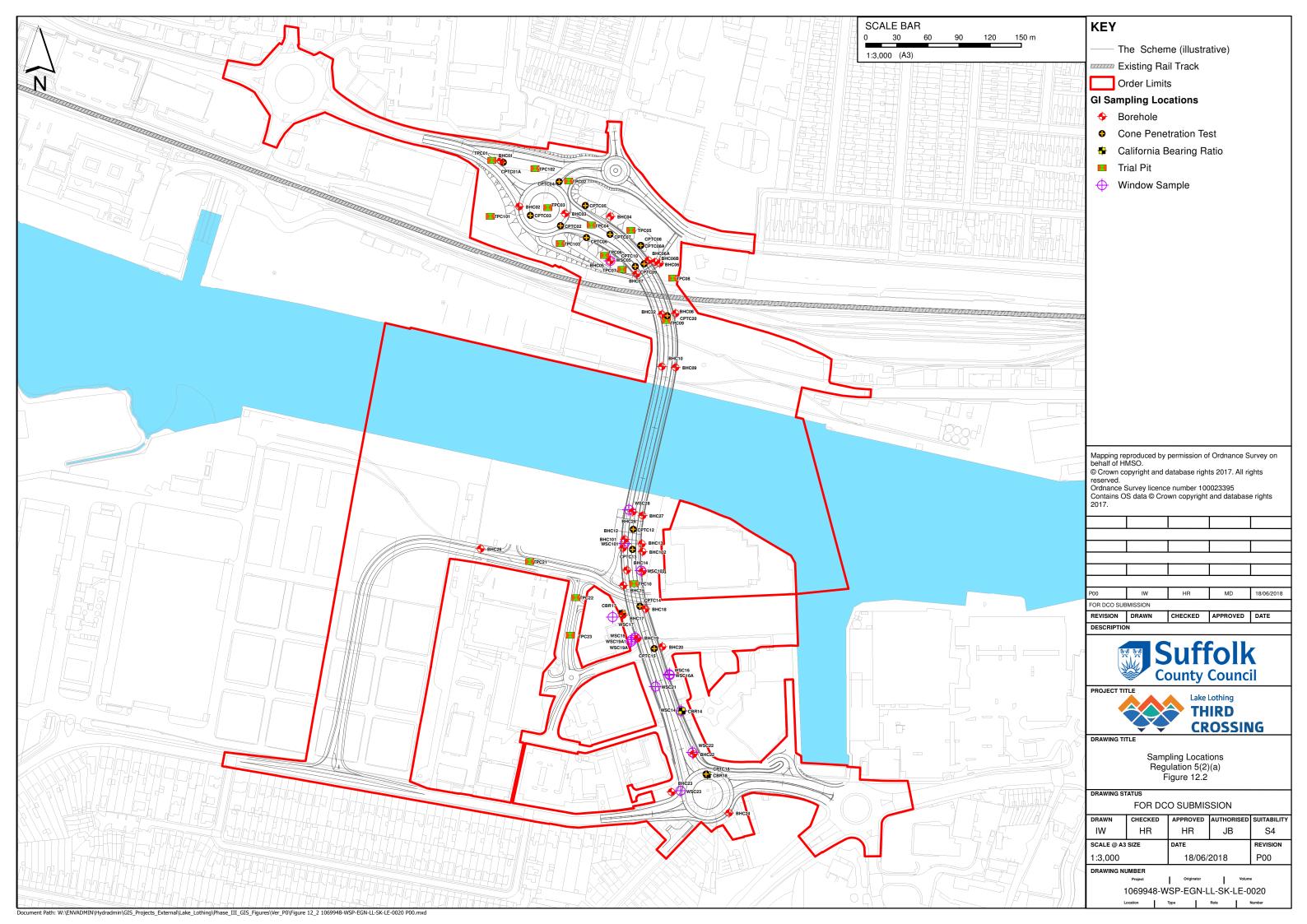
9.4 CONSTRUCTION CONSIDERATIONS

- 9.4.1. Protection of construction workers, site users and adjacent site users from airborne dust generated from made ground during construction will be required and measures are set out in the interim CoCP and will form part of the full CoCP.
- 9.4.2. The construction Contractor will need to keep a watching brief for unforeseen contamination including hydrocarbons and asbestos. Hydrocarbon odours and sheen were identified during the ground investigation, but chemical testing did not record any elevated concentrations.

Annex A

DRAWINGS





Annex B

SCOPE OF WORKS





LAND BASED FIELD WORKS

GENERAL WORKS

The ground investigation was undertaken between 24th July 2017 and 25th April 2018 by Geosphere Ltd who acted as Principal Contractor and were contracted to The Applicant. Chemtest Ltd were sub-contracted by Geosphere to undertake the chemical testing.

The ground investigation was undertaken in general accordance with techniques outlined in BS5930:2015 and BS1377:2016, as appropriate, at the positions shown on Drawing 1069948-WSP-ENG-LL-SK-LE-0020 – Sampling Locations Regulations 5(2)(a) Figure 12.2. The exploratory hole logs are presented in Annex C.1.

The investigation was monitored part time by an Engineer from WSP Ltd.

GAS AND GROUNDWATER MONITORING WELL INSTALLATION

Gas and groundwater monitoring wells were installed in selected boreholes summarised below and were constructed from 50mm perforated plastic pipe with a pea gravel surround and fitted with air tight gas valves. As a minimum requirement, each monitoring well comprised plain pipe from ground level to 1m with a bentonite pellet surround. Exact details of each installation are shown on the Engineers logs in Annex C.1.

Table 12 - Summary of Monitoring Wells

Exploratory Hole Location	Response Zone	Installed Strata							
BHC01	1m - 3m	Potential Made Ground** / Sand							
BHC02	1m – 10.5m	Possible made ground** / Silt / Sand							
BHC07	6m – 12m	Sand / Clay / Sand							
BHC08	7m – 12m	Sand							
BHC09	8m – 12m	Sand							
BHC14	1m – 2.5m	Made Ground							
BHC24	5m – 11.5m	Sand							
	1m – 2.5m	Made ground / Sand							
BHC27	4m – 12m	Gravel and Sand							
BHC102	5m – 11m	Sand							

^{**} Strata description changed from natural to potential / possible made ground by the Contractor after the monitoring well instruction was given.

HEADSPACE SCREENING

Disturbed soil samples were taken by Geosphere Ltd at regular intervals during the advancement of investigation locations for headspace screening. Samples were stored in headspace bags and screened for volatile organic compounds following a period for equilibration using a Photo Ionisation Detector. The results of the PID testing are presented on the exploratory hole records (Annex C.1).

GROUNDWATER AND GAS MONITORING

All boreholes were monitored by Geosphere Ltd for ground gas concentrations on two occasions to-date. Concentrations of methane (CH4), carbon dioxide (CO2), oxygen (O2) and trace gases (including carbon monoxide, hydrogen sulphide) and volatile organic compounds were recorded together with gas flow rates. Atmospheric pressures during the monitoring were also noted to enable a quantitative gas risk assessment to be carried out if necessary in accordance with current best practice.

The results of the gas and groundwater monitoring are presented in Annex C.2.



GROUNDWATER SAMPLING

Geosphere Ltd have undertaken groundwater sampling on two occasion's to-date (9th to 14th May and 23rd and 24th May) at fortnightly intervals after completion of the site works. Prior to each round of groundwater sampling, three well volumes were purged.

Groundwater samples were retained by Geosphere Ltd in containers provided to Geosphere Ltd by Chemtest Ltd and transported to the testing laboratory in accordance with Chemtest Ltd sample handling protocols.

In addition to the above two groundwater sampling visits undertaken after completion of the site works, two locations (BHC02 and BHC102) were also monitored on one occasion at the start of January 2018 during the site works.



MARINE SAMPLING WORKS

GENERAL WORKS

The marine sampling works were undertaken between 9th April 2018 and 23rd April 2018 by CMS-Geotech Ltd who were contracted to WSP Ltd. The chemical testing was scheduled by WSP Ltd and undertaken by ALS Ltd were sub-contracted by WSP Ltd.

Samples were stored in appropriate bottles and transported in cooler boxes to the testing laboratory under a chain of custody protocol within 24hours of being taken.

The factual records comprising sampling locations and test results are presented in Annex D.

SEDIMENT GRAB SAMPLING

Sediment surface grab samples were taken from 48 locations within the lake bed predominantly for the purposes of informing the potential for offshore disposal and sediment transport post construction.

VIBROCORE SAMPLING

Vibrocore sampling from 12 locations at nominal metre intervals to a nominal 4m depth was undertaken within the bed of Lake Lothing predominantly for the purposes of informing the potential for offshore disposal and sediment transport post construction.

SURFACE WATER SAMPLING

Surface water samples were recovered from the 4 locations within Lake Lothing.

Suffolk County Council



TESTING

CHEMICAL TESTING – SOILS & LEACHATE

Selected soil samples were scheduled for chemical analysis by WSP Ltd which was undertaken Chemtest Ltd under contract to Geosphere Ltd. The results of the contamination testing are presented in Annex C. The following testing was scheduled:

Table 13 - Summary of Chemical Testing for Soils

Strata	Soil Sample Laboratory Analysis (no.)												
		Metals	General	TPHCWG	VOC	SVOC	РАН	PCB EC7	PCB WHO 12	WAC	Asbestos	SOM	% Samples in Upper 1m
Made Groun	d	57	57	57	57	57	57	29	27	20	56	7	70
Natural Grou (Clay)	ınd	9	9	9	9	9	9	2	5	1	4	5	11.1
Natural Grou	ınd	1	1	1	1	1	1	1	0	1	0	1	0
Natural Grou	ınd	24	23-24	31	31	27	31	7	4	1	0	21	3.2
Natural Grou (Gravel)	ınd	0	0	2	2	0	2	0	0	0	0	0	0
Key					•		•	•	•			•	
Metals			oron, cadr and zinc	mium, ch	nromiu	m (tota	al and I	nexava	alent), I	ead, m	nercury	, copp	er, nickel,
General	pH, cyar		soluble su	ılphate,	total su	ulphate	e, amm	ionia a	s N, pl	nenol,	free cy	anide	and total
TPHCWG			TPH (alip		d arom	natic sp	olit and	l bande	ed) inc	luding	Benze	ne, To	luene, Ethyl
VOC	Vola	atile Or	ganic Cor	npounds	5								
SVOC	Sem	ni Vola	tile Organ	ic Comp	ounds								
PAH	Spe	ciated	Poly Aror	natic Hy	drocar	bons							
PCB EC7	PCE	3s EC7	'Congene	ers									
PCB WHO12	PCBs WHO12 Congeners												
WAC	Tota	al Was	te Accepta	ance Cri	teria S	uite							
Asbestos	Scre	en on	ly										
SOM	Soil Organic Matter												



Table 14 - Summary of Chemical Testing for Leachate

Strata		Soil Lea	chate La	boratory	Analysis	(no.)				
		Metals	General	TPHCWG	SVOC	РАН	% Samples in Upper 1m			
Made Groun	d	26	26	26	4	26	65.4			
Natural Grou Clay)	ınd	0	0	0	0	0	0			
Natural Grou	ınd	0	0	0	0	0	0			
Natural Grou (Sand)	ınd	1	1-2	3	0	3	0			
Natural Grou (Gravel)	ınd	0	0	0	0	0	0			
Key						,				
Metals		, boron, c selenium :		chromium	(total and	d hexavale	ent), lead, mercury, copper,			
General	pH, wa	ter soluble	sulphate	, ammoni	a as N, ph	nenol, free	cyanide and total cyanide			
TPHCWG	Speciated TPH (aliphatic and aromatic split and banded) including Benzene, Toluene, Ethyl Benzene and Xylene									
SVOC	Semi V	olatile Org	ganic Com	npounds						
PAH	Speciated Polyaromatic Hydrocarbons									

CHEMICAL TESTING - WATER

Water Samples were extracted from the monitoring wells on site on two occasions by Geosphere Ltd and submitted for chemical analysis at Chemtest Ltd. The results of the contamination testing are presented in Annex C. The following testing was carried out:

Table 15 – Summary of Chemical Testing for Water (Groundwater and Surface Water)

Water Body	Laborate	ory Analys	is (no.)						
	Metals General Suite		TPHCWG	VOC	SVOC	РАН			
Groundwater	19	19	19	19	19	19			
Key									
Metals Arsenic, cadmium, chromium (hexavalent and total), lead, mercury, copper, nickel, selenium and zinc),									



General Suite	pH, Sulphate water soluble, Ammonia as N, Cyanide (total and free) and phenol
TPHCWG	Speciated TPH (aliphatic and aromatic split and banded) including Benzene, Toluene, Ethyl Benzene and Xylene
VOC	Volatile Organic Compounds
SVOC	Semi Volatile Organic Compounds
PAH	Speciated Polyaromatic Hydrocarbons (PAH)

CHEMICAL TESTING - LAKE BED SEDIMENT GRAB SAMPLES

Lake bed sediment surface grab samples were taken by CMS-Geotech Ltd from 12 locations within the Lake and were submitted for chemical analysis at ALS Laboratories in Hawarden. The results of the contamination testing are presented in Annex D.2. The following testing was scheduled by WSP Ltd:

Strata	Labora	atory Ana	lysis (no.)								
	Metals	TPHCWG	Pesticides PAH		PSD	PCB	Organotins					
Lake Lothing Sediments	12	12	12	12	12	12	12					
Key												
Metals	Arsenic, bo		nium, chro	omium, co	pper, lead,	mercury, n	ickel,					
TPHCWG	Speciated Benzene,	` '			•	nded) inclu	ding					
Pesticides	Organo-ch	loride and	organo-p	hosphate	pesticides	and triazine	herbicides					
PAH	Speciated	Polyarom	atic Hydro	carbons			i					
PSD	Particle siz	e distribut	tion									
PCB	Polychlorin	ated biph	enyls EC7	and WH	O12 Conge	ners.						
Organotins	Organotin compounds											

CHEMICAL TESTING - LAKE BED SEDIMENT VIBROCORE SAMPLES

Lake bed sediment samples at nominal 1m intervals to 4m depth were taken from 12 Vibrocore locations within the Lake Lothing bed sediments by CMS-Geotech Ltd and were submitted for chemical analysis at ALS Laboratories in Hawarden. The results of the contamination testing are presented in Annex D.2. The following testing was scheduled by WSP Ltd:

LAKE LOTHING THIRD CROSSING
Project No.: 62240712 | Our Ref No.: 1069948-WSP-EGT-LL-RP-LE-0002

WSP June 2018



Strata	Lab	orator	y Ana	lysis (no.)								
	Metals	Metals General Suite ASbestos		Pesticides	PBDE	РАН	PSD	PCB	Organotins	TPHCWG	SVOC	VOC	WAC
Lake Lothing Sediment Vibrocor Samples	е 34	34	34	34	34	34	34	34	34	34	34	34	34
Key	'			,			,		,			,	,
Metals	Arsenic, boron, cadmium, chromium (total and hexavalent), copper, lead, mercury, nickel, selenium and zinc											ury,	
General Suite	Soil org				lphate	- wate	r soluk	ole and	l total,	cyanid	e (tota	l and fr	ee)
Asbestos	Asbesto	s scre	en										
Pesticides	Organo	-chlori	de and	dorgan	o-pho	sphate	pestic	ides a	nd tria	zine he	erbicid	es	
PBDE	Polybro	minate	ed Dipl	nenyl E	Ethers								
PAH	Speciat	ed Pol	yarom	atic Hy	/droca	rbons							
PSD	Particle	size d	istribu	tion									
PCB	Polychlo	orinate	d biph	enyls l	EC7 ar	nd WH	O12 C	ongen	ers.				
Organotins	Organo	tin con	npound	ds									
TPHCWG	Speciated TPH (aliphatic and aromatic split and banded) including Benzene, Toluene, Ethyl Benzene and Xylene												
SVOC	Semi vo	olatile o	organio	carbo	on								
VOC	Volatile	Organ	ic Car	bon									
WAC	Total Waste Acceptance Criteria suite												

CHEMICAL TESTING - LAKE LOTHING SURFACE WATER SAMPLES

Four water samples were taken from Lake Lothing by CMS-Geotech and submitted for chemical analysis at ALS Laboratories in Hawarden. The results of the contamination testing are presented in Annex D.2. The following testing was carried out:

Table 16 – Summary of Chemical Testing for Surface Water

Water Body	Laborator	y Analysis (no.)			
	Metals	General Suite	TPHCWG	VOC	SVOC	РАН
River (Lake Lothing)	4	4	4	4	4	4
Key						



Metals	Arsenic, cadmium, chromium (hexavalent and total), lead, mercury, copper, nickel, selenium and zinc),
General Suite	pH, Sulphate water soluble, Ammonia as N, Cyanide (total and free) and phenol
TPHCWG	Speciated TPH (aliphatic and aromatic split and banded) including Benzene, Toluene, Ethyl Benzene and Xylene
VOC	Volatile Organic Compounds
SVOC	Semi Volatile Organic Compounds
PAH	Speciated Polyaromatic Hydrocarbons (PAH)

Annex C

LAND BASED GROUND



INVESTIGATION FACTUAL INFORMATION

Annex C.1

ENGINEERS LOGS



CLIE	NT:	Suffo	lk Cou	nty (Council	PROJECT: Lake Lo	othin	g		, , , , , , , , , , , , , , , , , , , ,		GR	OUND	LEVEI	L m					HOLE No. BHC01
LOGGI					CHECKED BY: SG	EXCAVATION METHOD				n (shell and auger)		Co	ordinat	es: ,						SHEET 1 OF 3
FIELD\			L AGS B	H BETA	DATE:		·	Jncased	ι το 15.	L M		DA	TES 19-	Apr-1	8 - 2	0-Apr-1	L8			PROJECT NO. 2543,GI Lake Lothing
Date/Tir	ne [Depth	Depth'	Piez.				Strata		Graphical Representation			Situ Testin	Ĭ				Testing		Additional Tests and Notes
and Depth	.	of Casing	of Water	اقة	Description of	Strata	Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30 40	Depths ≥	No.	Blows	SPT N	<425 %	WC PI	. LL %	r Mg/m	Cu kN/m²	
0.7	+			71	TOPSOIL (Dark brown slightly gr	avelly silty fine to			0.00	0 10 20 30 40	0 -									_
(GS					coarse sand with rootlets. Grav subrounded fine to coarse flint)	/			0.20		0.20	B1								
A OTS					MADE GROUND (Dark orange b mottled gravelly fine to coarse s subangular to subrounded fine	rown and brown and. Gravel of					0.30 E	5 J1								VOC = 0ppm
GINT					subangular to subrounded fine \fint)	to coarse brick and			0.50	1	0.50	B2								
- 1					POTENTIAL MADE GROUND (Or fine to coarse sand with occasion	ange brown gravelly nal brown mottling.					0.70 E	5 J2								VOC = 0ppm
<).GPJ	+				Gravel of subangular to subrounded fine to coarse flint)				-		1 1	P2								-
CO.UK)					•						1.00 1.10 Es	B3 5 J3								VOC = 0ppm
							\bowtie													
ENVIRONMENTAL					Orange brown gravelly medium	and coarse SAND.	××		1.50	7	1.50 S	В5	22	18						
SON					Gravel of subangular to rounde	d fine and medium flint				I	1.70 ES	5 J4	3 4 5 6							VOC = 0ppm
N.							0			<i> </i>										
	T				2.00 Becoming yellow brown wi	th depth					2.00	В6								
QGEOSPHERE							· 6.			<i> </i>										
EOS																				
							; o; .				2.50 ES	B7 J5	2 2 2 3 3 2	10						VOC = 0ppm
EPHEN							:						3.2							
ST	+				Yellow brown slightly gravelly si	lty fine SAND. Gravel	×		3.00		3.00 3 -	В8								-
FROM					of subangular to subrounded fir	ne flint	× · .]									
							·*·:>]									
COPY							×:,			,	3.50 ES	B9 J6	33	13						VOC = 0ppm
LICT							×·]]	10	3 4 3 3							
NO PNO	1						×				4									_
17 (0										V	· · ·									
5-12-							×.,]									
<u>6</u>							×			 	4.50 C	B10	22	8						
Z E E							× · ·				4.60 ES	5 J7	12							VOC = 0ppm
O							: . : >						32							
IAKI	+						×. · ;		-		5 -									_
- 10							×:.													
2543,GI							×·			[····]]									
	ER 4	Z Stan	ding wa	ter lev	el PIEZOMETER Dupper so					S Standard penetration test BI								1	1	BILSSE
3H BI	Ž	<u></u> Wat	er strike	S	el PIEZOMETER Upper so Respons Lower so	eal TEST U	Undist	isturbed san		C Cone penetration test C Permeability test SF	PTN N = SP1	N value		fter sea	ting)					2543,GI Lake SHEET 1 OF 3 HOLE No. BHCQ1
AGS BH BETA								sample bed jar sar	nple			= Total l ng seatii	blows/per ng	netràtio	n	Y		Seosph	ere En	vironmental 01 8 6 6 6
SEL A					DEPTH All denths level and t	ES	Enviro	nmental s		</td <td>425 Sample</td> <td></td> <td></td> <td>icron si</td> <td>eve</td> <td>O</td> <td>D</td> <td></td> <td></td> <td> </td>	425 Sample			icron si	eve	O	D			
٠	DEPTH All depths, level and thicknesses in metres W Water Sample																			

CLIENT	: Suffo	olk County	Council	PROJECT: Lake L	Lothing Cable Percussion (shell and auger)						OUND	LEVEL	. m		HOLE No. BHC01			
LOGGED			CHECKED BY: SG DATE:	EXCAVATION METHOD): '	Capie Pe	rcussio	n (sneil and auger)		Cod	ordinat	es: ,						SHEET 2 OF 3
FIELDWO TEMPLAT		EL AGS BH BET				Uncased	(0 15.	L III		DA	TES 19-	Apr-1	8 - 2	0-Apr-	18			PROJECT NO. 2543,GI Lake Lothing
Date/Time		Depth*				Strata		Graphical Representation			itu Testin					Testing	_	Additional Tests and Notes
and Depth	of Casing	of Section Water	Description	of Strata	Leg	Leg Reduced Depth		SPT 'N' Value	Depths 2	No.	Blows	SPT N	<425 %	WC P	L LL 6 %	r Mg/m	3 Cu kN/m²	
			Yellow brown silty/clayey fine	SAND	·		5.50	0 10 20 30 40	5.50 C	B11	11	9						
ļ			,		Ţ.				5.60] E:	5 J8	2 2 3 2							VOC = 0ppm
ľ					F:_:				1									
+	†				Ī.		_		6 –									-
l					F:_:			l	}									
ľ																		
l					F:_:				6.50 S 6.60 E	B13	33	12						VOC. O
ľ					<u> </u>				6.60 E	s 19	33							VOC = 0ppm
_									7]									
l					ļ. <u></u>				´ - ' -									
ľ					F:_:				1									
ľ					<u></u>	1	7.50											
l			Yellow brown very clayey fine	and medium SAND			7.30		7.50 S 7.60 E	B15 J10		16						VOC = 0ppm
l					<u></u>						45							
ل	-				+:-:		-		8 -									_
l					<u>:</u>													
ļ					+:-:			1										
ļ					<u> </u>				8.50 S	B17	23	22						
ļ									8.60 E	5 J11								VOC = 0ppm
ļ					<u>.</u>				1									
+	†						-		9.00	B18								-
ļ					<u>. —</u>			····	+									
ļ								[····]····]····]	1									
l					<u>.</u> :-:			/	9.50 s	B20	7 10	45						
ľ								1111	9.60 E	5 J12	11 12 12 10							VOC = 0ppm
l					<u>.</u> :-:			···· ··· ···	40									
7	Ī				<u>.</u>				10-									
ľ					<u>.</u> :-:				1									
ľ					<u>:</u>		40.55		}							1		
ľ			Dark grey slightly clayey fine S sand pockets	AND with orange brown	[·:-		10.50		10.50 S 10.60 E	B22 5 J13		23				1		VOC = 0ppm
ľ									1		7 6 5 5					1		
			<u> </u>		<u> </u>				11-									
*WATER	¥ Sta ∇ Wa	nding water le iter strikes	vel PIEZOMETER Upper Respo	nse zone AND B seal TEST U KEY P	Bulk o Undis Pistor Distur	disturbed salisturbed sam turbed sam sample bed jar sam onmental sa	ample (aple I		(35) Ur T N N = SPT N*120	disturbe N value = Total I ng seatir	ed sample e (blows a plows/per ng	blow co fter sea netràtion	ount ting) n	Jec	(Do	Geosph	iere En	2543,GI Lake SHEET 2 OF 3 HOLE No. BHC01
			DEPTH All depths, level and				on sample	<4	sample	· /o passi	11g 425 M	ici off SIE	ve	O				ake

CLIEN.	T: Suffo	lk Cou	nty (Council	PROJECT: Lake Lo	thin	g				GRO	UND L	EVEL	m					HOLE No. BHC01
LOGGED				CHECKED BY: SG DATE:	EXCAVATION METHOD:				n (shell and auger)		Coo	rdinate	s: ,						SHEET 3 OF 3
	TE REF: G	EL AGS BH	I BETA				Jncased	1 (0 15.1	LITTI		DAT	ES 19- <i>A</i>	Apr-1	8 - 2	0-Apr-1	8			PROJECT NO. 2543,GI Lake Lothing
Date/Time	Depth	Depth*	Piez.				Strata		Graphical Representation			u Testing			Labora				Additional Tests and Notes
Depth	Casing	Water	۵	Description of	Strata	Leg	Reduced Level	Depth	SPT 'N' Value De	pths 2	No.	Blows	SPT N	<425 %	WC PL %	LL %	r Mg/m³	Cu kN/m²	
3.1	Ť		M	Dark grey slightly clayey fine SAl sand pockets (continued)	ND with orange brown			-	11.0	00 11-	B23								-
AGS				sand pockets (continued)		• : • :				1									
STD			M.			<u></u>		11.50	72	1									
FNIO				Grey medium and coarse SAND grey mottling	with occasional dark			11.50	11.5	50 S	B25	12 15	72*						
GPJ (· · ·						16 7							
	+							-		12-									-
CO.UK)										丹									
NTAL						· · ·		42.50	75										
ENVIRONMENTAL				Grey medium and coarse SAND natural organic odour	with weak to moderate			12.50	12.5	50 S	B27	19 20	75*						
/IRO										+		11							
N N	+					• : • :		-		13									-
H N										1									
OSP										-									
@ @			M			• : • :			13.5	50] s	B29	6 6 4 4	14						
N N										1		4 4 3 3							
STEP	+							- (1		14-									-
FROM			\bowtie	Grey CLAY with weak to modera	ite natural organic	<u>:::</u>		14.20		1									
				odour	ace natural organic				14.3	30	D30								
COPY									14.5 14.6	50	B32 UT31	(35)							VOC = 0ppm
FIG			\mathbb{A}	Dark grey silty medium SAND wi	th moderate natural	×		14.80		, ,	J14								voc – оррпі
CO	1			organic odour	in moderate natural			- 1.00		15-									-
17 (15.10	· · · · · · · · · · · · · · · · · · ·	1									Borehole completed at 15.1m bgl. Borehole backfilled with betonite grout to 3.0m bgl
05-12						Ì													backfilled with betoffile grout to 3.011 bg
Ŋ N										1									
O.										1									
Ä L	1							_		16-									_
2543,GI										-									
	D ▼ C+	ding wat	L L	DI DIEZOMETER NN LINGS	SAMPLE D	Small :	dicturbad a	cample C	Standard population test. Plane	CDT blo	uc for co	ch 7Fmm	incres	l l					
AGS BH BETA	∑ Wa	ter strikes	er ieve	PIEZOMETER Upper se Respons Lower se	e zone AND B	Bulk d	disturbed s isturbed sa turbed sam	ample C	Standard penetration test Blows Cone penetration test Permeability test SPT N		listurbed	l sample b	olow co	ount	X				PROJECT NO. 2543,GI Lake SHEET 3 OF 3 BHCQ1
38 BI				[∕/∕] Lower se	KEY P	Piston	sample	•	C reimeability test SPTN	N*120 =	Total bl	ows/pene			D	G	eosphe	ere Env	vironmental
EL AC				DESTRUMENT OF THE STATE OF THE	ES	Enviro	bed jar san onmental so	ripie oil sample	<425	includin Sample			ron sie	ve	O				o. ILa
ច				DEPTH All depths, level and t	nicknesses in metres W	water	sample												



TRIAL PIT LOG

Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	County Council	BHC03/HD/
Job No	Date 10-08-17	Groun	d Level (m)	Grid Reference ()	BHC02(HP)
2543,GI	10-08-17		2.57		
Fieldwork By			Logged By		Sheet
JG			JG		1 of 1

Depth	DESCRIPTI	ON	Legend	Depth	No	Remarks/Tests
0.00-0.20	CONCRETE	-	Parker ber			
0.20-0.40	MADE GROUND (orange brown very gravelly angular to subrounded fine and medium bric	coarse Sand. Gravel of k and flint) -		0.25	J1ES	VOC=1ppm (peak)
0.40-0.50	MADE GROUND (grey red very gravelly Sand. subrounded to angular red brick and concret	Gravel of fine and medium e)		0.40	J2ES	VOC=1ppm (peak)
0.50-0.70	MADE GROUND (black brown slightly gravelly subrounded to subangular flint)	organic Sand. Gravel of fine				
				0.60	J3ES	VOC=1ppm (peak)
0.70-1.30	Brown grey slightly gravelly medium and coa subangular to subrounded fine flints. -	rse SAND. Gravel of fine -				
7	-	-	0	0.90	J4ES	VOC=0ppm (peak)
-	-	-	0			Moderate to fast inflow o water at 1 m
				1.30	ISES	VOC=0ppm (peak)
	-	-	-			TEF NETT Z

All dimensions in metres Scale 1:12.5

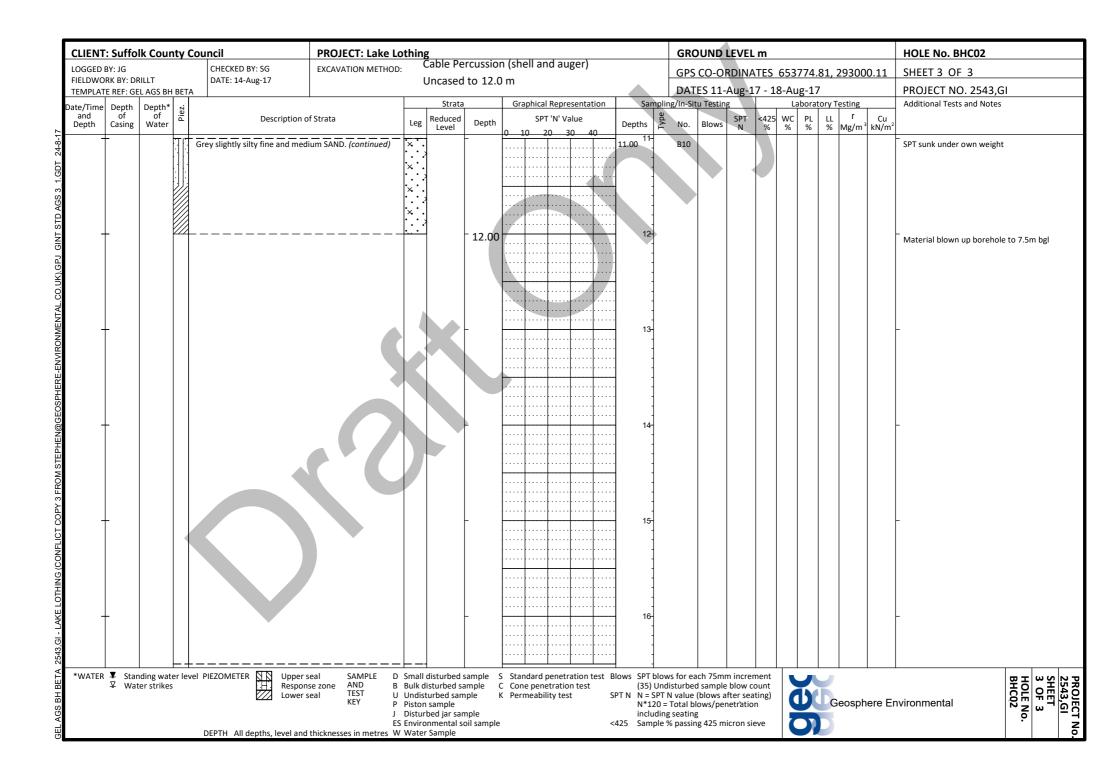
Method Inspection pit

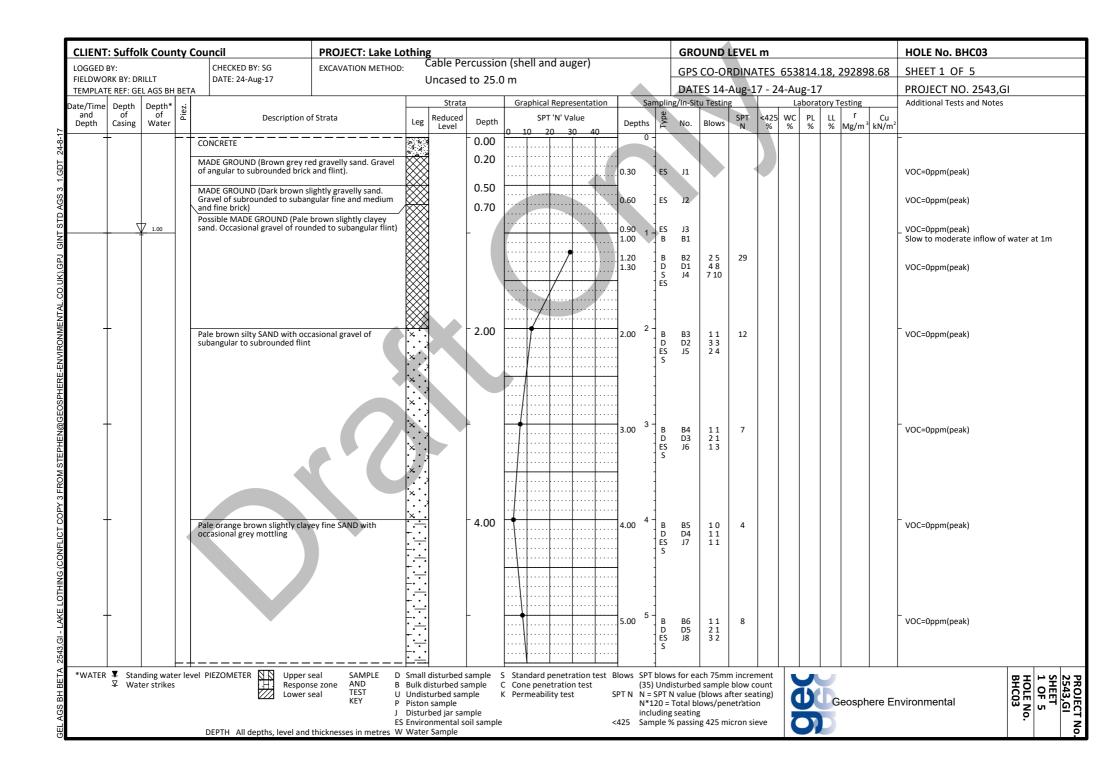
Plant Used HAND DUG

Checked By SG

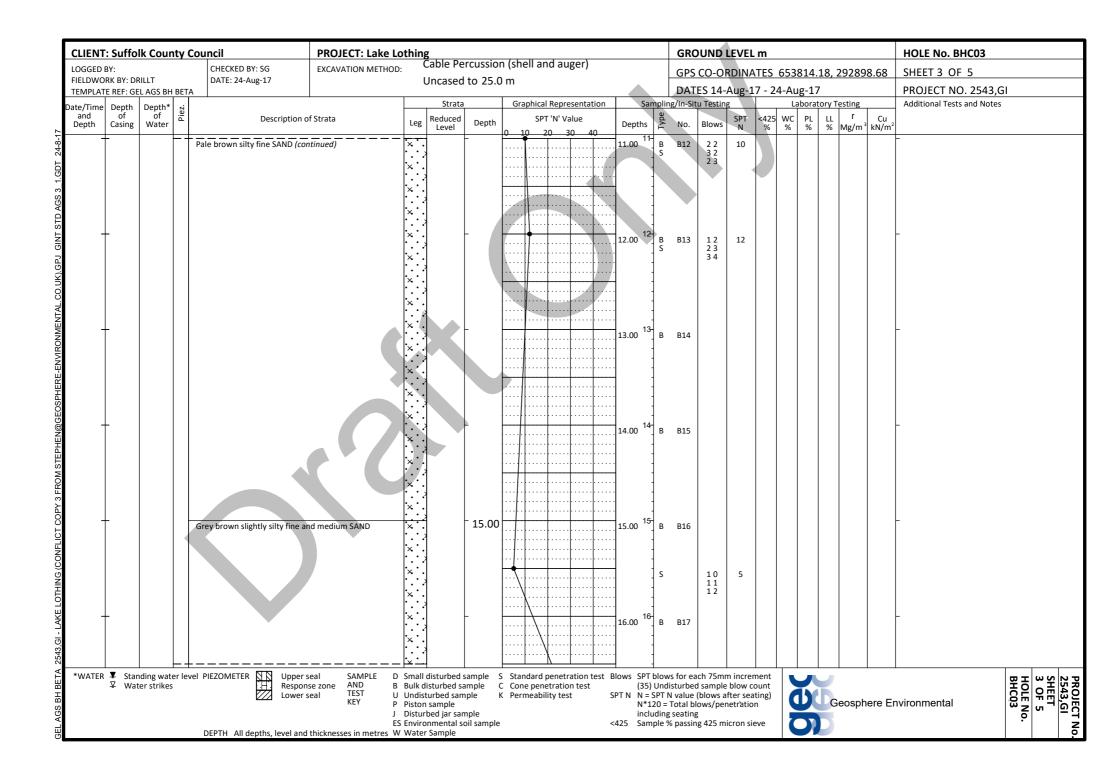
		k Co	unty	Council	PROJECT: Lake Lo		i g Cable Pe	rcuccio	n (ch	all and a	ıger)			GRO	UND	LEVEL	m						HOLE No. BHC02		
OGGED B	Y: JG RK BY: DR	IIIT		CHECKED BY: SG DATE: 14-Aug-17	EXCAVATION METHOD	<i>'</i> .	Uncased			eli aliu ai	uger)			GPS	CO-O	RDINA	TES	653	774.	81, 2	29300	00.11	SHEET 1 OF 3		
	REF: GE		ВН ВЕТ	_								4			ES 11-		7 - 1						PROJECT NO. 2543,		
e/Time and	Depth of	Depth of	Piez.				Strata	<u> </u>	Gra		esentation			g/In-Sit	u Testin						esting r	_	Additional Tests and Note	!S	
	Casing	Wate	er 🖰	Description	of Strata	Leg	Reduced Level	Depth	0 1	SPT 'N' \ 0 20	'alue 30 <u>40</u>	Depth	Type	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	Mg/m	3 kN/m ²			
1	•		110	CONCRETE		P 4	3	0.00					0 -										-		
				MADE GROUND (orange brow	n very gravelly fine to		3	0.20				0.25	ES	11									VOC=1ppm (peak)		
				coarse sand. Gravel of angular medium brick and flint)	to subrounded fine and	\gg	₹	0.40				0.40	ES	J1 J2		1							VOC=1ppm (peak)		
				MADE GROUND (Grey and dar gravelly fine to coarse sand. (k orange brown very		3	0.50				0.60	ES										VOC=1ppm (peak)		
				medium subrounded to angula (concrete)	r red brick and		4	0.70				. 0.60	153	13/									VOC-Ippin (peak)		
1				MADE GROUND (Black and bro	own slightly gravelly	/ : • :	•{		1,,			0.90	1 ES	J4									VOC=0ppm (peak)		
				sand with moderate natural o fine subrounded to subangula	flint)					J		1.00	В	B1	3 3 4 2	13									
				POSSIBLE MADE GROUND (Bromedium and coarse sand. Gra	wn grey slightly gravelly		<u>.</u>	1.30	1	<i>[[</i>]		1.20	D	D1 J5	3 4								\(\(\text{OC} = \text{One and } \)		
				\subrounded fine flint)	/	/\ . · .]	1.50	7			1.30	1 5	15									VOC=0ppm (peak)		
			計:	Possible MADE GROUND (Brow fine sand. Occasional gravel of rounded flint)	f subrounded to		·					-	-												
				Pale brown slightly sandy SILT	with occasional nockets	x		1.80					-												
+	_			of clay.	with occusional pockets	× *		-	1		+	1	2 -		2.1								1/0C 0mm (mm)		
						* .×						2.00	B	B2 D2	21	6							VOC=0ppm (peak)		
						× ×						-	ES	J6	2 2										
						×·^						-	}												
			:井:			××			1			1	1												
			13.			× · ×							1												
+	-					××		-	+	 	+	3.00	3 - B	В3	21	7							VOC=0ppm (peak)		
						* ×			/			.]	D ES	D3 J7	1 1 3 2								,, ,,		
			: :			× ×				\															
						× .×				\ 		1	1												
			[]			×.×				-\			-												
						×·×				[1												
+	-					× · ×		<u> </u>		 		4.00	4 ES	J8									>90% recovery from P1 sa	mple withi	in sof
						× .				<u> </u>		4.00- 5.00	P	P1									VOC=0ppm (peak)		
						×·×	1			\			-												
						* _*	1						1												
						* ·×				 \\			1												
			<u> </u>			× .×				···· <i>-J</i> ··			_												
T	-		: :			* ×	1					5.00	5 - B	B4 D4	3 3 6 6	24							VOC=0ppm (peak)		
						×·×	1			<i> </i>			D ES	D4 J9	5 7										
						×	<u>:</u>			····· <i> </i> ···		_	1												
VATER	¥ Stan	ding w	ater le	vel PIEZOMETER Upper							ration test											'	1	ᄧᄑ	<u></u>
	¥ Wat	er strik	es	vel PIEZOMETER Upper Respoi	seal TEST U	Undis	disturbed sa sturbed san			e penetrati meability te		SPTN N	= SPT N	value	d sample (blows a	fter sea	ting)			K				HOLE No. BHC02	台류
					KEY P	Pisto	n sample rbed jar sar			,		N	*120 =	Total bl	ows/per	netratio	n Ž			G	eospl	nere E	nvironmental	N Z	ω [_]
							onmental s		9			اا 425 S:				icron sie	eve	7	N						

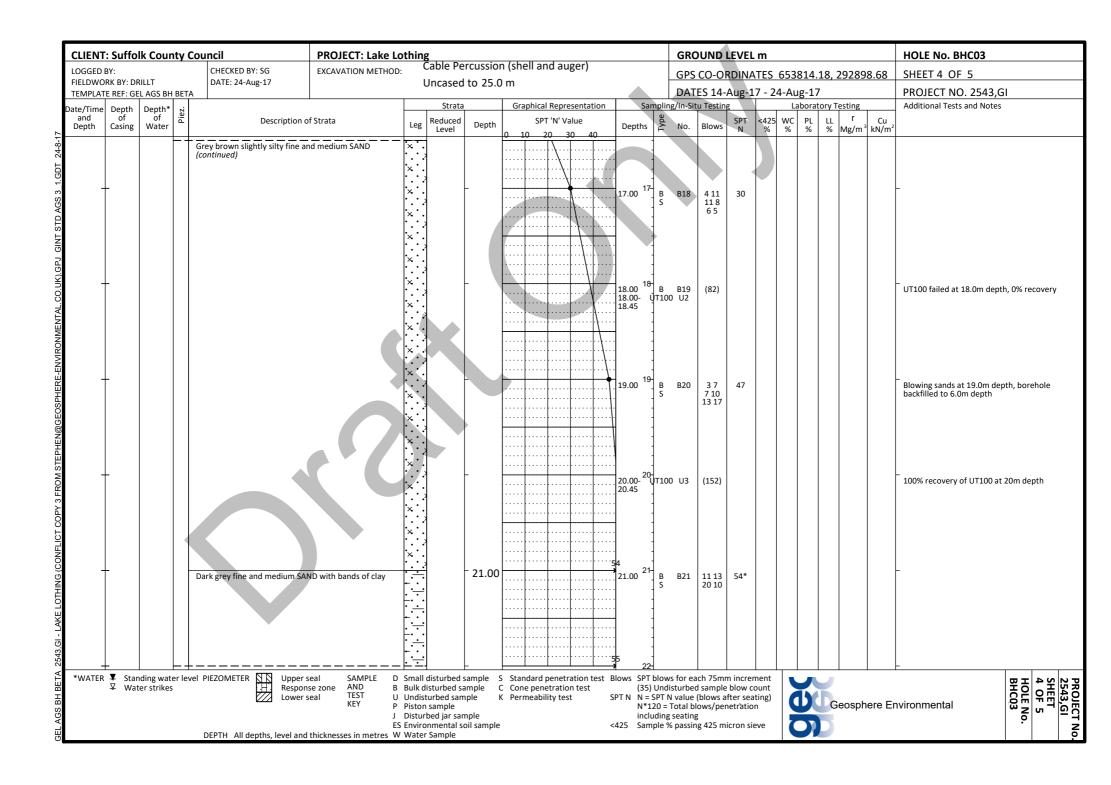
LIENT:	Suffol	k Coun	ty C	ouncil	PROJECT: Lake Lo	thin	ig Cabla Da	values! s	a /shall -	ad a	- w1			GROU	JND L	EVEL	m					HOLE No. BHC02		
OGGED B	BY: JG RK BY: DR	шт		CHECKED BY: SG DATE: 14-Aug-17	EXCAVATION METHOD:		Cable Pe Uncased			nd auge	er)			GPS C	O-OR	DINA	TES	6537	74.81	, 293	000.11	SHEET 2 OF 3		
		L AGS BH	<u>BE</u> TA	_			uncased	10 12.0	7 111					DATES	S 11-A	Aug-1	7 - 18	8-Aug	<u>-1</u> 7			PROJECT NO. 2543,G	<u> </u>	
e/Time	Depth	Depth*	ez.				Strata		Graphica	l Represe	entation	Sai		/In-Situ	Testing					y Testin		Additional Tests and Notes		
and Depth	of Casing	of Water	Piez.	Description o		Leg	Reduced Level	Depth		T 'N' Valu 20 30		Depths	Туре	No. B	Blows	SPT N	<425 %	WC %	PL L %	L r % Mg/	Cu m³ kN/m	2		
	-			Pale brown slightly sandy SILT v of clay. (continued)	ith occasional pockets	* * * * * * * * * * * * * * * * * * * *		_				6.00	B ES P	B5 J10 P2		•						No recovery within P2, bulk (peak)	taken, V	/OC=0
	-					*		-				7.00 ⁷	D	D5	11 13 46	14						VOC=0ppm (peak)		
	-			8.00 - 8.40 Grey clay band, reco	vered in lumps	· × × × × × × × ×			1			8.00 ^{8 -}	B ES	B7 J12	12 12 31	7						VOC=0ppm (peak)		
	-					× × × × × × × × × × × × × × × × × × ×		-				9.00 ^{9 -}	B ES 0T100	B8 J13 U1								UT100 failed, bulk taken, VC	C=0ppm	ı (pea
-	-		. □. □	9.80 - 10.10 Slightly grey brown selenite gravel Grey slightly silty fine and medi		× × × × × × × × × × × × × × × × × × ×	•	⁻ 10.00				10.00 ¹⁰] B	J14	3 2 4 4 5 1	14						VOC=0ppm (peak)		
WATER	- ▼ Stan ▼ Wat	ding wate er strikes	er leve	El PIEZOMETER Upper s Respons Lower s	e zone AND B eal TEST U KEY P	Bulk of Undis Pisto Distu	I disturbed sa disturbed sa sturbed sam n sample rbed jar san onmental so	mple (ple i	C Cone pen C Permeab	etration t	test	(35) PTN N = N*1	Undist SPT N v	urbed sa value (blotal blov	ample lows af	blow co	ount ting)			Geos	phere E	nvironmental	HOLE No. BHC02	SHEET 2 OF 3

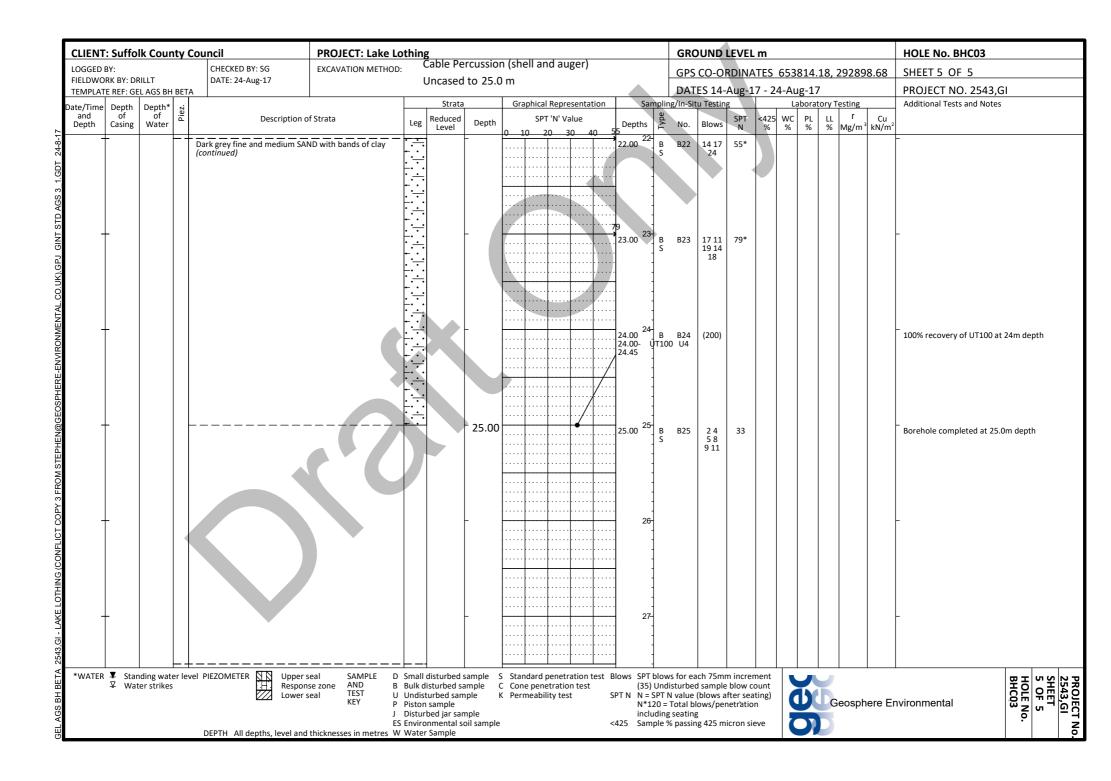




LIENT	: Suffo	lk County		PROJECT: Lake Lo	othin	ig Cabla Da	wa	n /sk=11 -	had	~~~!			GRO	UND	LEVEL	m						HOLE No. BHC03
OGGED E	BY: RK BY: DF	DILLT	CHECKED BY: SG DATE: 24-Aug-17	EXCAVATION METHOD		Cable Pe			ına au	ger)			GPS (CO-01	RDINA	TES	653	814.	18, 2	292898	3.68	SHEET 2 OF 5
		L AGS BH BET				Uncased	10 25.0	ווו ע						ES 14-		7 - 2	4-Au	ıg-17	,			PROJECT NO. 2543,GI
	Depth	Depth*				Strata	ı	Graphic	al Repre	sentation	Sa		/In-Situ	u Testin						esting I		Additional Tests and Notes
and Depth	of Casing	of Water ≅	Description	of Strata	Leg	Reduced Level	Depth		PT 'N' Va 20 3	lue 0 40	Depths	Туре	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²	
			Pale orange brown slightly cla occasional grey mottling <i>(con</i>	eyey fine SAND with tinued)		<u>-</u>									•							
	-		Pale brown silty SAND with o	ccasional pockets of clay	×	· · ·	6.00				6.00	B ES UT100	B7 J9 U0	(40)								VOC=0ppm(peak)
	_				×	;					7											UT100 failed at 6.0m depth, 0% recovery
					.^. ×. -		, and the second				7.00 '	B D ES S	B8 D6 J10	21 23 56	16							VOC=0ppm(peak)
_	-				×						8.00		В9	23	19							VOC=0ppm(peak)
					×							D ES S	D7 J11	5 4 5 5	13							voc-оррипреак)
+	-		9.00 - 9.40 Band of grey clay		×		-		•		9.00] B	B10	2 2	22							VOC=0ppm(peak)
			Pale brown silty fine SAND		×	· - - - - -	9.40				-	ES S	J12	3 5 7 7								
+	-				×		-		<u> </u>		10.00	B ES	B11	(72)								VOC=0ppm(peak)
				7	×	;						ES UT100	J13 U1									Blowing sands at 10.0m depth, borehole backfilled to 4.8m depth 80% recovery of UT100 at 10m depth
_	-				×:	•	_				1	- - -										
VATER	▼ Star ▼ Wat	nding water le er strikes	evel PIEZOMETER Upper Respo Lower	nse zone AND B seal TEST U KEY P	Bulk Undis Pisto Distu	disturbed sa sturbed sam in sample irbed jar sar	ample nple nple	C Cone per K Permeak	netratio	t 5	(35 PTN N = N* inc) Undis SPT N 120 = T ludings	turbed value (lotal blo seating	sample blows a ows/per	blow co fter sea netratio	ount ting) n			G	eosph	ere Er	nvironmental BHC03 PFT
			DEPTH All depths, level an			onmental se er Sample	oii sample	!		<	425 Sar	nple %	passing	g 425 mi	icron sie	eve						-







CLIENT	: Suffo	k Coun	ty C	Council	PROJECT: Lake Lo	thing	g 6-1-1-5		/ 1	-11 1			GRO	UND	LEVEL	. m						HOLE No. BHC04		
LOGGED E				CHECKED BY: SG	EXCAVATION METHOD:					ell and auger)).0 to 4.0m			GRID	REFE	RENC	Έ: ΤΙ	M 53	859	9298	35		SHEET 1 OF 8		
FIELDWOF TEMPLATI		ILLT L AGS BH	BETA	DATE:		2	250mm	cased fr	rom 4	1.0 to 4.0m 1.0 to 16.0m				ES 04-:								PROJECT NO. 2543,G		
	Depth	Depth*					Strata			aphical Representation				u Testin			Lạ	boraț	ory Tes	sting		Additional Tests and Notes		
and Depth	of Casing	of Water	Piez.	Description of	Strata	Leg	Reduced Level	Depth	0_1	SPT 'N' Value 10 20 30 40	Depth		No.	Blows	SPT N	<425 %	WC %	PL %	LL % N	r vlg/m³	Cu kN/m²			
1	-	Ī	- T	CONCRETE (Pale grey, no rebar)		P 4 5		0.00) -												
				MADE GROUND (Dark orange b and gravel. Gravel of angular to coarse concrete, brick and flint)	subrounded fine to			0.20			0.30	ES	B1 J1									VOC = <0.1ppm (peak)		
			1	MADE GROUND (Black and dark sand and gravel with weak to m organic odour. Gravel of angula to coarse flint, brick, concrete a	oderate natural ar to subrounded fine			0.50 0.60			0.60	ES	B2 J2									VOC = <0.1ppm (peak) Rest groundwater level at 0.	6m bgl	
4	_			MADE GROUND (Black silty fine strong sulphurous and hydrocar	grained soot with			1.00	•		0.90	ES	J3	12	5							_ VOC = 4.0ppm (peak)		
				MADE GROUND (Dark yellow br sand with black staining and str odour)	ong hydrocarbon			1.30			1.10	ES	B3 J4	11	3							VOC = 5.0ppm (peak)		
				Dark yellow brown very clayey the with pockets of dark yellow bro	fine and medium SAND wn gravelly clay																			
+	=							_			2.00	ES	B4	00	0							VOC = <0.1ppm (peak)		
04-09	2.00	7 2.40										S	J5	00								Inflam of water at 2 Am		
																						Inflow of water at 2.4m		
	-			Black organic rich CLAY with ver shells	ry occasional black			3.00			3.00	ES S	B5 J6	0 0 0 0 0 0	0							VOC = <0.1ppm (peak) Sample B5 unrepresentative saturated clayey sands	due to r	·eco
											<u></u>											Sample D2 representative of	black o	rgan
	_			Black organic rich clayey fine an black clay pockets	d medium SAND with			3.70				-												
									\\		4.00	ES S	В6 J7	0 0 0 0 0 0	0							VOC = <0.1ppm (peak)		
												-												
		<u> </u>	-	Orange brown and brown mott medium SAND with clay bands Orange brown and brown mott				5.00			5.00	ES S	B7 J8	2 2 2 4 4 2	12							VOC = <0.1ppm (peak)		
WATER	▼ Star ▼ Wat	ding wate	er lev	el PIEZOMETER Upper si Respons Lower si	e zone AND B	Bulk d	isturbed s	ample	C Con	ndard penetration test	(3	5) Undist	turbed	l sample	blow c	ount							물건 :	1 0
				Lower si	KEY P	Piston Distur	turbed san I sample bed jar sai Inmental s	mple		meability test		120 = To cluding s	otal blo	ows/per	netratio	n		N N	Ge	osphe	ere Er	nvironmental	HOLE No. BHC04	1 OF 8

CLIENT	: Suffo	lk Co	unty	Council	PROJECT: Lake Lo	othin	g				GRC	OUND	LEVEL	m						HOLE No. BHC04		
LOGGED E				CHECKED BY: SG	EXCAVATION METHOD	٠.			on (shell and auger) rom 0.0 to 4.0m		GRII	O REFE	RENC	E: T	M 53	859	9298	85		SHEET 2 OF 8		
FIELDWOF TEMPLATI			вн вет	DATE:					rom 0.0 to 4.0m rom 4.0 to 16.0m			ES 04-								PROJECT NO. 2543,0	GI	
Date/Time		Dept	:h* ;;				Strata		Graphical Representation			u Testin	g			borat				Additional Tests and Notes		
and Depth	of Casing	Wat	er Sies	Description	of Strata	Leg	Reduced Level	Depth	SPT 'N' Value D	epths 2	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²			
-	-			Orange brown and brown mo (continued) Yellow brown and orange bro medium SAND with dark oran pockets of dark grey sandy cla	wn mottled silty fine and	× × ×	· · · · · · · · · · · · · · · · · · ·	- 6.00	6.0	0 6 ES UT10	B8 0 J9 U1	(41)								VOC = <0.1ppm (peak)		
-	-					×	•	_	7.0	0 7 ES S	B9 J10	2 3 6 10 13 15	44							VOC = <0.1ppm (peak)		
-	-					×	· · · · · · · · · · · · · · · · · · ·		8.0	0 8 ES S	B10 J11	5 8 2 3 5 6	16							VOC = <0.1ppm (peak)		
-	_					× × ×		-	9.0	0 9 ES S	B11 J12	2 2 2 3 6 9	20							VOC = <0.1ppm (peak)		
05-09 + 60 mins	9.00	9.60 5.00				×				00 ¹⁰ ES S	B12 J13	12 37 96	25							Inflow of water at 9.6m VOC = <0.1ppm (peak)		
*WATER	 ▼ Sta ↓ Wa	nding v	water le		nse zone AND B	Bulk	disturbed s	ample (S Standard penetration test Blow C Cone penetration test	(35) Und	listurbed	d sample	blow co	ount						_	BHO HOI	2543,G SHEET 2 OF 1
				Lower DEPTH All depths, level an	KEY P J ES	Pisto Distu Envir	sturbed san n sample rbed jar sa onmental s er Sample	mple	·	N = SPT N*120 = including Sample	Total bl	lows/per	netratio	n	7	S S S	Ge	eosph	ere Er	ovironmental	HOLE No. BHC04	2543,GI SHEET 2 OF 8

				ouncil	PROJECT: Lake Lo		· <u>o</u>		/ I II I '		0.10	OUND I								HOLE No. BHC04
LOGGED E				CHECKED BY: SG	EXCAVATION METHOD:				n (shell and auger)		GRIE) REFE	RENC	E: TN	И 53	859	9298	85		SHEET 3 OF 8
FIELDWOI TEMPLATI			BET.	DATE:					om 0.0 to 4.0m om 4.0 to 16.0m			ES 04-								PROJECT NO. 2543,GI
ate/Time	Depth					Τ	Strata		Graphical Representation	Samplir		u Testing		, 	Lal	oorato	ory Te	esting		Additional Tests and Notes
and Depth	of Casing	Depth* of Water	Piez.	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30 40	Depths 2	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m	Cu kN/m²	
-				Pellow brown and orange brow medium SAND with dark orang pockets of dark grey sandy clay Dark grey slightly clayey fine ar Dark grey medium and coarse white shells	d medium SAND			- - - - - - - - - - - - - - - - - - -		11.00 11 S 12.00 12 13.00 13 13.00 15 15.00 15 15.00 15 15 15.00 15 15 15.00 15.00 15 15.00 15 15.00 15 15.00 15 15.00 15 15.00 15 15.00 15 15.00 15 15.00 15 15.00 15 15.00 15 15.00 15 15.00 15 15.00 15 15.00 15 15.00 15.00 15 15.00 15.	B13 B14 B15 B16 B17	12 24 511	0							Blowing sands encountered from 11.6m to 14.0m depth. Casing driven down to 14.0r Continued blowing sands from 16m to 32n depth
*WATER	▼ Stan ∇ Wat	ding wate er strikes	er leve	el PIEZOMETER Upper s Respon Lower s	se zone AND B eal TEST U KEY P	Smal Bulk Undis Pisto Distu	Il disturbed sa disturbed sa sturbed sam on sample urbed jar sar	ample C nple k	S Standard penetration test BIC Cone penetration test C Permeability test SI	ows SPT blow (35) Und TN N = SPT N*120 = including (25) Sample S	isturbed N value Total bl g seating	d sample (blows at ows/pen	blow co fter sea netratio	ount ting) n		人人人		eosph	nere Er	HOLE No.

CLIEN	T: S	uffol	k Coun	ty C	ouncil		PROJ	IECT: Lake	Lothin	g			(shell and auger)		G	ROU	JND LI	EVEL	m				_		HOLE No. BHC04		
LOGGED					CHECKED BY: SG		EXCAV	ATION METH	IOD:	Cable Pe	ercussio	on ((shell and auger)		G	RID F	REFER	RENCI	E:_TN	И 53	859 S	929	85]	SHEET 4 OF 8		
FIELDW			ILLT L AGS BH	ΒΕΤΔ	DATE:				-	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	casca II		m 0.0 to 4.0m m 4.0 to 16.0m				S 04-S						-		PROJECT NO. 2543,G	ı	
Date/Time		epth			· _ I					Strata		_	Graphical Representation	San	npling/Ir					La	borato	ory Te	esting		Additional Tests and Notes	-	
and Depth	- 1 - 4	of asing	of Water	Piez.	Descr	iption of	Strata		Leg	Reduced Level	Depth	n	SPT 'N' Value 10 20 30 40	Depths	Туре и		.		<425 %	wc %	PL %	LL %	r Mg/m³	Cu kN/m²			
				7	Dark grey medium and white shells (continued)	coarse S	AND wit	th black and	- :::	1		Ĭ.		-													
					,	,								- 1													
	+										-	-		17.00	В:	19									_		
]													
									· : · :																		
	+										-			18.00 ¹⁸	B	20									_		
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	Ť											-		19.00	B	21									_		
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2														-													
) 5	†													21.00 21	B	23									 		
														1													
												-		1													
														1													
2045	1								<u> </u>]				22													
	R ₹	Stan	ding wate er strikes	er lev		Upper se		SAMPLE AND		disturbed listurbed s			Standard penetration test Blo Cone penetration test				n 75mm ample b				_	,			ı	무도	4 SH 25
*WATE	•	**att	. Junes			Lower se		TEST KEY	U Undis P Pistor	turbed san sample	nple		Permeability test SP	TNNS=S	PT N va	ue (bl	lows aft vs/pene	er seat	ting)		5	Ge	eosph	ere Er	nvironmental	CO4	2543,GI SHEET 4 OF 8
5									J Distur	bed jar sa onmental s		le	<4		ding sea	ting					ת		.1		.	- N	8 5
					DEPTH All depths, le	vel and t	hickness	ses in metres				_	•••		pu				_								

CLIENT	T: Suffo	lk Coun	ty C	Council	PROJECT: Lake Lo	thing	3		on (shell and auger)		GRO	DUND I	EVEL	m					HOLE No. BHC04			_
LOGGED				CHECKED BY: SG	EXCAVATION METHOD:	(able Pe	rcussio	on (shell and auger)		GRII	D REFE	<u>RE</u> NC	E:_ TI	M 53	35 <u>9</u> 92	<u> 298</u> 5		SHEET 5 OF 8			_
FIELDWO		RILLT EL AGS BH	BET△	DATE:		J	COLLINI	Juscu II	rom 0.0 to 4.0m rom 4.0 to 16.0m			ES 04-5							PROJECT NO. 2543,G			
Date/Time		Depth*		•		L	Strata		Graphical Representation	Sampli	-	tu Testing		L	Lal	orator	/ Testing		Additional Tests and Notes	•		_
and Depth	of Casing	of Water	Piez.	Description of	Strata	Leg	Reduced Level	Depth	0 10 20 20 40	pths 2	No.	Blows	SPT N	<425 %	wc %	PL L	L r 6 Mg/r	Cu n³ kN/m²				
1.6DI 0-10-17	Casing	Water		Dark grey medium and coarse S white shells (continued) Dark grey silty medium and coarse S agravel, shell fragments and occarse S	AND with black and	Leg	Level		23.0 24.0	22-	B24 B25 B26	Blows	N N	%	%	9		1 ³ kN/m ²				
A ZOAS) GIT LANE LO ITING GOT GINI	₹ Sta	nding wate	er lev				disturbed s	- sample \$	27.0 S Standard penetration test Blows	-	B28	ach 75mn	n increr	nent					-	B T	л v 2	
*WATER	⊈ Wa	ter strikes		Respons Lower s	e zone AND B eal TEST U KEY P J ES	Bulk d Undist Piston Distur Enviro	isturbed sa :urbed sam sample bed jar sar nmental so	ample (aple I aple	C Cone penetration test K Permeability test SPT N	(35) Und N = SPT	disturbe N value Total b g seatin	d sample (blows at lows/pen	blow co fter sea etratio	ount ting) n	1	N N	Geosp	here Er	nvironmental	HOLE No. BHCQ4	HEET OF 8	מינים איני
<u> </u>				DEPTH All depths, level and	thicknesses in metres W	Water	Sample															;

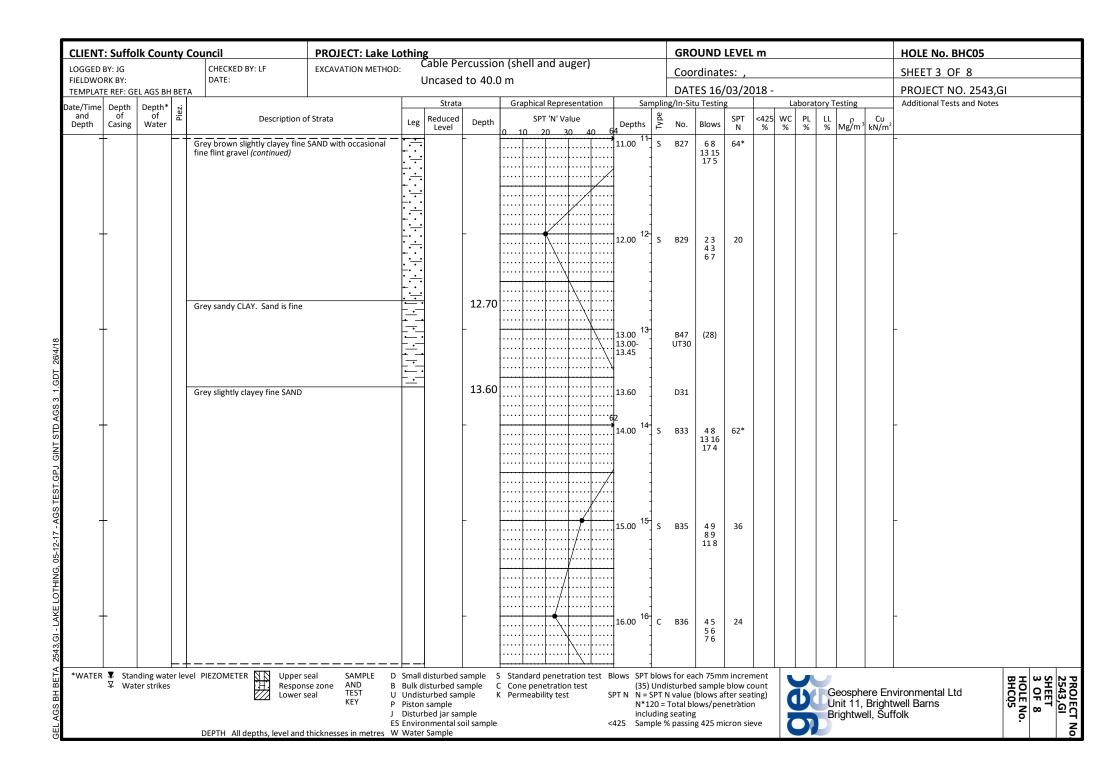
CLIENT	: Suffc	olk C	ounty	Council		PROJ	IECT: Lake I	othin	g				Į.			GRO	UND I	LEVEL	. m					Н	OLE No. BHC04		
LOGGED				CHECKED B	BY: SG		ATION METHO	D: (Cable Pe			nell and aug				GRID	REFE	RENC	E: TI	M 53	859 9	2985	5	SI	HEET 6 OF 8		
FIELDWO TEMPLAT				DATE:								0.0 to 4.0m 4.0 to 16.0n					ES 04-9								ROJECT NO. 2543,G	il	
Date/Time				· '					Strata			raphical Represe		Sar			u Testing		Ĺ	Lal	orato	ry Test	ting		dditional Tests and Notes		
and Depth	of Casing		pth* 29 of 29 ater		Description	of Strata		Leg	Reduced Level	Depth		SPT 'N' Valu		Depths	эе		Blows	SPT N	<425 %	WC %		LL		Cu /m²			
				Dark grey silty gravel, shell fra	medium and co	parse SANI	D with fine flint	,			Ĭ			-													
				clay bands (cor	ntinued)	casional si	nens and sandy	· :																			
_	_									_				28.00 ²⁸										-			
														28.00		B29											
													<mark>.</mark>														
											-	 															
														29.00 ²⁹⁻		В30								ļ			
-	_									-				30.00 30-		B31								-			
Ę																											
_	_							· : · :	1					31.00 31-		n22								-			
2								0.						31.00		B32											
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											/																
5											4			-													
								0.						8													
														32.00 ³²⁻	S		17 21 19 23	88*						Co	ontinued blowing sands fro	om 32m	to 39m
								:::									8										
								·.·.																			
	▼ C+-	andisa	L water la	vel PIEZOMETER	NN Unna		SAMPLE [<u></u>	dicturbod	- cample 1	C C1	andard penetrat	tion test D	33-	bloves f	for one	ch 75~~	n incre	mont	\perp	_						
*WATER	¥ Sta	ater st	rikes	ver PIEZUMETER		nse zone	AND E	Bulk d	isturbed sa	ample (C Cc	ne penetration	test	(35)	Undist	urbed	sample	blow c	ount							물질	2543,GI SHEET 6 OF 8
					∠∕∕_ Lower	seai	KEY F	Pistor	turbed san sample		K PE	rmeability test	5		20 = To	otal blo	ows/pen					Geo	sphere	Envir	onmental	0 E 2	3, <u>G</u>
į							E	ES Enviro	bed jar sar onmental s		e		<	inclu 425 Sam	ıding se ple % p			icron si	eve	7	n						
				DEPTH All d	epths, level and	d thickness	ses in metres \	N Wate	Sample																		

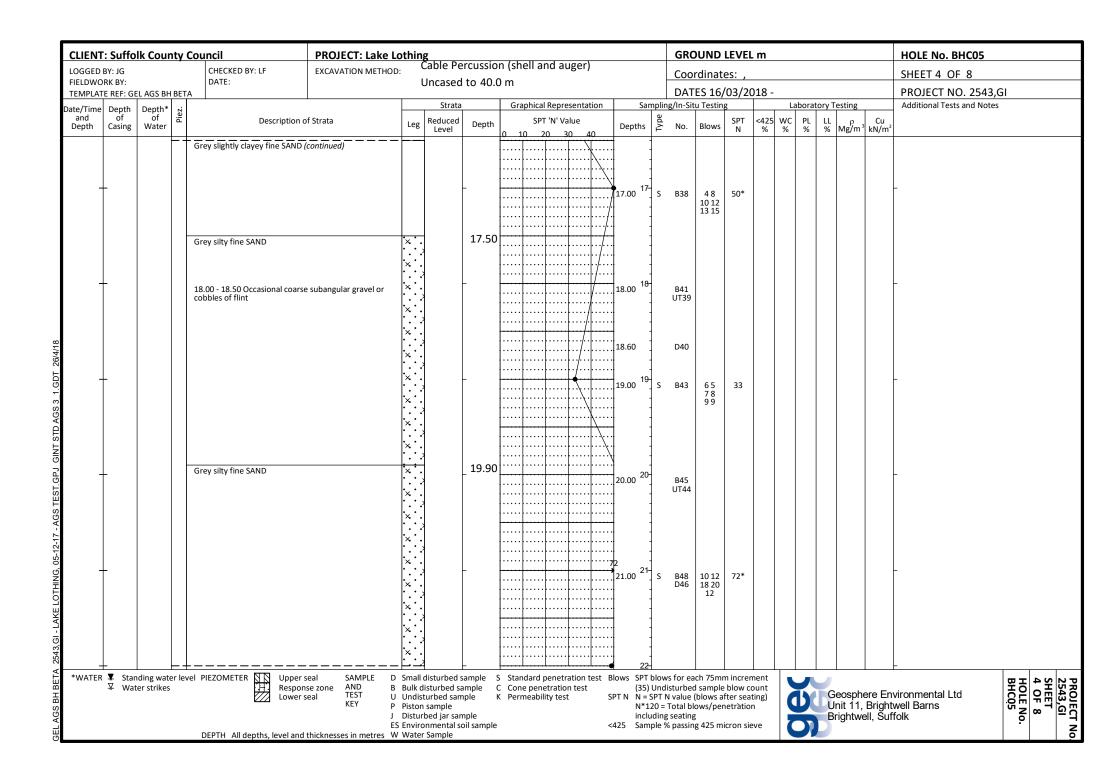
CLIENT	: Suffo	lk Co	unty	Council	PROJECT: Lake Lo		3 2-6-1- 2				GRO	UND	LEVEL	m				HOLE No. BHC04				
OGGED I				CHECKED BY: SG	EXCAVATION METHOD:				on (shell and auger) rom 0.0 to 4.0m		GRID	REFE	RENC	E: TM	53859	929	85	SHEET 7 OF 8				
IELDWO EMPLAT			BH RFT	DATE:					rom 0.0 to 4.0m rom 4.0 to 16.0m				Sep-1					PROJECT NO. 2543,G				
te/Time	Depth	Depti					Strata		Graphical Representation	Sampli	ng/In-Situ				Labora	tory Te	esting	Additional Tests and Notes				
and Depth	of Casing	of	1 ∺	Description of	of Strata	Leg	Reduced Level	Depth	SPT 'N' Value	Depths 글	No.	Blows	SPT N	<425 V	VC PL	LL	r _{Cu} Mg/m³ kN/m	2				
	-		-	Dark grey silty medium and co	arsa SAND with fine flint		Level	-	0 10 20 30 40	33- _S		3 4	9	/0	70 70	/0	IVIG/III KIV/III	-				
				Dark grey silty medium and co gravel, shell fragments and occ clay bands (continued)	asional shells and sandy							34										
				ciay banas (continuca)						1 1												
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-	-							-	•	34 s		44	7					-				
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_	_						-	-91		36.00 ³⁶	B34							-				
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			L.	 -		· · ·]]												
WATER	▼ Star ▼ Wa	nding w ter stril	rater le kes	vel PIEZOMETER Upper : Respon	se zone AND B	Small Bulk d	disturbed s isturbed sa	ample S	S Standard penetration test I C Cone penetration test		ws for ead				U		,		모공	7 SH		
				Lower	seal TEST U	Undist	turbed sam			PTN N = SPT N*120 =	N value ((blows a	fter sea	ting)	D	G	eosphere F	nvironmental	HOLE No. BHC04	유표		
					j	Distur	bed jar san			includin	g seating						P. 1010 L		- N	ω.		
				DEPTH All depths, level and			ES Environmental soil sample <425 Sample %						icron sie	eve		olle % passing 425 micron sieve						

CLICIAI	: Surro	lk Cou	nty (Council	PROJECT: Lake Lo	othin	g				GRO	UND	LEVEL	m	HOLE No. BHC04					
OGGED				CHECKED BY: SG	EXCAVATION METHOD				n (shell and auger) om 0.0 to 4.0m		GRID	<u>REF</u> E	RENC	E: TM 5	<u>385</u> 9	929	85	SHEET 8 OF 8		
	ORK BY: DI TE REF: GE		H BETA	DATE:		2	250mm c	ased from	om 4.0 to 4.0m				Sep-17					PROJECT NO. 2543,G	ı	
te/Time		Depth*		1			Strata		Graphical Representation		ng/In-Situ				Labora	tory Te	esting	Additional Tests and Notes		
and Depth	of Casing	of Water	Piez.	Description of Strata		Leg	Reduced Level	Depth	SPT 'N' Value	Depths Appe	No.	Blows	SPT N	<425 W0	PL %	LL %	r Cu Mg/m³ kN/m²			
-		Water		Dark grey silty medium and coa gravel, shell fragments and occ clay bands (continued)	rse SAND with fine flint asional shells and sandy		Level	41.50		41.00 ⁴¹ -	B35	BIOWS	N	% % %		96	Mg/m ² kN/m ²	Borehole aborted at 41.5m continued blowing sands	depth d	due to
+WATER	¥ Star	nding wa eer strike	ter lev s	el PIEZOMETER Upper s	se zone AND B eal TEST U KEY P	Bulk o Undis Pistor	disturbed s listurbed sa turbed sam n sample bed jar san	mple (S Standard penetration test B C Cone penetration test K Permeability test S	44- lows SPT blow (35) Und PT N N = SPT I N*120 = including	listurbed N value (Total blo	sample blows a ows/per	blow co		D	G	eosphere Ei	nvironmental	HOLE No. BHC04	SHEET 8 OF 8

CLIENT	: Suffo	lk Count	ty Co	ouncil	PROJECT: Lake Lo	othing	g					G	ROUNE	LEVE	L m			HOLE No. BHC05				
LOGGED				CHECKED BY: LF	EXCAVATION METHOD:					shell and auger)		Co	ordina	tes: ,						SHEET 1 OF 8		
FIELDWO TEMPLAT		EL AGS BH B	BETA	DATE:		ι	Jncased	το 40.0	.u m	1		D	ATES 16	5/03/2	018 -					PROJECT NO. 2543,G		
ate/Time	Depth		Piez.	-			Strata		(Graphical Representation		pling/In-	Situ Testi			Labor	atory	Testing		Additional Tests and Notes		
and Depth	of Casing	of Water	Ë	Description of	Strata	Leg	Reduced Level	Depth	۱	SPT 'N' Value	Depths	√ No	. Blows	SPT N	<425 %	WC PL	. LL %	ρ Mg/m	Cu kN/m²			
_	-	<u> </u>	- + 7	CONCRETE		6 N.A		0.00	0	10 20 30 40	0 -						+	0,	,	-		
						4					-											
			!	MADE GROUND (Dark grey brow to coarse sand. Gravel of angula and medium concrete and flint)	vn gravelly clayey fine			0.30			1	D4 -)/OC 1===(===l)		
			á	and medium concrete and flint)	ar to subrounded fine	\bowtie).40).50	B1 +	L							VOC = 1ppm (peak)		
						\bowtie).60	ES B2								VOC = 2ppm (peak)		
						\bowtie).90 1	ES B3								VOC = 1ppm (peak)		
Ī						\bowtie					']	J3										
			(Grey brown silty fine SAND		×		1.20	1		20	ES B5 C J4	10	2						VOC = 1ppm (peak)		
						×·í			1		1	C 3-	01									
						`;																
						·^.·;			1:1:		-											
-	-			Dark grey and black sandy CLAY	with moderate natural	<u>×</u> :		2.00	1		1.90 2.00 2 -	ES B7								VOC = 1ppm (peak)		
			(organic odour		<u></u>]	J5								., ., .		
									::		2.30	BS										
						<u> </u>					2.50	ES J6								VOC = 1ppm (peak)		
									::		-											
						<u> </u>					3 -											
											3.00 3.00-	ES B1 J7								VOC = 1ppm (peak)		
						<u> </u>					3.45	UT:	.0									
											1											
						<u> </u>					3.60	D1	1									
]											
-	-							-	-	 	1.00 4	ES B1	3 11	8						VOC = 2ppm (peak)		
						<u>-:</u>						C J8		-						- P.P. (P-22-1)		
						- -					1											
				Dark grey sandy CLAY. Sand is f	ine	-		4.50		 \\ 												
						<u></u>					1.60	D1	4									
											_]											
Ī						<u> </u>		_			5.00	ES B1	1							VOC = 1ppm (peak)		
											1	Ü	•									
			_								‡											
*WATER	▼ Star ∇ Wa	nding water ter strikes	level	PIEZOMETER Upper so Respons Lower so	e zone AND B real TEST U KEY P J ES	Bulk d Undist Piston Distur Enviro	isturbed sa turbed sam sample bed jar san onmental so	ample (aple k	C Co		(35) U FN N = S N*12	Jndisturl PT N valu 0 = Tota ding seat	oed samp ie (blows blows/pi ing	le blow o after sea enetratio	ount iting) in	dec	<u>U</u>	Jnit 11.	ere En , Bright ell, Suf	vironmental Ltd well Barns folk	HOLE No.	SHEET 1 OF 8

CLIENT	: Suffe	olk C	ounty	Council	PROJECT: Lake Lo	othir	ig		· · · / - la - II - · · · I		(GRO	UND I	EVEL	m						HOLE No. BHC05
LOGGED				CHECKED BY: LF	EXCAVATION METHOD	:	Cable Pe	ercussio	on (shell and auger)			Coord	dinate	es: ,							SHEET 2 OF 8
FIELDWO TEMPLAT		GEL AG	S BH BET.	DATE:			oncased	Jncased to 40.0 m					S 16/	03/20)18 -				PROJECT NO. 2543,GI		
Date/Time	Depth	Dep	oth* ½				Strata	1	Graphical Representation	Sar	npling/		Testing				borat	ory Te	esting		Additional Tests and Notes
and Depth	of Casing	Wa	oth* zi of zi oter	Description	of Strata	Leg Reduce Level		Depth	SPT 'N' Value 0 10 20 30 40	Depths	Туре	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	ρ Mg/m³	Cu kN/m²	
-				Dark grey sandy CLAY. Sand is Grey brown slightly clayey fine fine flint gravel				⁻ 6.00			ES E	B17 J10	23 46 67	23							VOC = 0ppm
-	_							_	7	.00 7 -	ES E	B19 J11	2 4 6 6 7 8	27							VOC = 1ppm (peak)
-	_							_		8 - 8 - 00 .	ES I	B21 J12	45 57 78	27							VOC = 1ppm (peak)
-	_							_	9	.00 9 - .00 .	ES E	B23 J13	3 2 3 2 8 8	21							VOC = 0ppm
-	_							-		0.00 10- 0.00 .	ES E	J14	2 4 9 12 13 12	46							VOC = 1ppm (peak)
*WATER	▼ Sta ∇ Wa	anding ater st	water lev rikes	vel PIEZOMETER Upper Respor Lower	seal AND B seal TEST U KEY P	Bulk of Undis Pistor Distu	:	ample (nple I nple		(35) N N = 5 N*1	Undisti SPT N v 20 = To Iding se	urbed : alue (b tal blov eating	sample plows af ws/pen	blow co ter seat etratior	ount ing) 1			Ur	eosphe nit 11, E	3riaht\	vironmental Ltd well Barns folk





CLIEN	T: Suff	olk C	County	Council	PROJECT: Lake Lo	othin	g		on (shell and auger)		GR	DUND	LEVEL	m					HOLE No. BHC05		
LOGGED				CHECKED BY: LF	EXCAVATION METHOD	: (able Pe	rcussio	on (shell and auger)		Coc	rdinate	es: ,						SHEET 5 OF 8		
FIELDW(GEL AC	SS BH BET	DATE:		l	Jncased	to 40.0	U M			TES 16/)18 -					PROJECT NO. 2543,	 3I	
Date/Time							Strata		Graphical Representation	Sampl		tu Testing		Ĺ.		ratory	Testing		Additional Tests and Notes		
and Depth	Depth of Casing	w	of ater	Description o	Strata	Leg	Reduced Level	Depth	IO 10 20 30 40 I	Depths 2	No.	Blows	SPT N	<425 %	WC P	L LL 5 %	Mg/m	Cu kN/m²			
•	†		-	Grey silty fine SAND (continued)		×		-	7 22	2.00 ²² s	B50 D49	47	49						-		
						×	1		-	+	D49	10 12 13 14									
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							1			+											
						^`. :	ł			1	554										
	+					×		-	22	2.90 ₂₃ S	D51 B52	4 10 12 14	43						-		
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							ł			1											
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						·. · .	1]25	5.00 ²⁵ S	B56 D55	13 12 14 16	75*								
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,						×]		1	7	D57	79 15 17	66*								
•	†					·× · .]	-	26	5.00 26	B58	15 17 18							<u> </u>		
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	+					× · .		_	127	7.00 ²⁷ S	860	5 7	62*						-		
							1		ļ	1	B60 D59	10 12	-								
				Grey silty fine SAND with occasi fragments.	onal fine shell	×		27.30		†		18 10									
	R ¥ Sta ∇ Wi	anding ater st	water le	vel PIEZOMETER Upper s Respons Lower s	e zone AND B eal TEST U KEY P J ES	Bulk d Undis Piston Distur Enviro	listurbed sa turbed sam sample bed jar san onmental so	ample (aple inple	·	(35) Un N N = SPT N*120	disturbe N value Total b	d sample (blows at lows/pen g	blow co fter seat etration	ount ting) n	dec		Geosph Init 11, Irightwo	ere En Bright ell, Suf	vironmental Ltd well Barns folk	HOLE No. BHC05	2543,GI SHEET 5 OF 8

CLIENT	T: 9	Suffo	lk Co	unty	Council	PROJECT: Lake L	othir	ng		on (shell and auger)		GR	DUND	LEVEL	. m						HOLE No. BHC05		
LOGGED					CHECKED BY: LF	EXCAVATION METHOD):	Cable Pe	ercussio	on (shell and auger)		Coc	rdinat	es: ,							SHEET 6 OF 8		
FIELDWC TEMPLAT			L AGS	ВН ВЕТ	DATE:			Uncased	1 to 40.0	.0 m		DA	ES 16,	03/20)18 -						PROJECT NO. 2543,GI		
Date/Time		Depth of	Dept			•		Strata	1	Graphical Representation		pling/In-Si					aborat	ory T	esting		Additional Tests and Notes		
and Depth	С	of Casing	of Wate		Descriptio	n of Strata	Leg	Reduced Level	Depth		epths	Po.	Blows	SPT N	<425 %	WC %	PL %	LL %	ρ Mg/m³	Cu kN/m²			
Depth		asing	Wate		Grey silty fine SAND with oct fragments. (continued)		X	Level		0 10 20 30 40 22 32 32 32 32 32 32 32 32 32 32 32 32	28- 3.50 - 3.50 - 30- 30- 31- 31- 32-	 No. B61 B63 S D62 S B65 D64 S B69 D68 S B71 D70 	10 15 18 18 14 6 17 19 18 13 10 15 17 20 13 12 13 31 19	75* 75*	%	%	%	- %	Mg/m³	kN/m²			
*WATER	R ¥	Z Stan Z Wat	ding wer strik	vater le	Resp Lowe	onse zone AND B or seal TEST U KEY P	Bulk Undi: Pisto Distu S Envir	disturbed s sturbed sar n sample rbed jar sar onmental s	ample (nple I nple		(35) U N N = SI N*12 includ	lows for e Indisturbe PT N value 0 = Total b Iing seatin le % passi	d sample (blows a lows/per g	blow co fter sea netration	ount ting) n	200	עע	Ur	nit 11.	ere En Bright	- vironmental Ltd well Barns folk	HOLE No.	SHEET 6 OF 8

CLIENT	: Suffc	olk (Count	y C	ouncil	PROJECT: Lake Lo	othin	g					GF	ROUNE	LEVE	L m					HOLE No. BHC05
LOGGED					CHECKED BY: LF	EXCAVATION METHOD	:	Cable Pe	ercussio	on ((shell and auger)		Co	ordina	tes: ,						SHEET 7 OF 8
FIELDWO TEMPLAT		iEL A	GS BH B	ETA	DATE:			Uncased	1 to 40.0	.0 m	m		DA	TES 16	5/03/2	018 -					PROJECT NO. 2543,GI
ate/Time								Strata		(Graphical Representation	$\overline{}$	pling/In-					aborat	ory T	esting	Additional Tests and Notes
and Depth	of Casing		of ater	Piez.	Description of		Leg	Reduced Level	Depth	0_	SPT 'N' Value Dep	ths	Jy No	. Blows	SPT N	<425 %	WC %	PL %	LL %	P Cu Mg/m³ kN/m³	2
					Grey silty fine SAND with occasi fragments. (continued) Grey silty slightly clayey fine SAI		X X X X X X X X X X		35.40		33.50 33.50 34.50 75 35.50 75 36.50	34-35-35-36-37-37-37-37-37-37-37-37-37-37-37-37-37-	S B7: D7: S B7: D7: S B7: D7: S B8: D7:	2 55 620 6 69 4 1923 8 8 7 8 17 18 24 8 8 9 25 31 19 19 19 19 19 19 19	75* 75*						
*WATER	▼ Star ▼ Wa	anding ater s	g water trikes	leve	I PIEZOMETER Upper so Respons Lower so	e zone AND B real TEST U KEY P	Bulk of Undis Pistor	disturbed satisturbed san disturbed san disturbed san disturbed san disturbed san disturbed san	ample (S S C C	Standard penetration test Blows Cone penetration test	(35) U N = S N*12	olows for Undisturk PT N valu 0 = Total ding seat	ed samp e (blows blows/p	le blow c after sea	ount ting)		1	- D.	eosphere Er nit 11, Brigh ightwell, Su	nvironmental Ltd twell Barns ffolk
					DEPTH All depths, level and t	ES	Envir	onmental s		e	<425		ole % pas		nicron si	eve				.g	

CLIENT	T: Sı	uffol	k Coui	nty C	ouncil	PROJECT: Lake Lo	othin	g		,	, , , ,			GI	ROUND	LEVEI	. m						HOLE No. BHC05		
LOGGED					CHECKED BY: LF DATE:	EXCAVATION METHOD	:	Lable Pe	ercussio	on (s	(snell and aug	er)		Co	ordinat	es: ,							SHEET 8 OF 8		
FIELDWO TEMPLAT			AGS BH	I BETA				Uncased	1 (0 40.0					DA	ATES 16	/03/20	018 -						PROJECT NO. 2543,G	il	
Date/Time	De	epth of	Depth* of	Piez.				Strata		G	Graphical Represe		Sam		Situ Testir				borato			=	Additional Tests and Notes		
and Depth	Cas	of sing	of Water	Ĭ.	Description o	f Strata	Leg	Reduced Level	Depth		SPT 'N' Valu 10 20 30		Depths	Jy No	. Blows	SPT N	<425 %	WC %	PL %	LL %	Mg/m³ kN	Cu N/m²			
					Grey silty slightly clayey fine SA	ND. (continued)	× · · · · · · · · · · · · · · · · · · ·		- 40.00			75	9.50	S B83	4										
	<u>+</u> R ¥ ∇	Stand Wate	ling wat r strikes	⊢ + er leve	Upper s Respons Lower s	te zone AND B TEST U KEY P J ES	Bulk of Undis Pistor Distur Envir	disturbed sa sturbed san n sample rbed jar sar onmental s	ample (nple i nple	C Co K Pe	Standard penetrati Cone penetration t Permeability test	est SP	ws SPT k (35) l N N = S N*12 inclu	Jndisturk PT N valu 0 = Total ding seat	ed sample le (blows a blows/pe	e blow c ofter sea netratio	ount ting) n	707	人との	Un	eosphere it 11, Br ghtwell,	riahtv	rironmental Ltd vell Barns olk	HOLE No. BHC05	SHEET 8 OF 8



TRIAL PIT LOG

Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	County Council	BUCOC
Job No	Date 28-07-17	Groun	d Level (m)	Grid Reference ()	BHC06
2543,GI	28-07-17		2.40		
Fieldwork By		•	Logged By		Sheet
SG			LF		1 of 1

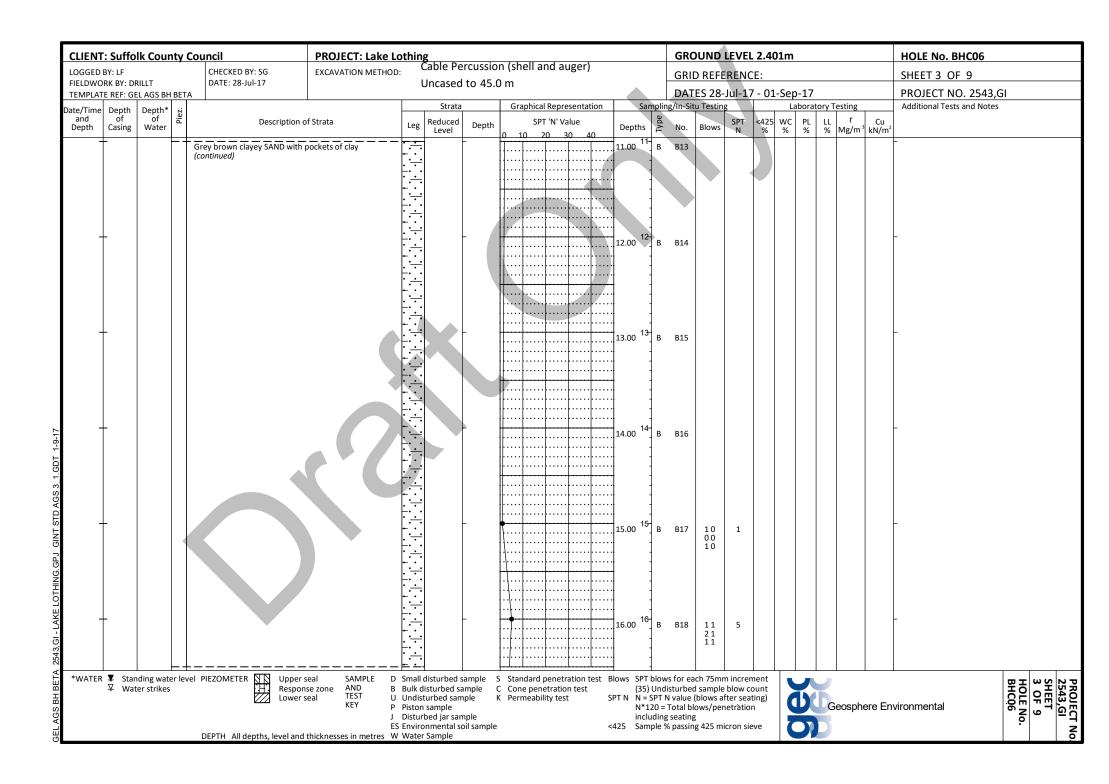
Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.17	CONCRETE: Pale grey fine to medium grained. No rebar identified.				
0.17-0.30	 MADE GROUND (sub-base): Dark orange brown slightly gravelly fine to coarse sand with frequent cobbles of slightly dark grey/black stained concrete. Gravel is angukar to sub-rounded fine to coarse quartz and flint. 		0.20	J1ES	VOC = 0 ppm (peak)
0.30-1.25	Possible MADE GROUND: Black stained (loose) silty slightly gravelly fine to medium sand with heavy hydrocarbon odour. Gravel is angular to sub-rounded fine to coarse flint.				
			0.40		VOC = 6 ppm (peak) VOC = 122 ppm (peak)
	0.60 becoming dark grey medium to coarse sand with occasional black		0.30	1253	VOC – 122 ррпі (реак)
	stained mottling and slight hydrocarbon odour. - -		0.70	J4ES	VOC = 9 ppm (peak)
					Moderate inflow of water at 1 m - Hydrocarbon sheen at surface of water level
					End of Inspection Pit at 1.25m bgl

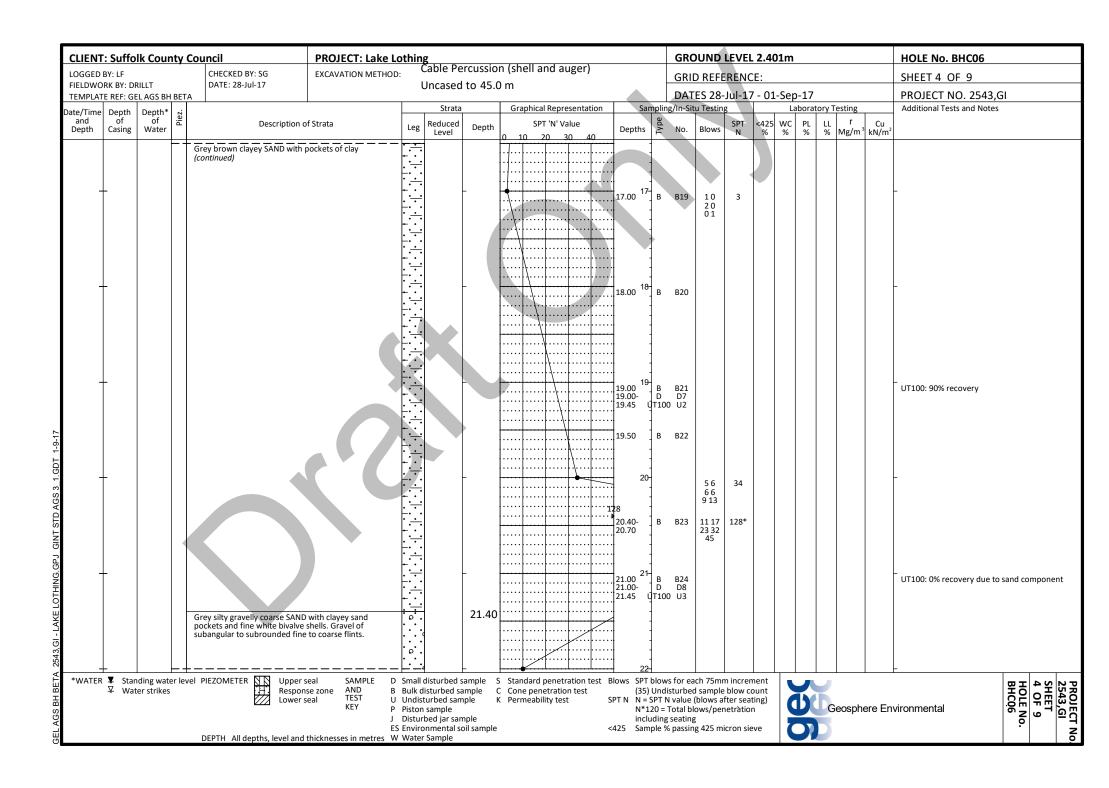
GEL AGS TP BETA 2543,GI - LAKE LOTHING.GPJ GINT STD AGS 3_1.GDT 29/7/17 0.35 -Shoring/Support: None Stability: Collapse to 1.12m

Checked By All dimensions in metres Scale 1:12.5 Plant Used HAND DUG Method Inspection pit

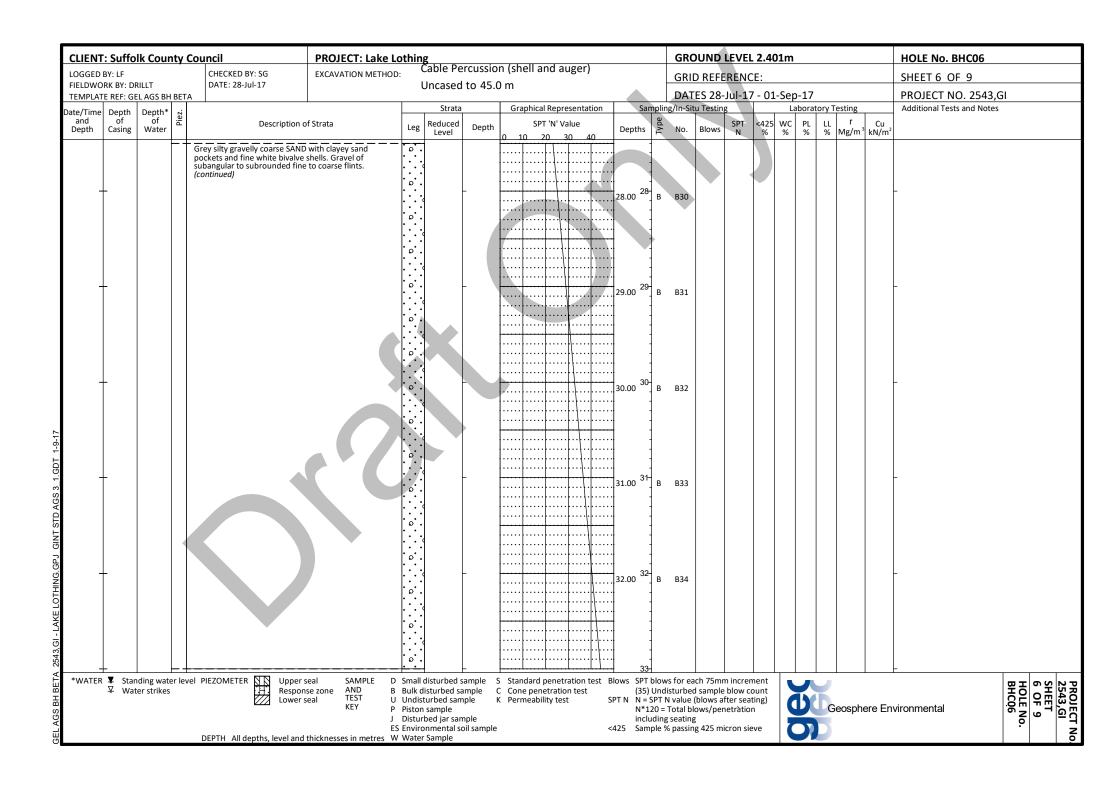
LIENT	: Suffo	lk Cou	ınty (Council	PROJECT: Lake Lo	othir	ıg							GRC	DUND	LEVEL	2.4	01m					HOLE No. BHC06		_
OGGED I				CHECKED BY: SG	EXCAVATION METHOD		Cable Pe		-	II and a	luger)			GRIE	D REFE	RENC	CE:						SHEET 1 OF 9		
	RK BY: DF E REF: GE		H BETA	DATE: 28-Jul-17			Uncased	(0 45.0	ווו כ					DAT	ES 28-	Jul-17	7 - 01	l-Sep	-17				PROJECT NO. 2543,G		
te/Time		Depth	* Piez.				Strata		Grap		resentation	Sa		g/In-Sit	u Testin				borat				Additional Tests and Notes	<u> </u>	
and Depth	of Casing	of Wate	r ä	Description o	f Strata	Leg	Reduced Level	Depth	0 10	SPT 'N' '	/alue 30 40	Depths	Туре	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²			
†	-			CONCRETE: Pale grey fine to m rebar identified.	edium grained. No	\otimes		0.00			ŢŢ	0	-										_		
				MADE GROUND (sub-base): Da gravelly fine to coarse sand wit	rk orange brown slightly	\bigotimes		0.17				0.20	ES	J1									VOC = 0 ppm (peak)		
				slightly dark grey/black stained angukar to sub-rounded fine to	concrete. Gravel is coarse quartz and flint.	/₩	8	0.00				0.40	ES B	J2 B1									VOC = 6 ppm (peak) VOC = 122 ppm (peak)		
				Possible MADE GROUND: Black slightly gravelly fine to medium	sand with heavy		8					0.70	ES ES	J3 J4									VOC = 9 ppm (peak)		
8-07		1.00		hydrocarbon odour. Gravel is a fine to coarse flint. 0.60 becoming dark grey mediu		\bowtie	1					1	4										_		
0 mins	-	1.02		occasional black stained mottlin hydrocarbon odour		\bowtie						1.10	EW	W1									Moderate inflow of water at - Hydrocarbon sheen at surfa	1m ace of water	ar l
				Possible MADE GROUND (Dark Gravel of angular to subrounde	brown clayey Sand and d fine to coarse flint.			1.25	M:::::::::				1		11 11 11	4							End of Inspection Pit at 1.25r	n bgl	
				Sand is fine and medium.		\otimes						1.50	В	B2	11										
						\bowtie							1												
4	-					\bowtie		- ,	ļ			2.00 2	ES	J5	0.0	0							VOC = 0 ppm (peak)		
						\bowtie			\\ :				1 53	13	00	0							voc – о ррпі (реак)		
									[:\::: :				1												
								7	\ \ . .		 		1												
				Black sandy CLAY with natural of	organic odour.	<u> </u>		2.70	\			2.70	D	B3 D1									VOC = 0 ppm (peak)		
+	-					E		-			+	3	ES	J6	11	8							Piston sample failed, bulk tak soils	en of recov	v
						\times			\ .			-]		1 2 1 4										
]												
				3.50 band of fine to coarse sub flint gravel	angular to subrounded		-						}												
				3.80 becoming very sandy with	depth	<u> </u>	1					3.80	ES	D2									VOC = 0 ppm (peak)		
+	_					=	1	-			 	4.00	ES UT100										UT100 no recovery, SPT take	n - sunk un	nc
					_	<u>-</u>				<u> </u>			ES EW	B4 J8 W2									weight of hammer VOC = 0 ppm (peak) - 4m		
							-			\·	<u> </u>	_	1	VVZ											
					7		1			\:		1	1												
						-	-			:\::\:::			1												
†	-			Pale grey and grey mottled gray grey sandy clay pockets. Grave		0	•	5.00		./ 	 	5.00	B ES	B5 J9	74 43	16							VOC = 0 ppm (peak)		
				subrounded medium and coars	e flints.		:∮		<i>;</i>	/ :			1	,,	43 72										
			\perp			0	:		\/			1	1												_
VATER	▼ Stan ▼ Wat	ding wa er strike	iter lev es		se zone AND B	Bulk	disturbed sa	ample (C Cone	penetrati		(35) Undi	sturbed	d sample	blow co	ount							1 OF 9 HOLE No. BHCQ6	Ϋ́
				Lowers	KEY P	Pisto	sturbed san n sample		k Perm	eability te	ST		120 = 1	Total bl	ows/per				D	Ge	eosphe	ere En	vironmental	1 OF 9 HOLE NO BHCO6	Ξ
							rbed jar sar onmental s					incl 425 San		seating		icron sic	OVΩ	7	7						

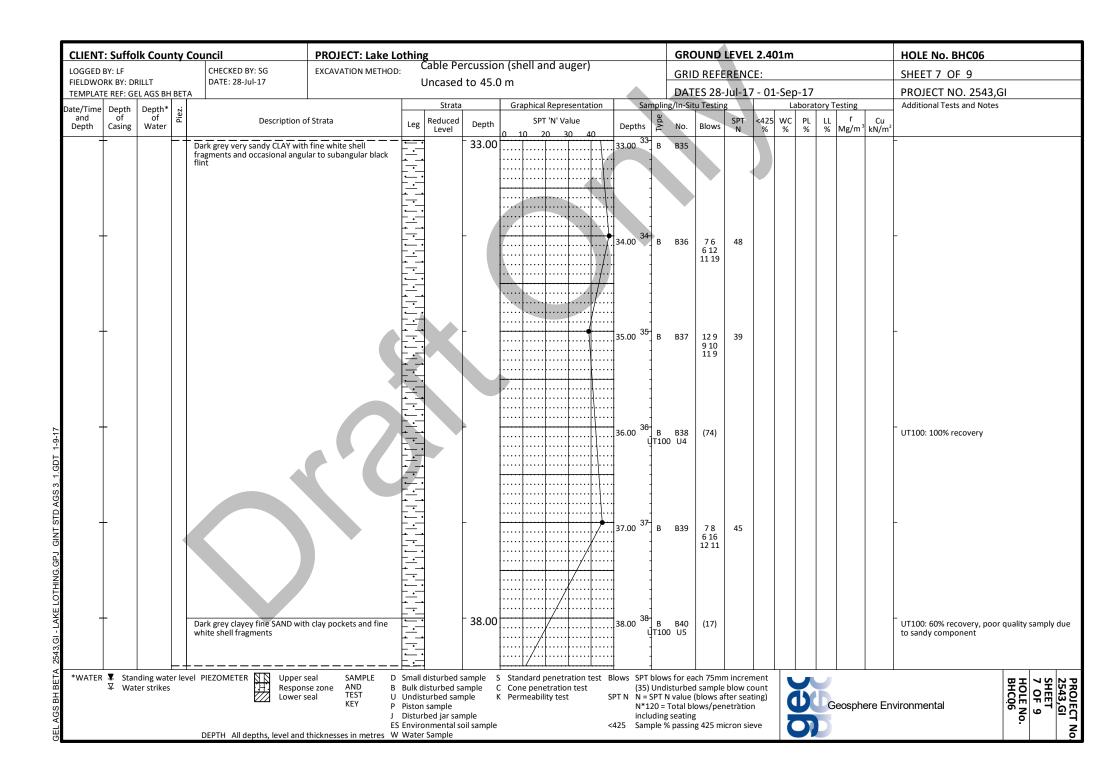
CLIENT	: Suffo	lk Co	unty	Council				PRC)JEC	Γ: Lak	e Lo	thing	g Cable P	orcus	cia	ı (ch	JI 22	.d	igor)			GRO	DUND	LEVE	2.4	01m					HOLE No. BHC06		
OGGED E		шт			KED BY: : 28-Jul-			EXCA	VATIC	N MET	HOD:		Jncase				en an	iu au	iger)			GRI	D REF	REN	CE:						SHEET 2 OF 9		
EMPLATE			вн вет		. Zo-Jul-	/							Jiicase	u 10 4	+5.0	' 1111						DAT	ES 28-	Jul-1	7 - 01	-Sep-	17				PROJECT NO. 2543,G	<u> </u>	
te/Time	Depth	Dept											Strat	а		Grap			sentation	Sa			tu Testin	g				ory Te	sting		Additional Tests and Notes		
and Depth	of Casing	of Wat	er ä			Descr	iption o	f Strata				Leg	Reduced Level	De	pth		SPT	'N' Va		Depths	Туре	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²			
				Pale grey a grey sand subround	y clay po	ockets	. Grave	of suba	angula	r to		00								5.50	B D	B6 D3											
+	-			6.00 occas	sional ba	ands o	f orang	e browr	n sand					-						6	-		00 00 21	3							_		
	_			Orange br	rown an	id grey	sandy	CLAY						6.5	50					7,00 7	-	В7									Dictor complet 50% recovery	coils to	o fire
				Orange br	Own 22	ıd grov	hrows	cilty fin	10 SAN	D				7.5	50					7.00 7.00- 7.50 7.50	B D ES S	D4 J10 P1									Piston sample: 50% recovery moderate sample quality but Water added, samples recov	only ~5	0%
				Orange br	own an	iu grey	nworu	SIILY IIN	ie san	(5	×	A	,] D	D5											
												×									ES UT10	J11 0 U1 B9									UT100: 20% recovery; poor of to sandy component	quality sa	ımp
+	-			Grey brov	vn claye	y SAN	D with p	ockets	of cla	-		×		9.0	00					9.00	В	B10									Samples very disturbed and	mixed to	getl
											-				- -					9.60-]]] B	B11											
+	-										-			_						9.80	D- B ES	B12 J12									_		
						V														<u> </u>		312											
_	-											· · ·		-						1	• •												
'ATER	▼ Stan ∇ Wat	ding v er stril	ater lev es	el PIEZOM	ETER		Upper s Respon Lower s	se zone		ST	B II U II P II J I	Bulk d Jndist Piston Distur	disturbed isturbed s turbed sa sample bed jar sa inmental	sample mple ample	C K	Stand Cone Perm	pene	tration		(35 SPTN N = N*) Und SPT N 120 = luding	isturbe N value Total b I seating	d sample (blows a lows/pe	e blow c fter sea netràtio	ount ting) n	1	N N		osphe	ere En	vironmental	HOLE No.	2 OF 9

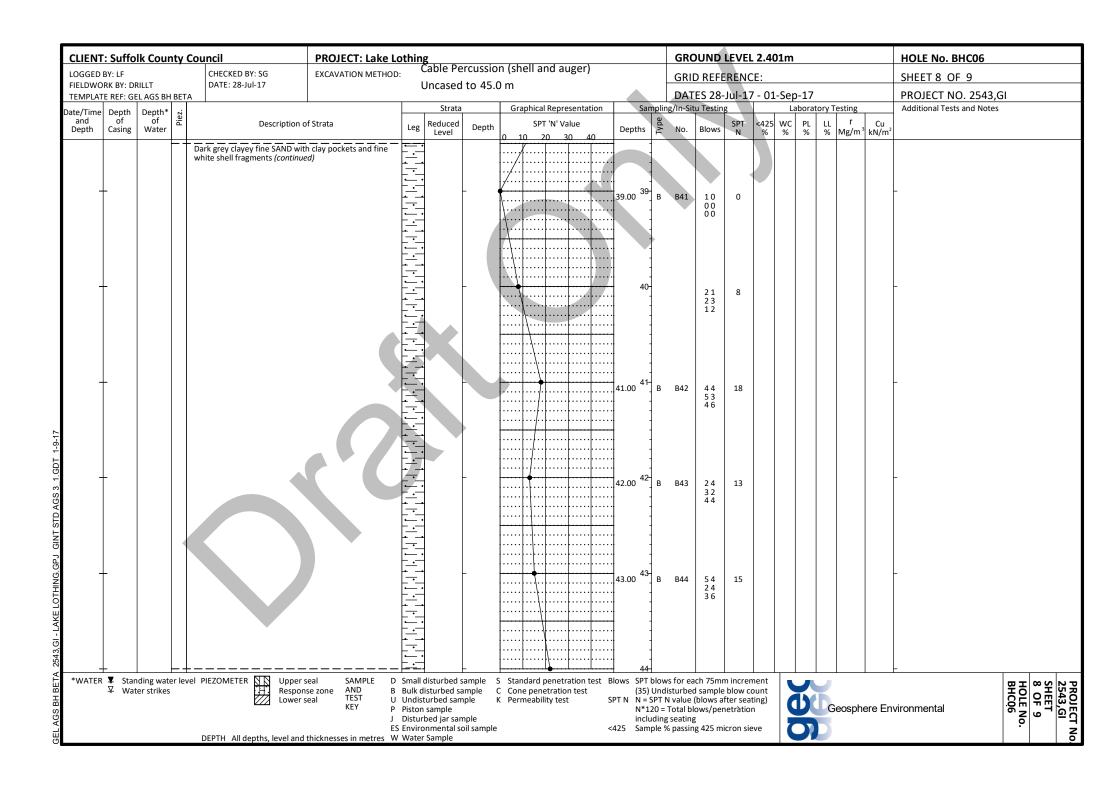


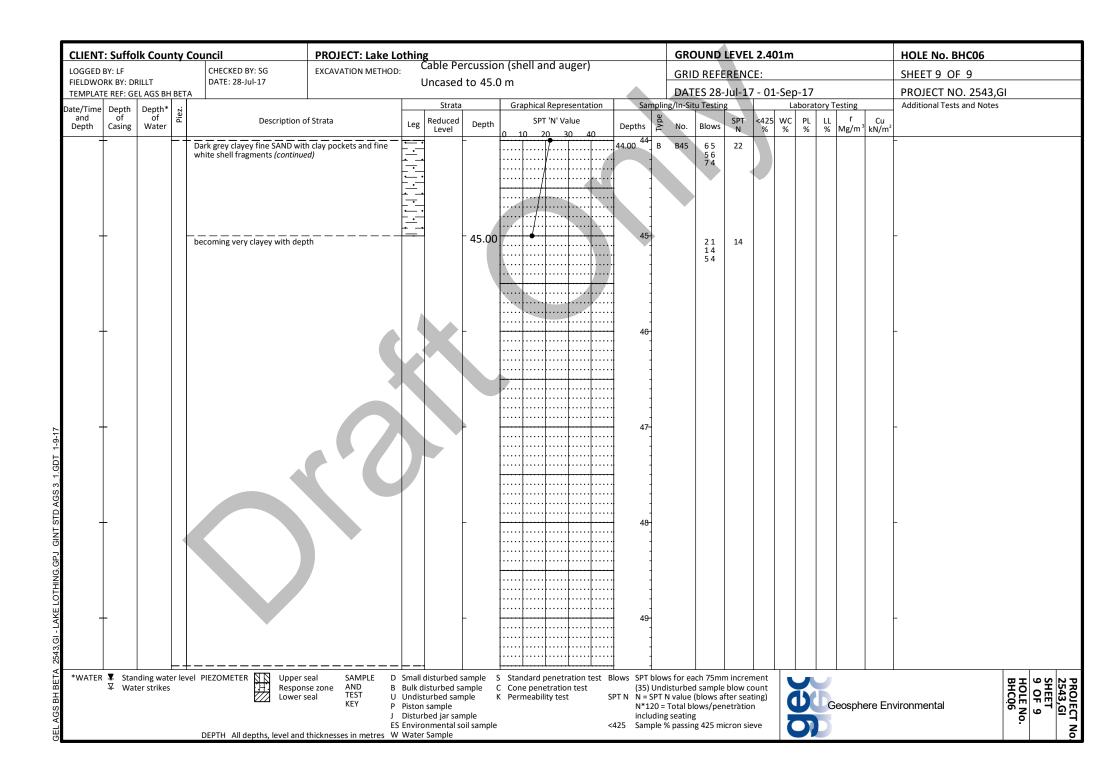


CLIENT	: Sut	folk	Coun	ty C		PROJECT: Lake Lo	- 1	g Cabla Da	rcuccio	n /-	Land augor)	(GROUND LEV	EL :	2.40	01m	1				HOLE No. BHC06
LOGGED			т		CHECKED BY: SG DATE: 28-Jul-17	EXCAVATION METHOD:		Uncased			l and auger)	C	GRID REFEREN	NCE	:						SHEET 5 OF 9
FIELDWO TEMPLAT				BETA	DATE. ZO-JUI-1/			oncase0	1 10 45.0	o m		E	DATES 28-Jul-	17	- 01						PROJECT NO. 2543,GI
ate/Time		h D	epth*	Piez.				Strata	1	(/In-Situ Testing				Labora				Additional Tests and Notes
and Depth	of Casin		of Vater	Pie	Description o	Strata	Leg	Reduced Level	Depth		SPT 'N' Value Depths	1	No. Blows SPT	r	<425 %	WC %	PL %	LL %	r Mg/n	Cu n³ kN/m²	2
	-		Valer		Grey silty gravelly coarse SAND pockets and fine white bivalve subangular to subrounded fine (continued)	hells. Gravel of		Level	-		20 30 40 Depths 2 B 22.00 22 B 8 22.00 25 B 8 22.50 24.00 24 B 8 25.00 25 B 8 25.00 25 B 8 25.00 25 B 8 25.00 25 B	B B B B	B25 22 10 325a 23 23 23 23 23 23 23 23 23 23 23 23 23 2		%	%	%	%	Mg/n	n s kN/m²	UT100: 0% recovery due to sand componen Blowing sands encountered from 25m to 33 depth
*WATER	I ▼ S ▼ V	tandii Vater	ig watei strikes	- + ·	PIEZOMETER Upper's Respons	e zone AND B eal TEST U KEY P	Bulk of Undis Pistor Distur	listurbed sa turbed san sample bed jar sar	ample (nple k	C Co K Pe	ability test SPT N N = SPT N*120 = includin	listu N va Tot g sea	urbed sample blow value (blows after so otal blows/penetrat	v cou eatir tion	unt ng)				⊥ ieosp	here Er	BHC06 ovironmental





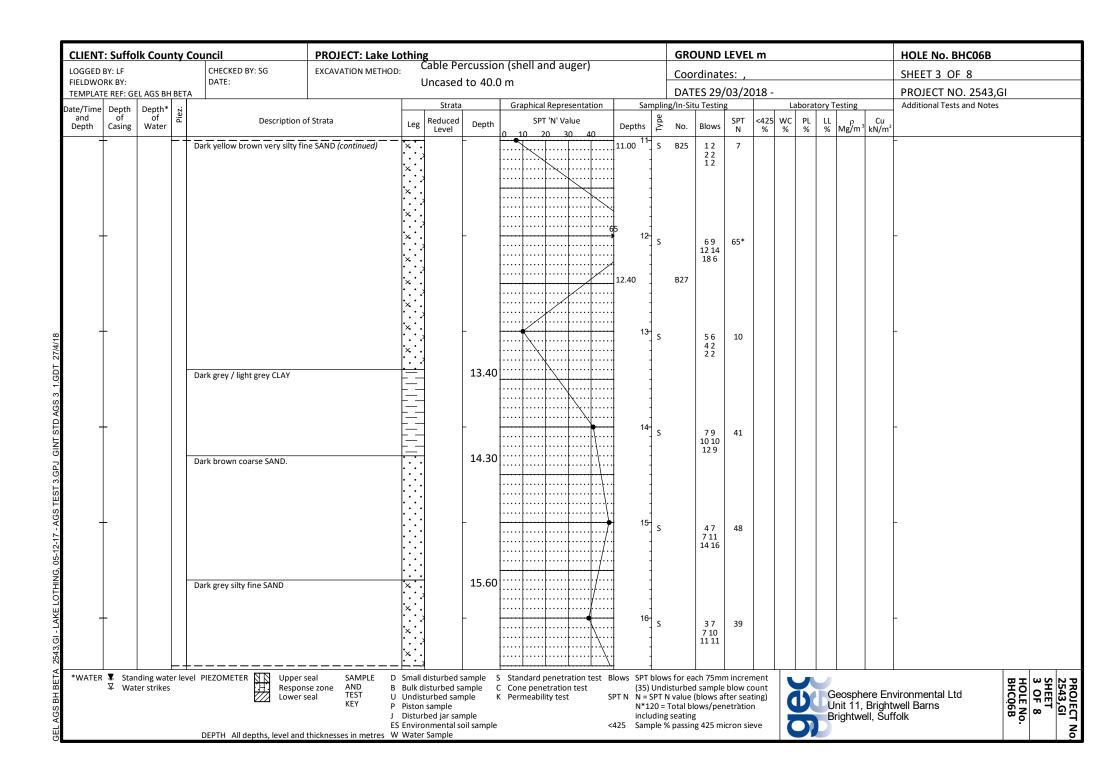




CLIENT	: Suffc	olk Cou	inty (Council	PROJECT: Lake Lo	othin	g			(ROUND	LEVEI	. m					HOLE No. BHC06A		
LOGGED				CHECKED BY: SG	EXCAVATION METHOD	: (Cable Pe		n (shell and auger)	C	Coordinate	es: ,						SHEET 1 OF 1		
FIELDWOI TEMPLAT		EL AGS B	H BETA	DATE:			Uncased	10 2.9	Ш 		ATES 28-	Mar-:	18 - 2	28-Ma	ır-18			PROJECT NO. 2543,GI		
Date/Time	Depth	Depth'	* Piez.				Strata				n-Situ Testing					y Test		Additional Tests and Notes		
and Depth	of Casing	Water	. =	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value Depths	- N	lo. Blows	SPT N	<425 %	WC %	PL %		r Cu g/m³ kN/m³	2		
-	_		Ħ	CONCRETE				0.00	0 10 20 30 40 0 -											
				MADE GROUND (Dark brown gr	avelly fine to coarse		Ž	0.20												
				sand. Gravel of angular to subr flint, brick and occasional potte	ounded fine to coarse ry)	\bowtie			0.30	Е	31									
-	- ,	1.10					3	- 	1-									-		
+ 20 mins		1.10		MADE GROUND (Dark brown sl coarse sand. Gravel of angular	ightly gravelly fine to to subrounded fine to	\bowtie		1.10	1.20	E	33 10	2						Slow inflow of water at 1.1m No recovery from SPT		
				coarse flint)			3			1	10 01									
				MADE GROUND (Dark grey silty	fine sand)			1.70	1.70	E	34									
-	-						3	-	2 - 5		10 10	2						No recovery from SPT		
											10							Obstruction at 2.1m depth - ca Casing left in-situ until examina	asing at a	angle.
							3											company	acion by	acintic3
				MADE GROUND (Black sandy cla	201			2.60	250		.									
				INIADE GROOND (RIBCK SAUGY CI	1y <i>)</i>		3	2.00	2.60	Ŀ	36									
						XXX		2.90	3 -									-		
	_								/ ⁴]											
									1											
																				
+	_							-	5 -									<u> </u>		
			$\perp \downarrow$			L_														
*WATER	▼ Sta	nding wa ter strike	ter lev	el PIEZOMETER Upper s Respons Lower s			disturbed s		S Standard penetration test Blows SPT blo C Cone penetration test (35) Ur		or each 75mn rbed sample			L		,		2	무돈	4 P
	- vva	CI SUINC		Lowers	eal TEST U	Undis	turbed sam		C Permeability test SPT N N = SP	N va		ter sea	ting)	1		Geo	sphere Fr	nvironmental	힐티	2543,GI SHEET
					j	Distur	rbed jar sar onmental s	nple	includi	ng sea	ating					000	opiioio Li	S	HOLE No.	
				DEPTH All depths, level and				on sample	<425 Sample	70 Pa	issilig 425 MI	cron sie	ve		N					

CLIENT	: Suffo	lk Cou	nty (Council	PROJECT: Lake Lo	othin	g					GR	OUND	LEVEL	. m					HOLE No. BHC06B		
LOGGED E				CHECKED BY: SG	EXCAVATION METHOD	:				(shell and auger)		Cod	ordinat	es: ,						SHEET 1 OF 8		
FIELDWO TEMPLAT		EL AGS BI	H BETA	DATE:		(Uncased	10 40.0	υ m	TI		DA.	TES 29/	03/20	018 -					PROJECT NO. 2543,GI		
Date/Time	Depth	Depth*	żz.				Strata	1	G	Graphical Representation			itu Testin	g		Labo	atory	Testing		Additional Tests and Notes		
and Depth	of Casing	of Water	Piez.	Description of	of Strata	Leg	Reduced Level	Depth		SPT 'N' Value	Depths 원	No.	Blows	SPT N	<425 %	WC P	LL %	ρ Mg/m	Cu kN/m²			
-	_		Ħ	CONCRETE + SUB-BASE (Orang	e brown sand and	200	4	0.00	0	10 20 30 40	0 -						1	0,	1,	-		
				gravel. Gravel of angular to su	brounded flint)	4					1											
				MADE GROUND (Dark grey bro to coarse sand with moderate	wn and black silty fine		7	0.30			0.30	В1										
				to coarse sand with moderate	natural organic odour)	\bowtie	3		 		0.45 ES	J1								VOC = 0ppm		
						\bowtie					-											
+ 20 mins		0.90	4			\bowtie	Ž				1									Slow inflow of water at 0.9m		
_	-					\bowtie	3	1.10			1 -									Bentonite seal installed between	en 1.9m	and 1.0
				Grey gravelly CLAY with occasi sandy clay pockets. Gravel of	onal orange brown Subangular to rounded			1.10	•		l.10]] S	B2	10	0						depth		
				fine to coarse chalk			9				L.30 L.35 ES	B4 J2	00							VOC = 1ppm (peak)		
				Grey brown fine SAND with po	ckets of grey clay	<u> </u>		1.50			L.60 ES									\(\(\sigma \)		
						· : · :					1.60] ES	13								VOC = 1ppm (peak)		
						· · ·					2											
				Dark grey sandy CLAY with mo organic odour	derate to strong natural	<u> </u>	1	2.00	Ĭ		2.00 ^{2 -} s	В6	10	0								
				0		<u> </u>]				1		0.0									
						<u></u> -	1				1											
						<u> </u>					2.60 ES	J4								VOC = 1ppm (peak)		
i						<u> </u>	1				- 1									, , ,		
	_								•		3 -		1.0							_		
						<u> </u>			1:::		s s		10	0								
						<u> </u>					+		0.0									
						F					3.40	В8										
						<u> </u>	1				3.60 ES	J5								VOC = 1ppm (peak)		
											}											
+	_						-	-	-		4 -		10	1						-		
									11::		1		00	-								
						<u> </u>					1		01									
1						<u> </u>	1		+		+											
				Dark yellow brown and orange fine SAND	brown mottled silty	×]	4.60	1:4:		1.60] 1.70] ES	B10 J6								VOC = 1ppm (peak)		
				57 1115		×·			1::	\	153	10										
+	-						1	-	-	\ 	5 - S		10	5						-		
						× .	}						0 1 1 3									
						×					5.40	B12										
*WATER	▼ Stai	 nding wat	er lev	el PIEZOMETER DUpper		⊢ — Small	disturbed of	sample ^o	S St	Standard penetration test Blo	1			n increr	nent							
	∑ Wa	ter strike	5		se zone AND B	Bulk d	listurbed san	ample (C Co	Cone penetration test		disturbe	ed sample	blow c	ount			Seosph	nere En	vironmental Ltd	HOLE No.	2543,GI SHEET
				V∕∕ Lower:	KEY P	Piston	sample		n rt	or a contract of the second of	N*120 =	: Total b	olows/per			U		Jnit 11	. Briaht	well Barns	OEN 8	, ET (3)
					ES	Enviro	bed jar sar onmental s		2	<4	includin 25 Sample			icron sie	eve			srightw	ell, Šuf	TOIK	~ <u>-</u> ~	
				DEPTH All depths, level and	thicknesses in metres W	Water	r Sample	-			-											

CLIENT	: Suffo	lk Co	unty	Council	PROJECT: Lake Lo	othir	ig			/ala all a sad a		GR	OUND	LEVEL	. m						HOLE No. BHC06B
LOGGED				CHECKED BY: SG	EXCAVATION METHOD					(shell and auger)		Cod	ordinate	es: ,							SHEET 2 OF 8
FIELDWO TEMPLAT		EL AGS	ВН ВЕТ	DATE:			Uncased	1 (0 40.0	.u m	III		DA	TES 29/	03/20)18 -						PROJECT NO. 2543,GI
ate/Time		Dept					Strata		(Graphical Representation	-	ling/In-S	itu Testin				aborat	tory T	esting		Additional Tests and Notes
and Depth	of Casing	of Wat	er Sie	Description o		Leg	Reduced Level	Depth	1 0	SPT 'N' Value D	pths	ed No.	Blows	SPT N	<425 %	WC %	PL %	LL %	ρ Mg/m³	Cu kN/m²	
				Dark yellow brown and orange fine SAND (continued)	brown mottled silty	×				5.6	0]	ES J7									VOC = 0ppm
-	_			6.00 Becoming pale grey mottl	ed with depth	×	· · ·	_		6.4	0	S B14	13 55 78	25							
-	_					×	· · · · · · · · · · · · · · · · · · ·	_		6.6	7 -	S J8	3 6 7 7 10 11	35							VOC = 2ppm (peak)
	_					×				7.4 7.6	0][B16									VOC = 3ppm (peak)
	_					×				8.4	0]	S B18	48 11 15 14 10	62*							
-	_			Dark grey and orange brown m	ottled slightly sandy	× · · · · · · · · · · · · · · · · · · ·	· · ·	9.00				S J10	35 79	36							VOC = 2ppm (peak)
										9.4]	B20 ES J11	9 11								VOC = 2ppm (peak)
	_			Dark yellow brown very silty fi	e SAND	× · · · · · · · · · · · · · · · · · · ·	- - · · ·	9.90		9.9 10 10	0 10- 00 10- 10 [B21 S B23 ES J12	11 12 22	7							- VOC = 0ppm
_	-					× · · · · · · · · · · · · · · · · · · ·	· · ·	_			11-										
WATER	▼ Star ▼ Wat	nding v ter stri	vater le kes	vel PIEZOMETER Upper: Respon Lowers	se zone AND B eal TEST U KEY P	Bulk of Undis Pistor Distu	disturbed s disturbed san sturbed san n sample rbed jar san onmental s	ample (nple k mple	C C		(35) U N = SF N*120 includ	ndisturbe T N value) = Total b ing seatir	ed sample (blows at blows/pen	blow co ter seat etration	ount ting) n		T)	U	nit 11.	ere En Bright ell, Suf	vironmental Ltd well Barns folk



CLIEN	T: Su	uffolk	c Cour	nty Co	ouncil	PROJECT: Lake Lo	othin	g					,			GRO	DUND	LEVE	L m						HOLE No. BHC06B		
LOGGE					CHECKED BY: SG	EXCAVATION METHOD	:	Cable Pe	rcussic	on (sh	ell a	nd au	ger)			Coor	rdinat	es: ,							SHEET 4 OF 8		
FIELDW TEMPLA			. AGS BH	BETA	DATE:			Uncased	to 40.	0 m							ES 29,		018 -						PROJECT NO. 2543,0	3I	
Date/Time			Depth* of		-			Strata		Gra	aphica	l Repre	sentation	Sa	mpling		u Testin				aborat	ory T	esting		Additional Tests and Notes		
and Depth	Cas	of sing	of Water	Piez.	Description of	Strata	Leg	Reduced Level	Depth			T 'N' Va 20 30		Depths	Туре	No.	Blows	SPT N	<425 %	wc %	PL %	LL %	ρ Mg/m	Cu kN/m²			
				-+-	Dark grey silty fine SAND (contin		·х			1	1	20 30	40														
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							·	1							-												
							<u></u>	<u> </u>						9	1												
	+						×		-			1	-	18	H s		7 12	69*							-		
							×·								}		16 19 15										
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				-	Dark grey slightly sandy CLAY		Ě	•	20.60)		<u> </u>			1												
								4				· [· · · · ·]			-												
	1						F	•	_			 		21	1										ļ-		
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							<u> </u>	_							1												
					Dark grey silty fine SAND		×		21.70)		[]	/.]												
	1			Lļ.			·- ·-	1	_		<u> </u>	<u> </u>	/	22	1										_		
*WATE	R ¥ ∇	Stand Water	ling wate r strikes	er level	PIEZOMETER Upper se Respons Lower se	e zone AND B eal TEST U KEY P	Bulk of Undis Pistor Distu	disturbed sa sturbed sam n sample rbed jar san	ample aple aple	C Con K Peri	e pen	penetra etratior lity test	S	lows SPT (35) PT N N = N*1 incl	blows) Undis SPT N L20 = T uding:	sturbed value (otal blo seating	d sample (blows a ows/pei	e blow of fter sea netratio	ount iting) in)	Ur	nit 11.	ere En Bright ell, Suf	vironmental Ltd well Barns ffolk	HOLE No BHC06B	2543,GI SHEET 4 OF 8
					DEPTH All depths, level and t	ES	Envir	onmental so		9			<	425 San	nple %	passing	g 425 m	icron si	eve				5	,		•	

CLIENT	: Suffo	lk Cou	ınty (Council	PROJECT: Lake Lo	othir	ng		on (shell and auger)		GRO	DUND	LEVEL	m					HOLE No. BHC06B	
LOGGED FIELDWO				CHECKED BY: SG DATE:	EXCAVATION METHOD):	Cable Pe	rcussio	on (shell and auger)		Coo	rdinate	es: ,						SHEET 5 OF 8	
TEMPLAT		EL AGS B	H BETA				Uncased	10 40.0	u m		DAT	ES 29/	03/20)18 -					PROJECT NO. 2543,GI	
Date/Time	Depth of	Depth of	* Piez.				Strata		Graphical Representation			u Testing	3			borato			Additional Tests and Notes	
and Depth	Of Casing	Water	r ä	Description of	f Strata	Leg	Reduced Level	Depth		Depths ≥	No.	Blows	SPT N	<425 %	wc %	PL %	LL % M	ρ Cu g/m³ kN/m²		
	Casing	Water	r	Dark grey silty fine SAND (contin		Leg	Level	23.60	0 10 20 30 40	22 S		810 Blows 46 67 911 49 89 1211	33 40 47 47	<425 %	%	% H	M ₁	g/m ³ kN/m ²		
*WATER	▼ Stai ▼ Wa'	nding wa	ater leve	Dark grey fine silty SAND with sl	—————————eal SAMPLE D		-4		S Standard penetration test Blc C Cone penetration test		ws for ea	7 11 19 24 7 ich 75mn							- B H	HS C7
	- vva	coi suine		DEPTH All depths, level and t	eal TEST U KEY P J ES	Undi Pisto Distu Envir	sturbed san n sample Irbed jar sar onmental s	nple k nple	K Permeability test SP	TN N = SPT N*120 :	N value = Total bl ig seating	(blows at ows/pen	ter seat etràtion	ting) 1	2	וע	Unit	sphere En 11, Bright htwell, Sut	avironmental Ltd twell Barns ffolk	

CLIENT: S	Suffol	k Cour	nty Co	ouncil	PROJECT: Lake Lo	othin	ıg							G	ROU	JND L	.EVEL	m						HOLE No. BHC06B		
LOGGED BY:				CHECKED BY: SG	EXCAVATION METHOD:	:	Cable Pe	rcussic	on (sł	iell ar	nd augei	r)		Co	oord	linate	es: ,							SHEET 6 OF 8		
FIELDWORK TEMPLATE R		L AGS BH	BETA	DATE:			Uncased	to 40.	.0 m								03/20)18 -						PROJECT NO. 2543,0	 31	
		Depth*					Strata		Gr	aphical	Represent	tation		pling/In					La	borato	ory Te	sting		Additional Tests and Notes		
and Depth Ca	Depth of Casing	of Water	Piez.	Description of	Strata	Leg	Reduced Level	Depth			'N' Value	40	Depths	√ No	o. B	Blows	SPT N	<425 %	WC %	PL %	LL %	ρ Mg/m³	Cu kN/m²			
				Dark grey fine silty SAND with si	nell fragments		Level	_			0 30	75	28- - - - - - - - - - - - - - - - - - -	s s	1 2 2	8 14 17 23 11 14 19 21 19 6 19 6 17 23	72* 75* 75*	76	76	76	<i>y</i> ₀ 1	Wig/III	RN/M			
*WATER \$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Stand Wate	ding wate er strikes	er level	PIEZOMETER Upper single Responsion Lower single DEPTH All depths, level and the control of the c	e zone AND B eal TEST U KEY P J ES	Bulk of Undis Pistor Distu Envir	disturbed saturbed saturbed sam n sample rbed jar sam onmental sa	ample aple aple	C Cor K Per		tration tes	st SPT	(35) I N N = S N*12 inclu	olows for Undistur PT N vali 0 = Tota ding seat	bed sa ue (blo Il blow ting	ample lows aff vs/pen	blow co ter seat etratior	ount ing) 1	1	ノンス	Ge Un Bri	it 11.	ere En Bright ell, Suf	- vironmental Ltd well Barns folk	HOLE No. BHC06B	2543,GI SHEET 6 OF 8

CLIENT	T: Su	ıffoll	c Count	y Co	ouncil	PRO	OJECT: La	ke Loth	ing		on (shell and auger)		GR	OUND	LEVEL	. m						HOLE No. BHC06B		
LOGGED					CHECKED BY: SG DATE:	EXC	AVATION M	ETHOD:	Cable Pe	ercussio	on (shell and auger)		Coc	rdinat	es: ,							SHEET 7 OF 8		
FIELDWC TEMPLA			AGS BH E	<u>BET</u> A	DATE:				Uncased	1 10 40.0	U III		DA	ΓES 29/	<u>/03</u> /20) <u>1</u> 8 -						PROJECT NO. 2543,0	GI	
Date/Time	e Dep	pth	Depth*	Piez.					Strata	1	Graphical Representation		oling/In-S	tu Testin	g			borato	$\vec{}$			Additional Tests and Notes		
and Depth	Casi	of sing	of Water	ä	Descripti	on of Strata	a	Le	g Reduced Level	Depth		Depths	od No.	Blows	SPT N	<425 %	WC %	PL %	LL %	Mg/m³ k	Cu N/m²			
Depth	Casi	ing	Water	+	Dark grey fine silty SAND w			× · · · · · · · · · · · · · · · · · · ·	Level	Depth	0 10 20 30 40 75	33-	No. S S	18 7 43 7 21 4 50	75* 75*	%	%	%	%	Mg√m³ k	N/m²			
	_							× · · · × · · × · · · × · · · × · · · × · · · × · · · × · · · × · · · × · · · × · · · × · · · × · · · × · · · × · · · × · · · × · · · · × ·		-	74	37-	s	25 25 11 13 18 24 8	74*									
*WATEF	R ¥ ∇	Stand Wate	ing water r strikes	level	. ⊢ Res	– – – – per seal sponse zone ver seal	SAMPLE e AND TEST KEY	B Bul U Und P Pist	· .	ample (S Standard penetration test Blo C Cone penetration test K Permeability test SP	ws SPT b (35) U (N N = SF N*120	ndisturbe	d sample (blows a lows/per	blow co	ount ting)			Un	eosphere it 11, B	rightw	ironmental Ltd vell Barns	HOLE No. BHC06B	2343,GI SHEET 7 OF 8

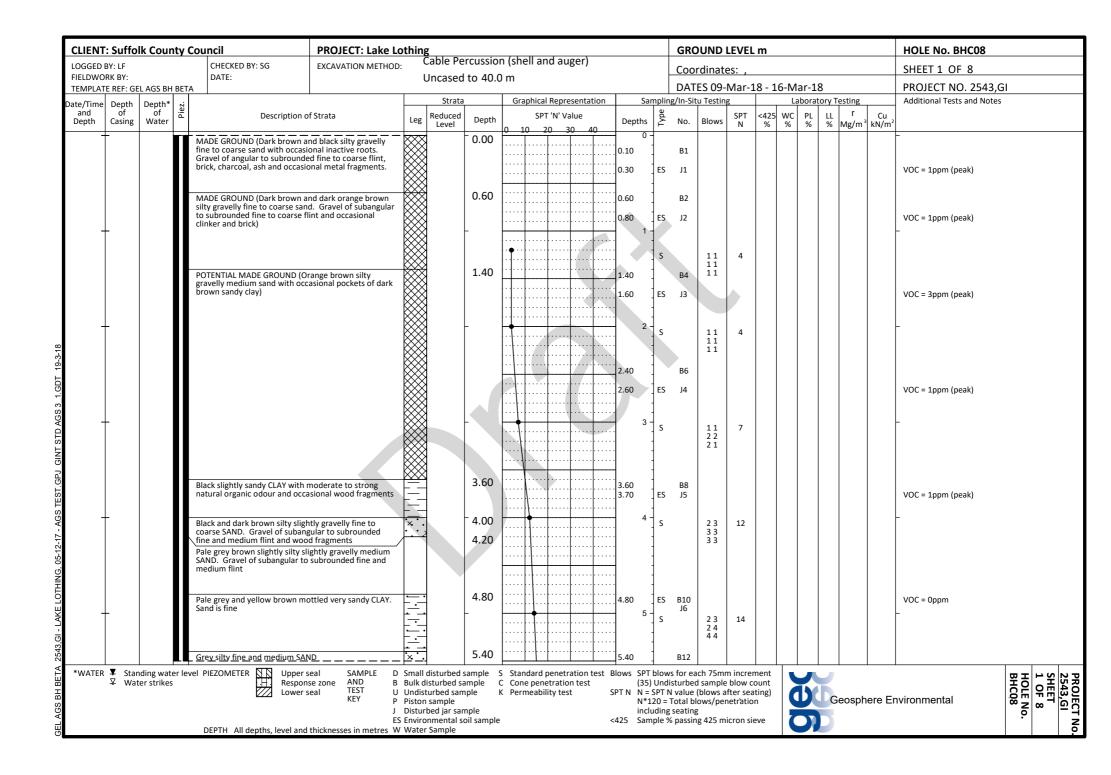
CLIENT	T: S	Suffo	lk Coı	unty (Council	PROJECT: Lake Lo	othin	g		, <u>, , , , , , , , , , , , , , , , , , </u>					GRO	UND	LEVEL	. m						HOLE No. BHC06B		
LOGGED					CHECKED BY: SG	EXCAVATION METHOD):	Cable Pe	ercussio	n (shell a	and au	ger)		L	Coord	dinate	es: ,							SHEET 8 OF 8		
FIELDWO TEMPLAT			L AGS I	BH BET	DATE:			Uncased	1 (0 40.0	, m					DATE	S 29/	03/20)18 -						PROJECT NO. 2543,0	il	
Date/Time	e D	epth of	Depth	* 92.	•			Strata		Graphica	al Repres	sentation	Si	mpling/	/In-Situ	ı Testing	3			borat	\neg			Additional Tests and Notes		
and Depth	Ca	of asing	of Wate	, Piez.	Description	of Strata	Leg	Reduced Level	Depth		T 'N' Va		Depths	Туре	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	ρ Mg/m³	Cu kN/m²			
- -		dailing	wate	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Dark grey fine silty SAND with (continued)	shell fragments	×	Level	- 40.00		20 30	7	5 3 5 4 4 4	9- s		25 41 9 222 3 38 12	75* 75*	%	%	%	%	Mg/m ²	kN/m²			
*WATER	<u>↓</u> R ¥ V	- Stan - Wat	ding wa	ater leves	vel PIEZOMETER Upper Respor Lower	ise zone AND B seal TEST U KEY P J ES	Bulk o Undis Pistor Distu	disturbed sa sturbed san n sample rbed jar sar onmental s	ample (nple I nple	C Cone per C Permeab	netratior	SF	35) • TNN : • N	Γ blows f) Undist : SPT N v 120 = To luding se	urbed : value (botal blove eating	sample plows af ws/pen	blow co fter sea etration	ount ting) n		がいて	Ur	nit 11,	ere En Bright	vironmental Ltd well Barns folk	HOLE No. BHC06B	SHEET 8 OF 8

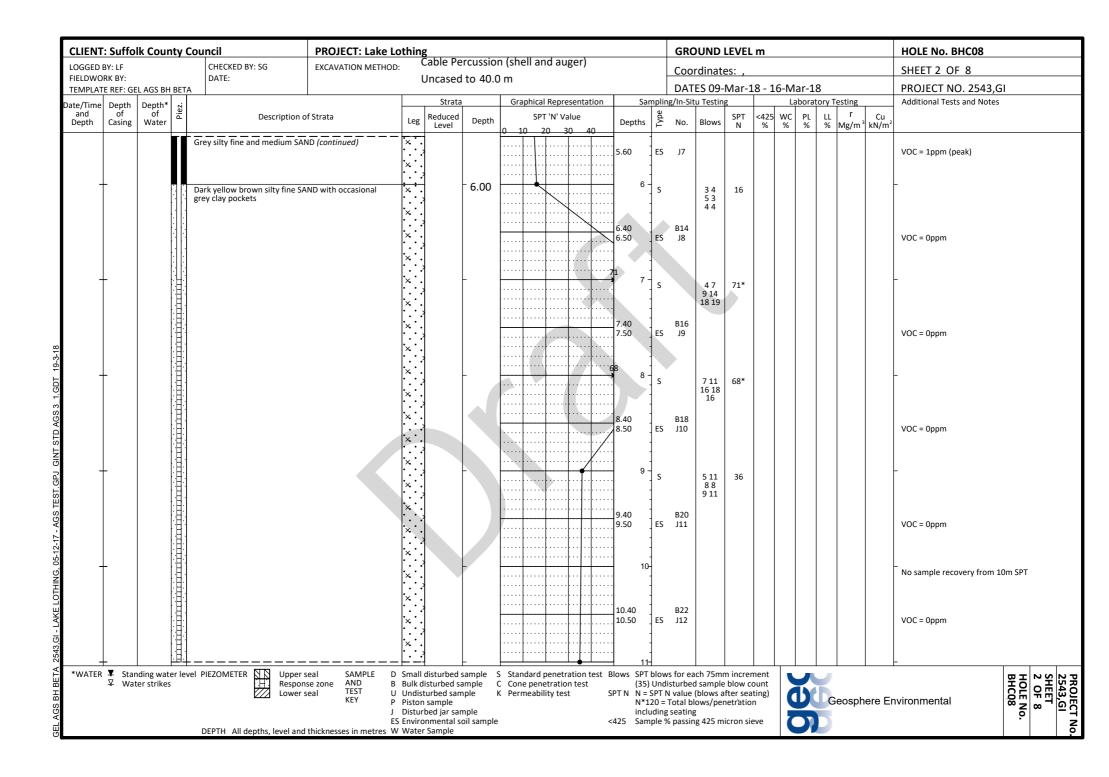
CLIENT	: Suffe	olk (County	Council	PROJECT: Lake Lo	othin	g Calala S		n /ala all au al access		GI	ROUND	LEVE	. m					HOLE No. BHC07
LOGGED		DD1::-	-	CHECKED BY:	EXCAVATION METHOD				on (shell and auger)		Co	ordinat	es: ,						SHEET 1 OF 4
FIELDWO TEMPLAT			T GS BH BET	DATE:		(Uncased	1 (0 40.0	U M			TES 20,)18 -	27/03/	2018	3		PROJECT NO. 2543,GI Lake Lothii
ate/Time	Depth	De	pth* ½				Strata	1	Graphical Representation		pling/In-	Situ Testin					Testing		Additional Tests and Notes
and Depth	of Casing		of id ater	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30 40		oN ₹	. Blows	SPT N	<425 %	WC PL	LL %	ρ Mg/m	Cu kN/m²	
-				Concrete with 5mm rebar at the		P 4		0.00		0 -									-
		\psi		MADE GROUND (Dark brown as coarse SAND with pockets of vis	sually desiccated clay	\bowtie		0.30		0.30	ES B1								VOC = 1 ppm (peak)
-	_	¥	.75	and moderate natural organic of to subangular fine to coarse bri and flint)	dour. Gravel of angular	0.		- 0.60	U 20 30 40	0.60	ES B2 J2								VOC = 0 ppm (peak) - Inflow of water at 0.75m
				Orange brown slightly gravelly in Gravel of subangular to subrou	ine to medium SAND.				T	1.20	B4 ES J3		2						VOC = 0 mmm (mook)
				flint.	nded line to coarse					1.40	ES J3	01							VOC = 0 ppm (peak)
-	_			Dark brown slightly gravelly me	dium SAND with weak	٠٠.		2.00		2		11	4						_
				natural organic odour. Gravel o subrounded fine to medium flir	f angular to nt.		.			2.40	В6	11 11							
						0.				2.50	ES J4								VOC = 0 ppm (peak)
-	<u> </u>							-	<i></i>	3.00	B8	33	20						
						· • ·				3.20	ES J5	3 5 5 7							VOC = 0 ppm (peak)
_				Dark grey / black CLAY with mo odour	derate natural organic	=		3.70		3.70	ES B9								_ VOC = 0 ppm (peak)
				0000.					<i> </i>	4.00	UT1								
				Dark grey very clayey medium a	and coarse SAND with	-		4.60		4 60	- B1	,							
_	_			weak to moderate natural orga	nic odour.	<u> </u>		5.00	-/	4.70	ES J7								VOC = 0 ppm (peak)
				Black slightly sandy SILT/CLAY worganic odour and occasional w	hite shell fragments.							11 01 11	3						
						<u>×</u>		F 00				11							
-	_			Slightly grey brown silty fine SA	ND.	×		5.80		5.80 6	ES B14 J8								_ VOC = 0 ppm (peak)
						× .			\\		UT1	5 (,							
						×				6.60	ES B1	,							VOC = 0 ppm (peak)
-	-						}	-		5./U 7 =	ES 19	11	14						_
						×				7.40	B19	3 2 4 5							
						× .			\	7.70	ES J10								VOC = 0 ppm (peak)
-	Ť					×				8		2 2 4 7	23						-
				Dark grey with occasional brow	n pockets slightly sandy	<u>×</u>	<u> </u>	8.40		8.40	B2:								
_				silty CLAY.		×		L		8.70	ES J11								VOC = 0 ppm (peak)
						*				::: ~]		4 6 9 9	36						
						÷×.	1	0.70				8 10							
-	-			Grey brown slightly silty fine SA	ND.	×	<u> </u>	9.70		9.70 9.80 10	ES B23	3	40						VOC = 0 ppm (peak)
				L 		×						3 3 7 12	49						
WATER	▼ Sta ▼ Wa			vel PIEZOMETER Upper s Respons Lower s	se zone AND B eal TEST U KEY P	Bulk d Undis Piston Distur	disturbed sa disturbed sam in sample rbed jar san onmental so	ample (nple i nple	S Standard penetration te: C Cone penetration test K Permeability test	(35) U SPT N N = SI N*12	Indisturk PT N valu D = Total Iing seat	ed sample e (blows a blows/pei ng	e blow c ofter sea netratio	ount ting) n	dec	U	Jnit 11		vironmental Ltd well Barns folk
				DEPTH All depths, level and				on sample		-425 Samp	ic 70 pas	6 72J III	11011 310						

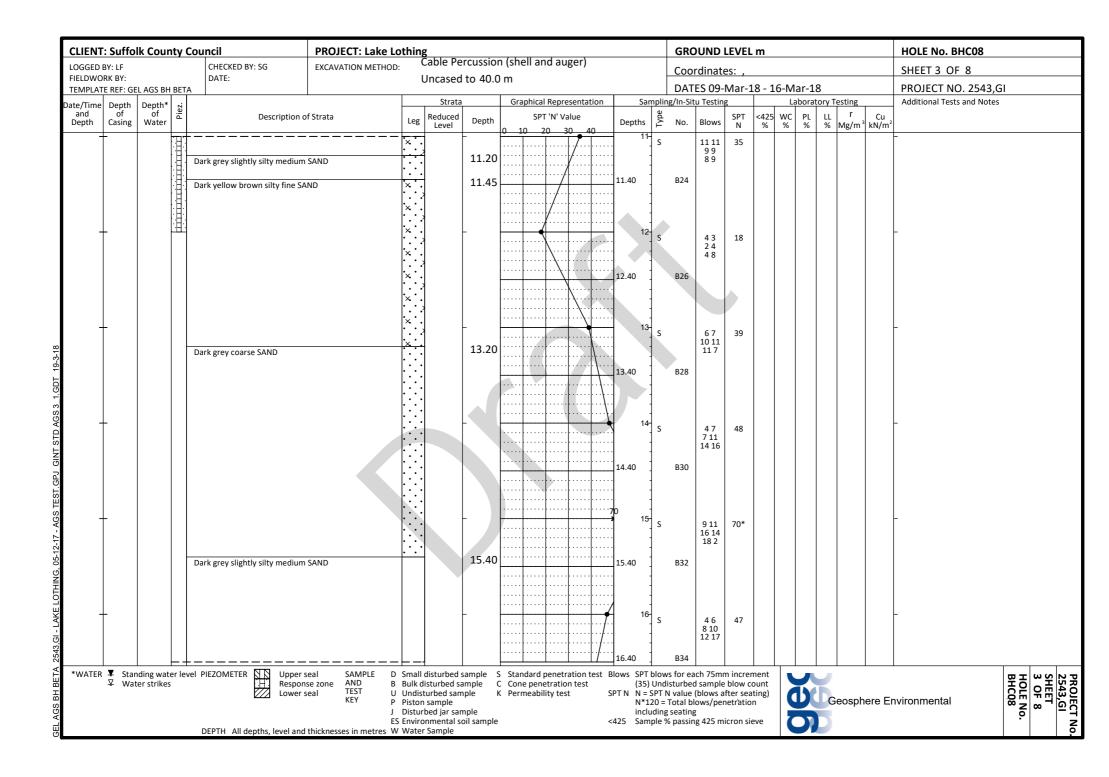
CLIENT	: Suffo	lk Cou	nty C	ouncil	PROJECT: Lake Lo	othin	g		on (shell and auge			G	ROUNE) LEVE	L m					HOLE No. BHCO	7	
LOGGED		NII T		CHECKED BY:	EXCAVATION METHOD	: '	Cable Pe	rcussio	on (shell and auge	r)		Co	ordina	ites: ,						SHEET 2 OF 4		
FIELDWO TEMPLAT			I BETA	DATE:			Uncased	to 40.	.u m			D	ATES 20	0/03/2	018 -	27/0	3/20	18		PROJECT NO. 25	43,GI Lake Lot	thing
Date/Time	Depth	Depth*	Piez.				Strata		Graphical Represent	tation	San	npling/In-	Situ Test	ing		Lal	borato	ry Testii	ng	Additional Tests and N		
and Depth	of Casing	of Water	ä	Description of	Strata	Leg	Reduced Level	Depth		40	Depths	√y No	. Blow	s SPT N	<425 %	WC %	PL %	LL % Mg	ρ Cu /m³ kN/m	2		
			Fŧ	Grey brown slightly silty fine SA	ND. (continued)	×					10.40	В2	5 14 16	5								
_	_					×	1	_	//		11-									-		
						$ \hat{\cdot} $:	;}				-		2 3 5 8	30								
						×					11.40	В2	7 98									
-	-					×		-		· 7 · · · · · ·	12		22	40						-		
						·:	1				-		5 7 12 16									
							$\langle \cdot \rangle$				12.60	В2		<u> </u>								
-	_					×	:	-		60	13		46	60*						-		
						× : .	.]				12.40		9 13									
						·. · :	.]				13.40	В3	1 101									
-	_		lŀ	Slightly brown grey becoming goccasional subangular to subrou	rey silty SAND with	· · ·		14.00		••••••	14		23	32						-		
				occasional subangular to subro	unded flint gravel.	×	· 		1	×11	14.40	В3	57 3 911									
						·*·:	;}				14.40	55										
-	 			Light grey silty fine SAND.		×.	1	15.00			15		67	47						<u> </u>		
0						, · ·	1		1		15.40	В3	8 9 5 12 18	3								
LARE LOT FING, US-12-17. GFJ GINT STD AGS S 1. GDT Z//4/10						· · ·	}			68	3											
	<u> </u>					×··	:	_			16-		7 11 14 2	68*								
<u> </u>						×					16.40	В3	4-	1								
200						\	1															
<u>-</u>	<u> </u>						}	_			17-		6 9 10 9	39								
0						×	. 			 	17.40	вз										
5						×				:: :::: / t)											
<u> </u>						·:	1				18		8 12 18 22									
7-7							3				18.40	В4	1 40	-								
-00						×··	;			::::::::6												
Ď ≧						×				::::::::	197		7 8 15 15	5								
				Dark grey slightly sandy CLAY.			1	19.60	1		10 60	В4	13 7									
- -	<u> </u>			Daik grey Siigiitiy Safidy CLAY.		<u>:</u>		15.50			20-									_		
'											20.00	UT4	14 (21)									
				Dark grey silty fine SAND with o fragments.	ccasional shell	×		20.40	/ 		1	В4	6									
-	_		$\perp \downarrow$			$\overline{\cdot}$]	_		74	21-	υ4								_		
*WATER		iding wat er strikes		PIEZOMETER Upper si Respons Lower si	e zone AND B eal TEST U KEY P J ES	Bulk o Undis Pistor Distur Enviro	disturbed sa sturbed san n sample rbed jar sar onmental s	ample nple nple	S Standard penetration C Cone penetration tes K Permeability test	st SP	(35) TN N=S N*12	Undisturl PT N valu 20 = Tota ding seat	oed samp ie (blows l blows/p ing	le blow o after sea enetratio	count ating) on	700	N N	Unit	sphere Er 11, Brigh itwell, Su	nvironmental Ltd Itwell Barns Iffolk	2 OF 4 HOLE No. BHC07	2543,GI Lak
·				DEPTH All depths, level and t	nicknesses in metres W	wate	r sample															<u> </u>

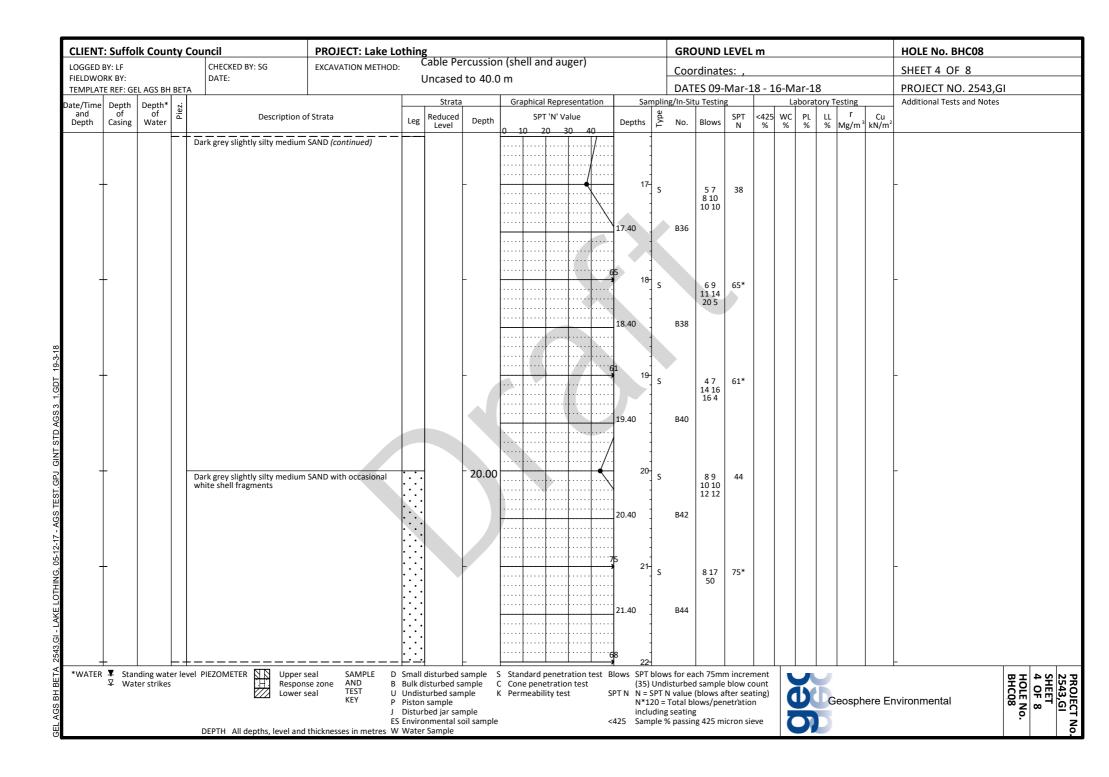
Companies Comp	CLIENT	: Suffo	lk Cour	nty C	Council	PROJECT: Lake L	othin	g					GRC	DUND	LEVEL	. m					HOLE No. BHC07		
Substitution Subs						EXCAVATION METHOD):	Cable Pe	ercuss	ion (shell and	auger)		Coo	<u>rdina</u> t	es: ,						SHEET 3 OF 4		
Part				I BETA				uncased	1 to 40	J.U M						018 - 2	27/03	/201	 8		PROJECT NO. 254	3,GI Lake	Lothing
Section Sect		Depth	Depth*					Strata		Graphical Re	presentation		ng/In-Sit										
Dark grey shy has park with occasional sines 2.1.40 2.2.40 3.3.10 2.3.80 3.3.80		of Casing	of	Pie			Leg	Reduced Level	Dept	0 10 20	30 40 7	4	No.	Blows	SPT N	<425 %	WC F	L LI % %	ρ Mg/m	Cu kN/m²			
Second	_			ΓŤ	Dark grey silty fine SAND with o	ccasional shell	×					21-			74*								
Corey slightly clayery/siley fine SAND. 23.80 22.340 850 21.23 75* 25 25 25 25 25 25 25					riagnieries. (continueu)		×	1				21.40	B48	15									
22.40 850 22.50 850 31.50 852 31.50								 				5											
23.80							·^.·:	<u> </u>		1::::::::::::::::::::::::::::::::::::::	:::::::::::::::::::::::::::::::::::::::			12 13 21 29	75*								
Grey slightly clayery/sity fine SAND. 23.80 24.40 34.11 36.18 37.1* 36.18 31.13 71.8 36.18 31.13 71.8 36.18 31.13 71.8 31.13 3							×:·					22.40	B50										
23.80 23.80 24 16 16 652 16 66 75 4 16 175 4 16 16 16 16 16 16 16 16 16 16 16 16 16	_						×]	L		· · · · · · · · · /	1 23											
Comparison of the comparison								1		1::::::::::::::::::::::::::::::::::::::	:::::::::::::::::::::::::::::::::::::::	23]			71*								
Circy slightly clayery/sity fine SAND. 23.80 5 24 14.11 75* 18.22 14.21 17.23 18.22 14.24 18.22 17.23							·^.·:	<u> </u>				23.40	B52	16									
25.70	_	<u> </u>			Grey slightly clayey/silty fine SA	ND.	×.	-	23.8	30 ::::: ::::: ::	::: :::::::::::::::::::::::::::::::::::	5 24			l								
No. 10 10 10 10 10 10 10 1							×			1:::::]		18 22	75*								
25.70								 		<u> </u>		24.40	B54	10									
25.70	_	_					×::	 -	_	1::::::::::::::::::::::::::::::::::::::		3 <u>-</u> 25		6.40	60*						_		
25.70							×					1		17 23	68*								
26							<u> </u>	1	25 -			25.40	B56	10									
-	-	<u> </u>			Dark grey silty SAND with shell f	ragments.	×. · :		- 23.7			3 <u>1</u> 26		E 0	62*						-		
-							×:.							12 18	03								
- 1 178 28 22 75* 178 28 22 75*							\	1				26.40	B58	20									
- 1 178 28 22 75* 178 28 22 75*	-	-					: :: -	1	F			27-		15 10	75*						-		
- 1 178 28 22 75* 178 28 22 75*	3						×. :					37.40		22 28	,,,								
- 1 178 28 22 75* 178 28 22 75*							×:.					2/.40	В60										
- 1 178 28 22 75* 178 28 22 75*	-	L					\	1	F		···.	28		187	75*						-		
- 1 178 28 22 75*	5						: . : .	1				30.40	DC3	19 19									
- 1 178 28 22 75*	5						·*.·:				· · · · · · · · · · · · ·	28.40	862										
- 1 178 28 22 75*	-	+					×:.		F			29		18 7	75*						-		
- 1 178 28 22 75*	3						\	1				20.40	DC1		-								
- 1 178 28 22 75*	ĵ							1		1::::::::::::::::::::::::::::::::::::::		29.40	804										
- 1 178 28 22 75*	-	+					×. :		F			30			75*						+		
- 1 178 28 22 75*							×:.					30.40	B66										
31 178 28 22 75*							×.:]		::::: ::::: ::		5 1	200										
*WATER Vater strikes Upper seal Response zone Lower seal Lower seal Lower seal Service for the first seasons to the lower seal Service for the first seasons to the lower seal Lower seal Lower seal Service for the first seasons to the lower seal Service for the first seasons to the lower seal Service for the first seasons to the lower seal Service for the first seasons to the lower seal Service for the first seasons to the lower seal Service for the first seasons to the lower seal Service for the first seasons to the lower seal Service for the first seasons to the lower seal Service for the first seasons to the lower seal Service for the first seasons to the lower seal Service for the first seasons to the first se	<u> </u>	 						*	F		 	31-		178	75*						+		
*WATER \$\frac{\frac}{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\fr				ot			- <u> -</u> :-:	2				‡		28 22									
DEPTH All depths, level and thicknesses in metres W Water Sample	*WATER	▼ Star ▼ Wat	nding wate ter strikes	er leve		se zone AND B eal TEST U KEY P J	Bulk o Undis Pistor Distur S Enviro	disturbed sa sturbed san n sample rbed jar sar onmental s	ample nple mple	C Cone penetra K Permeability	ation test test SF	(35) Und PTN N = SPT N*120 = including	listurbed N value (Total bl g seating	d sample (blows a lows/per	blow co fter sea netratio	ount ting) n	Gec	4	Jnit 11	. Briaht	twell Barns	HOLE No. BHCQ7	2543,GI Lake SHEET 3 OF 4

CLIENT	Γ: Suffo	lk Coui	nty Co	ouncil	PROJECT: Lake Lo	othin	ng .					GRO	DUND	LEVEL	m					HOLE No. BHC07		
LOGGED				CHECKED BY:	EXCAVATION METHOD	:	Cable Pe	rcussio	n (shell and a	uger)		Coo	rdinat	es: ,						SHEET 4 OF 4		
	ORK BY: DF FE REF: GE		IBETA	DATE:			Uncased	to 40.0	0 m			DAT	ES 20,	/03/20	18 - 2	27/03	/2018	3		PROJECT NO. 2543,	GI Lake	Lothing
Date/Time and		Depth*					Strata		Graphical Repr	esentation		ling/In-Si						Testing		Additional Tests and Note		
and Depth	of Casing	of Water	Piez.	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' V		Depths	No.	Blows	SPT N	<425 %	WC P	L LL 6 %	ρ Mg/m	Cu kN/m²			
			-+	Dark grey silty SAND with shell f	ragments. (continued)	×					1.40	B68										
-	+					×	.]	-	 	 	32		21 4	75*						-		
						· · ·						870	21 29	/3								
						·*. :	:				2.40	B70										
-	+					×		-		<u> </u>	33		15 10	75*						-		
						× :	:1				240	B72	26 24	,,,								
										. b. e. e. e. e. le. e. e. e. _	3.40	B/2										
-	+					·*. :	:	_			34		25 31	75*						-		
						×					4.40	B74	19									
						×	:1				4.40	574										
-	+							_		<u> </u>	35		58	63*						-		
						·*·	;}				5 40	B76	12 21 17									
						×					1	5.0										
-	†					× .	:1	-		1	36		7 11	86*								
											6.40	B78	18 27 23									
						·*. :	;}				3											
-	Ť					×		-			37-		8 15	73*								
						× .	.]				7.40	B80	22 28									
										. b. c. c. c. c. le. c. c. c	± ±											
-	†					·*:	;	-			38		25 33 17	75*								
						×				1	8.40	B82	17									
						×.	:1			75	-											
-	Ť							-		1	39		23 2 29 21	75*								
						·*. :	;		1		9.40	B84	29 21									
						×					3											
_	Ť						1	40.00			40-		18 7 22 28	75*								
									 	 	-		23									
	L							L			41-											
	Γ										47											
									 		‡											
_	_					L_	_				12											
*WATER		iding wat er strikes		I PIEZOMETER Upper s Respons Lower s	se zone AND B eal TEST U KEY P	Bulk of Undis Pistor Distu	disturbed sa disturbed san sturbed san n sample rbed jar sar onmental si	ample aple aple	S Standard penet C Cone penetration K Permeability tes	on test t SP	(35) U N N = SF N*120	ndisturbe T N value = Total b ing seatin	d sample (blows a lows/per g	blow co fter seat netration	ount ing) 1	OIEC	Y	Jnit 11	nere En , Bright /ell, Sut	uvironmental Ltd twell Barns ffolk	HOLE No. BHC07	2543,GI Lake SHEET 4 OF 4
				DEPTH All depths, level and t				on sumple		\4	.o Jampi	. 70 passii	ااا دعد ۵.	310								<u> </u>



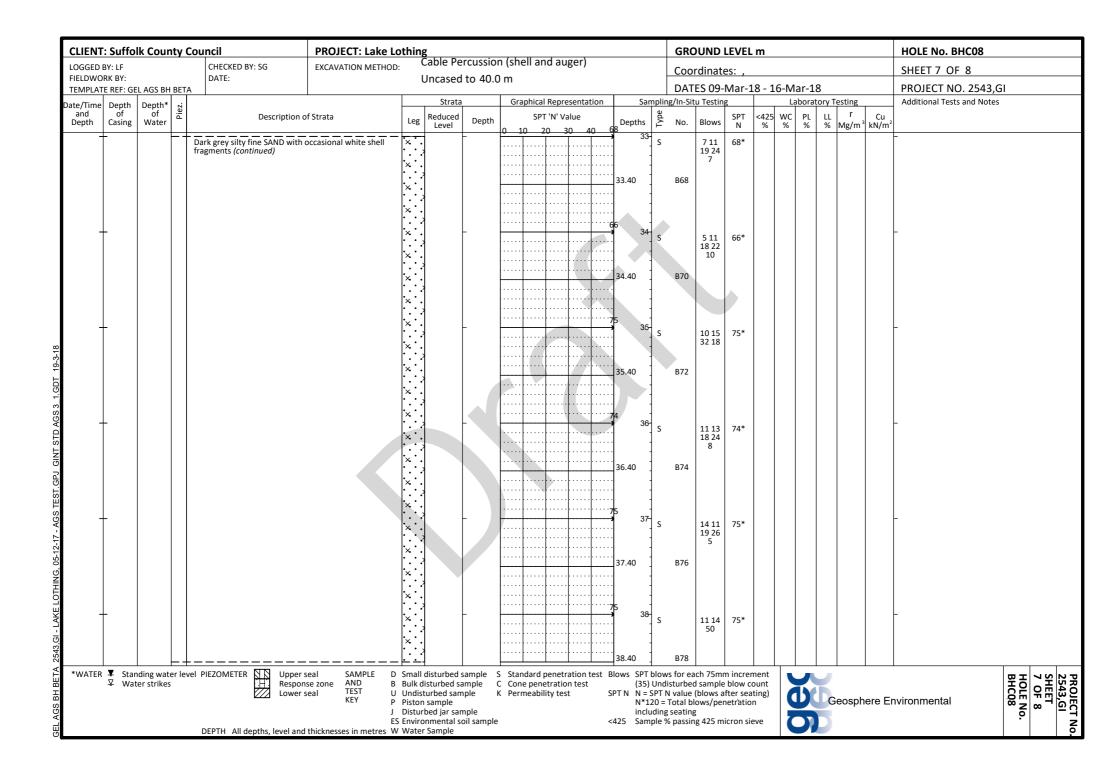


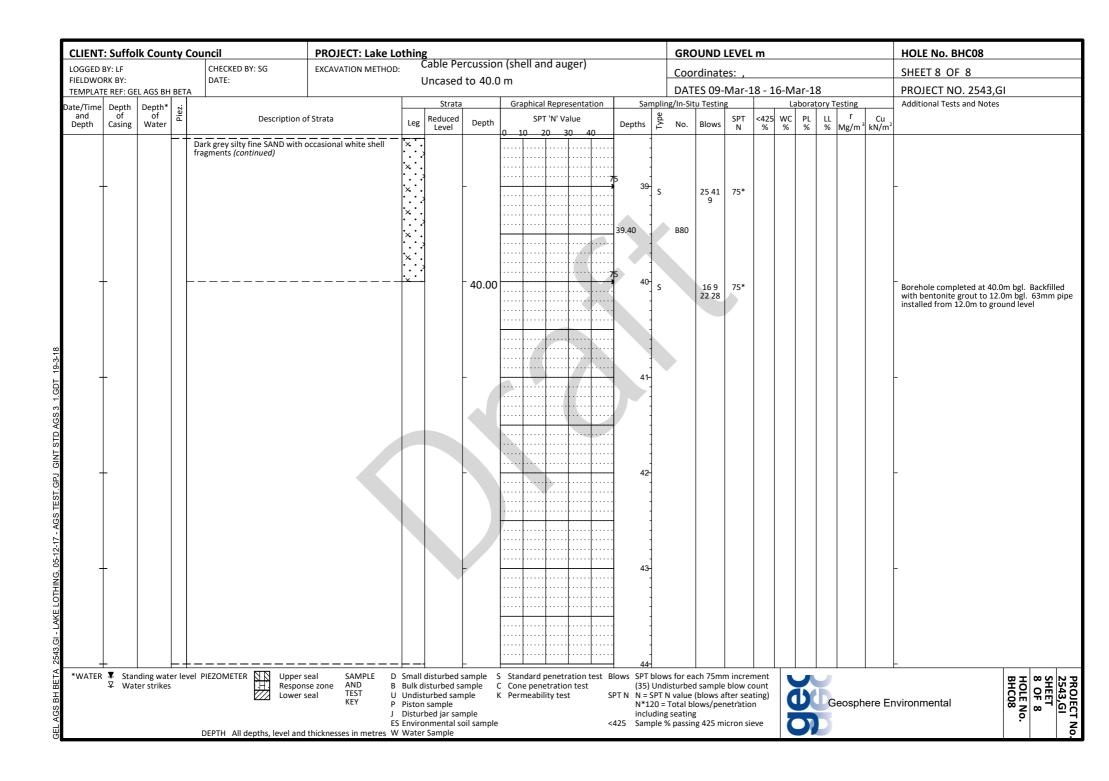




CLIENT	: Suffo	lk Count	ty C	ouncil	PROJECT: Lake Lo	othin	g					GROU	JND L	.EVEL	. m						HOLE No. BHC08			
LOGGED				CHECKED BY: SG	EXCAVATION METHOD:				n (shell and auger)			oord	dinate	s: ,							SHEET 5 OF 8			
FIELDWC TEMPLAT		L AGS BH I	BETA	DATE:			Uncased	το 40.0) m		- 1		S 09-N		l8 - 1	6-Ma	r-18				PROJECT NO. 2543,	GI		
Date/Time	Depth						Strata	Ī	Graphical Representation	San	npling/I		Testing			Lak	orato	ry Te	sting		Additional Tests and Note			
and Depth	of Casing	of Water	Piez.	Description of	Strata	Leg	Reduced Level	Depth	SPT 'N' Value	Depths		lo. B	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²				
-	-		-†	Dark grey slightly silty medium white shell fragments (continue	SAND with occasional			_		22-	S	(6 12 17 23	68*						-				
				writte shell fragments (continue	u)	: :::				-			10											
						· · · ·		22.50		-														
				Dark grey CLAY				22.50		22.50	В	346												
						<u> </u>	-																	
-	-						1	-		23.00 23	U	T47	(31)							-	_			
						-	-						,											
										-														
1			T	Dark grey slightly sandy CLAY		_	1	23.50		22.60		148												
										23.60		040												
1 .	1							_	62	2 24-				co*							_			
ω											S	1	5 7 10 14	62*										
9-3-1													21 5											
T 1										24.40	В	50												
 5																								
68 3																								
STD A	Ī									25.00 ²⁵	U	T51	(29)								_			
GINT S										-														
			L	Doub arous course CAND with fire	avent white shall	ļ	4	25.50		25.40	В	552												
T.GPJ				Dark grey coarse SAND with fre fragments	quent white shell			25.50		-														
SE L						\cdots																		
AGS	+								 	26- -	S	1		75*							<u> </u>			
-17-										-		3	31 19											
05-12-17						: .:				26.40	P	154												
						 :::				-														
E LOTHING,						: · : ·				-														
추 - 미 미	<u> </u>					 :::		_		9 - 27-	_		100	CC*							_			
<u> </u>						: :::				-	S		10 9 50	69*										
2543,GI										-														
	V C+c	dinget	_ 	ol DIEZOMETER NN USSESSES	CAMPLE D		dicturbad	cample (27.40 _		356	h 75	inere	mort	\perp	_	_						_
AGS BH BETA	∓ Star	er strikes	rieve	el PIEZOMETER Upper si Respons Lower si	e zone AND B	Bulk d	disturbed sa	ample (Standard penetration test Blo Cone penetration test	(35)	Undistu	irbed sa	sample	blow c	ount							몽	SHEET 5 OF 8	7
SSB				Lower s	KEY P	Pistor	turbed sam		C Permeability test SP		20 = Tot	al blow	ws/pen			Q	J	Ge	eosph	ere En	nvironmental	.E N	~ E	<u>ا</u> و د د
EL AG					ES	Enviro	rbed jar sar onmental s	nple oil sample	<4	inclu 125 Sam	iding se ple % pa		425 mi	cron si	eve		N						-	_
5				DEPTH All depths, level and	thicknesses in metres W	Wate	r Sample																	ا

		ITTOIR	Count	ty C	ouncil	PROJECT: Lake Lo	othing	3				GR	OUND	LEVE	. m						HOLE No. BHC08			
	BY: LF				CHECKED BY: SG	EXCAVATION METHOD):	Cable Pe	rcussio	n (shell and auger)		Cod	ordinat	es: ,							SHEET 6 OF 8			
FIELDW(AGS BH E	BETA	DATE:		·	Jncased	to 40.0) m		DA	TES 09-	Mar-1	18 - 1	.6-M	ar-18	3			PROJECT NO. 2543,G	ı		
Date/Time	Dep	pth		Piez.		•		Strata		Graphical Representation		ling/In-S	itu Testin			La	borat				Additional Tests and Notes			
and Depth	Casi	of sing	of Water	ä	Description o	of Strata	Leg	Reduced Level	Depth	SPT 'N' Value	Depths 2	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m ³	Cu kN/m²				
			+	-+	Dark grey coarse SAND with fro	equent white shell	•			0 10 20 30 40	-													_
					fragments (continued)						+													
										7!	5													
•	Ť								_		28-	5	25 35 15	75*							_			
											1													
				F	Dark grey silty fine SAND with	occasional white shell	× .		28.40		28.40	B58												
					fragments		× · .																	
							·.·>																	
	+						× ;		_		29		14 11	75*							=			
							×:,				-		18 22 10											
							× · .				29.40	B60												
							;				-5	200												
2							.:>				1													
	1						× · · >		_		5 30		40.5	7-+							-			
							×:,				3	•	19 6 22 28	75*										
							×·																	
							× ·				30.40	B62												
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							×:,			7	5													
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							× · ·				1		12 18 20											
							:∵				32.40	B66												
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	1						×:				8 33										_			
	₹ ₹	Stand Wate	ling water	r leve	el PIEZOMETER Upper s Respon	seal AND B seal TEST U KEY P	Bulk d Undist Piston Distur	isturbed san turbed san sample bed jar sar	ample (aple inple		(35) Ur PTN N = SP N*120 includi	ndisturb FN valu = Total ng seatii	ed sample e (blows a blows/per ng	e blow o after sea netratio	ount ating) on		D.	G	eosph	ere Er	nvironmental	HOLE No. BHC08	SHEET 6 OF 8	PROJECT
į					DEPTH All depths, level and	ES	S Enviro	nmental s		<4	125 Sample			nicron si	eve	(•		2





LIENT	: Suffo	lk County	Council	PROJECT: Lake Lo	othin	g Calala S		المامل المامل المامل		GRO	UND	LEVEL	m				HOLE No. BHC09
OGGED I			CHECKED BY: SG	EXCAVATION METHOD	, .			n (shell and auger)		Coor	rdinate	es: ,					SHEET 1 OF 5
	RK BY: J&	&M EL AGS BH BET	DATE:		ι	Uncased	d to 50.0) m		DΔΤ	ES 03/	/n4/20	118 -				PROJECT NO. 2543,GI Lake Lot
e/Time	Depth		<u>'</u>	1		Strata	3	Graphical Representation	Sampli	ng/In-Siti				Labora	tory T	esting	Additional Tests and Notes
and Depth	of Casing	Of Water	Description of	of Strata	Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30 40	Depths ^스 스	No.	Blows	SPT N	<425 %	WC PL %	LL %	ρ Cu Mg/m³ kN/m	12
†	_		Surfacing materials (Asphalt)			1	0.00		. 0 -								
			MADE GROUND (Multicoloure Gravel is fine to coarse grey co	ncrete, red brick, yellow	\bowtie	3	0.13		0.30	B1 J1							VOC = 0ppm
			brick and occasional pieces of MADE GROUND (Dark brown /	cast iron)		3	0.60		0.60	B2 J2							VOC = 0ppm
†	-		Gravel is fine and medium ang rounded subrounded flints)		×		1.10	/	0.90 1	J3 B3							- VOC = 1ppm
			Pale brown silty fine SAND.	/				/	1	БЭ	33 33	12					
			Dark brown sandy CLAY with f	sominations and	× .		1.80		1.60	B5 J4	33						VOC = 1ppm
+	-		coarse rounded flint gravel.	<u> </u>	<u>:-</u>		†		2 -		10	4					
			Black slightly brown mottled o	ganic CLAY.	=	-	2.20	<i>-[</i>	2.20	B7 J5	11 11						VOC = 1ppm
					71/	1			2.70	33							100 155
+	-					1	-		3 -		00	0					-
									3 40	В9	00						
						-				23							
+	-				77/		-		4 -		00	0					-
					<u> </u>	-			4.20-	J6 B11	00						VOC = 1ppm
					Ľ—	1			4.40	511							
+	-						-		5 -		3 4	29					-
			Pale brown / orange brown me	edium SAND.	· · ·	1	5.30	<i></i>	5 40	B13	77 87						
								/	5.50	J7							VOC = 0ppm
+	-				· · · ·		-	 	6 -		2 4	16					+
			Dark orange sandy CLAY		 : : :		6.40	1	6.40	B15	3 3 6 4						
			Dark Grange Sandy CLAT		<u> </u>				6.50	J8							VOC = 0ppm
+	-						-		7 -		3 4	19					-
					<u>_</u> :				7.40	B17	4 4 5 6						
			Light orange brown silty fine S	AND	<u> </u>		7.60		7.50	J9							VOC = 0ppm
+	-						-	<u> </u>	8 =		13	22					+
									: 1	B19	3 4 6 9						
									8.50	J10							VOC = 0ppm
+	-				· · · ·		-		9 🚽		35	27					-
									9.40	B21	77 67						
			Grey fine silty SAND		×	1	9.60	\\\\]]								
+	-				×	1	-	 	9.80 10	J11	24	36					VOC = 0ppm
		L	L 	. 	<u> </u>	·		<i>-</i> <i>/</i>]]		79						
VATER		nding water le ter strikes	vel PIEZOMETER Upper Respor	se zone AND B seal TEST U KEY P	Bulk d Undist Piston Distur	listurbed s turbed san I sample bed jar san	ample (nple I mple		(35) Und SPT N N = SPT N*120 = includin	disturbed N value (Total blo g seating	l sample blows at ows/per	blow co fter seat netration	ount ting) n	jec	U	eosphere E nit 11, Brigh rightwell, Su	nvironmental Ltd ntwell Barns uffolk
			DEPTH All depths, level and				oil sample	•	425 Sample	% passing	g 425 mi	cron sie	eve	O			-

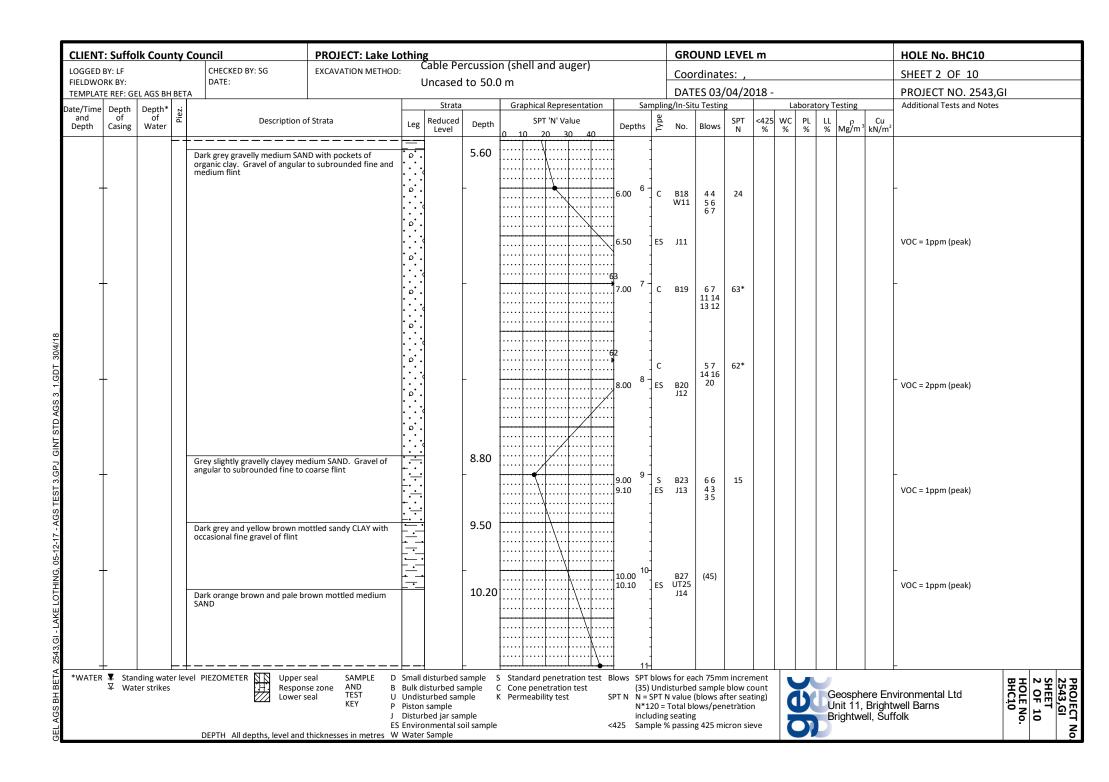
LIENT	: Suffo	lk County		PROJECT: Lake		ig Cablo Do	rcuccio	n (shell and	auger)		GRO	DUND	LEVEL	m					HOLE No. BHC09		
OGGED E	BY: JG RK BY: J&	M	CHECKED BY: SG DATE:	EXCAVATION METHO	JU.	Uncased			auger		Coo	rdinat	es: ,						SHEET 2 OF 5		
		EL AGS BH BET				Uncased	1 10 50.0	7 111			DAT	ES 03/	04/20	18 -					PROJECT NO. 2543,	GI Lake	Loth
e/Time	Depth of	Depth*				Strata		Graphical Re	presentation	San	pling/In-Si	tu Testin	g		Labo	ratory T	Testing		Additional Tests and Note	5	
and epth	of Casing	Of Water	2333,	n of Strata	Leg	Reduced Level	Depth	SPT 'N' 0 10 20	30 40	Depths	ار No.	Blows	SPT N	<425 %	WC P	L LL 5 %	Mg/m	Cu kN/m²			
	_		Grey fine silty SAND (continu	ued)	- × 	·}			./]	B23	9 11							_		
			Brown coarse SAND		× · · · ·	<u>·</u>	11.20			1 -	B25	3 3 4 4 7 10	25								
-	-						_			12-		4 8 9 10	49						_		
-	-						12 10	——————————————————————————————————————		12.40 13	B27	12 18	21						_		
			Grey silty CLAY		× - × - × -		13.10	N.	<u> </u>	13.40	B29	35 67	21								
	-		Dark grey coarse SAND.		×		14.00				B31	3 4 7 8 9 7	31						_		
	-						-				D22	7 8 10 12 12 11	45						_		
	-						_			16	B33	7 11 17 13	68*						_		
	-						_			16.40 0 17	B35	11 9	70*						-		
						•				17.40	B37	13 19 18	70								
	-		Dark grey sandy CLAY		:: 	· • <u>-</u>	18.40		1	18 18.40	В39	4 6 6 6 6 10	28						_		
	-					<u> </u>	_			19.00 ¹⁹	UT40								_		
	_		Posts area alle Class		<u></u>	<u> </u>	20.00	::::::	::: ::::\: ::::::	19.60	B42	0.0	20						-		
			Dark grey silty CLAY		× - × - × -	-	20.00			20.00	B44	8 9 8 7 10 13	38								
NATER	▼ Stan	iding water le	vel PIEZOMETER Upp			disturbed s		Standard pen	etration test B		olows for ea								-	무동	2 <u>Y</u>
	- vval	CI JUINES		er seal TEST (KEY p	U Undi: P Pisto J Distu	sturbed san n sample rbed jar sar onmental s	nple k mple	Permeability t	est S	PTN N=5 N*1: inclu	PT N value 10 = Total b ding seating ble % passir	(blows a lows/per g	fter seat netration	ing)	D	U	Jnit 11.		vironmental Ltd well Barns folk	HOLE No. BHC09	유 등 5
			DEPTH All depths, level a	nd thicknesses in metres \			oii sample		<	425 Sam	ne % passir	ıg 425 m	icron sie	ve	O						

LIENT	: Suffo	lk County	Council	PROJECT: Lake Lo	othin	g Salata S		- /ala - !!	- d \		GRO	UND	LEVEL	m					HOLE No. BHC09		
OGGED I			CHECKED BY: SG	EXCAVATION METHOD	:			•	nd auger)		Coor	dinate	es: ,						SHEET 3 OF 5		
	RK BY: J8 E REF: GI	kM EL AGS BH BET	DATE:		ι	Jncased	το 50.0	m			DATI	ES 03/	04/20	18 -					PROJECT NO. 2543	,GI Lake	Loth
e/Time			<u> </u>	1		Strata		Graphica	Representation	Samplir	ng/In-Situ				Labora	atory T	esting		Additional Tests and Not		
and epth	of Casing	l of l ∺	Description o	f Strata	Leg	Reduced Level	Depth	0 10 2	「'N' Value '0 30 40	Depths ≥	No.	Blows	SPT N	<425 %	WC PL %	LL %	Mg/m³	Cu kN/m²			
1	_	[-	Dark grey silty CLAY (continued	,	×	1				21.00 21	UT45								-		
					×				} · · · · · · · · · · · · · · · ·]											
			Dark grey silty fine sandy CLAY		<u>*</u> .×		21.60			21.60	B47										
+	-				<u>*</u>		-			22		46	36						-		
					× .×				h h h	22.40	B49	99 711									
					×			::::::		1	5-15										
+	-				<u>×</u> ×·		-			23.00 23	UT50								-		
					×-				[[]											
					÷.x.				 		B51										
4	_				<u>*</u> ×		_		6	24		5 14	69*						_		
			Dark grey silty fine SAND with s	helly gravel.	× .	•	24.20		ļ : : : : : : : : : : : : : : : : :	1 1		17 19	09								
					×	1				24.40	B53	14									
4	_				·*.·;	,	_		h h h	3 : 25									_		
					× .							6 17 22 28	73*								
						1			 	25.40	B55										
					·^.·;	}		::::::	<u> </u>	5] 26											
	_				×					20]		18 7 41 9	75*						_		
					\. · · ·	1				26.40	B57	.13									
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1	-				×	ļ	-			27		16 9	75*						_		
					×					27.40	B59	27 23									
						1															
+	_				× · ,	,	-			28		10 15	75*					-	-		
					× · .					30.40	B61	25 25									
						1				28.40	801										
+	-				*·:;	,	-			29		196	75*						-		
					×:.				h : : : : : h : : : : : h : : : : :	1 1		33 17	,,								
						1				29.40	B63										
4	_				\\rightarrow\cdot\rightarrow\c		_		h h h 4	5 <u>1</u> 30-									_		
					×							25 29 21	75*								
					_× · '	1			 	30.40	B65										
	_					1	L			5 31-									_		
7					×				h h h			15 10 23 27	75*								
		<u> </u>	<u> </u>		-				t : : : : t : : : : t : : : : :	1 1											
VATER	▼ Star ▼ Wa	nding water le ter strikes	vel PIEZOMETER Upper : . H Respon Lower s	se zone AND B seal TEST U KEY P	Bulk d Undist Piston Distur	listurbed sa turbed sam sample bed jar san	ample C nple K nple			(35) Und PT N N = SPT I N*120 = including	isturbed N value (I Total blo g seating	sample blows af ows/pen	blow co ter seat etration	unt ing)	e c	Ur	eosphe nit 11, rightwe	Bright	vironmental Ltd well Barns folk	HOLE No. BHC09	SHEET 3 OF 5
			DEPTH All depths, level and			onmental so	oil sample		<	425 Sample 9	% passing	g 425 mi	cron sie	ve	O		-				

CLIENT	: Suffo	lk County	Council	PROJECT: Lake Lo	othin	g _				GRO	DUND	LEVEL	. m				H	OLE No. BH	C09		
OGGED I			CHECKED BY: SG	EXCAVATION METHOD):			n (shell and auger)		Cooi	rdinate	es: ,					SH	HEET 4 OF	5		
FIELDWO		&M EL AGS BH BET	DATE:			Uncased	to 50.0	U m			ES 03/)18 -					ROJECT NO.		Lake I	Loth
ite/Time	Depth		,	I .		Strata		Graphical Representation	Samplir		u Testin				atory T	esting		ditional Tests a			
and Depth	of Casing	of l	Description o	of Strata	Leg	Reduced Level	Depth	SPT 'N' Value	Depths 전	No.	Blows	SPT N	<425 %	WC PL	LL %	ρ Mg/m³ ki	Cu N/m²				
		 	Dark grey silty fine SAND with s	shelly gravel.	×.	-			31.40	B67											
4	_		(continued)		×	1	_	7	4 <u>:</u> 32			l					-				
					·^.·:	;					11 13 22 28	74*									
					× .				32.40	B69											
						1			5												
1	-				·*·:	;	_		33-		14 11	75*					Ī				
					× .				33.40	B71	21 29										
						1															
+	-				× :	:	-		34		15 10	75*					+				
					× .				1 1		18 22										
						1		7	34.45	B73	10										
4	_				·^. · :	;	_		5] 35								-				
					×:.						14 11 22 28	75*									
						1			35.40	B75											
					·^.·:	;			ъ												
1					× .				36-		25 31 19	75*					Γ				
						1			36.40	B77	19										
					·^. · :	;}]												
+	-				× .		-	1	37-		11 13						l l				
						1]	D70	27										
					$ \cdot ^{2}$;}			37.40	B79											
4	-				× · .		_	7	5 <u>]</u> 38		44.44	75*									
						1]		11 14 50	75*									
					·*. · :	;			38.40	B81											
	_				× .				39								L				
	='					1			39		25 50						Γ				
					·*. · :	:			39.40	B83											
					× .			6	19]												
+	-					1	-	!!			9 10	69*					ŀ				
					\.\.\.\.	;			10.40	B85	10 10 14 16										
					× .			7	40.40	DÕO											
+	-					1	-	 	41		11 14	75*					F				
					·*·:	;}					19 23	/3									
					× : .	.]		l	41.40	B87	8										
1	_	L.	L		<u> </u>]	_	6	7 42								L				
VATER		nding water le ter strikes	vel PIEZOMETER Upper s Respon Lower s	se zone AND B seal TEST U KEY P	Bulk o Undis Pistor	disturbed sa disturbed sa sturbed sam n sample rbed jar san	ample (S Standard penetration test B C Cone penetration test K Permeability test S	lows SPT blow (35) Und PT N N = SPT N*120 = including	isturbed N value (Total blo	d sample (blows at ows/per	blow co	ount ting)	<u>6</u>	U	eospherenit 11, Birightwell,	rightwell	nmental Ltd Barns		HOLE No.	, SE Z
				ES	Enviro	onmental so		<	425 Sample S			icron sie	eve			ngniwell,	, Juillik			٠,	
			DEPTH All depths, level and	ES	Enviro	onmental so		<				icron sie	eve	O	D	ngntwell,	, Julioik			٠	

LIENT	: Suffo	J&M DATE: EXCAVATION METHOD: Uncas								GRO	UND	LEVEL	m					HOLE No. BHC09		
OGGED I				EXCAVATION METHOD				n (shell and auger)		Coor	dinate	es: ,						SHEET 5 OF 5		
	RK BY: J8 E REF: G				'	Uncased	to 50.0	J m		DATE	ES 03/	04/20)18 -					PROJECT NO. 2543,	GI Lake	Loth
te/Time			·· ,	1	Strata		Graphical Representation	Sampli	ng/In-Situ				Labo	atory T	esting		Additional Tests and Notes			
and Depth	of Casing	l of l;≝	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value	Depths 2	No.	Blows	SPT N	<425 %	WC PI	. LL %	Mg/m ³	Cu kN/m²			
	_	-	Dark grey silty fine SAND with	helly gravel.	×.		-		42-		6 11	67*						-		
			(continued)		×	1			42.40	B89	11 14 25									
					·^. · :				1 1											
+	-				×		_				10 15	75*						-		
						1			1 1		50									
					·^. · :				43.40	B91										
4	_				×:.		_		75 1 9 44									=		
						1			1		14 11 36 14	75*								
					·^. · :				44.40	B93										
					× .															
1	_					1	_		45		25 50							=		
					·^. · :				45.40	В95										
					×:.															
+	-					1	_		46		25 50							-		
					·^. · :				: 1	207										
					×:.				46.40	B97										
4	_					1	_		47		25.50							_		
					·^. · ;				1		25 50									
					× .			I	47.40	В99										
						1			: : : : : : : : : : : : : : : : : : : :											
T	-				·*· :		_		407		25 50									
					× .				48.40	B101										
						1														
+	_				·*. · :		_				25 50							_		
					× .]	5400										
						1			149.40	B103										
4	_				×		- 50 00		50		25.50							_		
							30.00		1		25 50									
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									:]											
+	-						-	l	52									_		
		L	L 		L_]			:]											
VATER		nding water le ter strikes	vel PIEZOMETER Upper : Respon Lower s	se zone AND B real TEST U KEY P	Bulk o Undis Pistor	disturbed satisturbed saturbed sam is sample rbed jar sam	imple (S Standard penetration test EC Cone penetration test K Permeability test S	(35) Und SPT N N = SPT N*120 =	disturbed	sample blows af ws/pen	blow co	ount ting)	ec	U	nit 11,	ere En Bright	vironmental Ltd well Barns folk	HOLE No. BHCQ9	SHEET 5 OF 5
					Enviro	onméntal so		•	425 Sample			cron sie	ve	O		9	J., Jui		5	

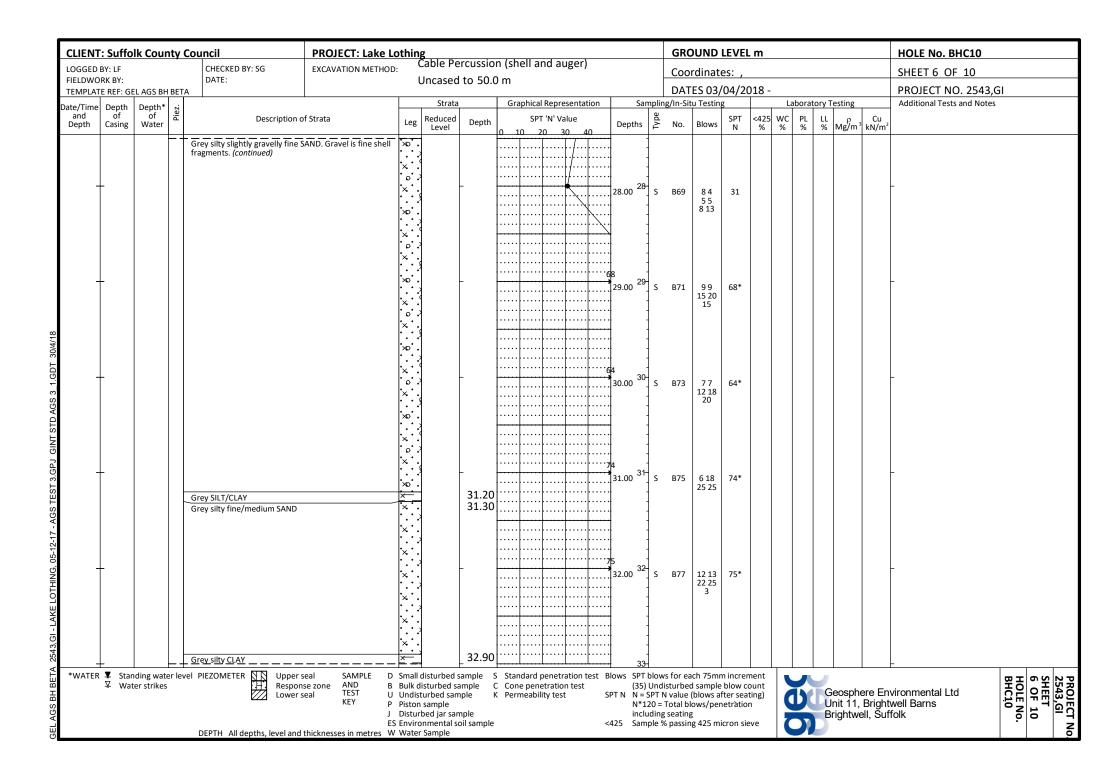
CLIENT	: Suffc	olk Co	unty	Council	PROJECT: Lake Lo	othing	3					GRO	DUND	LEVE	. m					HOLE No. BHC10		
LOGGED				CHECKED BY: SG	EXCAVATION METHOD					shell and auger)		Coo	rdinat	es: ,						SHEET 1 OF 10		
FIELDWO TEMPLAT		EL AGS	BH BET	DATE:		Ĺ	Jncased	10 50.0	u m			DAT	ES 03/	/04/20	018 -					PROJECT NO. 2543,0	il	
Date/Time							Strata		Gr	Graphical Representation			tu Testin	g		Labor	atory T	Testing		Additional Tests and Notes		
and Depth	of Casing	of Wat	er ä	Description of	Strata	Leg	Reduced Level	Depth		SPT 'N' Value	Depths 8	No.	Blows	SPT N	<425 %	WC PL	LL %	ρ Mg/m	Cu kN/m ²			
-	-		+	ASPHALT OVER CONCRETE		p 8.3		0.00	0	10 20 30 40	0 -							-	<u> </u>	-		
				MADE GROUND (Dark brown be very gravelly fine to coarse sand	ecoming red brown			0.13).20] ES	J1								VOC = 0ppm		
				subrounded fine to coarser brid flint)	k, concrete, metal and	\bowtie					,,20	, ,,								VOC - oppin		
				,		\bowtie		0.60).50 ES	J2								VOC = 0ppm		
				MADE GROUND (Dark brown ar medium and coarse sand. Grav	el of angular to	\bowtie		0.00			1											
				subrounded fine to coarse brick MADE GROUND (Grey brown sl		\otimes		0.90			0.80 ES	13								VOC = 0ppm		
_				coarse sand. Gravel of angular medium brick and flint)		\bowtie		1.10		1	00 1 ES	B1 J4								VOC = 0ppm		
				MADE GROUND (Grey brown si	ty fine to coarse sand			1.20			20 s		11	4								
				with pockets of grey brown clay subangular fine to coarse brick,						1	40 ES	J5	11 11							VOC = 1ppm (peak)		
				MADE GROUND (Multicoloured Gravel of angular to subrounde	gravelly sandy clay. d fine to coarse brick			1.60			1											
				\and flint) Soft dark grey and black mottle	d sandy CLAY with black	<u>.</u>					80] ES	B5								VOC = 3ppm (peak)		
-	_			clay pockets and weak to mode odour	rate natural organic	, <u> </u>		2.00			2.00 2 S	J6	11	4						-		
				Black and dark grey mottled sar moderate natural organic odou		=			: ::]		11	"								
				sacrate natara organic odou		-:-			: ::		2.20 ES	J7								VOC = 2ppm (peak)		
				Dark grey silty CLAY with strong	natural organic odour	×		2.50	-		2.50	В8										
					-	* ×					-											
						<u>×</u>			1		1											
-	_					<u>×</u>		-	 		3 ES		(5)							VOC = 2ppm (peak)		
						<u>×</u> _×					1	J8 UT9										
						×					1											
İ				Soft grey CLAY with occasional f	ibrous material			3.50			+											
											1											
i -									ļ		4 -											
İ									<i>y</i>		1.00 T ES S		00	0						VOC = 2ppm (peak)		
İ									-/		+		0.0									
									-/		- 1											
									;	\\\\\\\\\\	1											
											1											
-	-							_			5.00 5 ES	B16	(15)							VOC = 2ppm (peak)		
											}	J10 UT15										
						\vdash					1											
*WATER	¥ Sta ∇ Wa	l Inding v ater stril	vater lev	vel PIEZOMETER Upper's Respons	e zone AND B eal TEST U KEY P	Bulk di Undist Piston	isturbed sa urbed san sample	ample (C Co	candard penetration test Bloone penetration test ermeability test SP	(35) Un FN N = SPT N*120 =	disturbe N value = Total b	d sample (blows at lows/per	e blow co	ount ting)	e	U	Init 11.	. Briaht	vironmental Ltd well Barns	HOLE No. BHC10	2543,GI SHEET 1 OF 10
					ES	Enviro	bed jar sar nmental s			<4.	includin 25 Sample	ıg seatinį % passir		icron sie	eve	O	PR	igntw	ell, Šuf	IOIK		•
				DEPTH All depths, level and t	hicknesses in metres W	Water	Sample															



CLIENT	Γ: Suffc	olk	County	Council	PROJECT: Lake Lo	othir	ng						GRO	UND	EVEL	m						HOLE No. BHC10		
LOGGED				CHECKED BY: SG DATE:	EXCAVATION METHOD					(shell and auger)			Coor	dinate	es: ,							SHEET 3 OF 10		
		GEL A	AGS BH BET				Uncased	1 10 50.0	U III	m			DATE	ES 03/	04/20)18 -						PROJECT NO. 2543,G	il	
ate/Time	Depth	ı D	Pepth*				Strata	1	(Graphical Representation	San		/In-Situ	u Testing				borat				Additional Tests and Notes		
and Depth	of Casing	gΙ	of ਲ	Description of	of Strata	Leg	Reduced Level	Depth		SPT 'N' Value	Depths	Туре	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	ρ Mg/m ³	Cu kN/m²			
_	+			Dark orange brown and pale b	rown mottled medium	H	-	-			1.00	S	B29	46	44							_		
				SAND (continued)							-			9 11 11 13										
											-													
				Brown coarse silty SAND.		×:	-	11.50)		-													
						×.	.]				-													
_	↓					·.·	1	Ļ			- 12-											_		
						·.·	;				-	S		3 2 3 3	25									
						×	•				-			6 13										
				Grey/brown slightly clayey me	dium SAND.	 :≟	}	12.50)		2.50		B31											
						-:-					-													
				Constraint CLAY		<u>:</u>	<u>· </u>	12.90	,		-													
-	†			Grey sandy CLAY		$\dot{=}$		- 12.50	<u> </u>		3.00 ¹³		B35									_		
											3.10	'	UT33	(60)										
						<u>:</u>					-													
							-				-													
						=	1				-													
_	-			Carried and a second and a second	- CAND with a sectional		_	14.00) 		14-		D27	4.2	20							-		
				Grey clayey medium and coars fine subangular gravel.	se SAND with occasional	 	<u>.</u>	14.00	´ :::		4.00	S	B37	13 55 810	28									
						<u>:.:</u>	<u>. </u>			·····	-			8 10										
						<u> -:</u>	<u>:</u>				-													
						<u>: : :</u>	<u>- </u>				-													
						-:-	<u>:</u>				-													
-	†					<u></u>	• -	<u> </u>		1	5.00 15-	S	В39	5 4 3 5 5 5	18							_		
						- <u>:</u>	<u>.</u>				-			55										
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						-:	<u>.</u>				-													
						F: <u>.</u> -	<u>:</u>				-													
_	-			Cross alimbels along time CAND		+.·	<u>.</u>	16.00	····		- 16-		D 4 1	2.2	33							_		
				Grey slightly clayey fine SAND.		-:-		10.00	´ :::		.6.00 ¹⁰	S	B41	23 26 1213	33									
						<u></u>	•				-			12 13										
/*										Standard special in the Standard special speci		-1	f	-l- 75										
*WATER	R ▼ Sta ∇ Wa	andir ater	ng water lev strikes		nse zone AND B	Bulk	disturbed s	ample (СС	Standard penetration test Blo Cone penetration test	(35)	Undist	turbed	sample	blow co	unt				ooonh	oro En	vironmental Ltd	HOLE No. BHC10	SHE
				Lower	KEY P	Pisto	sturbed san n sample	•	K P	Permeability test SPT		20 = To	otal blo	ows/pen	ter seat etràtior	ing) 1		D	Ur	nit 11.	Briaht	well Barns		<u> </u>
							rbed jar sar onmental s		2	<42	inclu 25 Sam		eating passing		cron sie	ve	7	T	Br	ightwe	ell, Šuf	folk	, ē	6
				DEPTH All depths, level and								1		, ,		-								

CLIENT	Γ: Su	uffol	k Cour	nty C	Council	PROJECT: Lake Lo	thi	ng			(-			GRO	UND	LEVEL	. m						HOLE No. BHC10			
LOGGED FIELDWO					CHECKED BY: SG DATE:	EXCAVATION METHOD		Cable Pe	ercussio	ion ((shell and auger)			Coor	dinate	es: ,							SHEET 4 OF 10			
TEMPLAT			. AGS BH	I BETA				Uncased	1 10 50.0).U N	m			DAT	ES 03/	04/20)18 -						PROJECT NO. 2543,G	il		
Date/Time	Dep	pth	Depth*	Piez.				Strata	1	_	Graphical Representation	Sar		/In-Sit	u Testing	3			borat		esting		Additional Tests and Notes			
and Depth	Casi	of sing	of Water	ä	Description o	f Strata	Leg	Reduced Level	Depth	h	SPT 'N' Value	epths	Туре	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	ρ Mg/m	Cu kN/m²				
and Depth	o Casi	of sing	of Water		Grey slightly clayey fine SAND. (Grey clayey fine SAND (laminate fine SAND bands of up to 30mn)	continued)	Leg	Level	Depth		10 20 30 40 L		S	B43 B46 JT44	4 8 10 10 13 12 (25)	45 49	<425 %	WC %	PL %	LL %	Mg/m	Cu kN/m²				-
-					Grey clayey fine and medium Sa	AND.	· 	: - -	21.00			.50	S	B53	45 1016 203	58*										
*WATER	₹ ₹	Stand	ding water strikes	er leve	PIEZOMETER Upper s Respons Lower s	e zone AND B eal TEST U KEY P J ES	Smal Bulk Undi Pisto Distu Envii	I disturbed si disturbed sa sturbed san n sample irbed jar sar conmental s	ample (nple I nple	C (/S SPT (35) N N = 5 N*1 inclu	Undist SPT N v 20 = To Iding s	urbed value (otal blo eating	l sample blows af ows/pen	blow co ter sea etratio	ount ting) n		人との	Ur	nit 11.	ere En Bright ell, Suf	vironmental Ltd well Barns folk	HOLE No. BHC10	SHEET 4 OF 10	

CLIENT	T: Su	ıffoll	Count	y Co	ouncil	PROJECT: Lake Lo	othir	ng			,		GR	OUND	LEVEL	m						HOLE No. BHC10		
LOGGED					CHECKED BY: SG	EXCAVATION METHOD:	:	Cable Pe	ercussio	on (shell and auger	')		Coc	ordinat	es: ,							SHEET 5 OF 10		
FIELDWC TEMPLAT			AGS BH B	ETA	DATE:			Uncased	1 to 50.0	U M			DA	TES 03,	/04/20)18 -						PROJECT NO. 2543,0	il .	
Date/Time	Dep	oth	Depth*	.Z.				Strata		Graphical Representa	ation		ling/In-S	itu Testin				borato	ry Te	sting		Additional Tests and Notes		
and Depth	of Casi	f ing	of Water	Piez.	Description of	Strata	Leg	Reduced Level	Depth	SPT 'N' Value	40 I		No.	Blows	SPT N	<425 %	WC %	PL %	LL %	Mg/m³ kľ	Cu N/m²			
Depth -	Casi	ing	Water		Grey clayey fine and medium SA	ND. (continued)		Level	25.30	0 10 20 30	22	00 23 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	B56 UT54 6 B58 861 UT59	(100) 58 98 914 87 58 89 717 2525	N 40 40	%	%	%	% 1	Mg/m³ kt	N/m²			
*WATER	R ♥ ;	Stand Wate	ing water r strikes	level	Upper so Respons Lower so	eaal SAMPLE D e zone AND B eaal TEST U KEY P J ES	Bulk Undi Pisto Distu Envir	I disturbed si disturbed sa sturbed san n sample irbed jar sar conmental s	ample (nple i nple	S Standard penetration C Cone penetration test K Permeability test	SPT N	(35) U N N = SP N*120 includ	ndisturbe TN value = Total b ng seatin	ed sample (blows a blows/per	blow co fter seat netration	ount ting) n			Un	eosphere it 11, Br ghtwell,	riahtw	rironmental Ltd vell Barns olk	HOLE No. BHC10	SHEET 5 OF 10



CLIENT	: Suff	folk	County	Council		P	ROJE	CT: Lake	Lothin	g						GRO	UND	LEVEL	. m					HOLE No. BHC10		
LOGGED				CHECKED	D BY: SG	EX	XCAVAT	ION METH	IOD:	Cable Pe	ercussio	on (hell and auger)			Coor	dinate	es: ,						SHEET 7 OF 10		
FIELDWO TEMPLAT			AGS BH BE	DATE:						Uncased	ı to 50.0	.u m			Γ		ES 03/)18 -					PROJECT NO. 2543	 3,GI	
Date/Time	Depth					-				Strata	1	-	raphical Representation	Sar	$\overline{}$	g/In-Situ				Lab	orator	y Testi	ng	Additional Tests and No		
and Depth	of Casing		epth* of Vater		Description	on of Str	rata		Leg	Reduced Level	Depth	٥	SPT 'N' Value 10 20 30 40	Depths	Туре	No.	Blows	SPT N	<425 %	WC %	PL 1	LL % Mg	ρ Cu g/m³ kN/m²			
_	f			Grey silty CLA	AY (continued)				× ×			Ť		33.00 ³³		B80	(120)									
									×	-		1				UT78										
				Grey gravelly	silty fine and i	medium	SAND	Gravel is	<u>x</u>	1	33.40	o]												
				fine shell frag	gments.	mealain	13/1110.	Graveris		}] :												
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*WATER	¥ St ∇ W	tandir /ater	ng water le strikes	DEPTH All	H Res	per seal ponse zo ver seal	one A T K	AMPLE AND EST EY	B Bulk of U Undis P Pistor J Distu ES Enviro	disturbed s sturbed sar n sample rbed jar sa onmental s	ample nple mple	C C		(35) PTN N=: N*1	Undis SPT N 20 = T Iding	sturbed value (b Total blo seating	sample blows af ows/pen	blow co fter sea etration	ount ting) n	שפע		Geos Unit Brigh	sphere En 11, Bright ntwell, Suf	vironmental Ltd well Barns folk	HOLE No. BHC10	SHEET 7 OF 10

CLIEN	T: :	Suffo	lk Co	unty	Council			PROJ	IECT: La	ke Lo	thin	g		,	shell and					GRO	UND	LEVEI	. m						HOLE No. BHC	10		
LOGGED						BY: SG		EXCAV	ATION MI	ETHOD:						a aug	ger)			Coor	rdinat	es: ,							SHEET 8 OF 1	0		
FIELDWC TEMPLA			L AGS	BH BET	I							Jucased	d to 50.	.u m	1						ES 03/		018 -						PROJECT NO. 2	2543,GI		
Date/Time	e [Depth of	Depth* i									Strat	a	(Graphical R	leprese	entation	Sa	$\overline{}$	g/In-Sit	u Testin	g		La	borate	ory Te	sting		Additional Tests and	d Notes		
and Depth	0	of Casing	of Wat	er ä		Descr	ription of	Strata			Leg	Reduced Level	Depth	١		N' Valu		Depths	Туре	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	ρ Mg/m³	Cu kN/m²				
and Depth		of Casing	of	1.₩	Grey gravelly s fine shell fragn	ilty fine a	and medi	ium SAN	D. Gravel	is	Leg	Reduced Level	Depth			N' Valu	40	Depths 5 39.00 39 40.00 40 41.00 41 5 42.00 42	S	B92 B94 B96	21 4 47 3 25 50 25 50 25 50	75* 75*	<425 %	WC %	PL %	LL %	ρ Mg/m³	Cu kN/m²	-			
*WATEF	ER \$	Z Star Z Wat	nding v	vater le kes	evel PIEZOMETER		Upper se Respons Lower se	e zone eal	TEST KEY	B U P J ES	Bulk o Undis Pistor Distur Enviro	listurbed saturbed saturbed sample bed jar sammental s	sample mple	C C	Standard pe Cone peneti Permeability	ration t	test S	(35) PTN N = N*1	blows Undis SPT N .20 = T uding	sturbed value (otal blo seating	d sample (blows a ows/per	blow ofter sea netratio	ount ting) n			Un	it 11.	ere En Bright	- vironmental Ltd well Barns folk	внс10	HOLE No.	2543,GI SHEET

CLIEN	T: S	uffol	k Cour	nty C	ouncil	PROJECT: Lake Lo	othin	g								GRC	UND	LEVE	L m						HOLE No. BHC10			
LOGGE					CHECKED BY: SG	EXCAVATION METHOD	:	Cable Pe	ercussio	on (sh	ell ar	nd au	ger)			Cooi	rdinat	es: ,							SHEET 9 OF 10			
FIELDW TEMPLA			AGS BH	BETA	DATE:			Uncased	to 50.	0 m						DAT	ES 03,	/04/2	018 -						PROJECT NO. 2543,0	6l		
Date/Time			Depth* of					Strata		Gra	phical	Repres	sentation	Sar			u Testin				aborat	ory T	esting		Additional Tests and Notes			
and Depth	Ca	of asing	of Water	Piez.	Description of		Leg	Level	Depth		SPT 0 20	'N' Val		Depths	Ι'.	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	Mg/m ³	Cu kN/m²				
	+				Grey gravelly silty fine and medifine shell fragments. (continued) Grey slightly gravelly medium Safragments.			Level	45.50		0 20	0 30		44.00 ⁴⁴ 45.00 ⁴⁵ 45.00 ⁴⁶ 46.00 ⁴⁶ 48.00 ⁴⁷	S	B102 B104 B106 B108	25 50 25 41 9 25 50	75*	70	76	76	70	wgm	KNJIII				
	R ¥	Stand	ling wat	er leve									ition test E	lows SPT	blow	s for ea	ch 75mi	m increi								ᄪᆂ	9 <u>S</u> N	_
*WATE	₹	Wate	r strikes		Upper so Respons Lower so	eal TEST U KEY P J ES	Undis Pistor Distu Envir	disturbed san sturbed san n sample rbed jar sar onmental s	nple nple	C Con K Perr			9	PTN N= N*1	SPT N .20 = ⁻ uding	value (Fotal blo seating	ows/pei	ifter sea netratio	ting) n		D)	Ur	nit 11.	ere En Bright ell, Suf	vironmental Ltd well Barns ffolk	IOLE No.	2543,GI SHEET 9 OF 10	KOJECI NO

CLIEN	Γ: Suff	olk Cou	nty	Council	PROJECT: Lake Lo	othin	g						GRO	OUND	LEVEL	. m					HOLE No. BHC10		
LOGGED				CHECKED BY: SG	EXCAVATION METHOD:	:	Cable Pe	rcussio	n (she	ii and ai	ıger)		Coo	rdinat	es: ,						SHEET 10 OF 10		
FIELDWC TEMPLA		SEL AGS B	н вет	DATE:			Uncased	to 50.0) m				DAT	ΓES 03/	04/20	018 -					PROJECT NO. 2543,0	GI	
Date/Time	Depth						Strata		Grap	hical Repre			npling/In-Si		g		Lab		ry Testinį		Additional Tests and Notes		
and Depth	of Casing	of Water	Pié	Description	of Strata	Leg	Reduced Level	Depth	0 10	SPT 'N' Va	lue 0 40	Depths	√ No.	Blows	SPT N	<425 %	WC %	PL %	LL p	Cu n ³ kN/m ²			
			-	Grey slightly gravelly medium	SAND. Gravel is fine shell	٠٥.																	
				fragments. (continued)			.																
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*WATER	R ¥ Sta ∇ Wa	anding wa ater strike	ter lev	vel PIEZOMETER Upper Respo Lower	nse zone AND B r seal TEST U KEY P J ES	Bulk of Undis Pistor Distu Envir	disturbed sa sturbed sam n sample rbed jar san onmental se	ample (aple i	C Cone K Perm	ard penetr penetratio eability test	: :	(35) SPT N N = 9 N*12	Undisturbe SPT N value 20 = Total b ding seatin	d sample (blows a lows/per	blow co fter sea netration	ount ting) n		り	Geosp Unit 1 Bright	here En 1, Bright well, Sut	ovironmental Ltd twell Barns ffolk	HOLE No. BHC10	2543,GI SHEET 10 OF 10

CLIENT: Suffolk County Council PROJECT: Lake Lothing GROUND LEVEL m HOLE No. BHC14 Cable Percussion (shell and auger) CHECKED BY: SG EXCAVATION METHOD: LOGGED BY: LF Coordinates: SHEET 2 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 02-Jan-18 - 12-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Strata ate/Time Depth Depth* LL r Cu % Mg/m³ kN/m² and of of Description of Strata Reduced SPT 'N' Value <425 wc PL % Leg Depth Depth Casing Water Depths No. Blows Level Ν % % Orange brown slightly gravelly fine SAND. Gravel of subangular to rounded fine to coarse flint and quartz (continued) 5.80 B10 ٥. 46 38 6.10 J8 88 ES VOC = 0ppm 10 12 6.60 Orange brown very gravelly coarse SAND. Gravel of 6.60 B12 angular to subangular fine to coarse flint 6.80 ES VOC = 0ppm ٥. 37 38 ... 9 12 98 7.70 Pale orange brown slightly gravelly fine to coarse 7.70 B14 SAND. Gravel of angular to subangular fine to coarse 7.90 ES J10 VOC = 0ppm 12 29 3 7 109 8.40 Becoming pale brown with depth 8.60 ES B16 VOC = 0ppm J11 43 3 2 13 19 9.40 B18 9.60 ES J12 VOC = 0ppm 9.90 Becoming dark brown with depth 9.90 B19 46 35 68 10 11 10.60 B21 PROJECT No. 2543,GI SHEET 2 OF 8 HOLE No. BHC14 *WATER ▼ Standing water level PIEZOMETER SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment Upper seal AND ▼ Water strikes Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count TEST U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

CLIENT: Suffolk County Council PROJECT: Lake Lothing GROUND LEVEL m HOLE No. BHC14 Cable Percussion (shell and auger) LOGGED BY: LF CHECKED BY: SG EXCAVATION METHOD: Coordinates: SHEET 4 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 02-Jan-18 - 12-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes ate/Time Depth Depth³ LL r Cu % Mg/m³ kN/m² and of of Description of Strata Reduced SPT 'N' Value <425 wc PL % Leg Depth Depth Casing Water Depths No. Blows % Level Ν % Pale orange brown slightly gravelly fine to coarse SAND. Gravel of angular to subangular fine to coarse flint (continued) 16.70 B33 38 48 7 11 14 16 17.60 Dark grey silty fine SAND 17.60 B35 S 25 1 1 3 5 9 8 18.60 B38 12 17 79* 25 25 19.60 B40 20-69* 7 12 18 22 10 B42 20.60 21-57* 77 11 14 14 18 21.60 B44 PROJECT NO.
2543,GI
SHEET
4 OF 8
HOLE NO.
BHC14 *WATER ▼ Standing water level PIEZOMETER SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment Upper seal AND ▼ Water strikes Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count TEST SPT N N = SPT N value (blows after seating) U Undisturbed sample K Permeability test Lower seal Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

CLIENT: Suffolk County Council PROJECT: Lake Lothing GROUND LEVEL m HOLE No. BHC14 Cable Percussion (shell and auger) LOGGED BY: LF CHECKED BY: SG EXCAVATION METHOD: Coordinates: SHEET 6 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 02-Jan-18 - 12-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes ate/Time Depth Depth³ LL r Cu % Mg/m³ kN/m² and of of Description of Strata Reduced SPT 'N' Value <425 WC % PL % Leg Depth Depth Casing Water Depths No. Blows N % Level Dark grey slightly silty SAND (continued) 27.60 B56 28 16 19 24 26 85* 28.50 B58 29 11 18 79* 50 29.60 B60 10 16 76* 24 26 30.60 B62 31-12 50 31.60 B64 13 34 97* 50 32.60 B66 PROJECT No. 2543,GI
SHEET
6 OF 8
HOLE No. BHC14 *WATER ▼ Standing water level PIEZOMETER D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment Upper seal SAMPLE AND TEST ▼ Water strikes Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count SPT N N = SPT N value (blows after seating) U Undisturbed sample K Permeability test Lower seal Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

CLIENT	Γ: Sι	uffol	k Cou	nty C	ouncil		PR	OJEC	T: Lake	Lothi	ng						GRO	DUND	LEVEL	m						HOLE No. BHC14		
LOGGED					CHECKED B	Y: SG			ON METH	IOD:	Cable I			(shell and auger)			Coo	rdinate	es: .							SHEET 8 OF 8		
FIELDWO TEMPLAT			. AGS BI	I BETA	DATE:						Uncase	ed to 40	0.0 n	n				ES 02-		3 - 12	2-Jan	-18				PROJECT NO. 2543,G	il	
ate/Time and			Depth*			Dagarinti	tion of Ctuo				Stra	. al		Graphical Representation SPT 'N' Value			pling/In-Sit		g		La	borat	ory Te	esting r	Cu	Additional Tests and Notes		
Depth	Cas	sing	Water			Descripti	tion of Stra	Ld		Leg	Reduce Level	Dept	th 0	10 20 30 40	Dep	pths	od √ No.	Blows	SPT N	<425 %	%	PL %	%	Mg/m ³	kN/m ²			
					Dark grey sligh Gravel of white	tly silty grav	velly fine a	nd medd	dium SAN			- 40.0			38.6	39-	B78 S B80 S	19 50								Borehole completed at 40.0 with bentonite grout to 3.0	Om depth. m bgl.	. Backfille
*WATER	<u>+</u> R ¥ ∇	Stan Wate	ding wa	⊢ ∔ er leve		. ⊢ Res	oper seal esponse zor ower seal	ne AN	AMPLE ND EST EY	B Bulk U Und P Pisto J Disto	I disturbed disturbed sturbed son sample irbed jar stonmenta	I sample ample sample	C K	Standard penetration test Cone penetration test Permeability test	SPT N	(35) U N = SI N*12 includ	lows for ea Indisturber PT N value 0 = Total b ling seating le % passir	d sample (blows a lows/per g	blow ofter sea	ount ting) n		N N		eosph	ere Ei	- nvironmental	HOLE No. BHC14	SHEET 8 OF 8

PROJECT: Lake Lothing **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC15** Cable Percussion (shell and auger) LOGGED BY: LF CHECKED BY: SG EXCAVATION METHOD: Coordinates: SHEET 1 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 16-Jan-18 -PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth Depth' and of of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Leg Depth Blows Depth Casing Water Depths No. Mg/m³ kN/m³ Level Ν % % 20 30 MADE GROUND (Brown slightly gravelly clayey fine to 0.00 coarse sand with rootlets. Gravel of angular to 0.10 В1 subrounded fine to coarse flint) 0.25 ES J1 VOC = 0ppm 0.30 Becoming gravelly with depth 0.40 0.30 B2 MADE GROUND (Dark brown and dark orange brown sand and gravel. Gravel of angular to subangular fine 0.50 В3 to coarse flint. Sand is fine to coarse) ES 0.60 J2 VOC = 0ppm 0.70 MADE GROUND (Dark brown becoming black silty fine 0.80 and medium sand) 0.90 ES J3 VOC = 0ppm 1.00 Becoming gravelly with depth. Gravel of clinker, 1.10 flint and ash VOC = 0ppm 1.15 ES J4 Orange brown gravelly fine and medium SAND. Gravel 79 41 of angular to subangular fine to coarse flint 119 11 10 1.70 R6 1.80 ES Mag0 = DOV 2.00 Brown becoming yellow brown fine and medium SAND 50* 36 with occasional angular fine to coarse flint gravel 10 12 14 14 2.60 Brown SAND and GRAVEL. Gravel of angular to 2.60 В8 subrounded fine to coarse flint. Sand is medium. . b. 2.70 ES VOC = 0ppm .16 3 3.00 Dark yellow brown medium SAND 35 43 79 11 16 3.60 Becoming slightly clayey with depth 3.60 B10 3.70 ES J7 VOC = 0ppm 37 44 98 11 16 4.60 B12 4.70 ES J8 VOC = 0ppm 60* 37 11 13 16 10 *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count N = SPT N value (blows after seating) U Undisturbed sample K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC15** LOGGED BY: LF CHECKED BY: SG Coordinates: SHEET 2 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 16-Jan-18 -PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth Depth' and of of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows Mg/m³ kN/m³ Level Ν % % 20__30 Dark yellow brown medium SAND (continued) 5.60 B14 5.70 ES J9 VOC = 0ppm 6 23 14 33 44 6.60 Dark yellow brown slightly gravelly medium and coarse 6.60 B16 SAND. Gravel of subangular to subrounded fine to ES 6.70 J10 VOC = 0ppm coarse flint S 25 30 58 98 7.60 B18 ES 7.70 J11 VOC = 0ppm 8 25 38 79 11 11 B20 8.60 ES 8.70 J12 VOC = 0ppm 24 19 46 9.60 B22 l ES 9.70 J13 VOC = 0ppm 9.80 Yellow brown medium and coarse gravelly SAND 9.80 B23 37 24 79 129 10.60 B25 10.70 J14 VOC = 0ppm *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC15** LOGGED BY: LF CHECKED BY: SG Coordinates: SHEET 3 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 16-Jan-18 -PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth* of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows N % Mg/m³ kN/m³ % Yellow brown medium and coarse gravelly SAND 13 29 (continued) 36 911 B27 11.60 12 60* 12 16 22 12.60 B29 77* 47 10 21 296 13.50 Orange brown silty fine SAND 13.60 B31 66* 6 10 21 29 14.60 B33 64* 59 18 22 10 15.60 B35 62* 48 129 10 19 *WATER ▼ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment SHEET 3 OF 8 HOLE No. BHC15 AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC15** LOGGED BY: LF CHECKED BY: SG Coordinates: SHEET 4 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 16-Jan-18 -PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth* of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows N Mg/m³ kN/m³ Level 20 30 Orange brown silty fine SAND (continued) 16.60 B37 17-67* 6 11 20 22 17.60 B39 S 9 22 81* 21 19 18.20 10 Dark grey slightly clayey fine SAND 18.60 Dark grey silty fine SAND 18.60 B41 10 14 74* 13 20 19.60 B43 20-11 19 80* 24 26 B45 20.60 21-18 23 91* 30 20 21.60 B47 *WATER 🔻 Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment SHEET
4 OF 8
HOLE No.
BHC15 AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC15** LOGGED BY: LF CHECKED BY: SG Coordinates: SHEET 5 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 16-Jan-18 -PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth* of Гуре Description of Strata Reduced SPT 'N' Value <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows % Mg/m³ kN/m³ Ν % Dark grey silty fine SAND (continued) 44 58* 9 13 28 22.40 Dark grey CLAY 22.60 B49 23-23.60 D51 24 24.40 Dark grey coarse SAND with occasional shell fragments 24.60 B53 25-49 6 10 10 10 15 14 25.60 B55 66* 79 13 16 21 26.60 B57 27-16 29 95* 50 *WATER ▼ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC15** LOGGED BY: LF CHECKED BY: SG Coordinates: SHEET 6 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 16-Jan-18 -PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth' of and Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows N % Mg/m³ kN/m³ Level % 20 30 Dark grey coarse SAND with occasional shell fragments (continued) 27.60 B59 27.60 Sand becoming fine in grain size with depth 28 22 28 28.60 B61 29-15 50 29.60 B63 30-25 50 30.60 B65 196 75* 26 24 31.60 B67 25 38 75* 12 32.60 B69 *WATER 🔻 Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment SHEET 6 OF 8 HOLE No. BHC15 AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC15** LOGGED BY: LF CHECKED BY: SG Coordinates: SHEET 7 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 16-Jan-18 -PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth* of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows % Mg/m³ kN/m³ Level Ν % 20 30 Dark grey coarse SAND with occasional shell fragments 196 75* (continued) 35 15 33.60 B71 187 75* 27 23 34.60 B73 25 50 35.60 B75 36-75* 169 45 5 36.60 B77 25 50 37.60 B79 38 75* 223 50 *WATER 🔻 Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC15** LOGGED BY: LF CHECKED BY: SG Coordinates: SHEET 8 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 16-Jan-18 -PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth' and of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows N % Mg/m³ kN/m³ Level % 20 30 Dark grey coarse SAND with occasional shell fragments (continued) 38.60 B81 39-15 10 75* 32 18 39.60 B83 40-40.00 Borehole completed at 40.0m depth. Backfilled with bentonite grout. S 11 14 75* 21 19 10 41-42 43-*WATER \ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample N = SPT N value (blows after seating) Lower seal K Permeability test KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC17** Cable Percussion (shell and auger) LOGGED BY: JG CHECKED BY: LF EXCAVATION METHOD: Coordinates: SHEET 1 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 23-Jan-18 - 31-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth Depth' and of of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Leg Depth Depth Casing Water Depths No. Blows Mg/m³ kN/m³ Level Ν % % 20 30 0.00 TOPSOIL (Dark brown silty slightly gravelly fine sand with rootlets. Gravel of subangular to subrounded fine and medium flint) 0.20 ES В1 VOC = 12ppm (peak). Slight natural organic J1 0.40 MADE GROUND (Dark brown and black gravelly fine to B2 0.40 ES VOC = 23ppm (peak) coarse sand. Gravel of subangular fine and medium 0.50 J2 \asphalt and brick) ES 0.60 В3 VOC = 2ppm (peak) MADE GROUND (Brown slightly gravelly fine and J3 0.75 medium sand with occasional gravel of fine flint and (brick fragments) Light brown and yellow brown fine and medium SAND 1.00 B4 VOC = 6ppm (peak) with occasional fine and medium flint gravel 1.20 В6 11 9 22 23 1.60 ES J5 VOC = 8ppm (peak) 1.70 Brown and light grey mottled sandy CLAY with occasional fine flint and chalk gravel 1.80 D7 2.00 UT8 (42)2.50 VOC = 163ppm (peak). Strong natural organic 2.60 2.80 D10 3.00 B12 23 20 34 67 Δ + 20 mins 3.50 ES J7 Moderate inflow of water at 3.5m 3.60 W13 VOC = 0ppm D14 4.00 Yellow brown medium SAND with occasional fine flint 4.00 B16 12 16 23 gravel ES J8 4.50 VOC = 0ppm 23 17 24 5.00 B19 56 5.30 ES J9 VOC = 0ppm *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count N = SPT N value (blows after seating) U Undisturbed sample K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC17** Cable Percussion (shell and auger) LOGGED BY: JG CHECKED BY: LF **EXCAVATION METHOD:** Coordinates: SHEET 2 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 23-Jan-18 - 31-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth Depth' and of of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows Mg/m³ kN/m³ Level Ν % % 20__30 Yellow brown medium SAND with occasional fine flint gravel (continued) 6.00 B20 9 11 23 6.30 ES. J10 VOC = 0ppm 7.00 S B22 44 26 56 78 7.30 ES J11 VOC = 0ppm 8.00 Yellow brown gravelly medium and coarse SAND. 8.00 B24 35 24 Gravel of subangular to subrounded fine and medium 66 VOC = 0ppm 8.30 ES J12 9.00 S B25 12 7 0 12 ES J13 9.30 VOC = 0ppm ٥. 10.00 Grey brown very gravelly medium and coarse SAND. 10.00 13 B27 34 Gravel of subangular to subrounded fine and medium 43 flint and occasional coarse subrounded flint 33 10.30 ES J14 VOC = 0ppm ... D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count SPT N N = SPT N value (blows after seating) U Undisturbed sample K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC17** LOGGED BY: JG CHECKED BY: LF Coordinates: SHEET 3 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 23-Jan-18 - 31-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth Depth' and of of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows Mg/m³ kN/m³ Level Ν % % Grey brown very gravelly medium and coarse SAND. 11.00 B28 3 4 16 Gravel of subangular to subrounded fine and medium flint and occasional coarse subrounded flint 43 45 (continued) 12.00 B29 44 20 ٥٠ 44 66 13.00 C B30 23 19 3 4 5 7 14.00 Grey brown slightly silty fine SAND with occasional C B31 28 14.00 33 rounded fine flint 47 89 15.00 C B32 38 68 79 9 13 16.00 B34 29 33 5 7 7 10 D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC17** LOGGED BY: JG CHECKED BY: LF Coordinates: SHEET 4 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 23-Jan-18 - 31-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth* of and Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows N % % Mg/m³ kN/m³ Level 20 30 Grey brown slightly silty fine SAND with occasional rounded fine flint (continued) 17.00 B36 50* S 37 7 10 16 17 18.00 S B38 24 29 67 6 10 18.50 Grey fissured CLAY 19.00 UT39 (150) 19.20 Grey silty fine SAND 20.00 20-S B40 68 50* 8 10 14 18 21.00 S B42 10 14 74* 14 17 19 21.60 Grey fissured CLAY SAMPLE *WATER ▼ Standing water level PIEZOMETER Upper seal D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC17** LOGGED BY: JG CHECKED BY: LF Coordinates: SHEET 5 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 23-Jan-18 - 31-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth* of and Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows % Mg/m³ kN/m³ Ν % 20 30 Grey fissured CLAY (continued) 22.00 U46 (40)22.60 D47 1_{23.00} ²³1 B49 7 10 67* 12 14 168 24.00 24 UT50 (50)24.60 D51 125.00 ²⁵ 25.00 64* Grey silty fine SAND with occasional shell fragments B53 10 12 15 13 26.00 26 S B55 109 44 77 5 6 127.00 27 S B57 70* 7 13 14 15 174 *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC17** LOGGED BY: JG CHECKED BY: LF Coordinates: SHEET 6 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 23-Jan-18 - 31-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth* of and Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows N % % Mg/m³ kN/m³ Level 20 30 Grey silty fine SAND with occasional shell fragments (continued) 1_{28.00} ²⁸1 S B59 5 18 73* 40 10 129.00 ²⁹1 S B61 12 13 75* 15 15 20 30.00 B63 5 12 67* 30 20 31.00 ³¹ S B65 5 20 75* 25 25 32.00 S B67 7 12 69* 23 27 32.80 Grey silty gravelly fine SAND. Gravel of shell fragments and calcareous gravel *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) Lower seal K Permeability test Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

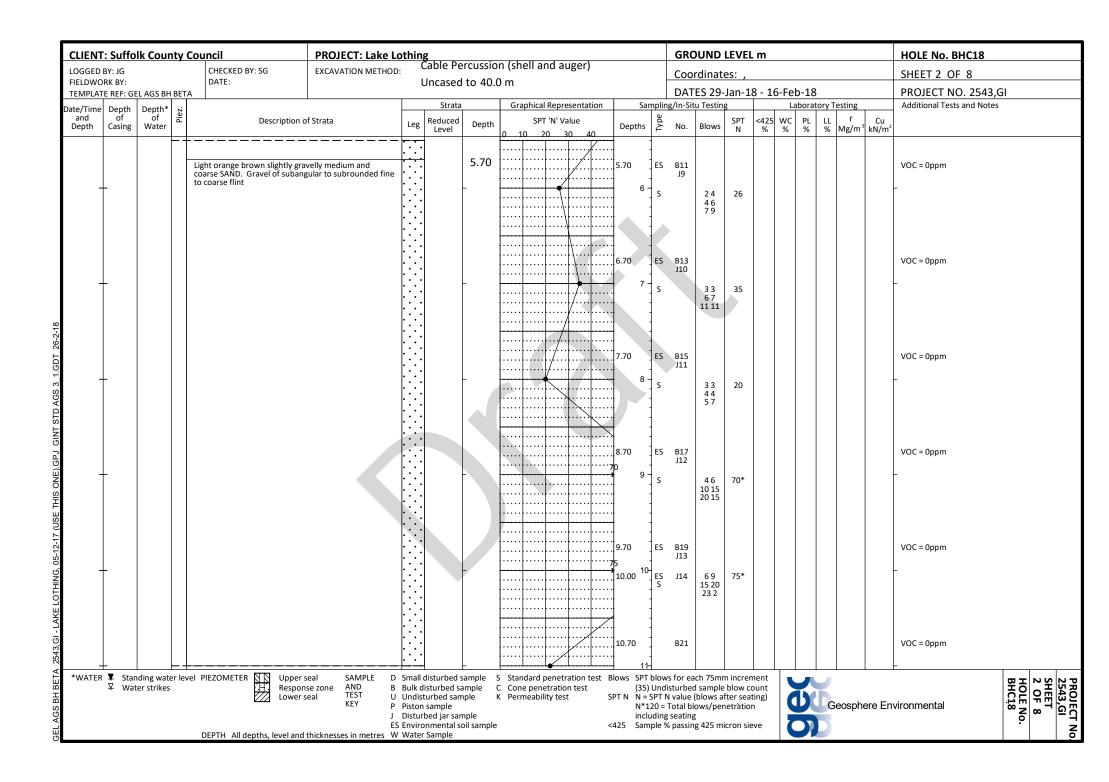
PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC17** LOGGED BY: JG CHECKED BY: LF Coordinates: SHEET 7 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 23-Jan-18 - 31-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth' and of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows Mg/m³ kN/m³ Ν % % Grey silty gravelly fine SAND. Gravel of shell fragments 33.00 S B69 4 10 64* and calcareous gravel (continued) 15 21 14 0 10 15 32 18 34.00 D71 75* ٥٠ 1_{35.00} 35 B73 12 13 75* 18 27 75* 36.00 Becoming slightly gravelly with depth B75 36.00 25 42 37.00 ³⁷⁻ S B77 7 17 74* 25 25 38.00 S B79 75* 15 10 28 22 *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC17** LOGGED BY: JG CHECKED BY: LF Coordinates: SHEET 8 OF 8 FIELDWORK BY: Uncased to 40.0 m TEMPLATE REF: GEL AGS BH BETA DATES 23-Jan-18 - 31-Jan-18 PROJECT NO. 2543.GI Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Depth of Date/Time Depth' and of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows N % Mg/m³ kN/m³ Level % 20 30 Grey silty gravelly fine SAND. Gravel of shell fragments and calcareous gravel (continued) 0 1_{39.00} ³⁹1 S B81 25 35 75* 15 o* 40.00 Borehole completed at 40.0m depth. Backfilled with bentonite grout. 25 32 75* 18 42 43-*WATER ▼ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample N = SPT N value (blows after seating) Lower seal K Permeability test KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

CLIENT	: Suffo	lk Count	y C	ouncil	PROJECT: Lake Lo	othin	g				GRO	DUND	LEVEL	m					HOLE No. BHC18
LOGGED FIELDWO				CHECKED BY: SG DATE:	EXCAVATION METHOD		Cable Pe Jncased		on (shell and auger)		Coo	rdinate	es: ,						SHEET 1 OF 8
_		EL AGS BH E	BETA				Jncased	1 to 40.0	u m		DAT	ES 29-	Jan-1	3 - 1	6-Feb-:	18			PROJECT NO. 2543,GI
Date/Time and Depth	Depth of Casing	Depth* of Water	Piez.	Description of	f Strata	Leg	Strata Reduced Level		Graphical Representation SPT 'N' Value 0 10 20 30 40	Samplin Depths 2	ng/In-Sit	tu Testing Blows	SPT N	<425 %	WC P	L LI	Testing r Mg/m	Cu kN/m²	Additional Tests and Notes
_				TOPSOIL (Brown silty slightly cla rootlets and occasional gravel o subrounded flints)	f subangular to			0.00	0.1	0 - 10 ES	J1								VOC = 0ppm
				MADE GROUND (Dark brown sil Gravel is fine and medium suba flints)	ty gravelly SAND. ngular to subrounded			0.30	0.		J2 J3								VOC = 1ppm VOC = 1ppm
_	_			Orange brown / brown slightly of SAND. Gravel is fine and mediur subrounded flints	gravelly medium fine n subangular to			1.00	0.1	7.]	B1 J4	12 35 55	18						– VOC = 0ppm
_	_			Brown very gravelly coarse SAN subangular to subrounded fine				1.70	1.	70 ES	B3 J5	37	50*						VOC = 0ppm -
_								-	2. 63		B5 J6	9 16 17 8 4 9 11 16 23	63*						VOC = 0ppm _
-	_			Grey brown slighlty silty slightly SAND. Gravel of subangular to	gravelly fine to coarse subrounded fine flint			3.50	3.	70 ES	В7 Ј7	23 57 75	24						VOC = 0ppm -
-	_							_	4.	70 ES	B9 J8	37 911 1416	60*						VOC = 0ppm -
*WATER	¥ Stai ∇ Wa	nding water ter strikes	leve	I PIEZOMETER Upper si Respons Lower si	eal AND B Eal TEST U KEY P	Bulk d Undist Piston Distur	disturbed sa listurbed san turbed san sample bed jar sar onmental si	ample nple mple		// S SPT blow (35) Und N N = SPT N N*120 = including S Sample 9	isturbe N value Total bl g seating	d sample (blows af lows/pen	blow co fter seat netration	ount ing) 1	Jec		Geosp	here En	SHEET SHEET 1 OF 8 HOLE No. BHC1.8
				DEPTH All depths, level and t				on sample	<423	Janipie 7	∘ hassili	15 423 IIII	CIUII SIE	vc	O		1		

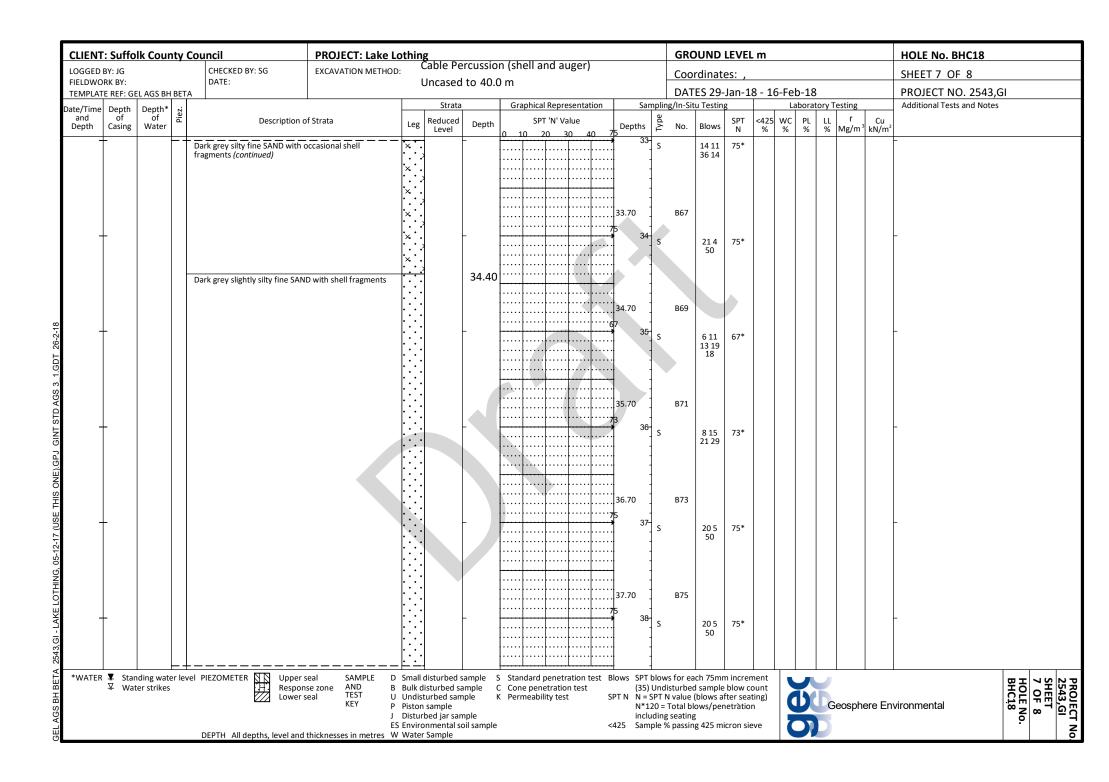


CLIENT	: Suffo	lk Count	ty C	ouncil	PROJECT: Lake Lo	othin	g		7.1.11		GRO	DUND	LEVEL	m						HOLE No. BHC18		
LOGGED				CHECKED BY: SG DATE:	EXCAVATION METHOD:	: (Cable Pe		n (shell and auger)		Coo	rdinate	es: ,							SHEET 3 OF 8		
FIELDWO TEMPLAT		EL AGS BH E	BETA				Uncased	1 10 40.0) III		DAT	ES 29-	Jan-1	3 - 1	6-Fek	-18				PROJECT NO. 2543,G	I	
Date/Time		Depth*	Piez.				Strata					tu Testing				borato	\neg			Additional Tests and Notes		
and Depth	of Casing	of Water	<u>a</u>	Description of	Strata	Leg	Reduced Level	Depth	SPT 'N' Value Depti	hs ₹	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²			
-				Brown gravelly medium and cossubangular to subrounded fine Brown SAND and GRAVEL. Grassubrounded fine and medium fand coarse.	rel of subangular to		Level	11.00	0 10 20 30 40 11.00 11.00 12.00	11- s	B23	35 55 66 28 98 99	35	76	%	76	% I	vig/m	KN/M			
S ONE).GPJ GINT STD AGS 3_1.GDT_26.2-18	_			Orange brown SAND and GRAV subangular medium and coarse	flint. Sand is medium.			13.80	14.00	14- C		2 1 2 5 7 7 7 7	21							-		
. 2543.GI - LAKE LOTHING. 05-12-17 (USE THIS.	_							-		15- S	B29	48 913 1313 37 1015 225	48 62*							-		
GEL AGS BH BETA	₹ Star ▼ Wat	nding water ter strikes	rleve	PIEZOMETER Upper since the second control of	e zone AND B eal TEST U KEY P J ES	Bulk d Undist Piston Distur Enviro	listurbed sa turbed san sample bed jar sar onmental s	ample (nple i mple	C Permeability test SPT N N N ii	35) Und N = SPT N*120 = ncludin	disturbed N value Total bl g seating	d sample (blows af lows/pen	blow co fter seat netration	unt ing) I		た ア	Ge	osphe	re Env	vironmental	HOLE No. BHC18	2543,GI SHEET 3 OF 8

CLIENT	: Suff	folk	Coun	ty C	Council	PROJECT: Lake Lo	othir	ng			(shell and auger)		GR	DUND	LEVEL	. m						HOLE No. BHC18		
LOGGED					CHECKED BY: SG DATE:	EXCAVATION METHOD	:	Cable Pe	ercussio	on ((snell and auger)		Coc	rdinat	es: ,							SHEET 4 OF 8		
FIELDWO TEMPLAT			GS BH I	ВЕТА				Uncased	1 to 40.0	.U m	m		DAT	ES 29-	Jan-1	8 - 1	6-Fe	b-18				PROJECT NO. 2543,GI		
Date/Time	Depth	n D	epth*	żz.	•			Strata	1		Graphical Representation			tu Testin	g		La	aborat	ory T	esting		Additional Tests and Notes		
and Depth	of Casing	g V	of Vater	Piez.	Description of	Strata	Leg	Reduced Level	Depth	0	SPT 'N' Value De	pths 2	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m	Cu kN/m²			
-	_				Orange brown SAND and GRAV subangular medium and coarse (continued)	EL. Gravel of flint. Sand is medium.			_		69	17- s		10 9 12 13 10 15	69*							-		
_	-				Dark grey fissured CLAY		b	• - - - - - -	17.80	0 ::	17.8	18-	B33 UT34	(57)								-		
_	_				Dark grey silty fine SAND with o	ccasional clay pockets	×	· · · · · · · · · · · · · · · · · · ·	18.80	0	18.8	19- 19- 5	B36	8 11 18 22 10	69*							-		
	_				Dark grey silty fine SAND) - - - - -	19.70		19.7 73	20- s	B38	9 14 31 19	73*							-		
_	_										20.7	21- 21- 5	B40	10 15 50	75*							-		
*WATER	▼ Sta ∇ Wa	andir /ater	ng water strikes	r leve	el PIEZOMETER Upper si Respons Lower si	e zone AND B real TEST U KEY P	Bulk of Undis Pistor	disturbed s sturbed san n sample	ample (nple k	s s c c	21.7 Standard penetration test Blows Cone penetration test Permeability test SPT N	22- SPT blo (35) Ur N = SPT N*120	disturbe N value = Total b	d sample (blows a lows/per	blow co	ount ting)	2	D)	G	eosph	ere En	- vironmental	HOLE NO. BHC18	2543,GI SHEET
					DEPTH All depths, level and t	ES	Envir	rbed jar sar onmental s er Sample		e	<425	Sample	ng seatin 9 % passii		icron sie	eve	(0	

CUENT: Suffice County Co	
Date Date	
Date/Time and Open of Garing of Water Depth of Garing of Water Description of Strata Description of Strata Depth of Garing of Water Description of Strata Description of Strata Depth of Garing of Water Depth of Garing of Water Description of Strata Depth of Garing of Water Dep	2543,GI
And Depth Casing Water Casing Water Casing	
Dark grey silty fine SAND (continued)	
Dark grey CLAY	
Dark grey CLAY 23.70 23.60 B47	
Dark grey CLAY 23.70 23.70 847	
Dark grey CLAY 23.70 23.70 847	
Dark grey CLAY 23.70 23.70 847	
24.00 24 UT48 (32)	
Dark grey silty fine SAND with occasional shell fragments 25.50 Sand becoming fine and medium with depth 25.30 25.30 25.30 25.30 25.30 25.30	
Dark grey silty fine SAND with occasional shell fragments 25.50 Sand becoming fine and medium with depth 25.50 Sand bec	
Dark grey silty fine SAND with occasional shell fragments 25.50 Sand becoming fine and medium with depth 25.50 Sand bec	
Dark grey silty fine SAND with occasional shell fragments 25.50 Sand becoming fine and medium with depth 25.50 Sand bec	
Dark grey silty fine SAND with occasional shell fragments 25.50 Sand becoming fine and medium with depth 25.50 Sand becoming fine and medium with depth (51)	
Dark grey silty fine SAND with occasional shell fragments 25.50 Sand becoming fine and medium with depth 25.50 Sand becoming fine and medium with depth (51)	
Dark grey silty fine SAND with occasional shell fragments 25.50 Sand becoming fine and medium with depth	
Dark grey silty fine SAND with occasional shell fragments 25.50 Sand becoming fine and medium with depth	
25.50 Sand becoming fine and medium with depth	
E	
S 169 75*	
x ·	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
*WATER \$\sqrt{\text{Standing water level PIEZOMETER \text{\text{N}} Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment \text{\text{\text{N}}}	
Response zone Lower seal Lower se	2543,GI SHEET 5 OF 8 HOLE No. BHC18
ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample	0 ¬

CLIENT	: Suffo	olk C	ount	y C	ouncil	PROJECT: Lake Lo	othin	ng			(shell and auger)		GROUND	LEVEL	m					HOLE No. BHC18
LOGGED					CHECKED BY: SG	EXCAVATION METHOD):	Cable Pe	ercussio	on ((shell and auger)		Coordinat	es: ,						SHEET 6 OF 8
FIELDWO TEMPLAT		SEL AG	SS BH B	ETA	DATE:			Uncased	1 to 40.0	.0 m	m		DATES 29-	Jan-1	8 - 1	.6-F	eb-18	3		PROJECT NO. 2543,GI
Date/Time	Depth	De	pth*	.z.				Strata					g/In-Situ Testin				Labora		esting	Additional Tests and Notes
and Depth	of Casing	W	of 2	Piez.	Description of	Strata	Leg	Reduced Level	Depth	n 0	SPT 'N' Value Depths	ıybe	No. Blows	SPT N	<425 %	w (PL %	LL %	r c Mg/m³ kN,	u m²
-	_				Dark grey silty fine SAND with o fragments (continued)	ccasional shell	×		-		27.70 73 28.70 28.70 29.70 29.70	s	855 8 15 16 21 13 857 11 14 23 27	73* 75*						_
-	_						×				30.70 75 31	S	B61 22 3 25 25	75*						-
-	_						× · · · · · · · · · · · · · · · · · · ·				31.70 72 32- 32.70 75 33-	S	B63 20 5 32 15	72*						
*WATER	▼ Sta ▼ Wa	anding ater st	g water rikes	leve	I PIEZOMETER Upper so Respons Lower so	e zone AND B eal TEST U KEY P J ES	Bulk o Undis Pistor Distur Enviro	disturbed sa sturbed san n sample rbed jar sar onmental s	ample (nple k mple	C C	Standard penetration test Blows SPT bl Cone penetration test (35) U Permeability test SPT N N = SP N*12C includ	ndis T N) = T ing	for each 75mr sturbed sample value (blows a otal blows/per seating passing 425 mi	blow co fter sea etratio	ount ting) n		900		eosphere	SHEET HOLE No. Environmental

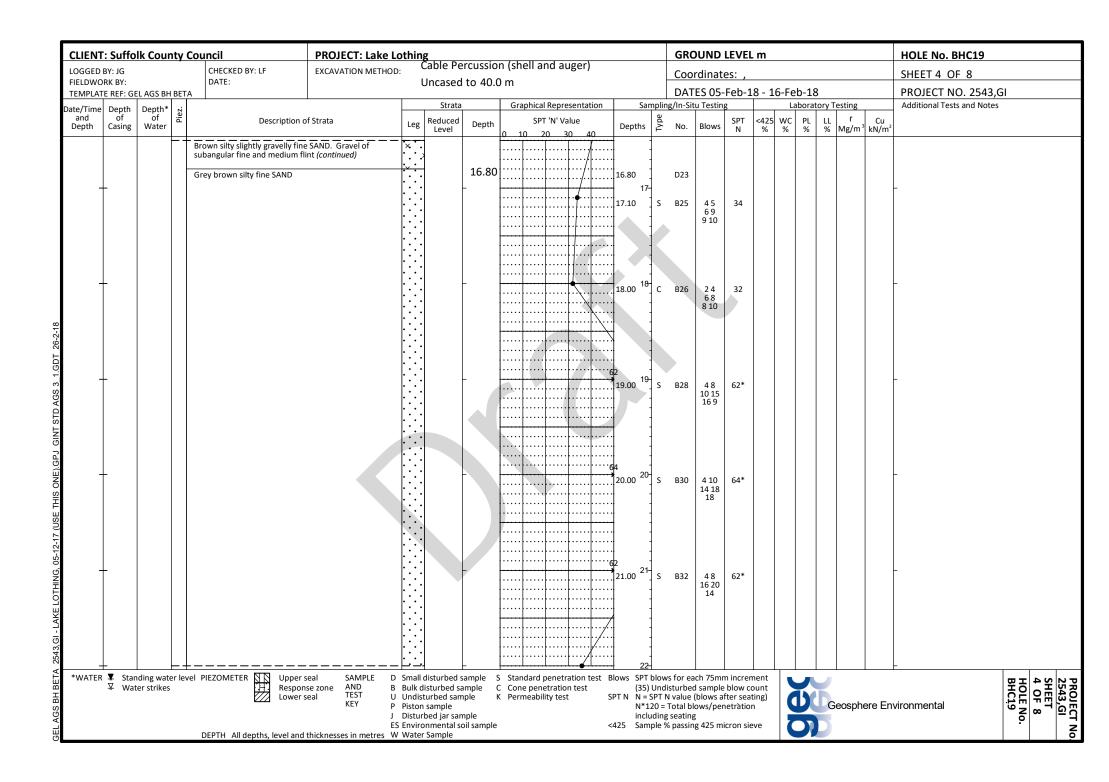


CLIENT	: Suff	olk	Coun	ty C	ouncil	PROJECT: Lake Lo	othin	ıg						GROUND	LEVEL	. m						HOLE No. BHC18	
LOGGED	BY: JG				CHECKED BY: SG	PROJECT: Lake Lo	:	Cable Pe	ercussio	n (shell a	and auger)			Coordinat	es: ,							SHEET 8 OF 8	
FIELDWO TEMPLAT		GEL A	GS BH	BETA	DATE:			Uncased	to 40.0	m				DATES 29	Jan-1	8 - 1	6-Fel	o-18				PROJECT NO. 2543,GI	
Date/Time	Depth	n De	epth*	żz.				Strata	1	Graphic	al Representation	S		/In-Situ Testin	g			borato	ory Te	esting		Additional Tests and Notes	
and Depth	of Casing	g v	of /ater	Piez.	Description o	f Strata	Leg	Reduced Level	Depth		PT 'N' Value	Depths	Туре	No. Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³ i	Cu kN/m²		
-					Dark grey slightly silty fine SANI (continued)) with shell fragments		Level	- 40.00	0 10	20 30 40	38.70	S	B77	70*	%	**	%	%	Mg/m	KN/M	Borehole completed at 40m bgl. Borehole with bentonite grout.	orehole
WATER	⊤ V Sta V Wa	andin ater s	g wate strikes	r leve	PIEZOMETER Upper s Respons Lower s	se zone AND B eal TEST U KEY P J ES	Bulk of Undis Pistor Distur Enviro	disturbed sa sturbed san n sample rbed jar sar onmental s	ample (nple i mple	C Cone per C Permeab	,	(35) SPT N N : N ind	T blows O Undist SPT N 120 = To luding s	turbed sample value (blows a otal blows/pe	blow co fter sea netratio	ount ting) n		S S S		eosphei	re Env	vironmental	SHEET 8 OF 8

			1		othing			, , , , , , , , , , , , , , , , , , ,		GRU	UND L	.EVEL	m				HOLE No. BHC19
TEMPLATE RE Date/Time Dep	DY:		CHECKED BY: LF DATE:	EXCAVATION METHOD:				on (shell and auger)		Coor	rdinate	es: ,					SHEET 1 OF 8
		AGS BH BET				Jncased	10 40.0	υ III		DAT	ES 05-F	Feb-18	3 - 16-	Feb-18			PROJECT NO. 2543,GI
	of	Depth* of Water	Description o	f Strata	Leg	Strata Reduced Level	Depth	Graphical Representation SPT 'N' Value 0 10 20 30 40	Samplin Depths 2		u Testing Blows	SPT N	<425 W	Laborator PL %	LL	r Cu Mg/m³ kN/m²	Additional Tests and Notes
+			TOPSOIL (Brown gravelly slightl with rootlets. Gravel of subang and chalk)				0.00		0 - 0.20 0.30 ES	B1 J1							VOC = 7ppm (peak)
			MADE GROUND (Dark brown g sand. Gravel of angular to subr	ounded flint and chalk)			0.40		0.50 0.60 ES	В2							VOC = 4ppm (peak)
+			Light brown slightly gravelly me Gravel of subangular to subrou	nded fine flint			0.80		0.90 1 ES	B3 J3							VOC = 10ppm (peak)
			1.20 Becoming gravelly with de Grey brown gravelly silty media occasional clay pockets. Gravel rounded fine and medium flint	m SAND with	× · · · · · · · · · · · · · · · · · · ·		1.70		1.70 C ES	B4 J4	11 33 33	12					VOC = 35ppm (peak) 5ppm (steady). No odd
			Light brown gravelly medium ai of subangular to subrounded n	nd coarse SAND. Gravel ledium and coarse flint			2.20		2.20	B6 J5	4 4 4 4 5 5	18					VOC = 3ppm (peak)
1									3.00 3 ES C	B7 J6	3 4 2 2 3 2	9					VOC = 33ppm (peak). No odour.
								7	4.00 4 ES C	B8 J7	2 2 3 4 7 7	21					VOC = 0ppm
+			Orange brown gravelly silty me angular to subrounded fine to o				⁻ 5.00	•	5.00 ⁵ ES C	B9 J8	23 45 67	22					VOC = 0ppm
*WATER \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	Stand Water	ling water le	vel PIEZOMETER Upper s Respon: Lower s	se zone AND B eal TEST U KEY P	Bulk d Undist Piston Distur	disturbed sa isturbed sa turbed sam sample bed jar san inmental so	ample (aple I		(35) Und T N N = SPT	listurbed N value (Total blo g seating	l sample l blows aft ows/pene	blow co ter seati etràtion	unt ng)	96	Geo	osphere En	SHEET 1 OF 8 HOLE No.

CLIENT	: Suffo	olk C	ount	y C	ouncil	PROJECT: Lake Lo	othin	g					GRO	DUND	LEVEL	. m					HOLE No. BHC19
LOGGED					CHECKED BY: LF	EXCAVATION METHOD:				-	shell and auger)		Coo	rdinate	es: ,						SHEET 2 OF 8
FIELDWO TEMPLAT		EL AC	S BH B	ETA	DATE:			Uncased	1 to 40.0	.U m	1			ES 05-		8 - 1	6-Feb	-18			PROJECT NO. 2543,GI
ate/Time								Strata		Gr	Graphical Representation		ling/In-Si						y Testi	ing	Additional Tests and Notes
and Depth	of Casing		of ater	Piez.	Description of		Leg	Reduced Level	Depth		SPT 'N' Value De	pths	No.	Blows	SPT N	<425 %	WC %	PL %	LL % Mg	r Cu g/m³ kN/m²	
_	_				Orange brown gravelly silty med angular to subrounded fine to co Orange brown silty fine and me occasional fine subangular flint	oarse flint (continued)	× × ×	- - - - - - - - - - - - - - - - - - -	⁻ 6.00		6.00	6-[S B10 C J9	23 45 55	19						VOC = 0ppm
-							× × ×		_		7.00	7-1	S B11 C J10	12 33 78	21						VOC = 0ppm
-	_				Brown gravelly medium SAND w brown sandy clay. Gravel of fin with occasional coarse flint	rith thin bands of grey e and medium flint	×		- 8.00		8.00	8-1	S B12 C J11	23 34 55	17						VOC = 0ppm
-	_				Brown gravelly medium SAND. fine and medium flint	Gravel of subangular	0		9.00				S B13 C J12	23 34 57	19						VOC = 0ppm
-	_						0					00 10-	S B14 C J13	3 4 5 5 5 6	21						VOC = 0ppm
*WATER	▼ Stal ▼ Wa	inding ater st	water	leve	I PIEZOMETER Upper si Respons Lower si	e zone AND B eal TEST U KEY P	Bulk of Undis Pistor	disturbed disturbed s iturbed san n sample rbed jar sai	ample (C Cor	standard penetration test Blows	(35) U N = SF N*120	ows for eandisturbe T N value T Total b	d sample (blows af lows/pen	blow co	ount ting)			Geos	sphere En	Vironmental SHEET

Brown silty slightly gravelly fine SAND. Gravef of subangular fine and medium flint	CLIENT	: Suffo	lk County	Council	PROJECT: Lake Lo	othin	g				GRC)UND I	LEVEL	m					HOLE No. BHC19		
Transfer of the Control Cont					EXCAVATION METHOD:	:			• •		Cooi	rdinate	es: ,						SHEET 3 OF 8		
Depth Came Votate Percentage Description of Strata Leg Review Service		L AGS BH BE				oncaseo	1 10 40.0	,		DAT	ES 05-	Feb-1	3 - 1	6-Feb	-18			PROJECT NO. 2543,GI			
Second Court Cou			Depth* 3						· · · · · · · · · · · · · · · · · · ·	$\overline{}$		u Testing							Additional Tests and Notes		
11.00 11.00 1 10.00 2 24 24 24 25 25 25 25			Water	Description o	f Strata	Leg	Reduced Level	Depth	Depths	Typ	No.	Blows		<425 %	WC %	PL L % 9					
	and	of	of l∺	Brown SAND and GRAVEL. Grarounded fine to coarse flint. Sa Grey brown sandy gravelly CLA subrounded to rounded mediu Orange brown sandy slightly cosubangular to rounded fine to define the define to define the define to define the define to define the define to define the define to define the define to define the define to define the define to define the define to define the define to define the define to define the define to define the define to define the define to define the define to define the define the define to define the define th	y. Gravel of m flint. Sand is medium. bbly GRAVEL. Gravel of oarse flint. Cobbles of		Reduced Level	12.80	0 10 20 30 40 Depths 11.00 1 12.00 1 12.00 1 13.00 1	1 c	B15 B16 D17 B19	24 56 67 67 610 1113 55 59 88	N 24 40 40 48	<425 %	WC %	PL S					
*WATER \$\frac{\frac}{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\frac{\fi	. 2543,GI - LAKE L	▼ Star	nding water le	evel PIEZOMETER Upper s		× · · · · · · · · · · · · · · · · · · ·			S Standard penetration test Blows SP	T blov	vs for ea	8 10 13 15 och 75mm	n increm						_	ᆓ 폰 ^I ~	25 SH
N*120 = Total blows/penetration J Disturbed jar sample N*120 = Total blows/penetration including seating	*WATER	- ***	e. suines		eal TEST U KEY P J ES	Undis Piston Distur Enviro	turbed san sample bed jar sar onmental s	nple i	K Permeability test SPT N N = N* inc	= SPT 120 = luding	N value (Total blog seating	(blows af ows/pen	ter seat etratior	ing)			Geos	sphere En	vironmental	OF & OLE No.	2543,GI SHEET



CLIENT	: Suffo	lk Co	unty	Council	PROJECT: Lake Lo	othin	ig		on (shell and auger)		GRC	UND I	LEVEL	m						HOLE No. BHC19		
LOGGED				CHECKED BY: LF	EXCAVATION METHOD	:	Cable Pe	ercussio	on (shell and auger)		Cooi	rdinate	es: ,							SHEET 5 OF 8		
FIELDWO TEMPLAT		EL AGS	BH BET.	DATE:			Uncased	1 to 40.0	U M		DAT	ES 05-	Feb-1	8 - 1	6-Fe	b-18	}			PROJECT NO. 2543,GI		
Date/Time	Depth	Dept	h* zi	•			Strata	1	Graphical Representation Sai	$\overline{}$		u Testing			Lä	borat		esting		Additional Tests and Notes		
and Depth	of Casing	of Wat	er Biez	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value Depths	Туре	No.	Blows	SPT N	<425 %	wc %	PL %	LL %	r Mg/m³	Cu kN/m²			
-				Grey brown silty fine SAND (co.	ntinued)			_	22.00 22		B37	87 88 911	36							-		
_	_							_	23.60		D36	2 8 7 8 8 9	32							-		
-	_			24.80 Becoming slightly gravell fine shell fragments	y with depth. Gravel of					S	B41	27 11 12 13 14	59*							-		
-	-			Grey slightly silty fine SAND wit	h occasional fine shells			- 26.00	75 26.00 ²⁶	S	B43	25 14 16 20	75*							-		
_	_						•	_	27.00 ²⁷	c	B44	19 6 21 29	75*							-		
*WATER	▼ Star ▼ Wat	nding w	vater lev kes	VEL PIEZOMETER Upper s Respon Lower s	se zone AND B eal TEST U KEY P J ES	Bulk of Undis Pistor Distu Envir	disturbed sa sturbed san n sample rbed jar sar onmental s	ample (nple I mple	K Permeability test SPT N N = N*1 incl	Und SPT N 20 = uding	isturbed V value (Total blog seating	d sample (blows af ows/pen	blow co ter seat etration	ount ting) n				eosphe	ere Env	vironmental	HOLE No.	SHEET

CLIENT	: Suffo	lk Co	unty	Council	PROJECT: Lake Lo	othin	ng				GRO	DUND	LEVEL	. m					HOLE No. BHC19	
LOGGED				CHECKED BY: LF	EXCAVATION METHOD):	Cable Pe	ercussio	n (shell and auger)		Coo	rdinate	es: ,						SHEET 6 OF 8	
FIELDWO TEMPLAT		EL AGS I	ВН ВЕТ.	DATE:			Uncased	to 40.0) m		DAT	ES 05-	Feb-1	.8 - 1	.6-Fe	b-18	3		PROJECT NO. 2543	,GI
ate/Time	Depth	Depth	. 1	<u>'</u>			Strata	1			ng/In-Sit					aborat		esting	Additional Tests and Not	
and Depth	of Casing	of Wate	1 % 1	Description	of Strata	Leg	Reduced Level	Depth	SPT 'N' Value Depti	rs Z	No.	Blows	SPT N	<425 %	wc %	PL %	LL %	r (Mg/m³ kN	cu /m²	
			Ħ	Grey slightly silty fine SAND w	ith occasional fine shells				0 10 20 30 40	-										
				(continued)		: . :	•			-										
										1										
-	-							_	28.00	28-	B46	25 32	75*						-	
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*WATER	¥ Star ∇ Wat	nding w ter strik	ater lev es	vel PIEZOMETER Upper Respo Lower	nse zone AND B seal TEST U KEY P	Bulk o Undis Pistor	l disturbed si disturbed san sturbed san n sample rbed jar sar	ample (K Permeability test SPT N N	35) Und I = SPT I*120 =	disturbe	d sample (blows at ows/per	blow co	ount ting)		J D		eosphere	Environmental	6 OF 8 HOLE No. BHC19
				DEPTH All depths, level and	ES	Envir	onmental s						cron sie	eve	7					' '

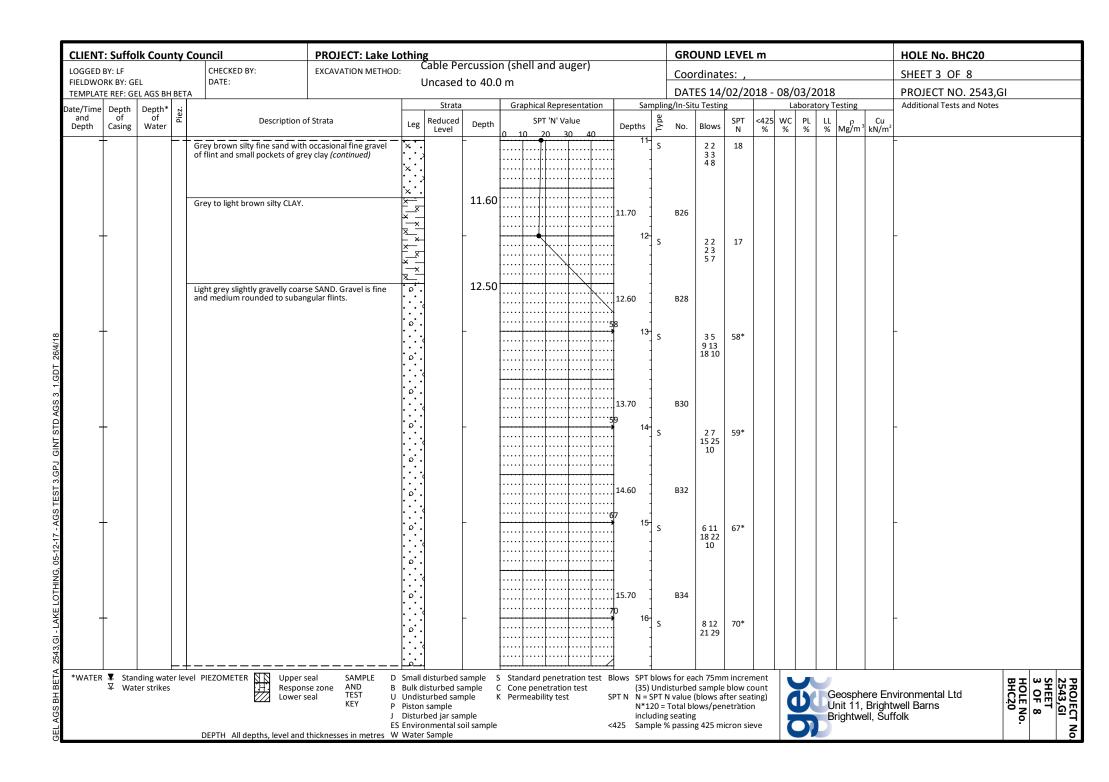
### PROJECT LOCATION AND ADDRESS OF THE DOTAL CORP. PROJECT SUFFIGURE CUSTORY Coordinates: Security Secur	CLIENT	: Suffe	olk (Count	ty C	ouncil	PROJECT: Lake Lo	othin	ıg				GRO	UND	EVEL	m						HOLE No. BHC19		
March Care							EXCAVATION METHOD	: (Cable Pe	ercussio	on (shell and auger)		Coor	dinate	es: ,							SHEET 7 OF 8		
Part Part			SEL A	GS BH E	BETA				Uncased	1 to 40.0	0 m		DATE	ES 05-	Feb-1	8 - 1	6-F	eb-18	3			PROJECT NO. 2543,GI		
Second Control Contr	Date/Time	Depth	De	pth*	ez.	•			Strata				/In-Situ	u Testing										
Givey lightly life fine SAND with occasional fine shells	and Depth	of Casing	w	of ater	, Bi	Description of	Strata	Leg	Reduced Level	Depth	10 10 20 30 40 75	Type	No.	Blows		<425 %	wc %	PL %	LL %	r Mg/m	Cu kN/m²			
	-					(continued) 36.00 Becoming slightly gravelly			Level		75 33.00 33 33.00 34 34.00 34 35.00 35 36.00 36	s	B56 B58 B60	12 13 30 20 10 15 20 30 9 14 24 26	75* 75* 73*	%	%	\(\frac{1}{2}\)	%	Mg/m	kN/m-	-		
Lower seal TEST U Undisturbed sample K Permeability test SPT N N = SPT N value (blows after seating) KEY P Piston sample N*120 = Total blows/penetration Geosphere Environmental	*WATER	▼ Sta ∇ Wa	anding	g water trikes	r leve	el PIEZOMETER Upper su Respons Lower su	e zone AND B eal TEST U	Small Bulk o	disturbed san	ample (S Standard penetration test Blows SPT b C Cone penetration test (35) L K Permeability test SPT N N = S	lows Indis	for each	31 19 ch 75mm sample blows af	n increm blow co	unt ing)				eosnh	ere Fn	vironmental	HOLE No. BHC19	SHEET OF 8

CLIENT	Γ: Suff	folk	Cour	nty C	Council	PROJECT: Lake Lo	othin	ng					G	ROUND	LEVE	. m						HOLE No. BHC19	
LOGGED	BY: JG				CHECKED BY: LF	PROJECT: Lake Lo	:	Cable Pe	ercussio	n (shell an	d auger)		Co	ordinat	es: ,							SHEET 8 OF 8	
FIELDWO TEMPLAT			GS BH	BETA	DATE:			Uncased	to 40.0) m			D	ATES 05	-Feb-1	.8 - 1	6-Fe	b-18				PROJECT NO. 2543,GI	
Date/Time	Depth	h D	epth*	żz.				Strata	1	Graphical F	epresentation	Sa	mpling/In-	Situ Testir			La	borato	ory Te			Additional Tests and Notes	
and Depth	of Casing	g \	of Vater	Piez.	Description of	Strata	Leg	Reduced Level	Depth		N' Value	Depths	y ye	. Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³k	Cu (N/m²		
-					Grey slightly silty fine SAND with (continued)	n occasional fine shells		Level	- 40.00	0 10 20	7,	5 39.00 39 4 40.00 40 41	S B6	8 169 3614	75* 74*	76	76	76	76	vig/m k	avym -	Borehole completed at 40m bgl. bentonite grout.	Backfilled wit
*WATER	R ▼ St ∇ W	tandir /ater	ng wate strikes	er lev	PIEZOMETER Upper s Respons Lower si	e zone AND B eal TEST U KEY P J ES	Bulk of Undis Pistor Distu Envir	disturbed s sturbed san n sample rbed jar san onmental s	ample (nple I mple	Cone penet Permeabilit	test SP	ows SPT (35) PT N N = N*1 incl	blows for Undistur SPT N valu 120 = Tota uding seat	oed sample ie (blows a blows/pe	e blow c ifter sea netràtio	ount ting) n	707	が以		eospher	e Env	vironmental BHC19	2543,GI SHEET 8 OF 8 HOLE No.

CLIENT	: Suffo	olk (County	Council	PROJECT: Lake Lo	othir	ng			- المطا	d = = e ::\			GRC	DUND	LEVEI	. m					HOLE No. BHC20		
LOGGED FIELDWO		EI		CHECKED BY: DATE:	EXCAVATION METHOD		Cable Pe		-		a auger)			Coo	rdinate	es: ,						SHEET 1 OF 8		
			GS BH BET.				Uncased	1 10 40.0	.U III					DAT	ES 14/	02/20)18 -	08/0	3/20	18		PROJECT NO. 2543,0	3l	
Date/Time			of Z				Strata		G	iraphical F	Representation	Sa		g/In-Sit	u Testin	g		La	orato	ry Te	sting	Additional Tests and Notes		
and Depth	of Casing		of ≝ /ater	Description of	f Strata	Leg	Reduced Level	Depth		SPT '	N' Value 30 40	Depths	Type	No.	Blows	SPT N	<425 %	WC %		LL %	ρ Cu Mg/m³ kN/r	n²		
-				MADE GROUND (FLEXIBLE SUR	FACING)	X	3	0.00			30 40	0	1									-		
				MADE GROUND (Dark grey and gravel of subangular to subrou	black slightly sandy	\bowtie	Š	0.10					-											
				\and flexible surfacing)	/		3	0.30				0.30	ES	J1								VOC = 4ppm (peak)		
				MADE GROUND (Grey brown s to subrounded fine and mediu			Š	0.50				0.50	ES	B1 J2								VOC = 0ppm		
				MADE GROUND (Orange brow medium sand. Gravel of subar	gular to rounded fine	\bowtie	Š						1	32										
_	_			flint) MADE GROUND (Multicoloured	d gravelly fine and	\otimes	3	0.85			· · · · · · · · · · · · · · · · · · ·	1	<u> </u>											
				medium sand with occasional particles and. Gravel of subangular to	ockets of compacted subrounded fine flints	\otimes	\hat{A}					1.00	ES	J3								VOC = 1ppm (peak)		
				and occasional clinker)		\bowtie	\langle				- J		S		4 6 6 6	25								
						\bowtie	\geqslant				 	1	-		67									
				Orange brown slightly silty gra	velly fine and medium	$\overset{\sim}{\bowtie}$	4	1.70			7	1.70	ES	В5								VOC = 0ppm		
				SAND. Gravel of subangular to			.]					1.80	15	J4 B6								VOC - ОРРПП		
-]	-			,	2	s	50	35	20						-		
							.]				·\···		1		5 4 6 5									
											\.	-	1											
						: :					\	-	}											
						٠,٠	1					2.80	ES	В8								VOC = 0ppm		
_	-					: :		-				3	1	J5	4.5	27						-		
						٠.							1,		45 69 1210	37								
							•					1	1		12 10									
						٥.						1	-											
							•						}											
							.]					3.80 2	ES	B10 J6								VOC = 0ppm		
-	<u> </u>						:					4	s	30	5 7 11 14	72*								
				Light brown silty fine SAND wit	h occasional fine gravel	×	Ì	4.20					1		17 18									
				of flint			1						1											
												1	}											
						×.	:					4.70	ES	B12 J7								VOC = 0ppm		
_	_			5.00 Sand becoming fine to me	dium with denth	×		_				5] s		33	24						-		
				5.00 Sand Decoming time to me	aiaiii witii deptii	·	.1						1		3 5 7 9	24								
						×:	4						1		, ,									
*\\/\TED	▼ S+¬	ndin	g water le	vel PIEZOMETER N Upper:			idisturbed :	sample 9	Ç (+	andard or	enetration test B	llows Sp	F blow	s for co	ch 75mr	n increr	nert	\vdash	_	_			T T	
WAIER	¥ Sta	ater s	g water iev trikes	Respon	se zone AND B	Bulk	disturbed sa	ample (C Co	one penet	ration test	(35) Undi	isturbed	d sample	blow c	ount			Ge	nsnhere F	nvironmental Ltd	HOLE No. BHC20	SHE 1 O
				Lowers	KEY P	Pisto	sturbed san n sample	•	K PE	ermeabilit	y test S		120 =	Total bl	ows/per					Un	it 11, Brig	htwell Barns	,20 ,20	SHEET 1 OF 8
					ES	Envir	ırbed jar sar ronmental s		e		<	inc 425 Sar		seating passin		cron sie	eve			Bri	ghtwell, Š	uffolk	5	
				DEPTH All depths, level and	thicknesses in metres W	Wate	er Sample	-																

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC20** LOGGED BY: LF CHECKED BY: Coordinates: SHEET 2 OF 8 FIELDWORK BY: GEL Uncased to 40.0 m DATES 14/02/2018 - 08/03/2018 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth' of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % ρ Cu Mg/m³ kN/m² Depth Leg Depth Casing Water Depths No. Blows % Ν % Light brown silty fine SAND with occasional fine gravel of flint (continued) ES B14 5.70 VOC = 0ppm 62* 57 9 11 15 15 6.60 ES VOC = 0ppm 6.70 B16 24 27 44 9 10 ES B18 7.70 VOC = 0ppm 24 30 66 711 8.60 Grey brown silty fine sand with occasional fine gravel 8.60 B20 VOC = 0ppm of flint and small pockets of grey clay J11 23 25 46 9.60 ES J12 VOC = 0ppm 9.70 B22 60* 37 11 13 13 13 10.60 ES B24 VOC = 0ppm J13 *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count Geosphere Environmental Ltd U Undisturbed sample N = SPT N value (blows after seating) K Permeability test Lower seal KEY Unit 11, Brightwell Barns P Piston sample N*120 = Total blows/penetration Brightwell, Suffolk J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample



PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC20** LOGGED BY: LF CHECKED BY: Coordinates: SHEET 4 OF 8 FIELDWORK BY: GEL Uncased to 40.0 m DATES 14/02/2018 - 08/03/2018 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth' of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % ρ Cu Mg/m³ kN/m² Depth Leg Depth Casing Water Depths No. Blows % Ν % Light grey slightly gravelly coarse SAND. Gravel is fine and medium rounded to subangular flints. (continued) 16.70 B36 45 23 46 67 17.50 Dark grey slightly silty/clayey fine SAND. 17.60 B38 35 25 5 7 67 18.60 Dark grey fine slightly silty SAND, with occasional shell 18.70 B40 196 75* 22 28 19.70 B42 214 75* 20 25 20.70 B44 12 13 75* 26 24 21.70 B46 D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count Geosphere Environmental Ltd U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal KEY Unit 11, Brightwell Barns P Piston sample N*120 = Total blows/penetration Brightwell, Suffolk J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

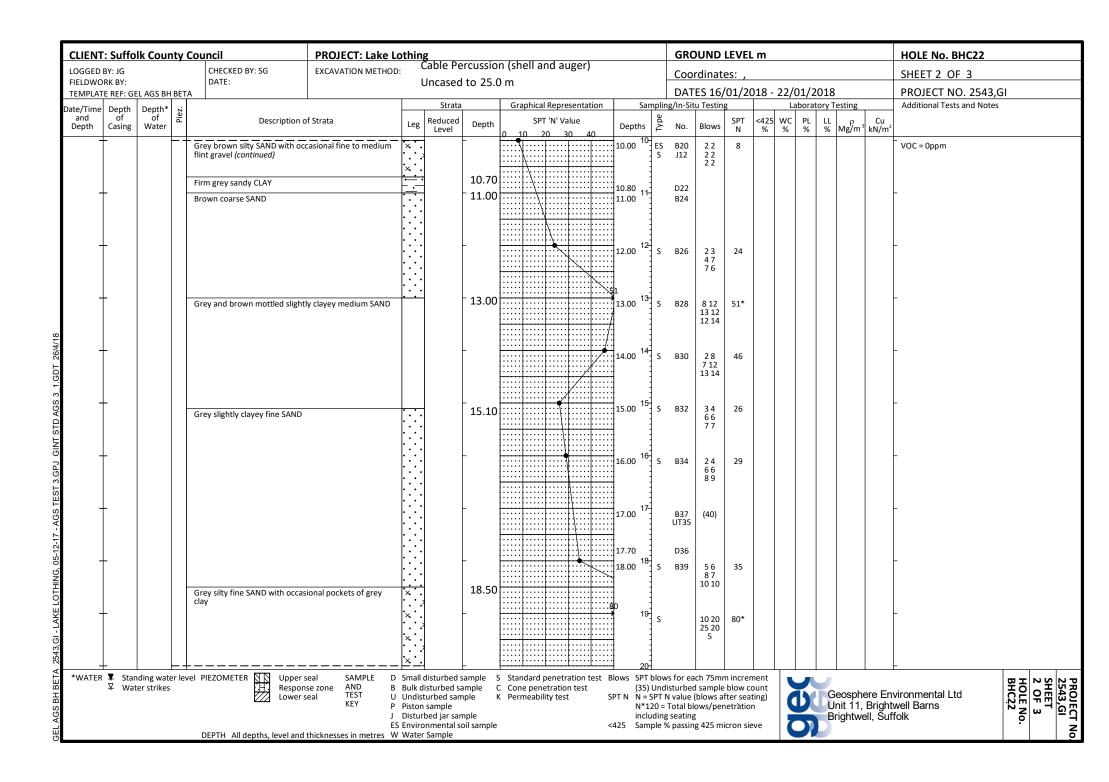
CLIENT	Γ: Suff	folk	Coun	ty C	ouncil	PROJECT: Lake Lo	othin	g							GRC	DUND	LEVEL	. m						HOLE No. BHC20		
LOGGED					CHECKED BY:	EXCAVATION METHOD	: (Cable Pe	ercussio	n (st	iell and	auger)			Coo	rdinate	es: ,							SHEET 5 OF 8		
TEMPLAT			AGS BH	BETA	DATE:			Uncased	10 40.0	וו ע					DAT	ES 14/	02/20)18 -	08/0	3/20)18		T	PROJECT NO. 2543,	GI	
Date/Time	Depth	h [epth*	ez.	•			Strata		Gr	aphical Rep	resentation			g/In-Sit	u Testin	3			borato	$\vec{}$			Additional Tests and Note	i	
and Depth	of Casing	ıg ,	of Water	Piez.	Description of	f Strata	Leg	Reduced Level	Depth		SPT 'N'		Depths	Туре	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	ρ Mg/m³	Cu kN/m²			
-	ŧ			=†	Dark grey fine slightly silty SAN	D, with occasional shell	×.		-	0	10 20	30 40	2:	2 S		169	75*							=		
					fragments. (continued)			 						-		22 28										
							×							1												
				F	Dark grey CLAY		Ħ	1	22.50					1												
							-				·····		22.60	}	B48											
														-												
-	Ť						-						23.00	7	UT49								Ī	-		
							_]				:: :::::		1												
				F	Dark grey coarse slightly shelly	SAND.	 		23.40		·····		·· ·	1												
											·····			+												
							· : · :						23.80]	B51											
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	<u> </u>		-	_+			<u></u>	<u> </u>			<u> </u>			1		<u> </u>										
WATER	R ¥ St ∇ W	tandi Vater	ng wate strikes	er leve	PIEZOMETER Upper: Respon Lower:	se zone AND B eal TEST U KEY P J ES	Bulk of Undis Pistor Distur Enviro	disturbed sa sturbed san n sample rbed jar sar onmental s	ample (nple k nple	C Coi C Per	ndard pend ne penetra meability t		(35 SPT N N = N) Undi: SPT N 120 = 1 luding	sturbed I value (Total bl seating	d sample (blows at lows/pen	blow co fter seat etration	ount ting) n	707)))	Un	it 11. I	ere Env Brightv II, Suff	vironmental Ltd vell Barns olk	HOLE No. BHC20	SHEET 5 OF 8

CLIENT	Γ: Suffo	lk Cou	nty C	ouncil	PROJECT: Lake Lo	thin	g		<i>.</i>					GRO	UND	LEVEL	. m						HOLE No. BHC20		
LOGGED				CHECKED BY:	EXCAVATION METHOD:	. '	Cable Pe	ercussio	on (sh	nell and	auger)			Cooi	rdinate	es: ,							SHEET 6 OF 8		
	ORK BY: GE TE REF: GE		н вета	DATE:			Uncased	to 40.	.U m						ES 14/)18 -	08/0	3/20)18			PROJECT NO. 2543,0	 SI	
Date/Time		Depth*					Strata	1	Gr	aphical Re	presentation	Sa			u Testin	g		La	borato	ry Tes			Additional Tests and Notes		
and Depth	of Casing	of Water	Pie	Description of	f Strata	Leg	Reduced Level	Depth			l' Value	Depths	Type	No.	Blows	SPT N	<425 %	wc %	PL %	LL %	ρ Mg/m³	Cu kN/m²			
-				Dark grey coarse slightly shelly s	SAND. (continued)		Level	-		10 20		27.70 1 28.70 5 29.70	S	B59 B61 B63	22 3 22 24 16 9 50	71*	76	%	70	96 1	vig/iii	RN/M			
- -				Dark grey silty fine SAND with sl	nelly fragments.	X		-				30.70 5 34 31.70 5 32 32.70 5 33	2 S	B65	25 42 8 17 8 31 19	75* 75*							-		
WATER	R ▼ Stan ▼ Wat	iding wat er strikes	er leve	PI PIEZOMETER Upper so Respons Lower so DEPTH All depths, level and t	e zone AND B eal TEST U KEY P J ES	Bulk of Undis Pistor Distur Enviro	disturbed san sturbed san n sample rbed jar sar onmental s	ample nple mple	C Cor K Per	ndard per ne penetra meability	test S	(35) PTN N = N:) Undi SPT N 120 = 1 luding	sturbed I value (Total blo seating	d sample (blows at ows/per	blow co fter sea netration	ount ting) n	1	が対	Uni	it 11.	ere En Bright ell, Suf	vironmental Ltd well Barns folk	HOLE No. BHC20	2543,GI SHEET 6 OF 8

CLIENT	<u>T: Տւ</u>	uffol	k Cou	ınty	Council	PROJECT: Lake	Lothi	ng				GRO	DUND I	LEVEL	m						HOLE No. BHC20		
LOGGED					CHECKED BY:	EXCAVATION METHO	D:	Cable Pe	ercussio	on (shell and auger)		Coo	rdinate	es: ,							SHEET 7 OF 8		
TEMPLAT				BH BET.	DATE:			Uncased	1 to 40.0	.u m			ES 14/)18 -	08/	/03/2	2018			PROJECT NO. 2543,0	 il	
Date/Time	e De	epth	Depth	. 1				Strata				ng/In-Sit	u Testing						esting		Additional Tests and Notes		
and Depth	0	of sing	of Wate	ا څا ا	Description	n of Strata	Leg	Reduced Level	Depth		Type	No.	Blows	SPT N	<425 %	wc %	PL %	LL %	ρ Mg/m³	Cu kN/m²			
Depth -	Cas	sing	Wate		Dark grey silty fine SAND w (continued)		Leg	Level 1	Depth	33.70 33.70 34.70 35.70 36.70 37.70	S \$\frac{1}{5} \simes S \$	B71 B73 B75	18 7 24 26 22 3 28 22 15 10 31 19 17 8 25 25 22 3 27 23		%	%	%	%	Mg/m ³	kN/m²			
*WATEF	R ₹ ∑	Stand	ling wa	ater leves	Res	oonse zone AND E er seal TEST U KEY F	B Bulk U Undi P Pisto J Distu	l disturbed si disturbed san in sample irbed jar sar ronmental s	ample (nple I nple	K Permeability test SPT N N N in	5) Und = SPT 120 = cludin	disturbed N value Total bl g seating	d sample (blows af lows/pen	blow co ter seat etration	ount ing) n	7	D	_ D.	eosphe nit 11, rightwe	ere En Bright	vironmental Ltd well Barns folk	7 OF 8 HOLE No. BHC20	SHEET

CLIENT	Γ: Su	ıffoll	(Cou	nty (Council	PROJECT: Lake Lo	othin	g		, .					GRO	UND	LEVEL	. m						HOLE No. BHC20		
LOGGED					CHECKED BY:	EXCAVATION METHOD	:	Cable Pe	ercussio	on (st	hell and a	uger)			Coor	dinate	es: ,							SHEET 8 OF 8		
FIELDWO TEMPLAT				I BETA	DATE:			Uncased	40.0	u m						ES 14/)18 -						PROJECT NO. 2543,G	il	
Date/Time	Dep	oth	Depth*	Piez.				Strata	1	Gr	raphical Repr	esentation	,		g/In-Situ	u Testing	3			borat	ory Te	esting		Additional Tests and Notes		
and Depth	Casi	t ing	of Water	ä	Description of	f Strata	Leg	Reduced Level	Depth		SPT 'N' V		Depth	rype s	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	Mg/m³ k	Cu (N/m²			
-					Dark grey silty fine SAND with si (continued)	nelly fragments.	×	Level	- 40.00		10 20	77	38.70	39- S 40- S 33- 33- 33- 33- 33- 33- 33- 33- 33-	B81	18 7 32 18	75*		70	70	70	<u>6</u> / k	ssylli -			
	<u>+</u> R ¥ ∑	Stand Wate	ing wat r strikes	<u>⊢</u> + er leve	Upper s Respons Lower si	te zone AND B real TEST U KEY P J ES	Bulk of Undis Pistor Distu Envir	disturbed s sturbed san n sample rbed jar san onmental s	ample (nple I mple	C Cor K Per	andard penet ne penetratic rmeability tes	n test t S	lows SI (3 PTN N N in	5) Undi = SPT N *120 = 1 cluding	sturbed I value (Total blo seating	l sample blows af ows/pen	blow co fter sea etration	ount ting) n		がい	Ur	eospher nit 11, B ightwell	Brightv	- vironmental Ltd well Barns olk	HOLE No. BHC20	SHEET 8 OF 8

CLIENT	: Suffo	olk Co	ounty (Council	PROJECT: Lake Lo	othiı	ng			/ala all a sa di a			GRC	DUND	LEVEL	. m					HOLE No. BHC22	
LOGGED				CHECKED BY: SG DATE:	EXCAVATION METHOD					(shell and auger)			Coo	rdinate	es: ,						SHEET 1 OF 3	
FIELDWO TEMPLAT		SEL AGS	S BH BET				Uncased	10 25.0	.0 m	TI			DAT	ES 16/	01/20)18 -	22/0	1/20:	18		PROJECT NO. 2543,GI	
ate/Time							Strata		(Graphical Representation	Sa		g/In-Sit	u Testing	Į.		Lak	orator	y Tes	sting	Additional Tests and Notes	
and Depth	of Casing	Wat	ter 🚡	Description of	of Strata	Leg	Reduced Level	Depth		SPT 'N' Value	Depths	Туре	No.	Blows	SPT N	<425 %	WC %	PL I	L % N	ρ Cu /lg/m³ kN/m²		
_	_		_ -	FLEXIBLE SURFACING		X	X .	0.00		10 20 30 40	0	+									-	
				MADE GROUND (Brown gravel and medium brick, flint and fle			X	0.15		0.	20	ES	B1 J1								VOC = 53ppm (peak)	
				fragments)	Aibie surracing	\otimes	\otimes			0.	50	ES	B2 J2								VOC = 98ppm (peak)	
-	_					\bowtie	\mathbb{X}	1 10			1	-	32								-	
				Orange brown slightly clayey fi with occasional fine and mediu	ne and medium SAND ım flint gravel			1.10	:::	7 1.	20	ES S	B4 J3	12	12						VOC = 6ppm (peak)	
				Orange brown clayey fine SAN	D	· :-	<u>.</u>	1.70	T	/]	13	23 34								
-	-			Orange brown clayey fille SAN	Ь	-:-		-			00 2	ES	J4	(17)							VOC = 2ppm (peak)	
						<u> </u>	-			2.		1 2	UT5	(1)							Zpp (peak)	
						-:-	<u>.</u>		::1	2.	60]	D6									
-	_					<u> </u>	<u>:</u>	-	::{	3	00 3	+ FS	B8	00	4						VOC = 1ppm (peak)	
							<u>-</u>		:::	3.	00	ES S	B8 J5	11 11	·						Too Ippiii (peak)	
						-:-	<u>:</u>]										
-	-					.÷	<u>-</u>	-			00 4	ES	B10	11	11						VOC = 0ppm	
						-:-	-		:::	4.	00	s	J6	22							voc - оррии	
				Brown silty SAND with occasion clay	nal thin bands of grey		-	4.50	:::	<u></u>		1										
-	-			5.00 Becoming grey brown wit	h denth			-	1		on 5	ES	B12	11	6						VOC = 0ppm	
				5.00 Becoming grey brown wit	писрип	:::	•				00	s	J7	11 22	O						VOC - оррии	
									1			1		22								
_	_					: :	•	_			6	=	B14	23	29						VOC = 0ppm	
						.:.				6.	00	S	J8	67 88	29						VOC - υρριτι	
						: :	•					1										
_	-							_		7.	7	1.	D4.5		-							
							•				00	ES	B15 J9	11 21	7						VOC = 0ppm	
									1:::			1		22								
_	_							_	1:::	:: :: :: ::::: ::::: :::::: :::::: :::::	8	1	546								- 100	
							.]			8.	00	ES	B16 J10	11	6						VOC = 0ppm	
												-		22								
	_					•	_	9.00			9	1									-	
				Grey brown silty SAND with oc flint gravel	casional fine to medium	×	;	9.00		9.	00	ES	B18 J11	23 47	26						VOC = 0ppm	
						×				l/.lll		}		78								
	_					· <u>·</u> ·		_			10	H H									-	
*WATER	¥ Sta ∇ Wa	inding v	water lev	vel PIEZOMETER Upper s Respon Lower s						Standard penetration test Blov											무필니	· ċ
	÷ vva	ater Stři	ikes	Lowers	seal TEST U	Undi	disturbed sam			Cone penetration test Permeability test SPT	N N =	SPT N	I value (d sample (blows af	ter seat	ting)		Y			vironmental Ltd well Barns folk BHC22 8	SHEET
					j	Distu	n sample Irbed jar san				incl	luding	seating							t 11, Bright ghtwell, Suf	folk	, ⊣
				DEPTH All depths, level and			ronmental so er Sample	oil sample	e	<42	5 San	nple %	passin	g 425 mi	cron sie	eve				- '		



CLIEN	T: Su	ıffolk	Cour	nty C	ouncil	PROJECT: Lake L	.othir	ng					GI	ROUND	LEVE	L m					HOLE No. BHC22		
LOGGED					CHECKED BY: SG	EXCAVATION METHOD	D:	Cable Pe	ercussio	on (shell a	nd auger)		Co	ordina	tes: ,						SHEET 3 OF 3		
FIELDW! TEMPLA			AGS BH	I BETA	DATE:			Uncased	1 to 25.	.0 m			DA	ATES 16	/01/20	018 -	22/0	01/20	18		PROJECT NO. 2543,	GI	
Date/Time	e Dep	pth [Depth*	Piez.				Strata		Graphica	l Representation	Sa	mpling/In-	-Situ Testii	ng		La	borato			Additional Tests and Notes	;	
and Depth	Casi	ing	of Water	ä	Description of	Strata	Leg	Reduced Level	Depth		T 'N' Value	Depths	y No	. Blows	SPT N	<425 %	WC %	PL %	LL % M	ρ Cu g/m³ kN/r	m²		
-LAKE LOTHING, 05-12-17 - AGS TEST 3.GPJ GINTSTD AGS 3_1.GDT 26/4/18	Casi	ing .	water		Grey silty fine SAND with occasi clay (continued)		X	Level	- 25.00	0 10	20 30 40	26 25 26 26 25 26 26 26 26 26 26 26 26 26 26 26 26 26	}	. Blows	N	%	%	%	% M	g/m³ kN/r	n²		
GEL AGS BH BE LA 2543, GI	R ¥ ∇	Standi Water	ng wate strikes	er leve	PIEZOMETER Upper s. Respons Lower s.	e zone AND B eal TEST U KEY P J E	Bulk of Undis Pistor Distu	disturbed sa sturbed san n sample rbed jar sar onmental s	ample nple mple	S Standard C Cone pen K Permeabi	penetration test BI etration test lity test SF	(35) PTN N = N*: incl		bed sampl ue (blows i I blows/pe ting	e blow c after sea netratio	ount iting) in		מנ	Unit	sphere E 11, Brig htwell, S	Environmental Ltd htwell Barns uffolk	HOLE No. BHC22	2543,GI SHEET 3 OF 3

CLIENT	: Suffe	olk C	ounty	Council	PROJECT: Lake Lo	othin	g Salah S		. (-la-II - a-d -		GRO	DUND	LEVEL	m						HOLE No. BHC23		
OGGED				CHECKED BY: SG DATE:	EXCAVATION METHOD		Cable Pe Uncased		n (shell and auger)		Coo	rdinat	es: ,							SHEET 1 OF 3		
TELDWO		GEL AG	S BH BET.				uncased	1 (0 15.0	u m		DAT	ES 26-	Feb-1	8 - 2	7-Fe	eb-18	3			PROJECT NO. 2543,0	SI	
te/Time	Depth	Dep					Strata	1	Graphical Representation			tu Testin	g				ory T	esting		Additional Tests and Notes		
and Depth	of Casing		of ≝ ater	Description of	of Strata	Leg	Reduced Level	Depth	SPT 'N' Value De	pths 2	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²			
_	_			TOPSOIL (Dark brown silty fine occasional flint gravel)	and medium sand with			0.00		0 -												
									0.30	D ES	B1 J1									VOC = 0ppm		
=	_			MADE GROUND (Dark brown g sand with occasional pockets o black sand and occasional cobl of angular to subrounded fine and occasional brick)	ravelly fine to coarse f orange brown and bles of concrete. Gravel to coarse flint, concrete			0.60	0.70)	B2 J2									VOC = 1ppm (peak) -		
				Orange brown fine and medius rounded flint	n SAND with occasional			1.20	1.20	,] _c	D3 B4 J3	12 22 23	9							VOC = 2ppm (peak)		
_	_			Orange brown slightly clayey fi with occasional pale grey mott	ling and bands of clay			2.00	2.00	2 s	В6	12 23 33	11							-		
				2.20 Bands of clay becoming m	ore frequent with depth				2.30) ES	J4	33								VOC = 1ppm (peak)		
_	_								3.30]	B8 J5	11 33 47	17							- VOC = 2ppm (peak)		
_	_			Orange brown silty fine and moccasional fine flint gravel	edium SAND with	×		- 4.00	4.30]	B10 J6	67 914 2115	72*							- VOC = 1ppm (peak)		
_	_					×		_	5.00	}	B12 J7	12 910 1213	44							– VOC = 1ppm (peak)		
WATER	¥ Sta ∑ Wa			vel PIEZOMETER Upper:	se zone AND B TEST U KEY P	Bulk o Undis Pistor Distur	listurbed sa turbed san I sample bed jar sar	ample (nple I mple	S Standard penetration test Blows C Cone penetration test K Permeability test SPT N	(35) Und N = SPT N*120 = including	listurbe N value Total b g seatin	d sample (blows at lows/per g	blow co fter sea netration	ount ting) n		D.	G	eosph	ere En	vironmental	HOLE No. BHC23	SHEET 1 OF 3
				DEPTH All depths, level and			onmental se r Sample	oil sample	<425	Sample	% passir	ng 425 mi	icron sie	eve							•	

CLIENT	: Suffo	olk C	ounty	Council	PROJECT: Lake Lo	othin	ıg			71 11 1		GRO	DUND	LEVEL	. m					HOLE No. BHC23	3
LOGGED				CHECKED BY: SG	PROJECT: Lake Lo):	Cable Pe	ercussio	on (s	(shell and auger)		Coo	rdinate	es: ,						SHEET 2 OF 3	
FIELDWO TEMPLAT		EL AG	S BH BET	DATE:			Uncased	ι το 15.0	.u m	m		DAT	ES 26-	Feb-1	8 - 2	7-Fe	 b-18			PROJECT NO. 25	43,GI
ate/Time	Depth	Dep			•		Strata	ì	G	Graphical Representation		ing/In-Si				La	borate	ory Te	esting	Additional Tests and N	
and Depth	of Casing	0	oth* zight of zight eter	Description o	of Strata	Leg	Reduced Level	Depth		SPT 'N' Value Del	oths 2	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³ ki	Cu N/m²	
-	-			Orange brown silty fine and m occasional fine flint gravel (con	tinued)	×		- 6.00		71 6.30 7.00 7.30	7 - S	B15	8 13 12 15 16 7	71*						- VOC = 0ppm - VOC = 0ppm	
-	-									8.00		B17	10 14 58	18						- VOC = 0ppm	
_	-			9.80 - 10.20 Band of grey clay						9.00	ES	5 J11	2 2 5 7 10 13	35						VOC = 0ppm	
	-									10.5	o 10] s	D20 B22	26 814 1312	47						VOC = 1ppm (peak)	
*WATER	¥ Star ∇ Wa	nding iter st	water le rikes	vel PIEZOMETER Upper:	se zone AND B seal TEST U KEY P	Bulk o Undis Pistor Distu	disturbed sisturbed sarurbed sarurbed sarurbed sarurbed jar saronmental s	ample (nple i mple	C Co K Pe	·	SPT blo (35) Un N = SPT N*120 includir	ws for eadisturbed N value Total blog seating % passir	d sample (blows af ows/pen	blow co ter seat etràtion	ount ting) n				eosphere	Environmental	2 OF 3 HOLE No. BHC23

CLIENT	Γ: Suff	folk	Count	ty C	ouncil	PROJECT: Lake Lo	othin	g		7.1.11	(GROUND	LEVEI	. m						HOLE No. BHC23		
LOGGED					CHECKED BY: SG	EXCAVATION METHOD:	: (Cable Pe		on (shell and auger)		Coordinate	es: ,							SHEET 3 OF 3		
FIELDWC TEMPLAT			AGS BH E	ВЕТА	DATE:		l	Uncased	to 15.0	U M		DATES 26-	Feb-1	.8 - 2	7-Fe	b-18	 3			PROJECT NO. 2543,G	1	
Date/Time	Depth							Strata	I		ing/	In-Situ Testing			La	borat		esting		Additional Tests and Notes		
and Depth	of Casing	g V	of Vater	Piez.	Description of	Strata	Leg	Reduced Level	Depth		. 1	No. Blows	SPT N	<425 %	wc %	PL %	LL %	r Mg/m³	Cu kN/m²			
Depth -	Casing	g V	Vater		Yellow brown silty fine and med 11.00 Becoming grey brown wit Yellow brown silty medium and occasional dark orange brown srounded flint Grey CLAY Grey brown silty fine and medium and m	lium SAND (continued) h depth coarse SAND with and pockets and	X X X X X X X X X X	Level	12.60 - 13.00	12.80 13 13 13 14.00 14 5 15 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		No. Blows 324 13 67 89 326 36 711 1214 331 56 711 1214 22 47 911	N 30 44 44 44 31	%	%	%	%	Mg/m ³	kN/m²			
*WATER	R ¥ St ☑ W	tandir Vater	ng water strikes	r leve	PIEZOMETER Upper so Respons Lower so	te zone AND B TEST U KEY P J ES	Bulk d Undis Piston Distur Enviro	disturbed sa sturbed san n sample rbed jar sar onmental s	ample (nple i nple	K Permeability test SPT N N = SP N*120 includi	disti N v = To ng se	urbed sample alue (blows at tal blows/pen eating	blow contraction blow c	ount ting) n	-	מט	Ge	eosphe	ere En	vironmental	HOLE No. BHC23	2543,GI SHEET 3 OF 3

PROJECT: Lake Lothing **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC24** Cable Percussion (shell and auger) LOGGED BY: LF CHECKED BY: EXCAVATION METHOD: Coordinates: SHEET 1 OF 3 FIELDWORK BY: GEL Uncased to 15.0 m DATES 14/02/2018 - 23/02/2018 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth Depth' of of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % ρ Cu Mg/m³ kN/m² Leg Depth Depth Casing Water Depths No. Blows Level Ν % % 20__30 0.00 CONCRETE (Pale grey, no rebar) Standpipe installed at 0m 0.15 MADE GROUND (Intact bricks and cobbles of brick) 0.23 0.25 J1 MADE GROUND (Orange brown and dark orange Standpipe installed at 0.1m brown silty gravelly fine to coarse sand with occasional pockets of black / dark brown silty sand VOC = 1ppm (peak) VOC = 1ppm (peak) ES J2 0.35 Becoming grey brown in colour with depth 0.50-В 1 0.60 MADE GROUND (Black silty slightly gravelly fine and medium sand with moderate natural organic odour. 0.70 Gravel of angular to subrounded fine and medium flint and clinker) 1.00 ES VOC = 1ppm (peak) Mag0 = DOV 1.50 ES 1.90 Grey brown silty slightly gravelly fine and medium SAND with weak natural organic odour to 2.5m. Gravel of subangular to rounded fine flint. 2.10 VOC = 2ppm (peak) 6 ĒS J5 2.50 8 VOC = 2ppm (peak) l ES 16 3 3.50 10 VOC = 1ppm (peak) ES J7 VOC = 5ppm (peak) 4.50 12 ĒS J8 5 *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count Geosphere Environmental Ltd U Undisturbed sample N = SPT N value (blows after seating) K Permeability test Lower seal KEY Unit 11, Brightwell Barns P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating Brightwell, Suffolk ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

CLIEN	T: Suffo	olk Co	ounty	/ Co	uncil	PROJECT: Lake Lo	othin	ıg							GRC	DUND	LEVE	L m						HOLE No. BHC24			
LOGGED					CHECKED BY:	EXCAVATION METHOD):	Cable Pe	ercussio	on (sh	ell and	auger)			Coo	rdinat	es: ,							SHEET 2 OF 3			
	ORK BY: G TE REF: G		BH BE	TA	DATE:			Uncased	to 15.	.0 m					DAT	ES 14/	/02/2	018 -	23/0)2/20)18			PROJECT NO. 2543,0	SI .		
Date/Time			th* s					Strata		Gra		epresentation	Sa	т-		tu Testin	g		La	borato	ory Te	sting		Additional Tests and Notes			
and Depth	Casing	Wat	ter 🗟		Description of	Strata	Leg	Reduced Level	Depth		SPT 'N 0 20	I' Value 30 40	Depths	Type	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	ρ Mg/m³	Cu kN/m²				
				Li	ght grey brown silty fine SAND		×	· >>	5.50				5.50 6 -	B ES	14 J9									VOC = 3ppm (peak)			
	_						×	<i>></i>	_				6.50	B ES	16 J10									VOC = 1ppm (peak)			
							× · · · × · · · × · · · × · · · · · · ·		_				7.50	B ES	18 J11									VOC = 2ppm (peak)			
				Li _i SA	ght brown fret slightly silty slig AND.	htly gravelly medium	× · · · · · · · · · · · · · · · · · · ·		8.10				8.50	B ES	20 J12									VOC = 2ppm (peak) / CO = 4	lppm (pe	ak)	
							× · · · · · · · · · · · · · · · · · · ·		_				9.50		22 J13									VOC = 1ppm (peak)			
							× × × · · ·						10.50	В	J14 24									VOC = 1ppm (peak) / CO = 4	₊ppm (pe	ak)	
*WATE	+ R ▼ Sta ∇ Wa	l Inding v ater stri	water le		PIEZOMETER Upper se Respons Lower se	e zone AND B ral TEST U KEY P J ES	Bulk o Undis Pistor Distur Enviro	disturbed sa sturbed sam n sample rbed jar san onmental so	ample nple nple	C Con K Perr			(35) PTN N = N*1	blows Undis SPT N 20 = T	sturbed value (Fotal blo seating	d sample (blows a lows/per	e blow of fter sea netratio	count ating) on		N N	Un	it 11.	ere En Bright	F vironmental Ltd well Barns folk	HOLE No. BHC24	SHEET 2 OF 3	PROJECT NO
					DEPTH All depths, level and the									, , , , ,	,	J		-									

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC24** LOGGED BY: LF CHECKED BY: Coordinates: SHEET 3 OF 3 FIELDWORK BY: GEL Uncased to 15.0 m DATES 14/02/2018 - 23/02/2018 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Depth Date/Time Depth' of of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % ρ Cu Mg/m³ kN/m² Depth Leg Depth Casing Water Depths No. Blows % Ν % 20 30 Light brown fret slightly silty slightly gravelly medium SAND. (continued) 11.30 Brown slightly gravelly medium SAND. Gravel is fine subangular flints. ×__x 11.50 26 12.10 Grey silty CLAY 12.30 Grey silty fine SAND. 12.50 B 29 13.00 Brown grey silty SAND with occasional fine subangular flint gravel 13.50 14.50 Grey silty fine SAND. 14.50 B 33 15.00 *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Geosphere Environmental Ltd Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) Lower seal K Permeability test Unit 11, Brightwell Barns P Piston sample N*120 = Total blows/penetration Brightwell, Suffolk J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

CLIENT	lk County	/ Council	othing Cable Percussion (shell and auger)						UND I	.EVEL	. m			HOLE No. BHC26					
LOGGED BY: JG CHECKED BY: LF EXCAVATION METHOD: FIELDWORK BY: DATE:								Coordinates: ,								SHEET 1 OF 3			
FIELDWORK BY: DATE: TEMPLATE REF: GEL AGS BH BETA					(Uncased	10 15.0) m		DATE	ES 05-I	Mar-1	L8 - (06-N	Mar-1	18			PROJECT NO. 2543,GI
Date/Time		Depth*	;			Strata	1	Graphical Representation Samplin		g/In-Situ	u Testing	Į.		Laboratory Testing					Additional Tests and Notes
and Depth	of Casing	of S	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value Depths	Туре	No.	Blows	SPT N	<425 %	5 W(C PL %	LL %	r Mg/m	Cu h³ kN/m²	
-			MADE GROUND (Dark brown g coarse sand. Gravel is angular t coarse flint, brick, clinker and d	o subrounded fine to			0.00	0.30 0.40	ES	B1 J1									VOC = 0ppm
-	_		MADE GROUND (Dark brown a to coarse sand with occasional occasional black sand pockets	nd orange brown fine subrounded flint and			0.70	0.70 0.80 1 -	ES	B2 J2									VOC = 0ppm -
			Dark yellow brown slightly silty SAND with occasional fine flint	/ clayey fine to coarse			1.30	1.30	S ES	B4 J3	2 2 4 6 6 6	22							VOC = 0ppm
	_		2.50 Becoming gravelly with de	pth			_	2.00 2	ES S	B6 J4	2 4 4 5 6 6	21							VOC = 0ppm
	_		250 500011111111111111111111111111111111					2.80	ES C	DS7 B8 J5	2 2 2 3 4 5	14							VOC = 0ppm
-	_						-	4.00 4	ES C	B9 J6	1 1 2 2 4 4	12							VOC = 0ppm
5	-						-	5.00	ES C	B10 J7	1 2 4 4 3 4	15							VOC = 0ppm
*WATER	¥ Sta ∇ Wa	nding water ter strikes	level PIEZOMETER Upper s Respon Lower s	se zone AND B eal TEST U KEY P	Bulk d Undist Piston Distur	disturbed listurbed san turbed san sample bed jar san onmental s	ample (nple mple	C Permeability test SPT N N = S N*12 inclu	Undi PT N 20 = ding	sturbed value (I Total blo seating	sample blows at ows/pen	blow c fter sea etratio	ount iting) n		<u>Ф</u>		Geosp	here Er	SHEET 1 OF 3 HOLE No.
;			DEPTH All depths, level and					1,25 30111		,					O				

CLIENT	lk Count	y Co	ouncil	PROJECT: Lake Lo	thing	5	GRO	DUND	LEVEL	. m			HOLE No. BHC26								
LOGGED BY: JG CHECKED BY: LF EXCAVATION METHOD					(Cable Pe	Coo	Coordinates: ,								SHEET 2 OF 3					
FIELDWORK BY: DATE: TEMPLATE REF: GEL AGS BH BETA						Uncased to 15.0 m							Mar-1	18 - 0)6-M	ar-1	8			PROJECT NO. 2543,GI	
Date/Time Dept			Piez.			Strata			1		ing/In-Si	ng/In-Situ Testing						esting		Additional Tests and Notes	
and Depth	of Casing	of Water	ă.	Description of	Strata	Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30 40	Depths 2	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²		
_				Dark yellow brown slightly silty SAND with occasional fine flint (/ clayey fine to coarse (continued)			_		6.00 6 - 6.00	S B11	11	11								
												32 33									
-	_									7.00 7 - ES	5 B12 J9	23 33 43	13							VOC = 0ppm	
-	_			8.00 - 9.50 Becoming dark oranչ	ge brown					8.00	5 B13 J10	2 3 4 4 6 7	21							VOC = 0ppm	
_											9.00 9 ES	5 B14 : J11	1 4 4 5 4 8	21						_	_ VOC = 0ppm
- 	_									10.00 10- 10 C	S B15	2 4 7 10 11 13	41							VOC = 0ppm	
*WATER	▼ Star ▼ Wat	nding water ter strikes	leve	I PIEZOMETER Upper so	e zone AND B eal TEST U KEY P	Bulk d Undist Piston	isturbed sa turbed sam i sample	ample (S Standard penetration test Bit C Cone penetration test C Permeability test SP	(35) Un T N N = SPT N*120	disturbe N value = Total b	d sample (blows a lows/per	blow c	ount iting)		J.	G	eosph	ere Er	2543,GI SHEET 2 OF 3 HOLE No. BHC26	
	J Disturbed jar sample including seating ES Environmental soil sample 425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample													eve	(

CLIENT	Ր։ Suffe	olk C	County	Council	PROJECT: Lake Lo	thin	g				GRO	UND L	.EVEL	. m						HOLE No. BHC26
LOGGED				CHECKED BY: LF	EXCAVATION METHOD:	. (Cable Pe		n (shell and auger)		Coor	dinate	es: ,							SHEET 3 OF 3
FIELDWO TEMPLAT		GEL AC	GS BH BET	DATE:		l	Uncased	to 15.0) m			S 05-1		 L8 - C	06-N	 1ar-1	.8			PROJECT NO. 2543,GI
Date/Time	Depth	De		,			Strata		Graphical Representation San		g/In-Situ				L	abora		esting		Additional Tests and Notes
and Depth	of Casing		of Aider	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value Depths	Туре	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m	Cu kN/m²	
- LAKE LOIHING, US-12-17 (USE THIS ONE) GINT STD AGS 3 1.GDT 8-3-18				Dark yellow brown slightly silty SAND with occasional fine flint Grey brown fine and medium S fine flint gravel	AND with occasional		Level	- 12.00 - 15.00	12.00 12- 12.00 13- 14.00 14-	C	B16 B17 B18	3 6 9 9 10 12 4 9 10 10 13 14 2 4 7 7 12 10 4 5 9 9 11 12	40 47 36 41		% 		%	Mg/m	kN/m-	Borehole completed at 15m bgl. Borehole backfilled with bentonite grout
*WATER	s ▼ Sta ▼ Wa	anding ater s	g water le trikes	vel PIEZOMETER Upper s Respon: Lower s	se zone AND B eal TEST U KEY P J ES	Bulk d Undis Pistor Distur Enviro	listurbed sa turbed sam I sample bed jar sar onmental so	ample (aple i aple	S Standard penetration test Blows SPT II C Cone penetration test (35) C Permeability test SPT N N = 5 N*12 inclu	Undi SPT N 20 = Iding	sturbed I value (b Total blo seating	sample blows af ows/pen	blow contraction the second contraction the s	ount iting) n		1) 1) 2)		eosph	ere Er	2543,GI SHEET 3 OF 3 HOLE No. BHC26

CLIENT: Suffolk County Council PROJECT: Lake Lothing GROUND LEVEL m HOLE No. BHC27 Cable Percussion (shell and auger) LOGGED BY: LF CHECKED BY: SG **EXCAVATION METHOD:** Coordinates: SHEET 2 OF 10 FIELDWORK BY: Uncased to 50.0 m DATES 02-Jan-18 - 15-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes ate/Time Depth Depth³ LL r Cu % Mg/m kN/m² and of of Description of Strata Reduced SPT 'N' Value <425 wc PL % Leg Depth Depth Casing Water Depths No. Blows % Level Ν % Grey brown silty fine and medium SAND (continued) 6.00 В7 23 18 33 5 7 6.20 ES J8 VOC = 0ppm 5 5 5 7 7 7 7.00 S В9 26 7.10 ES J9 VOC = 0ppm 8.00 C B10 23 26 8.10 ES J10 45 89 VOC = 0ppm 9.00 22 C B11 5 5 9.10 ES J11 VOC = 0ppm 10.00 3 2 B13 14 10.10 ES J12 3 3 VOC = 0ppm 10.20 Yellow brown slightly silty gravelly SAND. Gravel of angular to subrounded fine to coarse flint ٥. SAMPLE *WATER \(\Pi \) Standing water level PIEZOMETER D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment SHEET
2 OF 10
HOLE No.
BHC27 Upper seal AND ▼ Water strikes Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count TEST SPT N N = SPT N value (blows after seating) U Undisturbed sample K Permeability test Lower seal Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC27 Cable Percussion (shell and auger) LOGGED BY: LF CHECKED BY: SG **EXCAVATION METHOD:** Coordinates: SHEET 4 OF 10 FIELDWORK BY: Uncased to 50.0 m DATES 02-Jan-18 - 15-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes ate/Time Depth Depth³ LL r Cu % Mg/m³ kN/m² and of of Description of Strata Reduced SPT 'N' Value <425 WC % PL % Leg Depth Depth Casing Water Depths No. Blows N Level % Dark grey silty fine and medium SAND with occasional pale brown mottling (continued) 17.00 45 79 S B26 38 10 12 18.00 S B28 2 4 40 6 8 12 14 19.00 S B30 3 10 63* 18 24 20.00 20 S B32 78 65* 12 13 15 10 20.30 Dark yellow brown medium and coarse SAND 20.40 Dark grey silty medium SAND 21.00 21 S B34 7 10 40 108 10 12 21.60 Dark grey sandy CLAY SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment *WATER \(\Pi \) Standing water level PIEZOMETER Upper seal SHEET
4 OF 10
HOLE No.
BHC27 AND ▼ Water strikes Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count TEST U Undisturbed sample K Permeability test SPT N N = SPT N value (blows after seating) Lower seal Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC27 Cable Percussion (shell and auger) LOGGED BY: LF CHECKED BY: SG **EXCAVATION METHOD:** Coordinates: SHEET 6 OF 10 FIELDWORK BY: Uncased to 50.0 m DATES 02-Jan-18 - 15-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes ate/Time Depth Depth³ LL r Cu % Mg/m³ kN/m² and of of Description of Strata Reduced SPT 'N' Value <425 WC % PL % Leg Depth Depth Casing Water Depths No. Blows N % Level Dark grey silty fine and medium SAND (continued) 28.00 ²⁸1 7 19 21 29 S B50 76* 29.00 S B52 10 16 76* 35 15 30.00 S B54 4 15 69* 23 27 31-31.50 S B56 12 17 79* 24 26 B58 68* 32.50 8 13 19 24 4 D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment *WATER \(\Pi \) Standing water level PIEZOMETER Upper seal SAMPLE SHEET 6 OF 10 HOLE No. BHC27 AND TEST ▼ Water strikes Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count SPT N N = SPT N value (blows after seating) U Undisturbed sample K Permeability test Lower seal Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

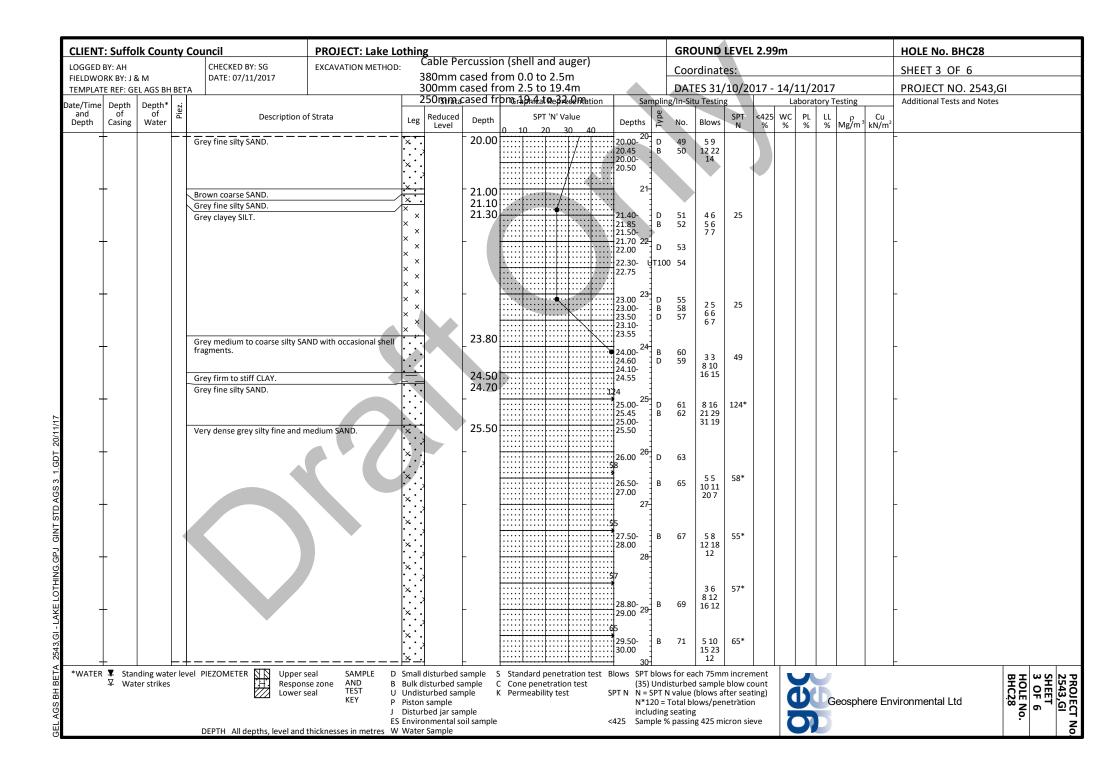
PROJECT: Lake Lothing CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC27 Cable Percussion (shell and auger) LOGGED BY: LF CHECKED BY: SG **EXCAVATION METHOD:** Coordinates: SHEET 7 OF 10 FIELDWORK BY: Uncased to 50.0 m DATES 02-Jan-18 - 15-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes ate/Time Depth Depth³ LL r Cu Mg/m³ kN/m² of of Description of Strata Reduced SPT 'N' Value <425 WC % PL % Leg Depth Depth Casing Water Depths No. Blows N % Level Dark grey silty fine and medium SAND (continued) 68* 33.50 B60 8 10 S 13 17 20 34.50 S B62 6 17 73* 20 27 3 35.50 S B64 20 27 97* 36 14 36.50 S B66 5 12 67* 24 26 37.50 S B68 17 20 87* 25 25 *WATER \(\Pi \) Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment SHEET 7 OF 10 HOLE No. BHC27 AND TEST ▼ Water strikes Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count SPT N N = SPT N value (blows after seating) U Undisturbed sample K Permeability test Lower seal Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC27 Cable Percussion (shell and auger) LOGGED BY: LF CHECKED BY: SG **EXCAVATION METHOD:** Coordinates: SHEET 9 OF 10 FIELDWORK BY: Uncased to 50.0 m DATES 02-Jan-18 - 15-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes ate/Time Depth Depth³ LL r Cu % Mg/m³ kN/m² of of Description of Strata Reduced SPT 'N' Value <425 WC % PL % Leg Depth Depth Casing Water Depths No. Blows N % Level Dark grey silty fine and medium SAND (continued) 44.20 White shell fragments present with depth 44.20 B81 44.50 B83 12 15 77* S 26 24 45.50 S B85 18 25 93* 40 10 46.50 S B87 14 25 64* 25 50 47.50 S B89 12 17 79* 27 23 48.50 S B91 10 28 88* 50 49.00 B92 *WATER \(\Pi \) Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment SHEET 9 OF 10 HOLE No. BHC27 AND TEST ▼ Water strikes Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count SPT N N = SPT N value (blows after seating) U Undisturbed sample Lower seal K Permeability test Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

CLIENT	T: Su	ıffol	c Cou	nty (Council		PRO	JECT: La	ke Lotl	hing	3							GR	OUND	LEVE	. m						HOLE No. BHC27		
LOGGED	BY: LI	F			CHECKED B	Y: SG		VATION ME		C	Cable Pe		-	ll and a	uger)			Cod	ordinat	es: .							SHEET 10 OF 10		
FIELDWO TEMPLAT			AGS B	H RFTA	DATE:					ι	Jncased	l to 50.0	0 m						TES 02-		8 - 1!	5-Jan-	-18				PROJECT NO. 2543,G		
ate/Time			Depth of		·		-1				Strata	1	Gra	phical Rep	resenta	tion		pling/In-S						ory Te	esting		Additional Tests and Notes	-	
and Depth	Cas	of sing	of Water	Piez.		Description	of Strata			Leg	Reduced Level	Depth		SPT 'N'			Depths	y No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²			
-	-				Dark grey silty f	ine and mediu	m SAND ((continued)		*		- 50.00		0 20		3	51-	S	8 28 45 5	86*							Borehole completed at 50.0 with bentonite grout to 13.0	m depth. Im bgl	. Backfille
																	-												
*WATER	<u>+</u> ₹ ₹ ∑	Stand	ling wa	ter lev s	el PIEZOMETER	Upper Respor Lower	nse zone	SAMPLE AND TEST KEY	B Bi U U P Pi	ulk di ndist iston isturl	disturbed sisturbed sam surbed sam sample bed jar sar	ample nple	C Con	dard pene e penetrat neability t	ion test		(35) TN N=S N*12	Jndisturbe	ed sample e (blows a plows/pe	blow of fter sea	count ating)	700	S.		eosph	ere Er	hvironmental	HOLE No BHC27	2543,GI SHEET 10 OF 10

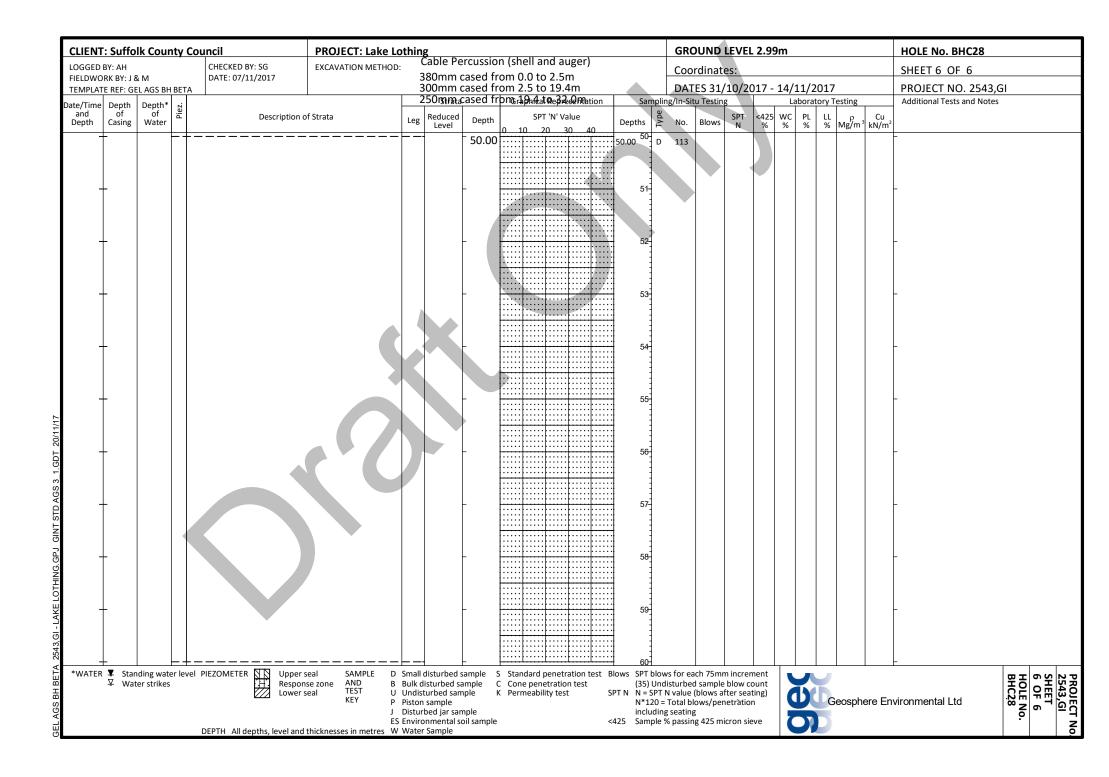
CLIENT	: Suffo	lk County	Council	PROJECT: Lake Lo	othing	<u> </u>		(-l- !!			Ţ	GRO	UND	EVEL	2.99m				HOLE No. BHC28		
LOGGED FIELDWO		0. мл	CHECKED BY: SG DATE: 07/11/2017	EXCAVATION METHOD:				n (shell an om 0.0 to				Coor	dinate	es:					SHEET 1 OF 6		
		& IVI EL AGS BH BE			3	00mm	cased fr	om 2.5 to	19.4m						17 - 14/	11/20	017		PROJECT NO. 2543	,GI	
Date/Time and Depth	Depth of Casing	Depth* of Water	Description o	f Strata		50mma Reduced Level	Depth	SPT	Re32es2 interion 'N' Value 0 30 40	Depths	l e		u Testing Blows		<425 WC % %		LL Mg,	ng Cu /m ³ kN/m ²	Additional Tests and Not	es	
_			Reinforced CONCRETE. MADE GROUND (Brown gravell of fine to medium subrounded to medium subrounded concreton)	to angular flint and fine te.)			0.00 0.15 0.36 0.52 0.75			4	D J	1 1		4					VOC=0ppm (peak)		
_			MADE GROUND (Brown mediu gravelly sand. Gravel of fine to angular flint with occasional fin subrounded to subangular con Brown firm sandy slightly grave angular flint.	medium subrounded to e to cobble sized crete.)						1.00 1.00 1.20- 1.65 1.20- 1.70	D D B J D	2 3 4 2 5	11 10 11	3					VOC=0ppm (peak)		
_			Grey brown medium to coarse SAND with occasional fine to m	slightly clayey organic edium subrounded to	 		2.60			1.70 2.00- 2.45 12.00- 2.50	D B J D B D	6 7 3 8 56	10 11 12	5					VOC=0ppm (peak)		
			rounded flint. Dark grey brown medium to co gravelly SAND. Gravel is fine to Light brown grey medium sligh Gravel is fine to coarse subang	coarse angular flint. tly gravelly SAND.	0.		3.00 3.30			2.60 2.70- 23.00 2.90	D B B	9 4 10 11	11 33 43	13					VOC=0ppm (peak)		
_	_		Light brown grey SAND and GR coarse with rare cobble sized s	ubangular flint.	0.0.0.		4.00		7	3.00- 4 :3.30 :4.00- :4.45 :4.20 :4.30-	D J B	12 5 13	16 88 1315	44					VOC=0ppm (peak)		
_	-		Light brown medium slightly gr fine to medium subangular fiin	avelly SAND. Gravel of t and quartz.	0.		5.00			4.50 5.10 5.20 5.30- 5.70	D J B	14 6 15	3 4 5 6 8 13	32					VOC=0ppm (peak)		
-	_			('(_			6.20 6.40- 6.60	D J B	16 7 17	23 77 1112	37					VOC=0ppm (peak)		
_							_		<i>,</i>	7.20	J D B	8 18 19	3 4 5 6 10 13	34					VOC=0ppm (peak)		
					8		- 0.00			8.50- 8.80	J D B	9 20 21	33 23 812	25 50*					VOC=0ppm (peak)		
_			Light brown SAND and GRAVEL gravel is fine to medium with o subangular flint.				9.00		::::: ::/::: ::::	9.50- 9.90	D B	22	11 15 15 9	ου.							
WATER		nding water le ter strikes	evel PIEZOMETER Uppers Respon Lowers	se zone AND B eal TEST U KEY P	Bulk di Undist Piston Disturb	sturbed san urbed san sample ped jar sar	ample (C Cone penet K Permeabilit	y test	(35 = SPT N N = : N:) Undis SPT N 120 = T luding:	sturbed value (I otal blo seating	sample blows af ows/pen	blow co ter seati etration	unt ng)	Ty.	Geos	phere En	vironmental Ltd	HOLE No. BHC28	SHEET 1 OF 6
			DEPTH All depths, level and				Jumpic			5 541	p.c /0	7 4 5 5 11 1E	,		-						

CLIENT	: Suffo	lk County	Council	PROJECT: Lake Lo	thin	g							GRO	DUND	LEVEI	2.99)m				HOLE No. BHC2	.8		
LOGGED			CHECKED BY: SG	EXCAVATION METHOD:				•	nell and 0.0 to 2.	· ,			Coo	rdinat	es:						SHEET 2 OF 6			
FIELDWO TEMPLAT		k M EL AGS BH BET	DATE: 07/11/2017		3	300mm	cased fr	rom 2	2.5 to 19	.4m			DAT	ES 31/	10/20)17 -	14/11/	2017	7		PROJECT NO. 2	543,GI		
Date/Time	Depth	Depth* ਨੂੰ			2	250mma	cased fr	ron _{gr}	19hAat Qe	20 Mation	Sa			u Testin			Labor		Testing		Additional Tests and	Notes		
and Depth	of Casing	of ĕ Water	Description o	Strata	Leg	Reduced Level	Depth	0	SPT 'N' 10 20		Depths	Туре	No.	Blows	SPT N	<425 %	WC PL	LL %	Mg/m	Cu kN/m²				
-			Light brown SAND and GRAVEL gravel is fine to medium with or subangular flint. (continued)	Sand is medium and casional coarse			-				10.50- 11.00	D B	24 25 26	13 34 715 44 45 710	29						_			
-	=		Grey brown medium to coarse soft clay laminations. Grey fine to medium clayey SAI				11.80 12.00 12.20				11.80- 12.00 12.00-	B D D	27 28 29	2 4 6 6	24						_			
	_		Grey soft to firm sandy slightly fine to meium subangular to su	gravelly CLAY. Gravel is			12.00				12.45 12.10 12.20- 12.50	В	30	66							_			
			Grey fine slightly gravelly SAND Light orange brown coarse sligh	tly gravelly SAND.	0.		13.20				13.00- 13.45		0 31	(52)										
			Gravel of fine to medium subro Grey brown SAND and GRAVEL gravel is fine to medium rounde	Sand is coarse and	ο. · .		13.50			1	13.50 13.50-	D B	32 33											
	-		Brown slightly clayey SAND and medium to coarse and gravel is subrounded flint.	GRAVEL. Sand is fine to medium			14.00				14.00 ₁₄ 14.20 14.50- 15.00	D B	34 35	45 87 87	30						-			
-	-				ο. ο. ο		15 50				15.00 ¹⁵]	36	11 35 1015	33						-			
-	-		Orange brown medium SAND w subrounded flint gravel.	ith occasional fine	0		-			\ 	16.00 16.00-	B	37	5 7 7 10	39						-			
			Grey brown medium SAND with subrounded flint gravel.	occasional fine	0.		16.30			/	16.50 16.50	D B	39 40	12 10										
-	-		Grey brown fine to medium slig	htly clayey SAND.			17.20				17.00- 17.45 17.00- 17.50	D B	41 42	33 77 88	30									
	-		Grey firm sandy CLAY. Grey fine to medium slightly cla	yey SAND.			17.70				17.90 18 18.00	B D UT100	43 0 44	(40)							-			
70+0,01-1-10,0+0.00	-						-)	18.70 18.70-19 19.00 19.00-	D B D B	45 46 47 48	15 1010 1012	42						-			
		ding water le	vel PIEZOMETER Upper s Respons Lower s	e zone AND B eal TEST U KEY P J ES	Small of Bulk d Undist Piston Distur Enviro	listurbed sa turbed san sample bed jar sar onmental s	ample C nple k nple	S Sta C Cor K Per	:1:::::1:::	tration test ion test	Blows SPT (35 SPT N N = N*:) Undi SPT N 120 = luding	isturbe I value Total bl seating	d sample (blows a lows/per	blow of fter sea netratio	ount ting) n	dec		Geosph	ere En	vironmental Ltd	BHC28	SHEET 2 OF 6	2543.GI



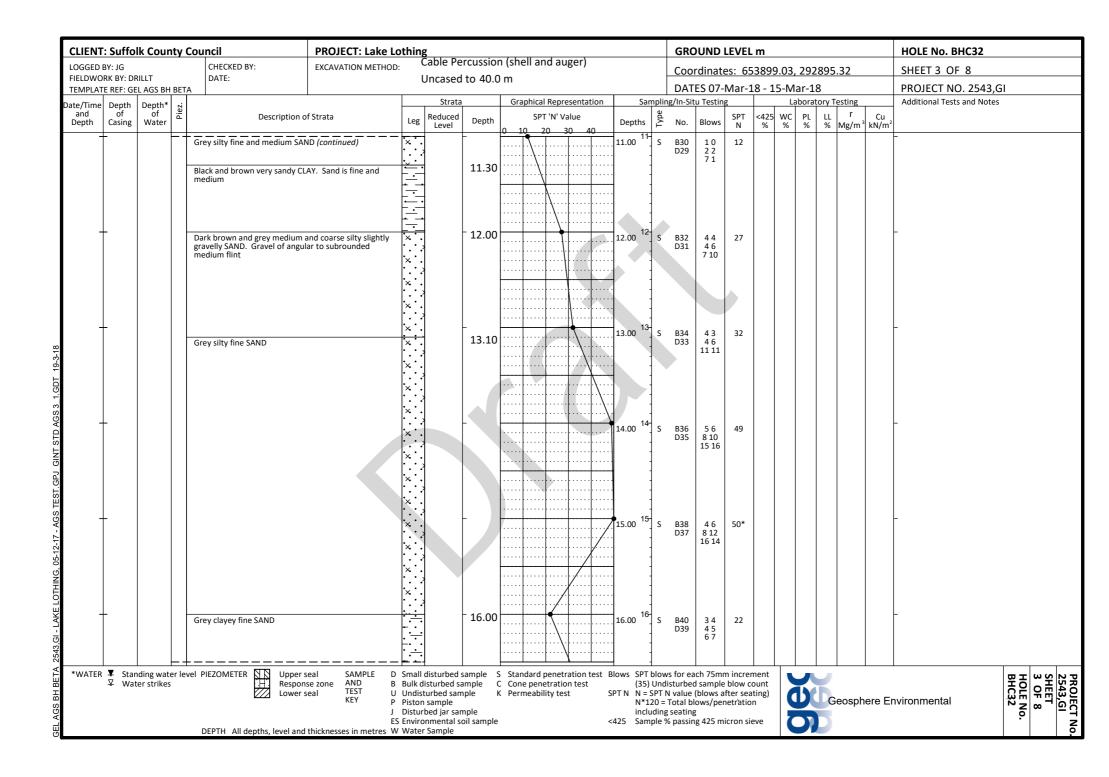
CLIENT	: Suf	ffolk	County	Council	PROJECT: Lake Lo	othing	3			Į.				GRO	UND	LEVEL	2.99)m				HOLE No. BHC28		
LOGGED				CHECKED BY: SG	EXCAVATION METHOD	. (able Pe		•		•			Coor	dinate	es:						SHEET 4 OF 6		
FIELDWO				DATE: 07/11/2017			80mm o										117	14/11/	2017	,		PROJECT NO. 2543	. GI	
			AGS BH BET	1		2	50mma	ased fr	bm ₆ ,19,4	1at 0 13.2	+111 • ⊘h tation	Sai			u Testing		11/-			esting		Additional Tests and Not		
Date/Time and Depth	Dept of Casin		Depth* of Water	Description	of Strata		Reduced Level	Depth	0 10	SPT 'N' Va	ilue	Depths	Туре		Blows		<425 %				Cu kN/m²	Additional Tests and 1900		
-	†			Very dense grey silty fine and	medium SAND.	×		-		:: :::::	40	30												
				(continued) Very stiff grey sandy SILT		*		30.30	<u> </u>	:: :::::	<u>:::::</u> :::::::::::::::::::::::::::::::	65	D	72					1					
				Very dense grey silty fine and	medium SAND	$\left[\times \right]$		30.50	::::	::[:::::		30.50-] B	74	5 10 15 15	65* ◀								
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	<u>+</u> ▼ c-	Standi	ng water le	VEL PIEZOMETER NO Upper	seal SAMPLE D	Fmall (licturbod o	amnlo s	 		ation test	- 40	hlows	for one	ch 75mm	n incres	nert					 	1.	
*WATER			ng water ie strikes	Respoi Lower	nse zone AND B seal TEST U KEY P J ES	Bulk di Undist Piston Disturl Enviro	isturbed sa urbed sam sample oed jar san nmental so	imple C iple k nple	Cone pe Permea	enetratio	n test	(35) SPT N N = N*1	Undis SPT N .20 = To uding s	turbed value (I otal blo seating	sample blows at ows/pen	blow co fter sea netration	ount ting) n	dec		eosph	ere Env	vironmental Ltd	HOLE No. BHC28	SHEET 4 OF 6
				DEPTH All depths, level and	thicknesses in metres W	Water	Sample	-																

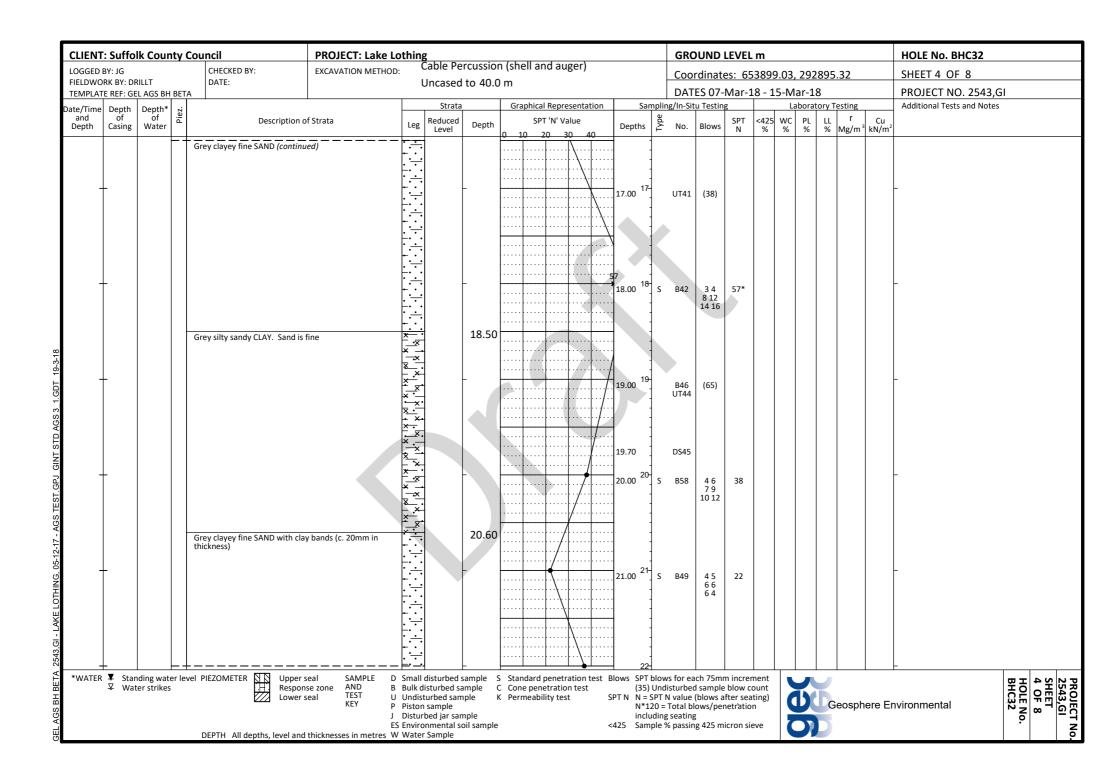
CLIENT	Ր։ Suff	folk	County	Council	PROJECT: Lake Lo	othin	g		,,,				G	ROUNI	LEVE	L 2.99)m				HOLE No. BHC28		
LOGGED				CHECKED BY: SG	EXCAVATION METHOD:				n (shell a om 0.0 t	and auger	r)		C	oordina	ates:						SHEET 5 OF 6		
FIELDWC TEMPLAT			1 AGS BH BET	DATE: 07/11/2017		3	300mm (cased fr	om 2.5 t	o 19.4m			D.	ATES 3	1/10/2	 017 -	14/11/	2017			PROJECT NO. 2543	,GI	
Date/Time	Depth	h D	epth* ਨੂੰ			2	250 หาก ส	cased fr		at Re32e.Qnn	ation	$\overline{}$	pling/In	-Situ Test	ing		Labora	tory T	esting		Additional Tests and Note	es	
and Depth	of Casing	g V	of Vater ≅	Description o	f Strata	Leg	Reduced Level	Depth		PT 'N' Value 20 30	40	Depths	Type	o. Blow	SPT N	<425 %	WC PL %	LL %	Mg/m ³	Cu kN/m²			
-	t		-	Very dense grey silty fine and n	nedium SAND	×		-	····	20 30		40-									_		
				(continued) Very dense grey silty fine SAND		× .		40.50			86	10.50	В 9	122	3 86*								
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1				is occasional fine shell fragmen	S.							44.50- 45.00	B 10	12 2									
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*WATER			ng water le strikes	vel PIEZOMETER Upper s Respons Lower s	e zone AND B eal TEST U KEY P J ES	Bulk d Undist Piston Distur Enviro	listurbed sa turbed sam sample bed jar san onmental se	ample C nple k nple	Cone pe Permeab	I penetration netration test ility test	t SP	(35) U T N N = S N*12	Jndistur PT N val 0 = Tota ding sea	bed sampue (blows ll blows/p ting	ole blow of after sea enetration	ount iting) in	dec		eosphe	ere Env	vironmental Ltd	HOLE No. BHC28	2543,GI SHEET 5 OF 6



CLIENT:	Suffol	k C	ounty	Co		PROJECT: Lake Lo		g Cabla Da	roussia	n /sk	مالم:	nd augast				GRO	UND	LEVEL	. m						HOLE No. BHC32	
OGGED B		шт			CHECKED BY: DATE:	EXCAVATION METHOD:				•	en ar	nd auger)			ļ	Coor	dinate	es: 65	389	9.03	, 292	895	.32		SHEET 1 OF 8	
EMPLATE			BH BE	TA	DATE.			Uncased	10 40.0	o m						DAT	ES 07-	Mar-1	L8 - 1	L5-M	lar-1	8			PROJECT NO. 2543,0	3I
te/Time	Depth	Dep			•			Strata		Gra	aphica	l Representa	tion	Sa			u Testin					tory T	esting		Additional Tests and Notes	i
and Depth	of Casing	o Wa	f h	-	Description of	Strata	Leg	Reduced Level	Depth	0_1		T 'N' Value	40	Depths	Туре	No.	Blows	SPT N	<425 %	wc %	PL %	LL %	r Mg/m	Cu kN/m²	2	
Ī	-				MADE GROUND (Dark brown gr Gravel is subangular to rounded	avelly coarse sand. I flints and clinker)			0.00					0.30	ES	B1 J1									VOC=1ppm (peak)	
				s	MADE GROUND (Yellow brown slightly gravelly medium to coal angular to rounded fine flint an	rse sand. Gravel is			0.50					0.50 0.60	ES	B2 J2									VOC=1ppm (peak)	
+	-			f E	MADE GROUND (Yellow brown silty/clayey sand. Gravel is fine flints.) Brown/grey slightly silty fine to very occasional fine rounded to	and occasional medium medium SAND, with	×		1.30					1.10 1.20 1.30	ES ES	B3 J3 W1 B5									VOC=1ppm (peak) VOC=1ppm (peak)	
				'	very occasional line rounded to	angulai illili gravei	×			•				1.50 1.70	ES S	J4 B6	10 10	3							VOC=1ppm (peak)	
	-						×		_					2.00	ES	J5	11								VOC=0ppm (peak)	
_	-			S	Dark grey / black medium fine S small clay pockets and fine rour	AND with occasional ided to angular flints			2.50					2.50	ES S	B7 J6	10 01 11	3							VOC=1ppm (peak)	
					Dark grey / black silty CLAY with natural organic odour	n moderate - strong	X		3.50					3.50	ES S	B9 D8 J7	10 01 01	2							VOC=1ppm (peak)	
	-				Dark grey / black clayey fine to moderate strong natural organi		*		- 4.00					4.00	-	B12 UT10	(25)								_	
				0	Grey brown sandy CLAY			-	4.60					4.50	ES S	B13 D11 J8	43 23 23	10							VOC=1ppm (peak)	
								•						5.00		B15										
WATER	¥ Stan ∇ Wat	ding er str	water ikes	evel	PIEZOMETER Upper so Respons Lower so	eal TEST U	Bulk of Undis Pisto	l disturbed si disturbed sa sturbed san n sample rbed jar sar	ample nple	C Con	ne pen	penetration etration test lity test		(35) PTN N = N*1	Undi: SPT N .20 = 1	sturbed value (l sample (blows a ows/per	blow c	ount iting)		D D	G	eosph	nere E	nvironmental	SHEET 1 OF 8 HOLE No. BHC32
					DEPTH All depths, level and	ES	Envir	onmental s		е			<	incl 425 San				icron si	eve	7	•}					9

CLIENT	: Su	ffoll	(Cou	nty C	Council	PROJECT: Lake L	othin	g Cabla D		/ a.l 11		1		GI	ROUNI	LEVE	L m						HOLE No. BHC32		
LOGGED E			ПТ		CHECKED BY: DATE:	EXCAVATION METHOD	J.	Cable Pe Uncased		-	i and au	ger)		Co	ordina	ites: 6	5389	9.03	, 292	895.	.32		SHEET 2 OF 8		
TEMPLAT				H BETA				Uncasec	1 10 40.0	, , , , ,				DA	ATES 0	7-Mar-	18 - 1	L5-N	1ar-18	3			PROJECT NO. 2543,GI		
ate/Time and	Dep	oth	Depth'	Piez.				Strata		Graph		esentation	Sai	mpling/In-	Situ Test				aborat				Additional Tests and Notes		
Depth	Casi		Water	۵	Description o	f Strata	Leg	Reduced Level	Depth	0 10	SPT 'N' Va	alue 80 <u>40</u>	Depths	Туре	. Blow	s SPT	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²			
				Ħ	Grey brown sandy CLAY (contin	ued)	==			11			5.50	ES J9									VOC=1ppm (peak)		
								-		1															
														-											
Ī					Pale grey silty sandy CLAY		<u>*</u> -x	-	6.00		<u> </u>		6.00	S B1 D1	7 12 6 24	13									
							<u>× –</u>	1]	3 4								\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		
							*×	4			\		6.30	ES J1	'								VOC=0ppm (peak)		
							<u></u>	1			\														
							×	1			[\	[
4	L				Cuerry business and a second s	no o divino CAND videli	×	1	7.00			Y	7.00			22							_		
					Grey brown very clayey fine to occasional fine subangular flint	S.	<u>.</u>		7.00			/	7.00	S B2 D1	9 66	33									
							<u> </u>				/		7.30	ES J1:	10 1	1							VOC=0ppm (peak)		
							ļ. <u> </u>																		
							<u> </u>																		
							-:-:				/.														
+	-						<u> </u>		-				8.00	S B2	2 2 2	14							_		
							+:::							D2	1 34										
							ļ. —						8.30	ES J1	2								VOC=0ppm (peak)		
							F																		
							÷																		
1	Ī				Grey brown slightly silty slightly	y sandy CLAY	Ē	-	9.00				9.00	B2 UT2	5 (28)										
							E			\				1											
							1						9.30 9.41	ES J1: D2									VOC=0ppm (peak)		
										ļļ.				-											
					Grey silty fine and medium SAN	ID	× .		9.80				9.80] 	6										
4	_				drey sitty fille and filedium sAr			}	-				10	1									-		
							×	,			<mark>.</mark>		10.10	S B2 D2	8 11 7 22	9									
							×	.]					10.30	ES J1									VOC=0ppm (peak)		
							×	1					1]									,, ,,		
							-^.·:	;}		1				1											
							×																		
	<u> </u>			<u> </u>	L DISTOLATED NIN		- <u> </u>	4	<u> </u>			<u> </u>	11			1.	<u> </u>	_					<u> </u>		
*WATER	Ž	Stand Wate	ling wa r strike	ter lev s		se zone AND B	Bulk	disturbed s	ample (C Cone p	penetratio		(35)	Undistur	oed samp	ole blow	count							HOLE No. BHC32	35
					Lowers	KEY P	Pistor	turbed sar n sample		K Perme	ability tes	t S	PTN N= N*1	20 = Tota	blows/p	s after se enetrati	ating) on		DL	G	eosph	ere Er	nvironmental		, T
						J	Distu	rbed jar sa onmental s				<	incl 425 Sam	uding seat	ing			1						اج.	~
					DEPTH All depths, level and				.c.i sample				25 Jan	Pic /u pas	J.116 42J										





CLIENT	Ր։ Suffo	lk Count	y Council	PROJECT: Lake Lo	othing	<u> </u>				GRO	DUND	LEVEL	m						HOLE No. BHC32		
LOGGED			CHECKED BY:	EXCAVATION METHOD:	: (able Pe		n (shell and auger)		Coo	rdinate	es: 65	3899	9.03,	292	895.	.32		SHEET 5 OF 8		
	ORK BY: DI FE REF: GI	RILLT EL AGS BH BI	DATE:		ι	Jncased	to 40.0) m			ES 07-								PROJECT NO. 2543,GI		
Date/Time	Depth		1	!		Strata		Graphical Representation			tu Testing			La	borat		esting		Additional Tests and Notes		
and Depth	of Casing	Depth* of Water	Description	of Strata	Leg	Reduced Level	Depth	0 10 20 30 40	epths 2	No.	Blows	SPT N	<425 %	wc %	PL %	LL %	r Mg/m³	Cu kN/m²			
			Grey clayey fine SAND with c thickness) (continued)	ay bands (c. 20mm in				22.	.00 ²² S	B51	4 6 8 10 9 10	37									
_	_						-	23.	.00 23	B59 UT52	(50)								-		
								23.	.70	D53											
0	_						_	66 24.	.00 ²⁴ s	B55	8 8 12 20 18	66*									
GINI OLD AGOS 1.GDI	_							25.	.00 25	B60 UT56	(150)								-		
			Grey silty fine SAND with wh 26.00 White shell fragments with depth		× · · · · · · · · · · · · · · · · · · ·		25.60	25.	.70]	D57 B62	8 12 12 15	70*							-		
- LANE LO IRIING, 09-12-17					· · · · · · · · · · · · · · · · · · ·			63 27.	.00 ²⁷ s	B64	67 68 1818	63*							-		
*WATER	x ▼ Star ▼ Wa	nding water ter strikes	level PIEZOMETER Uppe Respu	nse zone AND B seal TEST U	Small d Bulk di Undist	sturbed sa urbed sam	ample (5 Standard penetration test Blows Cone penetration test Permeability test SPT N	(35) Und N N = SPT I	isturbe V value	ach 75mr d sample (blows a	blow co	ount ting)	>	Di Di	7	o o o n h	oro Fr	nviron montol	HOLE No. BHC32	SHEET 5 OF 8
			DEPTH All depths, level ar	J ES	Disturl Enviro	sample bed jar san nmental so Sample		<425	N*120 = including Sample S	seatin					5		eosph	ere Er	nvironmental	No.	_∞ T <u>ໂດ</u>

CLIENT	: Suffe	folk	Coun	ty C	ouncil		PROJI	ECT: Lake L	othin:	g			shell and au				GROL	UND L	EVEL	m						HOLE No. BHC32		
LOGGED					CHECKED BY:		EXCAVA	ATION METHO	D: (Cable Pe	ercussio	n (s	shell and au	ger)			Coord	dinate	es: 65	3899	9.03.	2928	395.3	32		SHEET 6 OF 8		
FIELDWO TEMPLAT				RFTA	DATE:					Jncased	d to 40.0	0 m)					S 07-1								PROJECT NO. 2543,G	il	
Date/Time					· •	Į.				Strata	9	G	Graphical Repre	sentation	Sar	npling/		Testing				orato		sting		Additional Tests and Notes		
and Depth	of Casing		of Vater	Piez.	De	escription of	f Strata		Leg	Reduced Level	Depth		SPT 'N' Va		Depths	Туре	No.	Blows	SPT N	<425 %	wc %	PL %	LL N	r Mg/m³	Cu kN/m²			
				-+	Grey silty fine SAND	with white	shell frag	ments	·× ·	20101		0	10 20 3	040					•••	,,,			70	6/	,			
					(continued)			,		}																		
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<u>5</u>									× · .																			
2543,61	_			_‡]					5 33										ļ	-		
*WATER	¥ Sta	tandir /ater	ng wate strikes	er lev	el PIEZOMETER	Upper se Respons	se zone	AND B	Bulkd	isturbed s	ample (C Co	tandard penetra	n test	ows SPT (35)	Undist	urbed s	sample	blow co	ount			7	,	ļ		HOLE No. BHC32	2543,GI SHEET 6 OF 8
100 PB					[22	Lower s	eal	KEY P	Pistor	turbed san		r PE	ermeability test	. 31		20 = To	tal blov	ws/pen	etration	n		J	Ge	osphe	ere En	nvironmental	32 2	3,GI
T AC								E	S Enviro		mple soil sample	e		<	incli 125 Sam	iding se ple % p			cron sie	eve								
5					DEPTH All depths	s, level and	thickness	es in metres V	v Wate	Sample																		

CLIENT	Suffol	k Cou	nty (PROJECT: Lake Lo		g Cabla Da	reussi-	n /sk	ell and auger)			\perp	GRO	UND I	.EVEL	m						HOLE No. BHC32		
OGGED E		шт		CHECKED BY: DATE:	EXCAVATION METHOD:		Uncased			eli ariu auger)				Coord	dinate	s: 65	3899	.03,	292	895.	32		SHEET 7 OF 8		
EMPLATI			н ветл				Uncased	1 10 40.0	U III					DATE	S 07-I	Mar-1	8 - 1	5-Ma	ar-18	3			PROJECT NO. 2543,G	il	
te/Time	Depth	Depth		•			Strata		Gra	aphical Representa	ation	San		/In-Situ	Testing		,	Lą	borat	ory Te	sting		Additional Tests and Notes		
and Depth	of Casing	of Water	1 ∺ 1	Description o		Leg	Reduced Level	Depth		SPT 'N' Value 10 20 30	40 75	Depths	Туре	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²			
				Grey silty fine SAND with white (continued) Grey silty fine SAND with occas fragments				- 35.00			75 3	4.00 ³⁴ - 4.00 ³⁵ - 5.00 ³⁵ - 7.00 ³⁷ -	s c	B80 B81 B83	10 15 15 16 19 18 7 28 22 25 32 18 8 17 29 45 25 50 12 13 20 30	75* 75* 75*									
*WATER	▼ Stan ∇ Wat	ding wa er strike	ater leves	rel PIEZOMETER Upper s Respon-	se zone AND B eal TEST U KEY P	Bulk o Undis Pistor	disturbed san sturbed san n sample	ample nple	C Con	ndard penetration ne penetration test meability test	t	(35) N N = 5 N*12	Undist SPT N v 20 = To	turbed : value (b otal blo	sample blows at ws/pen	blow co	unt ing)		ĺ,	Ge	eosph	ere Er	nvironmental	7 OF 8 HOLE No. BHC32	CHEFT
				DEPTH All depths, level and	ES	Enviro	rbed jar sar onmental s r Sample	mple oil sample	е		<42	inclu 5 Sam		eating passing		cron sie	ve	7							-

CLIENT	: Suff	olk (Count	ty C	ouncil	PROJECT: Lake Lo	othin	g				GRO	DUND	LEVEL	m						HOLE No. BHC32
LOGGED	BY: JG			, -	CHECKED BY:	EXCAVATION METHOD):	Čable Pe	rcussio	on (shell and auger)			rdinate			9.03	292	895.	.32		SHEET 8 OF 8
FIELDWO TEMPLAT				BETA	DATE:			Uncased	l to 40.0	0 m			ES 07-						,		PROJECT NO. 2543,GI
Date/Time	Depth	De						Strata	1	Graphical Representation		ng/In-Sit	u Testing			La	borat		esting		Additional Tests and Notes
and Depth	of Casing	, w	of ater	Piez.	Description of	of Strata	Leg	Reduced Level	Depth		pths 2	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²	
23-9,01 - LANE LOTHING, 03-12-17 - AGS TEST GFO GINT STD AGS S. 1.GDT 18-5-10					Grey silty fine SAND with occa fragments (continued)	sional white shell	× · · · · · · · · · · · · · · · · · · ·	Level	- 40.00	0 10 20 30 40 69 39.0	30	B87	5 14 23 27	69* 75*	%	%	**************************************	**	ivig/m ⁻²	KN/M*	Borehole completed at 40.0m bgl. Borehole backfilled with betonite grout.
*WATER	¥ Sta ∇ Wa	andin ater s	g wate trikes	r leve	PIEZOMETER Upper Respor Lower	ise zone AND B seal TEST U KEY P J	Bulk o Undis Pistor Distur S Enviro	disturbed san sturbed san n sample rbed jar san onmental s	ample (nple i mple		SPT blov (35) Und N = SPT	disturbed N value Total bl g seating	d sample (blows a lows/per	blow co fter sea netration	ount ting) n		いり		eosph	ere En	2543,GI SHEET 8 OF 8 HOLE No. BHC32

CLIENT	: Suffo	lk County (Council	PROJECT: Lake L	othin	ng Cabla S		/al11	I				GRC	UND	LEVEL	3.07	75m					HOLE No. BHC101
OGGED E	D BY: JG ORK BY: HOLMES ATE REF: GEL AGS BH BETA Depth of of of Depth*			EXCAVATION METHOD	J:			n (shell					Cooi	rdinate	es: 65	387	0.53	7 <u>, 29</u> 2	<u> 266</u> 1	.398		SHEET 1 OF 4
	ORK BY: HOLMES ITE REF: GEL AGS BH BETA Depth Depth*							rom 0.0 t rom 23.5					DAT	ES 12/	12/20	 17 -	19/1	12/20)17		\Box	PROJECT NO. 2543,GI
ite/Time			• !	•		Strata		Graphic	cal Repr	esentation		Samplin		u Testin				borato		ting		Additional Tests and Notes
and	of	of læ	Description o	of Strata	Leg	Reduced Level	Depth		PT 'N' V 20	alue 30 40	Deptl	. '	No.	Blows	SPT N	<425 %	WC %	PL %	LL % N	r 1g/m³ kN	Cu V/m²	
Depth	- \sqrt{\frac{1}{2}}		CONCRETE (Concrete with 2-5): CONCRETE (Brown grey to gree a sandy gravel with some subb throughout. Sand is fine to coangular to subrounded concre occasional rounded flints. Hyd 0.30 - 2.00 Layers of concrete tranging from degraded crumbl 0.70 Three disused 6 inch pipe the southern wall, all filled with MADE GROUND (Slightly brow gravel. Gravel is rounded to slightly medium flints. Strong hydroca Grey becoming slightly grey br SAND. Gravel of angular to sub moderate hydrocarbon odour 3.50 Gravel becoming less free 4.00 Becoming slightly grey brodour no longer present with 6 medium gravel 6.00 - 7.00 Band of angular to semedium gravel	mm rebar) y concrete recovered as ase/degraded concrete resease/degraded concrete resease/degraded concrete resease Gravel is very te, red brick and rocarbon odour) throughout the strata; ly state to solid. sentering the pit from h soils. In grey slightly sandy ghtly angular fine and rbon odour) own sitty gravelly fine rounded fine flint with liquent with depth	× · · · · · · · · · · · · · · · · · · · ·	Level	- 2.00 2.50	7	20	80 40	0.30 0.90 1.40 2.10 2.50 3.00 3.50 4.00 5.00	0 = ES	J1 J2 J3	23 334 34 21 110 111 12 334 57	14 3 19 16 32 30		%	%	% N	1g/m³ kN	V/m²	VOC = 1ppm VOC = 4ppm VOC = 6ppm 1.4m sample is comprised of crushed concrand red brick and is red/grey in colour. Slow/moderate inflow of water at 2.1m VOC = 3ppm Water sample taken as water flowed into the excavation. Groundwater exhibited a black hydrocarbon "sheen". VOC = 4ppm. Hand dug pit to 2.4m, casing placed in the hole and backfilled with arisin VOC = 1ppm VOC = 1ppm VOC = 1ppm VOC = 1ppm VOC = 0ppm VOC = 0ppm
-	-				× × ×	; ; ;	_		/]	9 - B	8 J12 9	46 812	12							
					×						9.80	ES S	J13	23 34 714	36							oppiii
*\\/\\TED	▼ C+c···	ding water law	el PIEZOMETER 📆 Upper	- — — — — — — seal SAMPLE D		disturbed	cample			ation test	10.00	B ES	11 J14	10 9 8 9		non+						VOC = 0ppm
		er strikes		nse zone AND B seal TEST U KEY P	Bulk o Undis Pistor Distu	disturbed sa disturbed san sturbed san n sample rbed jar sar onmental sa	ample aple aple	C Cone pe K Permeal	enetratio	n test t	I) SPTN N N ii	35) Undi I = SPT N I*120 = 1 ncluding	isturbed N value (Total blo seating	d sample (blows at ows/per	blow co fter seat netration	ount ting) n		N N	Brig Brig	ghtwell I ghtwell,	Barn Suff	vironmental Ltd is, Ipswich Road folk, IP10 BJ 603 298076
			DEPTH All depths, level and				oii sample	!			425 S	ampie %	o passin	g 425 mi	icron sie	eve			J	- PI 10116.	. 51	-

CLIENT	: Suffo	lk Co	unty (Council	PROJECT: Lake Lo	othir	ng				GR	OUND	LEVEL	3.07	'5m				HOLE No. BHC101
LOGGED				CHECKED BY:	EXCAVATION METHOD:				on (shell and auger)		Cod	ordinate	es: 65	3870).537, 2	9266	61.398	3	SHEET 2 OF 4
	RK BY: HO		ВН ВЕТА	DATE:			200mm (cased fr	from 0.0 to 23.5m from 23.5 to 38.4m		DA ⁻	TES 12/	/12/20	17 -	19/12/	2017	7		PROJECT NO. 2543,GI
ate/Time		Depth					Strata	1	Graphical Representation		ling/In-S	itu Testin					Testing		Additional Tests and Notes
and Depth	of Casing	of Wate	l ë	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value D	epths	e ≧ No.	Blows	SPT N	<425 %	WC PL	LL %	r Mg/m	Cu kN/m²	
_	_			Grey becoming slightly grey bro SAND. Gravel of angular to sub moderate hydrocarbon odour	rounded fine flint with	× · · · · ×	· · · ·	_	72	00 11-	D 12 B 13 S J15	10 12 25 25	72*						VOC = 0ppm. SPT final penetration 70mm
_	_			Grey brown slightly gravelly sa angular to subrounded fine flin Orange brown gravelly fine to	t /	× × ·	· · · · · · · · · · · · · · · · · · ·	12.20 12.40	/-	‡	D 16 D 14 S J16 B 15	16 89 1515	47						VOC = 0ppm
_	_			angular to subrounded flint		0	•	_	13.	00 13	D 17 B 18	3 2 5 8 8 11	32						_
-	_			Brown gravelly silty slightly gra SAND. Gravel of angular to sub	velly fine to medium rounded flint	× × · •	· · · ·		0	1	D 19 B 20	6 10 10 10 15 15	66*						SPT final penetration 40mm
-	-					× × × × × × ×		_	15.	1	D 21 B 22	9 9 12 20 18	68*						SPT final penetration 25mm
_						×		_	16.	1	D 23 B 24	88 11 15 17 7	66*						SPT final penetration 10mm
_				Grey slightly clayey silty fine an	d medium SAND		• • •	7 17.00	0	00 17-	D 25 B 26	3 4 5 8 9 11	33						-
_	_						: :	_	18.	00 18	D 27 B 28	8 10 14 8 10 11	43						-
=	_						-	_	19.	00 19	D 29 B 30	10 17 35 15	77*						SPT final penetration 35mm
-	_			Grey clayey silty fine SAND			<u>.</u>	20.00	0 70 20.	00 20	D 31 B 32	8 12 25 25	70*						SPT final penetration 40mm
'WATER	▼ Star ▼ Wat	nding w er strik	ater lev es	el PIEZOMETER Upper s Respon Lower s	se zone AND B eal TEST U KEY P	Bulk Undi: Pisto Distu	I disturbed sa disturbed sa sturbed san n sample rbed jar sar conmental si	ample (nple k mple	·	(35) U I N = SP N*120 includ	ndisturbe T N value) = Total b ing seatir	ed sample (blows at blows/per	blow co fter seat netration	ount ing) I	Jec	B	Brightw Briahtw	ell Barr ell. Suf	vironmental Ltd is, Ipswich Road folk, IP10 BJ 603 298076

CLIENT	Γ: Su	ffolk	County	Council	PROJECT: Lake L	othin	ig			1	\			GRO	UND	LEVEL	. 3.07	′5m				HOLE No. BHC101		
LOGGED	DEPTH DEPTH S DEPTH DEPTH S DEPTH DEPTH S DEPTH DEPTH S DEPTH DEPTH S DEPTH DEPTH S DEPTH DEPTH S DESCRIPTION OF STR				EXCAVATION METHOD	J:	Cable Pe 200mm							Coor	rdinate	es: 65	53870).537,	2926	61.398	8	SHEET 3 OF 4		
	DRK BY: HOLMES TE REF: GEL AGS BH BETA Depth Depth*						200mm (DAT	ES 12/	12/20)17 -	19/12	/201	7		PROJECT NO. 2543,G	I	
ate/Time							Strata			nical Repre		Sa			u Testin					Testing		Additional Tests and Notes	-	
and Depth	of	f	of la	Description	n of Strata	Leg	Reduced Level	Depth	0 10	SPT 'N' Va	0 40 7	Depths	1.	No.	Blows	SPT N	<425 %	WC P	L LL 6 %	r Mg/m	Cu kN/m²			
-	+			Grey clayey silty fine SAND (continued)	·		F				21.00 ²¹	D		10 14	74*						SPT final penetration 70mm		
				Brown coarse SAND		*:	‡	21.30				:] B	34	14 36									
				Grey silty SAND		[[·^.·]	;	21.40					1											
_	Ļ			Grey silty CLAY		<u>×</u>]	21.80				21.80 22	D	35								_		
						×	-					22.00	T100	36										
						<u>x_</u>	1		 				1											
						<u>×</u>						22.60	D B	37 38										
-	+					<u>~</u>	4	-			•••••••••••••••••••••••••••••••••••••••	23.00	⊔		10 10	49						_		
						<u>×</u>	-						В	40	10 12 13 14									
						- -	1		1			.1	1		15 14									
_	L							L		::::		2/	Ė											
						-×						24.00	T100	41										
				Dark grey gravelly clayey me subangular fine shells	dium SAND. Gravel of	***	•	24.30				1	1	73										
				Grey silty SAND		×		24.70				24.60	D [42										
-	╆			,, .			.>	-				25 00 ²⁵	d D	43	7 10	67*						SPT final penetration 25mm		
						×	.]		:::::			25.00	B		12 12	0,						or rimar perietration 25mm		
						× :	1					1	1		206									
						\hat{\chi}\chi	;			::::	:::::::::::::::::::::::::::::::::::::::	4	.‡											
_	T					×' .		Γ				26.00 ²⁶	Ę p		12 13	46								
							.}						В		10 10 12 14									
						×							1											
_	+						1	F				27 00 27	4	40	C 11	67*						CDT final nanatuation 10mm		
												27.00	D B	48 49	6 11 18 27	67.						SPT final penetration 10mm		
						× * .						1	1		5									
												17	1											
_	t					×	•	-	l			28.00 ²⁸	d E		12 15	77*						SPT final penetration 50mm		
						· <u>×</u> · :				::::			В	51	26 24									
						· . · .				::::]											
_	1					×	.]	L				74	4_									L		
						·	1		:::::			29.00	D B	52 53	9 15 34 16	74*						SPT final penetration 20mm		
						-^`.·	;		 				1											
						× * .			:::::	::::		34	1											
-	t							-				30.00	H D	54	9 14	84*						SPT final penetration 50mm		
						×	:] B	54 55	11 27 23							·		
						· <u>x</u> · :	1						1		23									
_	1						.}	L	1			T'	1									_		
						×							D B		10 17 30 20	77*						SPT final penetration 30mm		
*\\/\TED	\	Stand	ha water la			- ' - '	dicturbod	cample of			ation test E	1	hlows	for ac	ch 75~~	n incre-	nont			1		<u> </u>		
WAIEK	· Δ ·	Water	rig water iev strikes	.H. Resp	onse zone AND B	Bulk	disturbed s	ample (C Cone p	oenetratio	n test	(35) Undis	turbed	sample	blow co	ount			Geosph	nere En	vironmental Ltd	물등	SHEET 3 OF 4
				Lowe			sturbed san n sample	nple l	K Perme	ability test	: S	PTN N=			(blows at ows/per			4	E	3rightw	ell Barr	ns, Ipswich Road		치田무
					j	Distu	rbed jar sar					incl	uding s	seating	5				E	Brightw	ell, Suf	folk, IP10 BJ	걸장	₽ ' 9
					E: nd thicknesses in metres W		onmental s	oil sample			<	:425 San	nple %	passing	g 425 mi	cron sie	eve			elepho	one: 01	1603 298076	-	

CLIENT	: Suffo	lk Cou	nty (Council	PROJECT: Lake Lo	othin	ıg				G	ROUND	LEVEL	3.0	75m				HOLE No. BHC101	
LOGGED				CHECKED BY:	EXCAVATION METHOD				n (shell and auger) om 0.0 to 23.5m		C	ordinat	es: 65	387	0.537,	2926	61.39	8	SHEET 4 OF 4	
FIELDWO TEMPLAT			H BETA	DATE:		:	200mm (cased fr	om 23.5 to 38.4m		D	ATES 12	/12/20)17 -	19/12	/201	7		PROJECT NO. 2543,GI	
Date/Time		Depth*	ez.				Strata	l I	Graphical Representation			-Situ Testir	ng T		Labo	ratory	Testing		Additional Tests and Notes	
and Depth	of Casing	of Water	Piez.	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value De	epths	Туре	o. Blows	SPT N	<425 %		L LI	∟ r 5 Mg/n	Cu n 3 kN/m²		
			Ħ	Grey silty SAND (continued)		×.			 	-										
_						×	1	-	79	32		.								
						 	;}		32.	.00 [D 5 B 5	9 9 20 9 41 9	79*						SPT final penetration 10mm	
						× :				1										
_	_					×	.]	ļ.	222	33	D 6								-	
						×:			33.	.00.	В 6	J								
						ļ	.}			1										
-	-					×		-	34.	00 34	D 6	1 57	48						-	
						×	.]			.00	B 6	9 11 12 16	40							
						×	.]]		12.10								
-	-					 	.}	-	35.	.00 35	В 6	3							_	
						×	:		35.	1										
						×	.]		6 7]										
-	-					×	.]	-	36.	.00 36	D 6	4 89	67*						SPT final penetration 40mm	
]	В 6	5 12 12 15 11							,	
						×	·			1										
-	-			Grey silty slightly gravelly fine S	AND. Gravel of	×o.		37.00	37.	37-	В 6	٤							-	
				subangular fine shell fragments	i	× :				1	Б 0									
						6.	;}		85]										
-	-					×	. 	-	38.	.00 38	D 6		85*						SPT final penetration 30mm	
						×o*]	В 6	8 28 22								
						×	·}			-										
_						0.	.}		39.	.00 39	В 6	9							-	
						×	. }]										
						×o.	.]		87	40										
							1	40.00	40.	.00 40-	D 7	0 17 20 22 28	87*						SPT final penetration 60mm	
										1										
								L		41										
										7']										
										1										
_			$\perp \downarrow$			L_		-		42									-	
*WATER	▼ Stan ▼ Wat	iding wat er strike	ter leve	el PIEZOMETER Upper s H. Respon Z. Lower s	se zone AND B eal TEST U KEY P	Bulk o Undis Pistor	disturbed sa disturbed sa sturbed san n sample rbed jar sar	ample (nple l	6 Standard penetration test Blows C Cone penetration test C Permeability test SPT N	(35) U N N = S N*12	Jndistur PT N val	bed sampl ue (blows a I blows/pe	e blow co	ount ting)	P	O	Bright\ Briaht\	vell Barı vell. Suf	IUIK. IF IU DJ I 🗀 🚄 I	SHEET 4 OF 4
				DEPTH All depths, level and	ES	Envir	onmental s		<425			ssing 425 m	icron sie	eve			i eleph	one: 0	1603 298076	l l

CLIENT	: Suff	olk Co	ounty (Council	PROJECT: Lake Lo	othin	ng						GRO	UND	LEVEL	3.09	92m				HOLE No. BHC102
LOGGED			•	CHECKED BY: SG	EXCAVATION METHOD):				nell and auger) 0.0 to 13.0m			Coor	dinate	es: 65	5388	9.341,	2926	661.4	4	SHEET 1 OF 4
FIELDWO TEMPLAT				DATE:					rom 1	13.0 to 36.6m			DATE	ES 01/	12/20)17 -	11/12	/201	.7		PROJECT NO. 2543,GI
Date/Time							Strata		Gra	aphical Representation	San		/In-Situ	u Testing					Testin		Additional Tests and Notes
and Depth	of Casing	g Wa	ter =	Description	of Strata	Leg	Reduced Level	Depth		SPT 'N' Value 10 20 30 40	Depths	Туре	No.	Blows	SPT N	<425 %		PL L % %		m³ kN/m²	
-	-		98	CONCRETE and rebar (5mm)			3	0.00			0 -										
				MADE GROUND (Dark brown g fine and medium brick and cor				0.17		C	0.30	ES	J1								PID VOC = 62 ppm
				\hydrocarbon odour) CONCRETE		2 K					-										
Ī	Ī			MADE GROUND (Dark brown/ coarse sand. Gravel of fine and	black very gravelly		3	1.00		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	00	ES	J2								PID VOC = 3 ppm
				concrete, with a very mild hyd Brown slightly clayey very grav	rocarbon odour)	- •		1.40		1	50 -	ES	J3								PID VOC = 2 ppm
_	_			SAND. Gravel is fine and medit subangular flints	im rounded to	<u>.</u> :-	-	2.00		1	60 -	В	B1								_
				Grey slightly sandy fine and medium coarse and gravel is si	edium GRAVEL. Sand is	ĺ°∙		2.00		2 2	2.00- <u>-</u> 2.50 <u>-</u>	В	2								Water added from 2m to 36.5m
				flints. Moderate to strong hyd		0.				2	2.50	ES	J4								PID VOC = 40 and 6 ppm two tests
-	_					ò.		-		7 a	3.00-	В	4	5 7	45						_
						•	•			3 3 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	3.50	С		8 10 12 15							
										3	3.50	ES	J5								PID VOC = 2 and 4 ppm two tests
-	_						\cdot	-		· · · · · · · · · / · · · · · 4	1.00-	B C	6	6 8 12 11	40						-
						•	1			4	1.50 -	ES	J6	89							PID VOC = 1 ppm
				Brown silty gravelly SAND. Gra	vel is fine and medium	×o.		4.80			5 -										L L L L L L L L L L L L L L L L L L L
				subrounded to angular flint. N hydrocarbon odour.	lild to moderate	·× ·	·}			5 5 5 5	5.00- 5 5.50 -	B C	8	3 6 4 5	20						
						6.	.}			5	5.50	ES	J7	56							PID VOC = 1 ppm
_	_			Dogwood Balaka ana alkana di wa	- Fire CAND Correllie	×	•	6.00	:::::	•	6 -	В	10	2.4	27						_
			[∄]	Brown slightly gravelly medium fine and medium subrounded occasional soft grey brown cla	to angular flint, with			0.00		6	5.50	C	10	24 57 78	27						
				8.0m bgl. Mild Hydrocarbon o	dour.					(e	5.50	ES	J8	/ 0							PID VOC = 1 ppm
-	_		[]]					-	:::::	 	7 -7	В	12	33	27						-
l										7	'.50	С		46 710							
			[計]			:::				· · · · · · /· · · · · · · · · · · · ·	7.50 <u>-</u>	ES	J9								PID VOC = 0 ppm
-	_						:	-			3.00- 8 -		14	23	19						_
									:::::	8	3.45 3.00-	B S ES	15 J10	4 5 5 5							PID VOC = 2 ppm
l						0.				1 2	3.50	LJ	,10								116 VGC - 2 ppiii
			[計]				:∮			9).00- ⁹ -	SPT B	17 18	3 4 5 7	33						
						0	.			<u> </u>).00-).50	S		10 11							PID VOC = 0 ppm
_	-		 			· : · :	:	L		8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	0.50	_	25		2-						-
							:		1:::::		.0.00- 10 .0.50 -	B S	20	23 45	23						
*WATER		anding v		el PIEZOMETER Upper Respor Lower	nse zone AND B seal TEST U KEY P	Bulk o Undis Pisto Distu	disturbed s sturbed san n sample rbed jar san	ample nple mple	C Con K Peri	·	(35) FN N = 9 N*12 inclu	Undis SPT N 20 = T ding s	turbed value (lotal blo seating	sample blows at ows/pen	blow co ter sea etration	ount ting) n	P	U	Bright Briaht	well Barı well. Suf	vironmental Ltd ns, Ipswich Road folk, IP10 BJ 1603 298076
				DEPTH All depths, level and			onmental s r Sample	oil sample	e 	<42	25 Sam _l	ole %	passing	g 425 mi	cron sie	eve			i elebi	IOHE. U	

CLIENT	: Suffo	lk Cou	nty C	ouncil	PROJECT: Lake Lo	othin	ng		- (ab all and			GRO	UND L	EVEL	3.09	92m				HOLE No. BHC102		
LOGGED				CHECKED BY: SG	EXCAVATION METHOD				n (shell and auger) om 0.0 to 13.0m			Coord	dinate	es: 65	3889	9.341	, 292	661.4	14	SHEET 2 OF 4		
			H BETA						om 13.0 to 36.6m			DATE	S 01/	12/20)17 -	11/1	2/20:	17		PROJECT NO. 2543,G	il	
Date/Time		Depth*	ez.				Strata		Graphical Representation	Sa	T	/In-Situ	ı Testing				orator		ng	Additional Tests and Notes		
and Depth	DATE: DATE: DATE: Depth of of Casing Water Description and medium sub-occasional soft grey by occasional soft grey by occa			Description of	Strata	Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30 40	Depths	Туре	No.	Blows	SPT N	<425 %	WC %	PL I	L % Mg	r Cu :/m³ kN/m	2		
	Depth of of Casing Water Depth beautiful Depth* in the control Depth of Of Casing Water Depth beautiful Depth* in the control Depth of Casing Water Depth beautiful Depth* in the control Depth of Casing Water Depth beautiful Depth* in the control Depth of Casing Water Depth of Depth* in the control Depth of Casing Water Depth beautiful Depth* in the control Depth of Casing Water Depth of Depth* in the control Depth of Casing Water Depth of Depth* in the control Depth of Casing Water Depth of Depth* in the control Depth of Casing Water Depth of Casing Water Depth of Casing			Brown slightly gravelly medium	fine SAND. Gravel is	0				10.50	ES	J12	77							PID VOC = 33 and 75 ppm		
-	_		田	occasional soft grey brown clay 8.0m bgl. Mild Hydrocarbon odd	up to 50mm thick from		•	-	<u> </u>	11 00 11	В	22	4.6	35						-		
				8.011 bgi. Willa nyarocarbon out	our. (continueu)	0	•			11.50	č		4 6 6 7 10 12	33								
							:		- <u> </u>	;	-											
-	_					٥.	•	-	/	12	C		2 2 8 9	34						-		
				Brown gravelly CLAY. Gravel is f subrounded flint.	ne angular to	-0_	-	12.20	/	12.20- 12.60	В	23	107									
				Brown gravelly silty SAND. Grav subangular to rounded flint.	el is fine and medium	×o	-	12.60]											
-	<u> </u>					** *	•	_		13.00-	B C	24	2 5 5 5	22								
						×	.]			113.50			5 7									
_								- 14 00		14]									_		
				Brown silty slightly gravelly med fine and medium subangular to	ium SAND. Gravel is rounded flint.	×o	.>	14.00		14.00- 14.50	B C	25	5 7 9 9	36								
						× .	•			1]		99									
-	_					×	.]	-		15 00-15	SPT	26	45	35						-		
						,×0.				15.45	B	27	77 10 11	33								
							.}		1	115.50]		10 11									
-	-					×.	• •	-	<u> </u>	16.00- ¹⁶		28	3 4	40						-		
				Grey/brown slightly clayey med	ium SAND.			16.20		16.45 16.00-	В S		8 8 11 13									
						<u>.</u>	•			116.50]											
-	<u> </u>					-:-		-	*	17.00-	SPT B	30 31	3 4 8 11	42								
				Grey silty fine and medium SAN	D.	×	-	17.40		17.00-	Š		11 12									
_						×.	.]	_		18]											
							.>			18.00- 18.45	1в	32 33	23 45	19								
						·*.·	.}			118.00- 118.50	S		5 5									
_	-					×	.	-		: 19 00- ¹⁹	T100	34	(60)							-		
						×	.]			19.45	1 B	35	(66)									
						·. ·	.]			19.50]											
-	-							-		20.00-	SPT	36	68	64*						SPT final penetration 70mm		
						·^·	.}		[[120.43	B	٥, ا	12 12 14 12									
						×	·			20.50]											
*WATER	<u>▼</u> Star	l Iding wat	er leve	PIEZOMETER Dpper so			disturbed s		S Standard penetration test	Blows SPT										F	B T 2	S
	⊻ Wat	er strikes	5	el PIEZOMETER Upper so Respons Lower so	eal TEST U	Undi	disturbed sa sturbed sam		C Cone penetration test K Permeability test	SPT N N =	SPT N	value (b		ter seat	ing)		A 4 1	Geos	sphere Er	nvironmental Ltd ns, Ipswich Road	2 OF 4 HOLE No. BHC102	
					J	Distu	n sample rbed jar san			incl	uding s	eating				7		Brigh	ntwell, Su	ffolk, IP10 BJ	02 No	SHEET
				DEPTH All depths, level and t	ES	Envir	onmental so			<425 San				cron sie	ve			l ele	onone: 0	1603 298076	-	

CLIENT	: Suffo	lk Coun	ty C	Council	PROJECT: Lake L	othin	g					GRO	UND I	LEVEL	3.09	2m				HOLE No. BHC102
LOGGED		DIMES		CHECKED BY: SG	EXCAVATION METHOD	J:			n (shell and auger) om 0.0 to 13.0m		L	Coor	dinate	es: 65	3889	9.341,	2926	61.44		SHEET 3 OF 4
FIELDWO TEMPLAT		L AGS BH	<u>BE</u> TA	DATE:					om 13.0 to 36.6m			DATE	S 01/	12/20)17 -	11/12	/2017	7		PROJECT NO. 2543,GI
Date/Time	Depth		Piez.				Strata		Graphical Representation	Sar	npling/		Testing	S		Labo	atory	Testing		Additional Tests and Notes
and Depth	of Casing	of Water	Ä	Description o	f Strata	Leg	Reduced Level	Depth		Depths			Blows	SPT N	<425 %	WC P	- LL %	r Mg/m	Cu kN/m²	
-	-		-+	Grey silty fine and medium SAN	D. (continued)	× .		-	0 10 20 30 40	1.00- ²¹	T100	38	(110)							
				a di ann			<u> </u>	21 50	2	1.45 1.00-	В	43								
				Grey silty CLAY.		× ×		21.50		1.50 1.70	D	39	(85)							
_	_					<u>×</u> _x	1	-	2	1.80-22 2.25	T100 B	40 42	(65)							-
						<u>×</u>	1		2	2.00- 2.50	D	41								
						<u>~</u>	-		2	2.50	1									
						X	1		2	3.00 23	SPT	44	2 5 7 7	35						
						×	1		2	3.50	Š	75	10 11							
						× ×	1	L		24										
						×-	1		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	4.00- ²⁴ 4.45	T100 B	46 48	(120)							
			F	Grey gravelly SAND. Gravel is fir	ne subangular shells.	· o .		24.50	2	4.00- 4.50		47								
								- 25 00	2	4.60	1	47								_
				Grey silty fine and medium SAN clay bands.	D with occasional thin	×	,	25.00	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	5.00- ²⁰ ; 5.45	SPT B		4 8 10 11	48						
						×			2	5.00- 5.50	S		12 15							
_	_					×		_ :	2 65 2 2	26										
							}		2	6.00- 6.45	SPT B		5 10 15 16	65*						SPT final penetration 70mm
						×	,		2	6.00- 6.50	S		19							
_	_					×		-	68	27-	CDT			C0*						- CDT final management as 50 mm
						×·	1		2	7.45	В		4 14 16 20	68*						SPT final penetration 50mm
							}		2 2 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	7.50 7.50	3		14							
_	-					×	,	-	72	e on 28	СВТ	55	8 14	72*						SPT final penetration 40mm
						×			2	8.45 8.00-	B	56	16 22 12	72						3FT Illiai peliettation 40mm
			H	Grey very silty clayey SAND.		 ::	1	28.60	2	8.50			12							
-	-					- - -		-	2 2 2 2 2 2 4 5 6 7 2 2 2 3 3 3 3 3 3 3	9.00- ²⁹	T100	57	(100)							_
-						F:			2	9.45 9.00-	B SPT	59 59	(===,							
				Grey silty fine and medium SAN clay pockets.	D, with occasional small	×		29.50	2	9.50 9.00-	D	58								
-	_			.,,		×		-	5	9.45 30 9.60	D	61	38	61*						SPT final penetration 60mm
							1		3	0.00- 0.45	B	62	16 17 17							
						*. · ;	,		3 3 83	0.00-										
-	-					×		-	3	1.00- ³¹	D	63	8 25	83*						SPT final penetration 10mm
			$_{\perp}\downarrow$			_ <u> × · ·</u>]		3	1.45	В	64	24 20							·
*WATER		iding wate er strikes	r leve	el PIEZOMETER Upper s Respons Lower s	se zone AND B eal TEST U KEY P	Bulk d Undis Piston Distur	listurbed san turbed san sample bed jar sar	ample C nple k nple	,	(35) N N = N*1 inclu	Undist SPT N v 20 = To uding se	urbed : alue (b tal blo eating	sample plows af ws/pen	blow co ter seat etration	ount ting) 1	Jec		Brightw Brightw	ell Barr ell, Suf	vironmental Ltd hs, Ipswich Road folk, IP10 BJ 603 298076
<u> </u>				DEPTH All depths, level and			onmental s r Sample	oii sample	<42 	5 Sam	pie % p	assing	425 mid	cron sie	ve	O		olopi10	, io. UI	

and	RK BY: H		Piez.	CHECKED BY: SG DATE: Description of Grey silty fine and medium SAN clay pockets. (continued)		Leg	250mm 200mm Strata	cased fr cased fr	on (shell and auger) rom 0.0 to 13.0m rom 13.0 to 36.6m Graphical Representation			rdinate							SHEET 4 OF 4
TEMPLATE Date/Time and	REF: GE Depth of	L AGS BI Depth* of		Description o		Leg	Strata Reduced	cased fr	rom 13.0 to 36.6m		DAT	ES 01/	12/20	4-7					l
and	of	of	Piez.	Grey silty fine and medium SAN			Reduced		Craphical Poprocentation					1/-	11/12	201	7		PROJECT NO. 2543,GI
			id	Grey silty fine and medium SAN					· · · · · · · · · · · · · · · · · · ·		<u> </u>	u Testing					Testing		Additional Tests and Notes
					ID, with occasional small		Level	Depth	SPT 'N' Value D	epths 원	No.	Blows	SPT N	<425 %	WC P	- LL %	r Mg/m	3 kN/m²	
+	-					×	, , ,	-	31. 841. 32. 32. 32. 32. 32.	.50] .00- 32- .45] D	65 66	6 10 24 27 23	84*						SPT final penetration 50mm
						×	, , , ,	-	32. 32. 32. 32. 32. 33. 33. 33. 33. 33.	.50	67 68	5 7 19 15	62*						SPT final penetration 35mm
+	-					×	; ; ; ;	-	34.	.00- D	69 70	3 25 28 22	78*						SPT final penetration 20mm
	-					×	>	_	344 34. 62 35. 35. 35. 35.	.00- ³⁵ D	71 72	5 7 12 20 18	62*						SPT final penetration 40mm
1	-					×	*	-	36. 36. 36. 36. 36.	.00- ³⁶ D	73 74	6 12 10 12 14 14	68*						SPT final penetration 20mm
+	-					1	1	37.00		37									Borehole ceased due to bailer lost and unable continue.
	•							-		38									_
1	-							-		39									_
1	-							-		40									_
-	-							-		41-									-
1	-									42									_
*WATER	▼ Star ∇ Wat	ding wat er strikes	er lev	el PIEZOMETER Upper s Respon Lower s	se zone AND B eal TEST U KEY P	Bulk of Undis Pistor Distu	disturbed s disturbed s sturbed san n sample rbed jar san onmental s	ample (mple I mple		(35) Und N N = SPT N*120 =	disturbed N value Total bl g seating	d sample (blows af ows/pen	blow co ter seat etration	unt ing)	Jec		Brightw Brightw	ell Barr ell, Suf	vironmental Ltd ns, Ipswich Road folk, IP10 BJ 603 298076 BHC102 BHC102 F 4 OF 4 OF 4

CLIENT	: Suffo	lk County	Council	PROJECT: Lake Lo	othing	g			GRO	DUND	LEVEL	. m	HOLE No. BHC103
LOGGED			CHECKED BY: SG	EXCAVATION METHOD:				n (shell and auger)	Coc	rdinate	es:		SHEET 1 OF 4
FIELDWO TEMPLAT		M EL AGS BH BE	DATE:					om 0.0 to 18.5m om 18.5 to 38.8m				017 - 29/11/2017	PROJECT NO. 2543,GI
Date/Time						Strata			_	tu Testing		Laboratory Testing	Additional Tests and Notes
and Depth	of Casing	Depth* of Water	Description o	Strata	Leg	Reduced Level	Depth	SPT 'N' Value Depths	No.	Blows	SPT N	<425 WC PL LL r Cu Mg/m³ kN/m	2
			TOPSOIL with cobble of brick at		XXX		0.00	0					
			MADE GROUND (Dark grey coal Asphalt)	/			0.18	0.30	J1 J2				PID VOC = 0ppm PID VOC = 0ppm
			MADE GROUND (Dark grey browith fine to coarse gravel and coarse	wn gravelly clayey Sand obbles of brick and	\bowtie		- 0.90	0.30 0.50 1- 1.00 1.20					
			\mortar) MADE GROUND (FILL) (Dark ora	nge brown slightly	\bowtie		1.20	1.00	J3 J4				PID VOC = 0ppm PID VOC = 0ppm
			gravelly medium to coarse Sand (rounded flint)		 : : 		1.50	1.50- S 2.00	4	5 6	33		132.55
	1		Dark orange brown / yellow bro				-	2.00		7 8 10 8			F
			\flint.		F			1	J5				PID VOC = 1ppm
			Grey brown clayey slightly silty of fine subangular to subround moderate hydrocarbon odour, and hydrocarbon sheen.	ed flint. Mild to			2.50	2.50- 3.00 2 - 2.50- 3.00 C	5 J6	5 4 5 5 6 8	24		PID VOC = 0ppm
			Brown grey gravelly slightly clay and medium subrounded to sul odour in top 1m of this strata	ey SAND. Gravel of fine pangular flint. Mild HC	-: -:			3.50- C	6	46	19		PID VOC = 4ppm
-	_					X	-	3.50- C 4.00 3.50 4	J7	66	13		-
								4.50- C	7 J8	1 4 4 3	14		PID VOC = 25 & 7ppm (two tests)
-	_		Orange brown slightly silty fine	SAND with occasional	 ×		5.30	4.50 C 5.00 4.50 5 –	8	43			-
:			fine subangular to subrounded	flint gravel.	×			5.50 C C 6.00 5.50 6	9 J9	4 3 4 4 6 6	20		PID VOC = 0ppm
					×			6.00- SPT 6.45 C 6.00- 6.50	10 11 J10	3 3 4 5 4 3	16		PID VOC = 0ppm
_	_		Brown slightly gravelly SAND. G medium rounded subangular fli	ravel of fine and nt.	0		7.00	5.30 D 5.50 C 6.00 5.50 6 6.00- 6.00- 6.50 6.50 6.50 7.00- 7.00- 7.7.50 7.00- 7.00- 8.00- 8.00- 8.00- 8.00- 8.00- 9.00-	12 13 J11	7 8 12 12 10 12	46		PID VOC = 13 & 6ppm(two tests)
=	_						_	7.00 8 SPT SPT SPT SPT SPT SPT SPT SPT SPT SPT	14 15	13 34 44	15		_
_							9.00	8.50 8.50 9	J12				PID VOC = 0ppm
_			Brown gravelly medium and coa	arse SAND			9.00	9.00- 9.50 9.50 9.50	16 17 J13	56 77 910	33		PID VOC = 0ppm
-	_						_	9.30 10.00- 10 10.45 SPT	18 19	8 12 15 16			PID VOC = 0ppm
		iding water le er strikes	evel PIEZOMETER Upper s Respons Lower s	eal AND B TEST U KEY P	Bulk di Undist Piston Disturl	isturbed san turbed san sample bed jar sar	ample nple mple	S Standard penetration test Blows SPT blow: C Cone penetration test (35) Undi Permeability test SPT N N = SPT N N*120 = 1 including	isturbe I value Total b seatin	d sample (blows af lows/pen g	blow co fter seat etration	Geosphere E Brightwell Ba Brightwell, Su	nvironmental Ltd rns, Ipswich Road ffolk, IP10 BJ 1603 298076
			DEPTH All depths, level and			nmental s Sample	oii sample	<425 Sample %	passir	ng 425 mi	cron sie	eve leephone. C	1003 298070

LIENT:	Suffo	lk Cou	nty C	Council	PROJECT: Lake Lo	othin	g Cabla S		n (ahall and awara)		GR	OUND	LEVEL	m						HOLE No. BHC103		
GGED B		N		CHECKED BY: SG DATE:	EXCAVATION METHOD				n (shell and auger) om 0.0 to 18.5m		Cod	ordinat	es:							SHEET 2 OF 4		
		L AGS BI	H BETA						om 18.5 to 38.8m			TES 21,		17 -	29/1	1/20	17			PROJECT NO. 2543,G	<u> </u>	
	Depth	Depth*	Piez.				Strata	1	Graphical Representation			itu Testin				orator				Additional Tests and Notes		
epth	of Casing	of Water	<u>a</u>	Description of	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30 40	Depths	No.	Blows	SPT N	<425 %	WC %	PL I	-L	r g/m³ k	Cu (N/m²			
			<u> </u>	Brown gravelly medium and co	arse SAND (continued)					10.00-	J14	19/70mr	n									
+	•			Grey brown becoming orange	brown gravelly SAND.	0.	<u>: </u>	11.00		10.00 11	B 20 C	5 10 12 15							-	-		
				Gravel is subrounded to suban flints.	gular fine and medium					11.25		18 5/10m	m									
						0.																
Ť	•						:			12.00-	B 21	6 7 7 12	45							-		
						٥.				-		12 14										
+								- 1		69 13	n 22	6.13	co*							_		
										13.45	B 22 C	6 13 19 31	69*									
							:]			13.60	D 23											
†	•				_			-		14.00-	B 24	10 12 14 16	72*						ŀ	-		
						0				114.50	C	20										
1										7/5 15										_		
						0.			 ;;:::	15.00-	B 25 C	10 15 15 20 15	75*									
										1 1		12										
+						°		-		15.80 16.00-16	D 26 B 27	38	49						ł	-		
										16.50	C	9 12 13 15										
										17										_		
T				Grey slightly silty fine SAND with	h occasional small	/ <u>/</u> /	:	17.20		17.00- '7 17.45	PT 28 B 29	1 2 3 7	27							_		
				bands of clay. 18m - small bands sample.	of clay within bulk	 x	1			1	S	8 9										
+							}	-		17.80	D 20 31	(65)							}	_ Small band of clay within the	bulk sam	nple
						×	;			18.45		`,										,
						×	;			18.60	D 32											
†	-			Grey silty fine SAND.	7	×		19.00		19.00- 19-s 19.45	PT 33 B 34	5 4 10 20	59*						İ	-		
						×				19.00- 19.50	S	20										
+						×	1	-		20 00 20	В 35	(85)								-		
				▼		×	1			20.45	36	(85)										
							1			: 20.50												
<u></u> VATER	▼ Stan	ding wat	⊢ ∔	el PIEZOMETER D Upper	seal SAMPLE D	Small	disturbed	sample s	S Standard penetration test	7 211	ows for e	ach 75mr	n increm	nent					-	<u>-</u>		
		er strikes			se zone AND B	Bulk c	disturbed san	ample (C Cone penetration test		ndisturbe	ed sample	blow co	unt						vironmental Ltd is, Ipswich Road	HOLE No. BHC103	5 5 5 5 5 5 5
				22	KEY _P	Pistor Distur	n sample rbed jar sar	nple	,	N*120		olows/per			7	V	Brig	htwell	, Suff	folk, IP10 BJ	ios ENo	:: :: 4
				DEPTH All depths, level and	ES	Enviro	onmental s			<425 Samp			icron sie	ve			Tele	phone	e: 01	603 298076	٦	

CLIENT	T: Suffo	lk Count	y Co	uncil	PROJECT: Lake L	othin	g			GI	ROUND	LEVE	. m					HOLE No. BHC103			
LOGGED				CHECKED BY: SG	EXCAVATION METHOD):			on (shell and auger)	Cc	ordinat	es:						SHEET 3 OF 4			
FIELDWO TEMPLAT		&M EL AGS BH E	BETA	DATE:					rom 0.0 to 18.5m rom 18.5 to 38.8m	DA	ATES 21	/11/2	 017 -	29/11	/2017	 7		PROJECT NO. 2543,0	GI		
Date/Time	Depth			-			Strata		Graphical Representation Samp	ng/In-	-Situ Testir			Labo	atory	Testing		Additional Tests and Notes			
and Depth	of Casing	of Water	Piez.	Description of	Strata	Leg	Reduced Level	Depth	SPT 'N' Value Depths	No	. Blows	SPT N	<425 %	WC P	- LL %	r Mg/m	Cu kN/m²				
-	+		- + -	Grey silty fine SAND. (continued)		×.		-	0 10 20 30 40 73 21.00-21 SF	Г 37	8 15	73*						_			_
									21.45 21.00-	38	16 34										
			G	Grey silty CLAY.		× ×		21.60	21.50	r 20											
-	Ť		G	Grey sandy SILT/ CLAY		<u>×</u>		22.00	0 10 20 30 40 73	40	(49)							_			
						<u>×</u> _×			22.43												
						<u>~</u> _			22.60 E	42	2							_			
						× _			SF 23.00 25 SF 23.00-	44	9 10	46									
						XX			23.45		12 15										
-	+					×		-	24 00 24	45	5 (48)							_			
1						<u>×</u> _x			22.43 22.60 22.60 23.00 23.00 23.45 23.00 23.45 23.50 23.50 24.00-24 24.45	45	(40)										
			S	Grey silty slightly gravelly fine Sa ubangular light grey calcareous	AND. Gravel is fine shells.	×o		24.50	24.60	46	5										
-	Ť		G	Grey silty SAND with occasional	fine shell fragments.	×		1 25.00	1	T 47		46						_			
						×			25.00- 25.50	-10	12 15										
_	1					/x · .			63 26									_			
									26.00- SF 26.45 E	T 49		63*									
7						× ;			26.00-												
- 10	+					×		-	27 00-	г 51	L 57	62*						_			
				Grey clayey silty fine SAND with	accasional fine shells	·		27.40	27.45 E	52		"									
2. D				orey clayey sincy fine SAND with	occasional fille stiells	1.7.			27.50 ± 27.70 ± 1	53	3										
-	†					× .		20 20	28.00-28	54								-			
OIIS			9	Grey silty medium fine SAND.		× ;		20.20	25.45 25.00 5 25.50 5 25.50 5 26.00 5 26.00 5 26.50 5 26.50 5 26.50 5 27.45 5 27.70 5 27.70 28.00 28.45 5 28.60 10 28.60												
- -						×:,				55	5										
ອ ເ						×			29.00- 29.45 E 29.00- 29.00- 29.50		7 15 24	67*									
<u>5</u>						× · ·			29.00- 29.50		11										
<u>-</u>	1					>					1016	76*						-			
Щ. С						*.·;			30.00- 30.00- 30.05- 30.05- 30.00-	T 58	3 10 16 21 29	76.									
Ž						×.;			30.50												
2543,GI	†					×		-	31.00- 31 SF		8 14	72*						-			
									31.45 E	61	L 50										
*WATER		nding water ter strikes	level	PIEZOMETER Upper se Respons Lower se	e zone AND B eal TEST U KEY P J	Bulk d Undist Piston Distur Enviro	isturbed sa turbed sam sample bed jar san onmental so	ample (nple k nple	K Permeability test SPT N N = SP N*120 includi	disturl N valu Tota g seat	bed sample ue (blows a l blows/pe ing	e blow o ifter sea netratio	ount ting) n	dec		Brightw Brightw	ell Barr ell, Suf	vironmental Ltd ns, Ipswich Road folk, IP10 BJ 603 298076	HOLE No. BHC103	2543,GI SHEET 3 OF 4	PROJECT No

CLIEN.	T: S	Suffol	k Cou	ınty (Council	PROJECT: Lake Lo	othin	g		7.1.11			ROUNI	LEVE	L m						HOLE No. BHC103		
LOGGED					CHECKED BY: SG	EXCAVATION METHOD				n (shell and auger) om 0.0 to 18.5m		_(Coordina	ites:							SHEET 4 OF 4		
FIELDW(TEMPLA				н ветл	DATE:					om 18.5 to 38.8m		E	ATES 2	1/11/2	017 -	- 29/:	11/20	017			PROJECT NO. 2543,GI		
Date/Time		epth	Depth	* Piez.				Strata		Graphical Representatio	n San		n-Situ Test				borato	ory Te	esting		Additional Tests and Notes		
and Depth		of asing	of Water	ايج	Description of	Strata	Leg	Reduced Level	Depth	SPT 'N' Value	Depths	Type	lo. Blow	S SPT	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²			
				╆╅	Grey silty SAND with occasional	fine shell fragments	×		31.50	0 10 20 30 40	31.00-	s								,			
	1				and clayey bands		× :	1			631.50		A^{p}										
							·*.·;				32.00-	D B	52 7 12 53 16 2	69*									
							×				32.00- 32.50		9										
	1						×·		-		:::51										_		
								1			33.00-	D (54 7 13 55 13 10)									
							ļ^. : ;	}			33.50		12 1	²									
	+						×.,	.	- \		34										_		
							×				34.20- 34.65	D (56 8 19 14 1										
							· · · ·]			34.50-	В (57 21	1									
	+								-		35.00-35	D (68 68	64*							-		
							×				35.45 35.00-	В (59 12 20 18	י									
							×				:::: 35.50												
	+						×.	1			36.00- 36	D :	70 10 1								_		
								1			36.45	В	71 15 9 9 11										
							\.\dots			>	36.50												
44	Ť						×		-		37.00- 37-	В	73	70*							_		
0/11							×				37.20-	D :	72 7 13 23 2										
DT 3											64												
<u>.</u> .	T				Grey silty SAND with occasional	fine shell fragments	×7]	38.00		38.00- 38 38.45	D :	74 68 75 101								_		
(S)							×·]			38.00-		25										
DAC	1						× · ·	1			:::75										_		
E SI							^.·;	·}			39.00-	В :	76 10 15 50	5 75*									
DIST							× .				39.50-	В	77										
GP	1					L	×··		40.00														
O N T									40.00		::::1	D :	78 15 5)							Borehole completed at 40.0m	1	
Ė											:::												
XE I	1								-												_		
<u>-</u>					•						::::1 =												
2543,GI										I I I I I I I													
	↓_			<u></u>				-	-		42										-		
L AGS BH BETA	R ¥ ∇	Stand Wate	ding wa er strike	eter lev	el PIEZOMETER Upper se	e zone AND B real TEST U KEY P	Bulk d Undist Piston Distur	disturbed salisturbed san sturbed san sample rbed jar sar onmental se	ample (nple i nple	S Standard penetration tes C Cone penetration test C Permeability test	(35) SPT N N = 5 N*12	Jndistu PT N va 0 = Tot ding se	rbed samp alue (blows al blows/p ating	ole blow of after sea enetration	ount ating) on	7	Y V	Br Br	ightwe ightwe	ell Barr ell, Suf	vironmental Ltd ns, Ipswich Road folk, IP10 BJ 1603 298076	HOLE No.	SHEET 4 OF 4
و					DEPTH All depths, level and t							P	. 39		-				-				



Project			Client	TRIAL PIT No			
Lake Lothing			Suffolk	IPC01			
Job No	Date 15-08-17	Ground Level (m)		Grid Reference ()	IF COT		
2543,GI	15-08-17						
Fieldwork By			Logged By		Sheet		
GEL			LF		1 of 1		

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-1.50	MADE GROUND (Dark brown and brown gravelly very silty fine sand Gravel of angular to subrounded fine to coarse flint and occasional fragments of brick and flexible surfacing) -				Groundwater not encountered during drilling
	-		0.30-1.00 0.30	B ES	
	0.50 Becoming dark yellow brown with depth				
			0.60	ES	
			0.70	D	
			0.90	ES	
			1.20	ES	Hand pit extended from 1.2m depth with hand
-			1.30	D	auger methods
					Excavation completed at 1.5m depth due to poor recovery with hand auger and continued collapse
		1			

Shoring/Support: Stability: Checked By

Plant UsedHAND DUG



Project			Client	TRIAL PIT No		
Lake Lothing			Suffolk	IPC02		
Job No 2543,GI	Date 15-08-17 15-08-17	Groun	d Level (m)	IPCUZ		
Fieldwork By			Logged By		Sheet	
GEL			LF		1 of 1	

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-1.40	MADE GROUND (Brown gravelly very silty fine sand. Gravel of angular to subrounded fine to coarse flint and occasional fine brick fragments)				Groundwater not encountered during drilling
	- 		0.30-1.00 0.30	B ES	
-			0.60	ES	
- -	- - -		0.90	ES	
			1.20	ES	Hand pit extended from 1.2m depth with hand auger methods
					Excavation completed at 1.4m depth due to poor recovery with hand auger and continued collapse

Shoring/Support: Stability: Checked By

Plant UsedHAND DUG



Project			Client	TRIAL PIT No			
Lake Lothing			Suffolk	Suffolk County Council			
Job No Date 16-08-17 Great			d Level (m)	Grid Reference ()	IPC03		
2543,GI	16-08-17						
Fieldwork By			Logged By		Sheet		
GEL			LF		1 of 1		

	<u> </u>				
Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.80	MADE GROUND (Dark brown very gravelly very silty fine sand. Gravel of angular to subrounded fine to coarse flint and occasional concrete and brick)				Groundwater not encountered during drilling
	- - -	-	0.30-1.20 0.30	B ES	
			0.60	ES	
0.80-1.20	MADE GROUND (Dark orange brown gravelly very silty fine sand. Gravel of angular to subrounded finen to course flint and occasional concrete and brick fragments		0.90	ES	
	1.10 Becoming pale orange brown with depth				
		-	1.20	ES	Excavation completed at 1.2m depth
		-			
		_			

All dimensions in metres Scale 1:16.666666666667

All dimensions in metres Scale 1:16.666666666667

All dimensions in metres Scale 1:16.666666666667

Plant Used

Checked By SG



Project			Client		TRIAL PIT No	
Lake Lothing			Suffolk	IPC04		
Job No Date 16-08-17 Gr			d Level (m)	Grid Reference ()	IPC04	
2543,GI	16-08-17					
Fieldwork By			Logged By		Sheet	
GEL			LF		1 of 1	

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.60	MADE GROUND (Dark brown very gravelly very silty fine sand. Gravel of angular to subrounded fine to coarse flint and occasional concrete and brick)				Groundwater not encountered during drilling
	0.40 - 0.50 Cobbles of concrete	-	0.30-1.00 0.30	B ES	
0.60-1.50	MADE GROUND (Brown slightly gravelly very silty fine sand. Gravel of subangular to subrounded flint)		0.60	ES	
	-		0.90	ES	
			1.20	ES	Hand pit extended from 1.2m depth with hand auger methods
	-	-			Excavation completed at 1.5m depth due to poor recovery with hand auger and continued collapse
		-			

Shoring/Support: Stability: Checked By Plant Used



Project			Client	TRIAL PIT No			
Lake Lothing			Suffolk	IPC05			
Job No Date 16-08-17 Great			d Level (m)	Grid Reference ()	IFCUS		
2543,GI	16-08-17						
Fieldwork By			Logged By		Sheet		
GEL			LF		1 of 1		

		II			
Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.80	MADE GROUND (Dark brown very gravelly very silty fine sand. Gravel of subangular to subrounded fine to coarse concrete, flint and brick)				Groundwater not encountered during drilling
-	- · · · · · · · · · · · · · · · · · · ·		0.30-1.00 0.30	B1B J1ES	
	-		0.60	J2ES	
0.80-1.30	MADE GROUND (Brown slightly gravelly silty fine sand. Gravel of subangular to subrounded fine to coarse concrete and flint) ———————————————————————————————————		0.90	J3ES	
	-		1.20	J4ES	1.2m depth with hand auger methods Excavation completed at
		-			1.3m depth due to poor recovery with hand auger and continued collapse
		_			
]			

Shoring/Support: Stability: Checked By Plant Used



Project			Client		TRIAL PIT No		
Lake Lothing			Suffolk	TPC01			
Job No Date 03-08-17 Gr			d Level (m)	Grid Reference ()	IPCOI		
2543,GI	03-08-17						
Fieldwork By			Logged By		Sheet		
HOLMES			LF		1 of 1		

		I			
Depth	DESCRIPTION	Legend	Depth	No	,
0.00-0.40	TOPSOIL (Dark brown very silty gravelly fine and medium SAND. Gravel of angular to subangular fine to coarse flint, brick, concrete and occasional wood)	-	0.20	J1ES	No groundwater encountered
0.40-3.00	MADE GROUND (Yellow brown and pale yellow brown mottled gravelly fine and medium SAND. Gravel of angular to subrounded fine to coarse flint)		0.55 0.60	B1B J2ES	B1 taken beneath the plate load test location for ex-situ testing purposes. Pit excavated to 0.55m and Plate Load Test undertaken.
-			1.70 1.80	J3ES B2B	
-	- - - - - - -		2.60 2.60	B3B J4ES	
	- - - - - - -				



Project			Client		TRIAL PIT No
Lake Lothing		Suffolk	County Council	TPC02	
Job No	Date 17-08-17	Groun	round Level (m) Grid Reference ()		IPCUZ
2543,GI	17-08-17			TM 53818 93025	
Fieldwork By		•	Logged By		Sheet
HOLMES			LF		1 of 1

					_
Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.15	FLEXIBLE SURFACING MADE GROUND (Dark brown slightly cobbly very silty sand and gravel.				Groundwater not encountered during excavation
	Gravel of angular to subangular fine to coarse brick, flint and concrete)				
	- - -		0.30	J1ES	VOC = 0ppm (peak)
	- -				Plate Load Test undertaken at 0.5m depth
0.70-0.80	MADE GROUND (Brick layer)				
0.80-1.20	MADE GROUND (Black, dark grey and dark brown mottled gravelly medium sand. Gravel of subangular to rounded flint, brick and concrete with occasional cobbles of concrete)				Service encountered within the north of the pit, potential redundant drain. Service undisturbed and
			1.00 1.00	B1 J3ES	pit extended southwards Trial pit discontinued due
1.20-1.40	MADE GROUND (Dark brown gravelly fine to medium sand with occasional gravel of subangular to rounded fine to coarse flint, brick and concrete)		1.30	J4ES	as redundant. Pit to be continued at a later date
1.40-1.50	MADE GROUND (Pale yellow and pale brown fine and medium sand)				
		-	1.50	J5ES	VOC = 0ppm (peak)
		-			
_		1			

Shoring/Support: Stability: Checked By

Plant Used



Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	County Council	TPC02
Job No	Date 17-08-17	Date 17-08-17 Ground L		Coordinates ()	IPCUZ
2543,GI Lake Lothing				653818.141, 293025.206	
Fieldwork By			Logged By		Sheet
HOLMES			LF		1 of 1

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.15	FLEXIBLE SURFACING				
0.15-0.70	MADE GROUND (Dark brown slightly cobbly very silty sand and gravel Gravel of angular to subangular fine to coarse brick, flint and concrete)		0.30	J1ES	VOC = 0ppm (peak) Plate Load Test undertaken at
0.70-0.80	MADE GROUND (Brick layer)				0.5m depth
0.80-1.20	MADE GROUND (Black, dark grey and dark brown mottled gravelly medium sand. Gravel of subangular to rounded flint, brick and concrete with occasional cobbles of concrete)		1.00 1.00	B1B J3ES	Service encountered within the north of the pit, potential
1.20-1.40	MADE GROUND (Dark brown gravelly fine to medium sand with occasional gravel of subangular to rounded fine to coarse flint, brick and concrete)		1.30	J4ES	redundant drain. Service undisturbed and pit extended
1.40-1.60	MADE GROUND (Pale yellow and pale brown fine and medium sand)		1.50	J5ES	southwards
1.60-2.70	Yellow brown fine SAND with occasional wood fragments		1.70 1.80 2.50 2.70	J6ES B1 J7ES B2	VOC = 0ppm (peak) VOC = 0ppm (peak) VOC = 0ppm (peak) Severe collapse of sidewalls from 1.6m bgl VOC = 0ppm Moderate inflow of water at 1.9 m VOC = 0ppm Trial pit terminated at 2.7m due to severe collapse

All dimensions in metres Scale 1:29.166666666667

Method Trial Pit/trench Shoring/Support: Stability:

Checked By Plant Used



Project Client				TRIAL PIT No	
Lake Lothing			Suffolk	TPC03	
Job No	Date 03-08-17	Groun	d Level (m)	Grid Reference ()	1PC03
2543,GI	03-08-17				
Fieldwork By			Logged By		Sheet
HOLMES			LF		1 of 1

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.15	CONCRETE (pale grey no rebar)	4 4 6			
0.15-0.35	MADE GROUND (Dark brown silty sand and gravel with cobbles of brick. Gravel of angular to subangular fine to coarse brick, concrete and flint)	-			
0.35-0.60	MADE GROUND (Dark brown silty very gravelly fine to coarse sand. Gravel of angular to subrounded fine to coarse brick and concrete)	-	0.40 0.50	J1ES B1B	
0.60-1.00	MADE GROUND (Pale brown fine and medium sand)	-			Plate Load test)
	-	-	0.80	J2ES	
1.00-2.10	Pale yellow brown slightly gravelly fine and medium SAND. Gravel of subangular to subrounded fine to coarse flint.	- 0 0	1.10	B2B	
-	<u>-</u>		1.20	J3ES	Groundwater encounted from all walls of the pit - held within natural
-					sandsmoderate to fast inflow of water at 1.2 m
			1.80	взв	
		$+$ \cdot \cdot \cdot \cdot			
-	-	-	2.10 2.10	D1D J4ES	
-	- -	1			,
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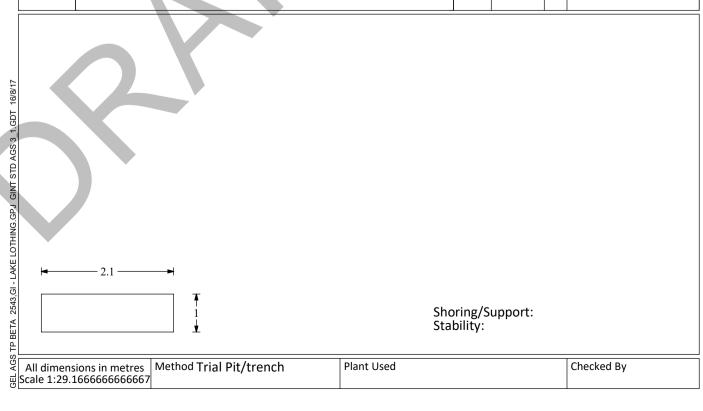
Shoring/Support: Stability: Checked By

Plant Used



Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	County Council	TDC04
Job No	Date 03-08-17	Groun	d Level (m)	Grid Reference ()	TPC04
2543,GI	03-08-17				
Fieldwork By			Logged By		Sheet
HOLMES			LF		1 of 1

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.15	CONCRETE (Pale grey with 5mm rebar)	P 4 4 P			
0.15-0.50	- MADE GROUND (Brown very silty very gravelly fine to coarse SAND. Gravel - - of angular to subangular fine to coarse brick, concrete and occasional - flint)		0.30	J1ES	VOC = 0ppm (peak)
0.50-1.10	MADE GROUND (dark brown/black silty gravelly fine to coarse SAND with weak natural organic odour. Gravel of angular to subrounded fine to coarse brick, flint and concrete)		0.55 0.55	B1B J2ES	
1.10-2.00	Orange brown silty slightly gravelly SAND. Gravel of fine and medium subangular to rounded flints.	×0	1.20 1.20	B2B J3ES	VOC = 0ppm (peak)
2.00-2.70	1.80 becoming grey with depth Grey/black sandy CLAY with moderate natural organic odour.	× × × · · · · · · · · · · · · · · · · ·			
2.00-2.70	Grey/black sandy CLAT with moderate flatural organic odour.		2.20 2.20	B3B J4ES	
		<u></u>	2.70 2.70	B4B J5ES	11 11 7
		-			





Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	County Council	TPC05
Job No 2543,GI	Date 31-07-17 31-07-17	Groun	d Level (m)	IPCUS	
Fieldwork By			Logged By		Sheet
			JG		1 of 1

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.15	CONCRETE				
).15-0.25).25-1.10	MADE GROUND (Black and grey very gravelly medium to coarse sand.		0.30	1J	VOC = 1.0 ppm (peak)
	- Gravel of subangular to subrounded fine to coarse clinker, brick and concrete)		0.50 0.50	1B 2J	VOC = 5.0 ppm (peak)
1.10-2.30	Grey brown sandy CLAY with weak natural organic odour and pockets of yellow brown sand		1.00 1.00 1.10	2B 3J 3B	VOC = 2.0 ppm (peak) VOC = 1.0 ppm (peak)
			1.10 1.10 1.30	4J 5J	VOC = 1.0 ppm (peak)Slo seepage inflow of water 1.3 m Continued collapse from 1.5m depth
					Slow seepage inflow of water at 2 m
2.30-2.80	Dark grey slightly gravelly CLAY. Gravel of subangular to subrounded fine to medium chalk		2.30 2.30	4B 6J	VOC = 1.0 ppm (peak)
2.80-3.10	Grey slightly gravelly medium to coarse SAND. Gravel of subrounded fine and medium flint	ρ	2.90 2.90	5B 7J	VOC = 0.0 ppm
					Trial pit completed at 3.1 depth

2.5 The ETA 2643.61-LAKE LOTHING. GPJ GNT STD AGS 3.1.6DT 1-8-17

All dimensions in metres Scale 1:59.1666666666667

Method Trial Pit/trench Shoring/Support: None Stability:

Checked By Plant UsedMECHANICAL EXCAVATOR



Project			Client			TRIAL PIT No		
Lake Lothing			Suffolk County Council			TDCOC		
Job No	Date 01-08-17	Groun	d Level (m)	Grid Reference ()		TPC06		
2543,GI	01-08-17		2.43					
Fieldwork By	1		Logged By			Sheet		
			JG			1 of 1		

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.20	CONCRETE (with 5mm diameter rebar)	\$ \$ \$ \$			
0.20-0.70	MADE GROUND (Brown grey gravelly fine to coarse sand. Gravel of angular fine and medium flint, brick concrete)		0.30	1 J	
	0.60 Redundant 20mm black pipe encountered				
0.70-0.90	MADE GROUND (Black slightly gravelly silty fine to coarse sand. Gravel of subangular to angular fine brick)		0.70 0.70	1B 2J	
0.90-1.90	Olive brown silty fine SAND	*****			
	-		1.10 1.10	2B 3J	
	1.50 Becoming slightly darker in colour with depth				Significant collapse of sidewalls to 1.5m depth
90-3.20	Black and dark grey CLAY with moderate natural organic odour	. · . · · · · . 			Slow seepage inflow of
			2.00 2.00	3B 4J	water at 1.9 m
			2 20	45	
			3.20 3.20	4B 5J	Trial pit completed at 3 depth

2.45 The ETA 2543.61-LAKE LOTHING. GPJ GNT STD AGS 3.1.6DT 1-8-17

All dimensions in metres Scale 1:59.1666666666667

Method Trial Pit/trench Shoring/Support: None Stability: Checked By

Plant UsedMECHANICAL EXCAVATOR



Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	County Council	TPC07
Job No 2543,GI	Date 21-09-17 21-09-17	Groun	d Level (m)	Grid Reference ()	TPC07
Fieldwork By			Logged By		Sheet
			LF		1 of 1

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.20	CONCRETE (Pale grey, 5mm diameter rebar)				
0.20-0.40	MADE GROUND (Orange brown silty sand and gravel. Gravel of angular to subrounded fine to coarse flint and occasional brick)		0.30	J1ES	VOC = 0ppm (peak)
0.40-0.55	MADE GROUND (Black silty sand and gravel. Gravel of angular to subrounded fine to coarse brick, clinker and flint)		0.45	J2ES	VOC = 0ppm (peak)
0.55-1.40	MADE GROUND (Orange brown slightly gravelly fine to medium sand with occasional brown mottling. Gravel of subangular to subrounded fine to coarse flint and occasional brick fragments)				
,	-		0.90	J3ES	VOC = 0ppm (peak)
-			1.00	B1	Moderate inflow of wate at 1 m
1.40-1.50	Dark grey very sandy slightly gravelly CLAY. Gravel of subangular to				Trial pit aborted at 1.4m
	_ subrounded fine to coarse flint		1.50 1.50	D1 J4ES	depth due to significant collapse of sidewalls VOC = 0ppm (peak)
		_			



GEL AGS TP BETA 2543,GI - LAKE LOTHING.GPJ GINT STD AGS 3_1.GDT 27-9-17

TRIAL PIT LOG

Project			Client			TRIAL PIT No
Lake Lothing			Suffolk	County Council		TPC08
Job No 2543,GI	Date 21-09-17 21-09-17	Groun	d Level (m)	Grid Reference ()		IPCU8
Fieldwork By		l	Logged By		Sł	neet
			LF			1 of 1

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.20	CONCRETE (Pale grey, 5mm diameter rebar)				
0.20-0.30 0.30-0.40	MADE GROUND (Orange brown silty sand and gravel. Gravel of angular to subrounded fine to coarse flint, concrete and occasional brick)		0.25	J1ES	
0.40-0.80	MADE GROUND (Black and dark grey gravelly clayey fine to coarse sand. Gravel of angular to subrounded fine to coarse flint, brick and concrete)		0.30	J2ES	
	-MADE GROUND (Yellow brown and brown mottled fine to coarse sand with occasional flint gravel)		0.50	J3ES	
0.80-2.50	MADE GROUND (Dark brown and black mottled fine to coarse sand with occasional fine to coarse subrounded to rounded flint gravel and moderate natural organic odour)		1.00 1.00	B1 J4ES	
			1.00	J4E3	
			1.60	J5ES	Moderate seepage inflow of water at 1.6 m
			2.00 2.00	B2 J6ES	
					Trial pit aborted at 2.5m
					depth due to significant collapse of sidewalls

All dimensions in metres Scale 1:25

All dimensions in metres Scale 1:25

All dimensions in metres Scale 1:25

All dimensions in metres Scale 1:25



Project				Client					TRIAL PIT No
	e Lothing				County Cou				TPC09
Job No		Date 23-04-18	Groun	d Level (m)	Coordinates	5 ()			17003
	ake Lothing	23-04-08				,			
Fieldwork	Ву			Logged By					Sheet
				JG					1 of 1
Depth		D	ESCRIPT	ION		Legend	Depth	No	Remarks/Tests
0.00-0.50	MADE GRO Gravel of su flint)	UND (Dark brown and b ubangular to subrounde	lack grav d fine ar	velly fine and mond medium clink	edium SAND. er, brick and	-	0.20	J1ES	VOC = 0ppm
0.50-1.40	MADE GRO of subangul	UND (Orange brown gra lar to rounded fine and	avelly fin medium	e and medium S flint and occasi	AND. Gravel onal clinker)		0.60	J2ES	VOC = 0ppm
1.40-2.00	Grey browr	n CLAY with moderate n	atural or	ganic odour			1.50	J3ES	VOC = 0ppn Moderate inflow of water at 1.6 m
	- - - - - - - - - -								Trial pit terminated at 2.0m bgl due to severe collapse
					Sh St	noring/Suability:	upport:		
All dimens	sions in metre	Method Trial Pit/tr	ench	Plant l	JsedMECHAN				Checked By



Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	County Council	TPC21
Job No	Date 17-08-17	Groun	d Level (m)	Grid Reference ()	IPCZI
2543,GI	17-08-17			TM 53780 92650	
Fieldwork By			Logged By		Sheet
HOLMES			LF		1 of 1

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.05	FLEXIBLE SURFACING				No significant collapse of sidewalls
0.05-0.15 0.15-0.70	MADE GROUND (Black and dark brown silty sand and gravel. Gravel of angular to subangular fine to coarse flint, clinker and brick)		0.10	J1ES	VOC = 0ppm (peak)
	MADE GROUND (Pale brown very silty very gravelly fine and medium	₩₩	0.25	J2ES	VOC = 0ppm (peak)
	sand. Gravel of angular to subangular fine to coarse brick, flint, concrete	>>>>			
	and clinker)	+	0.50	B1	Plate bearing test undertaken at 0.5m dept
0.70-1.40	MADE GROUND (Dark brown very sandy clay with natural organic odour)				
			0.80	J3ES	
	-				
			1.20	В2	
1 40 2 10	Vollage by a good blue grass pastaled alightly agondy grasselly CLAV with				
1.40-3.10	Yellow brown and blue grey mottled slightly sandy gravelly CLAY with clayey sand pockets. Gravel of subangular to subrounded fine to coarse		1.45	J4ES	
	chálk and flint		1.60	D1	
	-				
	2.00 Becoming dark yellow brown and blue grey mottled with depth		2.00	В3	Moderate seepage inflo
					of water at 2 m
			2.30	J5ES	
		 			
			2.50	D2	
		 			
	_		2.00	D4	F+
		<u> </u>	3.00	B4	Fast seepage inflow of water at 3 m
		1			Trial pit completed at 3.1 depth
		4			'
		1	1	1	



Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	County Council	TPC22
Job No	Date 17-08-17	Groun	d Level (m)	Grid Reference ()	IPCZZ
2543,GI	17-08-17			TM 53820 92612	
Fieldwork By			Logged By		Sheet
HOLMES			LF		1 of 1

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.35	MADE GROUND (Dark brown very gravelly very silty fine sand. Gravel of angular to subrounded fine to coarse flint, clinker, brick and fragments of clay pipe)				Groundwater not encountered during excavation
0.35-1.10	- POTENTIAL MADE GROUND (Pale brown gravelly fine and medium sand.		0.30	J1ES	VOC = 0ppm (peak)
-	- Gravel of angular to subrounded fine to coarse flint) -		0.50 0.60	B1 J2ES	Plate bearing test undertaken at 0.5m depth
-	- -		0.00	0220	
-	- 				
1.10-3.00	Orange brown and pale brown mottled gravelly fine and medium SAND with occasional pockets of dark orange brown sand. Gravel of angular to subrounded fine to coarse flint		1.20	J3ES	
-			1.50	B2	
-		ρ.			
-		a .	2.10	J4ES	
-		0	2.60	В3	
-					
-		-	3.00 3.00	B4 J5ES	Trial pit completed at 3.0m depth
-	-	1			



Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	County Council	TPC23
Job No	Date 17-08-17	Groun	d Level (m)	Grid Reference ()	IPC25
2543,GI	17-08-17			TM 53812 92579	
Fieldwork By		•	Logged By		Sheet
HOLMES			LF		1 of 1

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-2.00	MADE GROUND (Pale brown very gravelly very silty fine and medium sand. Gravel of angular to subangular fine to coarse brick, concrete, flint and glass. Fragment of potential asbestos containing material				Groundwater not encountered during excavation
	encountered) 0.40 Becoming dark brown with depth		0.30	J1ES	VOC = 0ppm (peak)
	- 0.40 Becoming dark brown with depth		0.50	В1	Plate bearing test
	0.60 Cobbles of concrete with rebar (20mm diameter) and brick 0.70 Layers of ash, clinker and burnt ground		0.60	J2ES	undertaken at 0.5m depth
			1.00	J3ES	
			1.50	В2	
2.00-2.50	MADE GROUND (Dark brown slightly gravelly slightly clayey fine and medium sand. Gravel of angular to subrounded fine to coarse brick,		2.00	J4ES	
	concrete, flint, glass and wood)				
			2.40	В3	
2.50-3.10	POTENTIAL MADE GROUND (Orange brown fine and medium sand)		2.60	J5ES	
			3.00	В4	Trial pit completed at 3.1m
					depth

All dimensions in metres Scale 1:29.16666666667

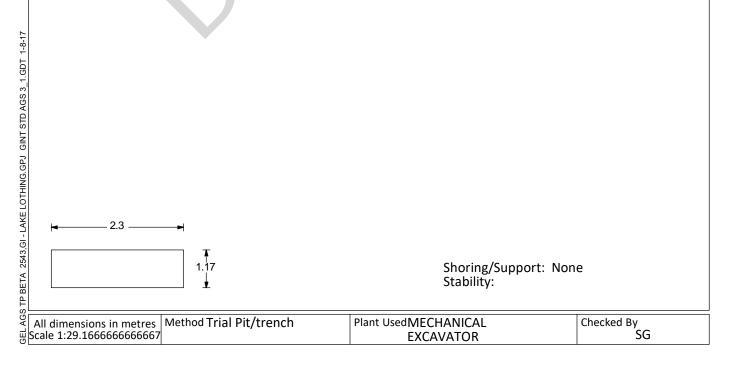
Method Trial Pit/trench
Scale 1:29.166666666667 Shoring/Support: Stability: Checked By

Plant Used



Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	County Council	TPC101
Job No	Date 01-08-17	Groun	d Level (m)	Grid Reference ()	IPCIUI
2543,GI	01-08-17		2.54		
Fieldwork By			Logged By		Sheet
			JG		1 of 1

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.20	_ CONCRETE (with 5mm rebar)				
).20-0.60	MADE GROUND (Orange brown silty sand and gravel. Gravel of subangular to angular fine to medium brick, concrete and flint)		0.30 J	1+B1	ES
.60-2.05	MADE GROUND (Pale yellow brown gravelly fine and medium sand. Gravel of fine and medium angular to subrounded brick and flint)		0.80 J	2+B2E	ES
	1.50 Becoming fine grained and less gravelly with depth				Significant collapse of sidewalls to 1.6m depth Moderate inflow of wate
			1.80 J	3+B3E	Sat 1.65 m Trial pit completed at 2.05m depth
		- - -			
		- - - -			





Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	County Council	TPC102
Job No	Date 04-08-17	Groun	d Level (m)	Grid Reference ()	IPC102
2543,GI	04-08-17				
Fieldwork By			Logged By		Sheet
HOLMES			LF		1 of 1

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.30	TOPSOIL (Dark brown silty slightly gravelly fine to coarse sand with rootlets. Gravel of subrounded and angular fine to coarse flint)		0.20	J1	VOC= 0ppm (peak)
0.30-1.40	MADE GROUND (Orange brown with occasional pale brown mottling slightly gravelly fine and medium sand. Gravel of subrounded to subangular fine to coarse flint)		0.50 0.50	B1 J2	VOC= 0ppm (peak)
1.40-2.80	Pale yellow brown slightly gravelly medium SAND. Gravel of subangular to subrounded fine to coarse flint.		1.60 1.60	B2 J3	VOC= 0ppm (peak)
7 7 - - -			2.40 2.40 2.80 2.80	B3 J4 B4 J5	VOC= 0ppm (peak) slow inflow of water at 2.7 m VOC= 0ppm (peak) End of trial pit due to collapse of sidewalls.
· · · · · · · · · · · · · · ·		- - - - -			



Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	County Council	TPC103
Job No 2543,GI	Date 31-07-17 31-07-17	Groun	d Level (m)	Grid Reference ()	IPC103
Fieldwork By		•	Logged By		Sheet
			JG		1 of 1

DESCRIPTION CONCRETE MADE GROUND (Orange brown silty sand and gravel of subangular to subrounded fine to coarse flint)	Legend	Depth	No	Remarks/Tests
MADE GROUND (Orange brown silty sand and gravel of subangular to subrounded fine to coarse flint)				
\subrounded fine to coarse flint)				
L MADE CROUND (Plack silty gravally fina to coarse sand with maderate	-/ - 	0.30	1 J	VOC = 0.0 ppm
MADE GROUND (Black silty gravelly fine to coarse sand with moderate natural organic odour and burning odour. Gravel of angular to subangular fine to coarse flint, brick, concrete and occasional slate)		0.50 0.50	1B 2J	VOC = 1.0 ppm (peak)
MADE GROUND (Dark brown fine and medium sand with moderate to strong sulphurous odour)		1.10 1.10	2B 3J	VOC = 0.0 ppm
		1.50 1.50	4J	Slow seepage inflow of water at 1.45 m VOC = 0.0 ppm
Pale brown fine SAND with weak to moderate sulphurous odour		1.70	1	
	-	2.00 2.00	4B 5J	VOC = 0.0 ppm
	-			Trial pit aborted due to significant collapse of sidewalls
	- - - -			
	strong sulphurous odour)	strong sulphurous odour)	1.10 MADE GROUND (Dark brown fine and medium sand with moderate to strong sulphurous odour) 1.50 1.50 1.78 Pale brown fine SAND with weak to moderate sulphurous odour 2.00	MADE GROUND (Dark brown fine and medium sand with moderate to strong sulphurous odour) 1.10 2B 1.10 3J 1.50 3B 1.50 4J 1.78 Pale brown fine SAND with weak to moderate sulphurous odour 2.00 4B

All dimensions in metres | Method Trial Pit/trench | Plant UsedMECHANICAL | EXCAVATOR | SG

excavation Mether on of Strata rown gravelly fine to e to coarse subrounded to) /black gravelly fine to e to coarse angular to arcoal and clinker) own slightly gravelly fine to ne to medium subrounded	Leg	Level	d to 5.0	Graphical Representation SPT 'N' Value 0 10 20 30 40 Depth 0 10 20 30 40 October 10 0 0.25 October 10 0.60 Oct	, s	DATE ng/In-Situ No. E	REFERENCES 03/10/2 Testing Blows N	017 - 17	Laborato	ry Testir	ng r Cu /m ³ kN/m	SHEET 1 OF 1 PROJECT NO. 2543,GI Additional Tests and Notes A Hand dug starter pit from ground level to VOC = 0ppm VOC = 0ppm VOC = 0ppm VOC = 0ppm Fast inflow of water at 1.15m Partial collapse of sidewalls to 1.3m VOC=7ppm (peak)
rown gravelly fine to e to coarse subrounded to) /black gravelly fine to e to coarse angular to arcoal and clinker) own slightly gravelly fine to ne to medium subrounded	Leg	Strat Reduced Level	Depth 0.00 0.20 0.50 0.85	Graphical Representation Section	1 - J+D	ng/In-Situ No. E	Testing	<425 W	Laborato	ry Testir	r Cu	Additional Tests and Notes Thand dug starter pit from ground level to VOC = 0ppm VOC = 0ppm VOC = 0ppm VOC = 0ppm Past inflow of water at 1.15m Partial collapse of sidewalls to 1.3m
rown gravelly fine to e to coarse subrounded to) /black gravelly fine to e to coarse angular to arcoal and clinker) own slightly gravelly fine to ne to medium subrounded	to o o o o o o o o o o o o o o o o o o	Reduced Level	Depth 0.00 0.20 0.50 0.85	SPT 'N' Value Depth 0 10 20 30 40 0 0.25 0.40 0.60 0.60 0.55 0.40 0.40	1 - J+D	ng/In-Situ No. E	Testing	<425 W	Laborato	ry Testir	r Cu	Additional Tests and Notes Thand dug starter pit from ground level to VOC = 0ppm VOC = 0ppm VOC = 0ppm VOC = 0ppm Past inflow of water at 1.15m Partial collapse of sidewalls to 1.3m
rown gravelly fine to e to coarse subrounded to) /black gravelly fine to e to coarse angular to arcoal and clinker) own slightly gravelly fine to ne to medium subrounded	to o o o o o o o o o o o o o o o o o o	Level	0.00 0.20 0.50 0.85	0 10 20 30 40 Depth 0	0 - - - - - - - - - - - - - - - - - - -	1 2 3 3	Blows SPT N	<425 % %	C PL %	KE NGA	Cu /m³ kN/m	Hand dug starter pit from ground level to VOC = 0ppm VOC = 0ppm VOC = 0ppm VOC = 0ppm Pocc = 0ppm Fast inflow of water at 1.15m Partial collapse of sidewalls to 1.3m
e to coarse subrounded to) /black gravelly fine to e to coarse angular to arcoal and clinker) own slightly gravelly fine to ne to medium subrounded	to to		0.20 0.50 0.85	0.25 0.40 0.60 0.60 0.55 0.1.00 1.50	J+D	0 2 3 0 3						VOC = 0ppm VOC = 0ppm VOC = 0ppm VOC = 0ppm Fast inflow of water at 1.15m Partial collapse of sidewalls to 1.3m
e to coarse subrounded to) /black gravelly fine to e to coarse angular to arcoal and clinker) own slightly gravelly fine to ne to medium subrounded	to o	***************************************	0.50	1.50	J+D	0 2 3 0 3						VOC = 0ppm VOC = 0ppm VOC = 0ppm Fast inflow of water at 1.15m Partial collapse of sidewalls to 1.3m
/black gravelly fine to e to coarse angular to arcoal and clinker) own slightly gravelly fine to ne to medium subrounded			0.85	1.50	J+D) 4						VOC = 0ppm Fast inflow of water at 1.15m Partial collapse of sidewalls to 1.3m
own slightly gravelly fine to ne to medium subrounded to medium subrounded		X		1.50]]]]]							Fast inflow of water at 1.15m Partial collapse of sidewalls to 1.3m
·			- 1.95	1.50]]]]]							Fast inflow of water at 1.15m Partial collapse of sidewalls to 1.3m
·			- 1.95	5		4						VOC=7ppm (peak)
·			- 1.95	5	2 -							
												F
	長											
				2.50	٦	5						VOC=486ppm (peak)
					3 -							
	A											
fine sand (50mm)	<u> </u>		3.50	3.50],	6						VOC=72ppm (peak)
ellow brown with depth	×				4							
ith depth	.^ ×			4.00	В	1						
	×	.)										
		•	- 5.00	5	5 -							
			3.00	,								Borehole completed at 5.0m. No further progress as too dense/blowing sands
	B Bulk c	disturbed s	sample	C Cone penetration test (3	35) Und	disturbed s	sample blow of	ount				Environmental Ltd
		n sample rbed jar sa	ımple	, N² in	I*120 = ncluding	Total blov g seating	ws/penetratio	on .		Brigh	twell, Su	Environmental Ltd Irns, Ipswich Road Urffolk, IP10 BJ 21603 298076
	sponse zone AND wer seal TEST	sponse zone AND B Bulk wer seal TEST U Undi KEY P Pisto J Distu	sponse zone AND B Bulk disturbed so wer seal TEST U Undisturbed so KEY P Piston sample J Disturbed jar sa	per seal SAMPLE D Small disturbed sample sponse zone AND B Bulk disturbed sample Wer seal TEST U Undisturbed sample P Piston sample J Disturbed jar sample ES Environmental soil samp	per seal SAMPLE D Small disturbed sample S Standard penetration test Blows S Standard penetration test Blows S Standard penetration test Blows S Standard penetration test Blows S Standard penetration test G STAN N STANDARD STAND	per seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blor Sponse zone Wer seal KEY P P iston sample J Disturbed ja sample J Disturbed ja sample J Disturbed ja sample J Disturbed ja sample J Disturbed ja sample I S Standard penetration test Blows SPT blor (35) Undisturbed sample K Permeability test SPT N N = S	per seal sponse zone wer seal KEY Piston sample KEY Piston sample J Disturbed jar sample J Disturbed J Disturb	per seal sponse zone wer seal KEY Piston sample J Disturbed jar sample J Disturbed jar sample J Disturbed jar sample J Disturbed jar sample J Disturbed jar sample jincluding seating	per seal sponse zone wer seal KEY Piston sample J Disturbed jar sample J Disturbed J Disturbed jar sample J Disturbed jar sample J Disturbed	per seal sponse zone wer seal KEY Disturbed sample J Disturbed jar sample J Disturbed	per seal sponse zone wer seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment C Cone penetration test er seal sponse zone wer seal WEY Bright well by Disturbed jar sample J Disturbed J	

CLIEN	T: Suffo	lk Cou	nty C	Council	PROJECT: Lake Lo	thin	g	_			GR	OUND	LEVE	L m					HOLE No. WSC14			
LOGGE				CHECKED BY: SG	EXCAVATION METHOD:		Window		•		Cod	ordinat	es:						SHEET 1 OF 1			
	ORK BY: D TE REF: G		H BETA	DATE:		ι	Jncased	to 5.0	U M		DA.	TES 02-	-Nov-	17 - 0	 2-No	v-17			PROJECT NO. 2543,0	GI		
Date/Time		Depth*					Strata		Graphical Representation			itu Testin	g		Lab	orator	/ Testing		Additional Tests and Notes			
and Depth	of Casing	of Water	Piez.	Description of	f Strata	Leg	Reduced Level	Depth		Depths ≥	No.	Blows	SPT N	<425 %	WC %	PL L % 9	L r 6 Mg/n	Cu n³ kN/m²				
				MADE GROUND (Pale yellow brown slit to coarse flint, concrete and brid to coarse flint, concrete and brid to coarse flint, concrete and brid to coarse flint, concrete and brid to coarse flint, concrete and brid mottled slightly gravelly fine to angular to subangular fine to coarse flint or subangular fine to coarse flint or subangular fline to coarse flint or subangular fline to coarse flint or subangular fline to coarse flint or subangular f	ghtly silty gravelly fine ar to subrounded fine ck) own and brown coarse sand. Gravel of larse flint, brick and tile) dium SAND with lins	Leg	Reduced	1.50 - 2.00	0 10 20 30 40	0 -	J1	Blows	SPTN	<425 %	WC %	PL 1	L r Mg/r	Table 1				
	_			Orange brown fine and medium gravel of subrounded fine and room of the control of	nedium flint			4.50 - 4.90 - 5.00		4.20 ES	J6								Blowing sands encountered backfilled to 4.0m depth	d at 5.0m	, borel	hole
GEL AGS BH BETA 2543,GI	R ¥ Star ¥ Wa	nding wat ter strikes	er leve	el PIEZOMETER Upper s Respons Lower si	se zone AND B eal TEST U KEY P J ES	Bulk d Undist Piston Distur Enviro	listurbed sa turbed san sample bed jar sar onmental s	ample nple nple	,	(35) Und TN N = SPT	listurbe N value Total k g seatir	ed sample e (blows a plows/per ng	e blow o Ifter sea netratio	ount iting) n	1		Geosp	here En	vironmental	HOLE No. WSC14	SHEET 1 OF 1	PROJECT No. 2543,GI

CLIENT	: Suffo	lk Cou	nty (Council	PROJECT: Lake Lo	othin	g							GRO	UND	LEVEL	. m					HOLE No. WSC16			
LOGGED				CHECKED BY: SG	EXCAVATION METHOD:		Window 	less sai	mple	er				Coor	dinate	es:						SHEET 1 OF 1			
FIELDWO TEMPLAT			H BETA	DATE:			Uncased	l to 1.1	. m					DATE	ES 31-	Oct-1	.7 - 3:	1-Oc	t-17			PROJECT NO. 2543,G	îl		
Date/Time		Depth*	žZ.	<u> </u>			Strata	1	Gr	iraphical Repre	sentation	Sa	_	/In-Situ	u Testing	g		La	borato	ry Test	ting	Additional Tests and Notes			
and Depth	of Casing	of Water	Pie	Description o	f Strata	Leg	Reduced	Depth		SPT 'N' Va		Depths	Туре	No.	Blows	SPT N	<425 %	WC %	PL %		r Cu	2			
and	of Casing	of	Piez	MADE GROUND (Orange brown sand. Gravel of angular to subr flint, concrete and brick) MADE GROUND (Orange brown mottled fine and medium sand) CONCRETE	n gravelly fine to coarse counded fine to coarse	Leg	Reduced Level	Depth - 0.00		10 20 3	0 40	Depths 0 0.40 0.80 1 2 4	ES	J1	Blows	SPT N	<425 %	WC %	PL %		r Cu lg/m³ kN/m	Groundwater not encounte excavation Hand pit aborted at 1.0m de obstruction			
	▼ Stan ▼ Wat	ding wat er strikes	ter leves	el PIEZOMETER Upper s Respon: Lower s	se zone AND B eal TEST U KEY P	Bulk o Undis Pistor	disturbed sa sturbed sam n sample	ample nple	C Co	andard penetration	n test	(35) TN N = N*1	Undist SPT N v .20 = To	turbed value (t otal blo	sample blows af ows/pen	blow co	ount ting)	2		Geo	osphere Ei	nvironmental	HOLE No.	2543,GI SHEET 1 OF 1	
				DEPTH All depths, level and	ES	Enviro	rbed jar sar onmental so r Sample		е		<4	incl 125 Sam	uding s iple % p			cron sie	eve	(N				0.		

CLIENT	: Suffo	lk Cou	nty C	Council	PROJECT: Lake Lo	thin	g							GRO	DUND	LEVE	L m					HOLE No. WSC16a			
LOGGED				CHECKED BY: SG	EXCAVATION METHOD:		Window	less sai	mple	r				Coo	rdinat	es:						SHEET 1 OF 1			
FIELDWO TEMPLAT			I BETA	DATE:		,	Uncased	to 1.1	. m						ES 31-		L7 - 3	1-00	:t-17			PROJECT NO. 2543,G	ı		
Date/Time		Depth*	sz.				Strata		Gr	aphical Rep	esentation	Sa		g/In-Sit	u Testin	g		La	borato	ry Testi	ing	Additional Tests and Notes			
and Depth	of Casing	of Water	Pie	Description o	f Strata	Leg	Reduced	Depth		SPT 'N' \		Depths	Туре	No.	Blows	SPT N	<425 %	wc %	PL %		r Cu g/m³ kN/m²				
and	Casing	of		MADE GROUND (Orange brown sand. Gravel of angular to subr flint, concrete and brick) MADE GROUND (Orange brown mottled fine and medium sand) CONCRETE	gravelly fine to coarse ounded fine to coarse	Leg	Reduced	Depth - 0.00 0.70 - 1.00 1.10		10 20	30 40	Depths 0 0.30 0.70 1	ES	J1	Blows	SPT N	<425%	WC %	PL %		r Cug/m³ kN/m²	Groundwater not encounter excavation Hand pit aborted at 1.0m de obstruction			
	▼ Stan	ding wat er strikes	er leve	el PIEZOMETER Upper s Respons Lower s	se zone AND B eal TEST U KEY P	Bulk o Undis Pistor	disturbed s listurbed sar turbed sam i sample bed jar san	ample aple	C Cor	ndard pene ne penetrati meability te		(35) = PTN N = :*N	blow) Undi : SPT N	isturbed V value	d sample (blows a ows/per	blow c	ount ating)		Di Di	Geog	sphere En	ıvironmental	HOLE No.	2543,GI SHEET 1 OF 1	
				DEPTH All depths, level and	ES	Enviro	onmental so		e		<	425 Sar				icron si	eve	(N				- 6		

CLIENT: Suffoli	k County	Council	PROJECT: Lake Lo	othin	g				GROUND LEV	/EL ı	m						HOLE No. WSC17		
LOGGED BY: LF		CHECKED BY: SG	EXCAVATION METHOD:	:	Window		•		Coordinates:								SHEET 1 OF 1		
FIELDWORK BY: DRI TEMPLATE REF: GEL		DATE:		·	Jncased	1 (0 4.0	m		DATES 30-Oct	t-17	- 30)-Oc	t-17				PROJECT NO. 2543,G	il	
Date/Time Depth		-			Strata			_	g/In-Situ Testing			Lal	borato	ry Te			Additional Tests and Notes		
and of Depth Casing	of i≝ Water	Description of	Strata	Leg	Reduced Level	Depth	SPT 'N' Value Depths	Туре	No. Blows SP	T (<425 %	WC %	PL %	LL %	r Mg/m³ I	Cu kN/m²			
and of	of Water	TOPSOIL (Dark brown slightly gr sand. Gravel of angular to subriflint and occasional brick) MADE GROUND (Dark orange b fine to coarse sand. Gravel of sine to coarse sand. Gravel of sine to coarse flint) Orange brown slightly gravelly from with occasional pale orange brown subangular to rounded fine to commend the sand medium SAND Orange brown and pale grey medine and medium SAND with free clay Stiff dark brown grey CLAY Stiff dark grey very gravelly CLA subangular to subrounded fine occasional flint	avelly fine to coarse bunded fine to coarse bunded fine to coarse frown slightly gravelly ubangular to rounded fine and medium SAND with pockets of coarse flint buttled slightly clayey mottled slightly clayey quent pockets of sandy	Leg	Reduced		SPT 'N' Value	ed/\(\lambda\)	. SP SP	PT	<425 %	wc	PL	LL	r	Cu ĸN/m²	Inflow of water at 3.7m		
*WATER ▼ Stanc ▼ Wate	ding water lever strikes	rel PIEZOMETER Upper so Respons Lower so	e zone AND B eal TEST U KEY P	Bulk d Undist Piston Distur	disturbed si isturbed sa turbed san sample bed jar sar nnmental s	ample (nple I mple	 Permeability test SPT N N = SF N*120 includ 	Indis PT N 0 = 1 ling	s for each 75mm inc sturbed sample blov value (blows after s Total blows/penetr's seating passing 425 micron	w cou seatir ation	int ng)			Ge	eosphei	re Env	Blowing sands encountered backfilled to 3.0m depth		2543,GI SHEET

: LF (BY: GE REF: GE Depth of Casing	L AGS BH	DE T •	CHECKED BY: LF DATE:	EXCAVATION METHOD:	٠ '	Window	iess san	ipier					- 1								1		
REF: GE Depth of	L AGS BH	DET.	I DATE:			11000	+- 40	-					L	Coor	rdinate	es: ,					SHEET 1 OF 1		
Depth of		RFIA			(Uncased	(0 4.0	Ш						DAT	ES 02	Jan-18	8 - 02-	-Jan-18	3		PROJECT NO. 2543,0	3I	
of						Strata		Grap	phical	Representa	ation	Sa		g/In-Sit	u Testin	3		Labo	atory 1	esting	Additional Tests and Notes		
	of Water	Piez.	Description of	f Strata	Leg	Reduced Level	Depth			'N' Value		Depths	Туре	No.	Blows	SPT N	<425 %	WC PI	LL %	r Cı Mg/m³ kN/	n ²		
		Fŧ	TOPSOIL (Dark brown silty fine	to coarse sand with	_		0.00	0 10	2(30	40	0	1							,	-		
			occasional angular to subround brick and flint)	ed fine and medium									-										
												0.35	ES	J1							VOC = 0ppm		
			MADE GROUND (Pale brown sli	ghtly gravelly fine and	XXX		0.60]										
			medium sand. Gravel of subang fine and medium flint)	gular to subrounded								0.80] ES	.12							VOC = 0ppm		
			Pale brown slightly gravelly med	dium and coarse SAND		4	1.00					1									-		
			Gravel of subangular to subrour	nded fine and medium																			
												1 40	-	12							1/06 0		
			1.50 - 1.60 Band of gravelly sand	d	.							1.40	ES	13							VOC = Uppm		
					· : · :								1										
												2	_										
												2.40	ES	J4							VOC = 2ppm (peak)		
					· · · :]								Borehole collapsed to 2.65	m bgl	
			2 90 - 3 00 Band of gravelly can	d							ļ		1										
			Orange brown gravelly medium	SAND. Gravel of	0.		3.00					. 3	1										
			suparigular to subrounded fine	to coarse mint	· · · ·								1										
Z	3.50		252 252 15		0.						<u> </u>		-									2.5	
			3.50 - 3.60 Band of coarse flint g	gravel	· . · .'	d						3.50	ES	J5							VOC = 0ppm	: 3.5m	
					0.			<u> </u>					1										
						4	4.00	 			 	4	-								Borehole aborted at 4.0m	due to co	ntinu
								1					-								collapse from 3.0m to 4.0n	n bgl	
]										
													1										
													1										
							-					5	1								-		
													1										
Z Stan	nding wat	⊢ ∔ er lev"	el PIEZOMETER NN Lippor o	eal SAMPLE D	L —	disturbed	samnle G	Stand	dard n	enetration	test 0	Nows SPT	hlows	for ea	ch 75mr	n increr	ment					 	
			ei Fizzoivietek Uppersi	se zone AND B	Bulk d	listurbed sa	ample (C Cone	pene	tration tes	t	(35)) Undis	sturbed	sample	blow c	ount	X	X			SW	1 OF 1
			V∕∕ Lower Si	KEY P	Pistor	sample		. reim	ıcavıll	ty icst	3	N*1	120 = T	otal bl	ows/per			$lue{\mathbf{\Phi}}$	G	eosphere	Environmental	19a	F_1
				ES	Enviro	onmental s	ripie oil sample				<					icron si	eve	O				<u>(1)</u>	
	- Star			medium sand. Gravel of subang fine and medium flint) Pale brown slightly gravelly me Gravel of subangular to subrou flint 1.50 - 1.60 Band of gravelly san Orange brown gravelly medium subangular to subrounded fine 3.50 - 3.60 Band of coarse flint floor subangular to subrounded fine Water strikes Upper s Respons Lower s	Pale brown slightly gravelly medium and coarse SAND. Gravel of subangular to subrounded fine and medium flint 1.50 - 1.60 Band of gravelly sand Orange brown gravelly medium SAND. Gravel of subangular to subrounded fine to coarse flint 3.50 3.50 - 3.60 Band of coarse flint gravel Upper seal Response zone AND Band D Lower seal TEST UKEY PISS	medium sand. Gravel of subangular to subrounded fine and medium flint) Pale brown slightly gravelly medium and coarse SAND. Gravel of subangular to subrounded fine and medium flint 1.50 - 1.60 Band of gravelly sand Orange brown gravelly medium SAND. Gravel of subangular to subrounded fine to coarse flint 3.50 3.50 - 3.60 Band of coarse flint gravel Upper seal Response zone AND B Bulkc Water strikes Upper seal Lower seal SAMPLE D Small Response zone AND B Bulkc SERVICE SERVIC	medium sand. Gravel of subangular to subrounded fine and medium flint Pale brown slightly gravelly medium and coarse SAND. Gravel of subangular to subrounded fine and medium flint 1.50 - 1.60 Band of gravelly sand Orange brown gravelly medium SAND. Gravel of subangular to subrounded fine to coarse flint 3.50 3.50 - 3.60 Band of coarse flint gravel Upper seal SAMPLE of Samall disturbed set of Samall distur	### Standing water level PIEZOMETER Upper seal Nature of Subangular to Subrounded fine and medium flint Standing water level PIEZOMETER Upper seal Lower seal Lower	medium sand. Gravel of subangular to subrounded fine and medium flint Pale vomm slightly gravelly medium and coarse SAND. Gravel of subangular to subrounded fine and medium flint 1.50 - 1.60 Band of gravelly sand Orange brown gravelly medium SAND. Gravel of subangular to subrounded fine to coarse flint 3.50 3.50 - 3.60 Band of coarse flint gravel Vater strikes Upper seal Response zone RAND Bulk disturbed sample Sample	medium sand. Gravel of subangular to subrounded fine and medium flint Pale brown slightly gravelly medium and coarse SAND. Gravel of subangular to subrounded fine and medium 1.50 - 1.60 Band of gravelly sand Orange brown gravelly medium SAND. Gravel of subangular to subrounded fine to coarse flint 3.50 3.50 - 3.60 Band of coarse flint gravel Water strikes Upper seal Response zone Lower seal Lower seal KEY Response zone KEY J Small disturbed sample Bulk disturbed sample C C Cone pene C K Permeabili Piston sample J Disturbed jar sample S Standard p D	MADE GROUND [Pale brown slightly gravelly fine and medium sand. Gravel of subangular to subrounded fine and medium flint) Pale brown slightly gravelly medium and coarse SAND. Gravel of subangular to subrounded fine and medium flint 1.50 - 1.60 Band of gravelly sand Orange brown gravelly medium SAND. Gravel of subangular to subrounded fine to coarse flint Orange brown gravelly medium SAND. Gravel of subangular to subrounded fine to coarse flint AND Standing water level PIEZOMETER Response zone Response zone Lower seal Lower seal SAMPLE D Small disturbed sample Occope penetration tes Undisturbed sample Undisturbed sample Undisturbed sample Undisturbed sample Undisturbed sample Undisturbed sample Undisturbed sample Cocope penetration tes FEST FEST Undisturbed sample Undisturbed sample Undisturbed sample Undisturbed sample Cocope penetration tes Fermeability test Piston sample J Disturbed jar sample J Disturbed jar sample	MADE GROUND [Pale brown slightly gravelly fine and medium sand. Gravel of Subangular to subrounded fine and medium flint) Pale brown slightly gravelly medium and coarse SAND. Gravel of subangular to subrounded fine and medium flint 1.50 - 1.60 Band of gravelly sand Orange brown gravelly medium SAND. Gravel of subangular to subrounded fine to coarse flint 3.50 - 3.60 Band of coarse flint gravel Valuer strikes Upper seal Response zone Response zone Lower seal Lower seal TEST U Undisturbed sample S Standard penetration test E V Piston sample J Disturbed jar sample S Es Environmental Soil sample S Standard penetration test S V Permeability test S Strongen Piston sample S Standard penetration test S V Piston sample S Standard penetration test S V Piston sample S S Environmental Soil sample S S Standard penetration test S V Piston sample S S Standard penetration test S V Piston sample S S Standard penetration test S V Piston sample S S Standard penetration test S V Piston sample S S Standard penetration test S V Piston sample S S Standard penetration test S V Piston sample S S Standard penetration test S S V Piston sample S S Standard penetration test S S V Piston sample S S Standard penetration test S S V Piston sample S S Standard penetration test S S V Permeability test S S V Piston sample S S S V Piston sample S S S V S V P Piston sample S S S V S V P Piston sample S S S V S V P Piston sample S S S V S V P Piston sample S S S V S V P Piston sample S S S V S V P P Piston S V P Piston S V P Piston S V P Piston S V P Piston S V P Piston S V P Piston S V P Piston S V P Piston S V P Piston S V P Piston S V P Piston S V P Piston S V P Piston S V P Piston S V P Piston S V P Piston S V P P Piston S V P P Piston S V P P P P P P P P P P P P P P P P P P	MADE GROUND (Pale brown sighty gravelly fine and medium and. Gravel of subangular to subrounded fine and medium flint) Pale brown slighty gravelly medium and coarse SAND. Gravel of subangular to subrounded fine and medium flint 1.50 - 1.60 Band of gravelly sand 2.90 - 3.00 Band of gravelly sand Orange brown gravelly medium SAND. Gravel of subangular to subrounded fine to coarse flint 3.50 - 3.60 Band of coarse flint gravel Standing water level PIEZOMETER Department of subangular to subrounded fine to coarse flint gravel AND TEST Understrikes Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT Now Now Now Now Now Now Now Now Now Now	MADE GROUND (Pale brown slightly gravelly fine and medium sand. Gravel of subangular to subrounded fine and medium flint Pale brown slightly gravelly medium and coarse SAND. Gravel of subangular to subrounded fine and medium flint 1.50 - 1.60 Band of gravelly sand Orange brown gravelly medium SAND. Gravel of subangular to subrounded fine to coarse flint gravel 3.50 - 3.60 Band of coarse flint gravel Orange brown gravelly medium SAND. Gravel of subangular to subrounded fine to coarse flint Orange brown gravelly medium SAND. Gravel of subangular to subrounded fine to coarse flint Orange brown gravelly medium SAND. Gravel of subangular to subrounded fine to coarse flint Orange brown gravelly medium SAND. Gravel of subangular to subrounded fine to coarse flint gravel Orange brown gravelly medium SAND. Gravel of subangular to subrounded fine to coarse flint Orange brown gravelly medium SAND. Gravel of subangular to subrounded fine to coarse flint Orange brown gravelly medium SAND. Gravel of subangular to subrounded fine to coarse flint gravel Orange brown gravelly medium sand Orange brown gravelly sand Orange brown gravelly sand Orange brown gravelly sand Orange brown gravelly sand Orange brown gravelly sand Orange brown gravelly sand Orange brown gravelly sand Orange brown gravely sand Orange brown gravely sand Orange brown gravely sand Ora	MADE GROUND (Pale brown slightly gravelly fine and medium sand. Gravel of subangular to subrounded fine and medium sind. Gravel of subangular to subrounded fine and medium fint. 1.50 - 1.60 Band of gravelly sand 2.90 - 3.00 Band of gravelly sand 2.90 - 3.00 Band of gravelly sand 3.50 - 3.60 Band of coarse flint gravel 3.50 - 3.60 Band of coarse flint gravel 3.50 - 3.60 Band of coarse flint gravel 3.50 - 3.60 Band of coarse flint gravel 5 Bulk disturbed sample 4.00 Shall disturbed sample 6 Cone penetration test Blows 5 Standard penetration test Blows 5 SPT blows for each strikes 8 SPT blows for each strikes 8 SPT blows for each strikes 9 Standard penetration test Blows 1.50 - 1.60 Band of coarse flint gravel 2.60 Small disturbed sample 4.00 Small disturbed sample 6 Cone penetration test Blows 8 SPT blows for each strikes 9 SPT blows for each strikes 1.50 Small disturbed sample 9 Standard penetration test Blows 1.50 SPT blows for each strikes 1.50 Small disturbed sample 1.50 Small disturbed sample 1.50 Small disturbed sample 1.50 Standard penetration test Blows 1.50 SPT blows for each strikes 1.50 SPT blows for each strikes 1.50 SPT blows for each strikes 1.50 SPT blows for each strikes 1.50 SPT blows for each strikes 1.50 SPT blows for each strikes 2.50 SPT blows for each strikes 3.50 ST blows for each strikes 5 SPT blows for each strikes 5 SPT blows for each strikes 5 SPT blows for each strikes 6 SPT blows for each strike strikes 1.50 SPT blows for each strike strikes 8 SPT blows for each strike strikes 8 SPT blows for each strike strikes 8 SPT blows for each strike strikes 9 SPT blows for each strike strikes 1.50 SPT blows for each strike strikes 1.50 SPT blows for each strike strikes 1.50 SPT blows for each strike strikes 1.50 SPT blows for each strike strikes 9 SPT blows for each strike strikes 9 SPT blows for each strike strikes 1.50 SPT blows for each strike strikes 1.50 SPT blows for each strike strikes 1.50 SPT blows for each strike strikes 1.50 SPT	MADE GROUND (Pale brown slightly gravelly fine and medium and. 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Falls brows slightly gravelly medium and coarse SAND. Ground of slavelly sand 1.50 - 1.60 Band of gravelly sand 2.90 - 3.00 Band of gravelly sand Change brown gravely medium SAND. Gravel of subsingular to subtrounded fine or or or subsingular to subtrounded fine to coarse fint gravel 3.50 - 3.60 Band of coarse first gravel Sanding water level PIZZOMETER SET Upper said to subtrounded fine to coarse first gravel Sanding water level PIZZOMETER SET Upper said to subsingular to subtrounded fine to coarse first gravel Sanding water level PIZZOMETER SET Upper said to subtrounded fine to coarse first gravel Sanding water level PIZZOMETER SET Upper said to subtrounded fine to coarse first gravel Sanding water level PIZZOMETER SET Upper said to subtrounded fine to coarse first gravel Sanding water level PIZZOMETER SET Upper said to subtrounded fine to coarse first gravel Sanding water level PIZZOMETER SET Upper said to subtrounded fine to coarse first gravel Sanding water level PIZZOMETER SET Upper said to subtrounded fine to coarse first gravel Sanding water level PIZZOMETER SET Upper said to subtrounded fine to coarse first gravel Sanding water level PIZZOMETER SET Upper said to subtrounded fine to coarse first gravel Sanding water level PIZZOMETER SET Upper said to subtrounded fine to coarse first gravel Sanding water level PIZZOMETER SET Upper said to subtrounded fine to coarse first gravel Sanding water level PIZZOMETER SET Upper said to subtrounded fine to coarse first gravel Sanding water level PIZZOMETER SET Upper said to subtrounded fine to coarse first gravel Sanding water level PIZZOMETER SET Upper said to subtrounded fine to coarse first gravel Sanding water level PIZZOMETER SET Upper said to subtrounded fine to coarse first gravel Sanding water level PIZZOMETER SET Upper said to subtrounded fine to coarse first gravel set upper set upper set upper set upper set upper set upper set upper set upper set upper set upper set upp

CLIENT	: Suffo	olk Co	unty	Council	PROJECT: Lake Lo	othin	g						GROU	JND L	EVEL	. m						HOLE No. WSC19
LOGGED	BY: LF			CHECKED BY: SG	EXCAVATION METHOD:	: \	Window	less sa	amp	ler			Coord	dinate	es:							SHEET 1 OF 1
FIELDWO TEMPLAT			вн вет	DATE:			Uncased	to 0.8	8 m				DATES	S 01-I	Nov-1	17 - 0	1-N	ov-1	7			PROJECT NO. 2543,GI
Date/Time		Depth		'			Strata			Graphical Representation		pling/l	n-Situ T			Ĺ,		borat		esting		Additional Tests and Notes
and Depth	of Casing	l of	Fi I	Description	of Strata	Leg	Reduced Level	Depth	h	SPT 'N' Value	Depths	Туре	No. B	Blows	SPT N	<425 %	wc %	PL %	LL %	r Mg/m	Cu kN/m²	
-	+		+-	TOPSOIL (Dark brown silty gra	velly fine to coarse sand		-	0.00) 0	10 20 30 40	0 -					"	,0	,,,	,0		,	-
				with rootlets. Gravel of angula coarse brick, flint, concrete, m	er to subangular fine to						1											
				course show, mine, comorcie, m	etar arra emmer,						0.30	ES	J1									
				MADE GROUND (Dark brown	very silty gravelly fine to		\$	0.50)		1											
				coarse sand. Gravel of angula coarse flint, brick, metal and c	r to subangular fine to inker)	\bigotimes	Ž	0.75	;		0.60	ES	J2									Hand nit abouted at 0.75m due to about stip
				CONCRETE		1		0.80			4											Hand pit aborted at 0.75m due to obstructio
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באהב בכן חוויס. כפס א סומי ואוס נסדים היו היו היו היו היו היו היו היו היו היו	†							_	-		5 -											-
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0.45											1											
*WATER	 ▼ Stai	nding w	ater lev	vel PIEZOMETER Dupper	seal SAMPLE D	⊢ − Small	disturbed s	l ample	S 9	itandard penetration test Blo	ows SPT h	lows f	or each	1 75mm	n increr	nent			_			
	¥ Wa	iter strik	es	vel PIEZOMETER Upper Respoi	nse zone AND B seal TEST U	Bulk o	disturbed san	ample	C (Cone penetration test		Jndistu	urbed sa	ample	blow co	ount						vironmental
				ZZZ LOWEI	KEY P	Pistor	n sample			ccasincy cest	N*12	0 = To	tal blow	vs/pen	etràtio	n		D	G	eosph	ere En	vironmental 93 E F 1 3 E C
*WATER					ES	Enviro	bed jar sar onmental s		ole	<4	inclui 25 Samp	ding se ole % p		425 mic	cron sie	eve	7	7				0. 2
5				DEPTH All depths, level and	thicknesses in metres W	Wate	r Sample															0

CLIENT	: Suff	folk	County	Council	PROJECT: Lake Lo	othin	g				GR	OUND I	LEVEL	. m					HOLE No. WSC19a		
LOGGED		DDI::	_	CHECKED BY: SG	EXCAVATION METHOD);	Ŵindow		•		Cod	ordinate	es:						SHEET 1 OF 1		
FIELDWO TEMPLAT			.T AGS BH BE	DATE:			Uncased	1 (0 5.0	III 		DA.	TES 02-	Nov-1	L7 - C	2-No	<i>-</i> 17			PROJECT NO. 2543,0	il .	
Date/Time		h D	epth* is		•		Strata	1	Graphical Representation			itu Testing	Į.		Lab	ratory	Testing		Additional Tests and Notes		
and Depth	of Casing	g V	of Vater ⊟≝	Description of	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value D	epths 원	No.	Blows	SPT N	<425 %	WC %	PL LL % %	r Mg/m	Cu kN/m ²			
_			-	TOPSOIL (Dark brown silty grav with rootlets. Gravel of angula coarse brick, flint, concrete, mo	r to subangular fine to			0.00	0 10 20 30 40	0 -											
				MADE GROUND (Grey and darl gravelly fine sand. Gravel of ar fine to coarse flint, clinker, cha	grey very silty very gular to subrounded rcoal and ash)			0.65	0.4		5 J1 5 J2										
				MADE GROUND (Black and dar MADE GROUND (Orange brow with occasional black mottling)	n fine to coarse sand		× × × × ×	1.20 1.30													
				Pale yellow brown medium SAI subangular to subrounded fine	ND with occasional		<u> </u>	1.80	1.5	50 ES	5 J3										
	 							2.40	2.1	2 - 10 ES	5 J4								-		
				Pale yellow brown very gravell SAND becoming slightly gravell subangular to subrounded fine	y medium to coarse y with depth. Gravel of to medium flint	0		2.40	2.5	70 ES	5 J5										
		<u> </u>	3.20			0				3 -									Inflow of water at 3.2m		
-				Dark orange brown slightly gra coarse SAND. Gravel of subang and medium flint	velly medium and gular to subrounded fine	0		- 4.00	4.2	4 – 20 – ES	5 J6								_		
-	_					ρ.	9	5.00		5 -									Blowing sands encountered	at 5 0m	horehol
							-			-									backfilled to 3.0m depth	at J.UIII	שוטופווטופ
*WATER	¥ St ∇ W	tandir /ater	ng water le strikes	vel PIEZOMETER Upper s Respon Lower s	se zone AND B real TEST U KEY P	Bulk o Undis Pistor Distur	listurbed san turbed san I sample bed jar sar	ample nple mple		(35) Un N N = SPT N*120 : includir	disturbe N value Total b ng seatir	ed sample (blows af blows/pen	blow co ter sea etration	ount ting) n	P		Geosph	iere En	vironmental	HOLE No. WSC19a	2543,GI SHEET 1 OF 1
				DEPTH All depths, level and			onmental s r Sample	oil sample	<425	Sample	% passi	ng 425 mi	cron sie	eve	C					•	

CLIENT	Ր։ Suff	folk	County	Council	PROJECT: Lake Lo	othing	<u> </u>				G	ROUND	LEVEI	. m					HOLE No. WSC21		
LOGGED		CEL		CHECKED BY: LF	EXCAVATION METHOD:			less sar	•		Co	ordinat	es: ,						SHEET 1 OF 1		
FIELDWC TEMPLAT			AGS BH BET	DATE:		ι	ıncased	to 3.2	m		D	ATES 02-	Jan-1	8 - 02	2-Jan-	 L8			PROJECT NO. 2543,G	1	
Date/Time		h D	epth* 8				Strata	9	Graphical Representation	San		-Situ Testin	g				y Testin		Additional Tests and Notes		
and Depth	of Casing	g V	epth* of Vater	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value	Depths	Туре	. Blows	SPT N	<425 %	WC %	PL L % %	L r % Mg/	m ³ KN/m ²	2		
_	+		-	FLEXIBLE SURFACING				0.00	0 10 20 30 40	0 -				1			1	,	-		
				MADE GROUND (Brown silty gra	avally fine to coarse	\bigotimes		0.20		-											
				sand. Gravel of angular to suba flint and occasional brick)	ingular fine to coarse	\bowtie		0.20		0.35	ES J1								VOC = 0ppm		
				MADE GROUND (Yellow brown	silty gravelly medium			0.50		-											
				sand. Gravel of subangular to s coarse flint)	ubrounded fine to	\bowtie				0.75 -	ES J2	.							V0C - 0nnn		
										0.75	ES J2	•							VOC = 0ppm		
	Ť					\bowtie				1 -											
						\bowtie															
						\bowtie		1 50													
				Yellow brown fine and medium dark orange brown sand	SAND with bands of	:::		1.50		-											
						<u> </u> :.:.				1.75 -	ES J3								VOC = 0ppm		
-	+			Brown clayey fine and medium	SAND with occasional	: : :		2.00		2-									-		
				dark orange brown bands	SAND WITH Occasional																
						<u> </u>		2 40		2.25	ES J								VOC = 0ppm		
1				Pale yellow brown fine and me occasional dark orange brown	dium SAND with reining			2.40											Borehole collapsed to 2.5m	bgl	
2						$ \cdot $				2.65	ES J	;							VOC = 0ppm	-	
3-1-		4	3.00			:::															
lds ————————————————————————————————————		Ť	3.00							3 -									Inflow of water at 3m		
 								3.20		-									Refusal encountered at 3.2r	n bgl	
85 A										_											
										-											
7) 2 5										-											
	1									4 -									-		
05-12-17.GPJ									l	-											
12-1										_											
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2543,GI										-											
	. ¥ Sta	andir	ng water le	+ — — — — — — — — — — — — — — — — — — —	eal SAMPLE D	Small o	disturbed	sample	S Standard penetration test BI	lows SPT I	blows for	each 75m	l m incre	ment							L (0 N)
	⊉ W	/ater	strikes	evel PIEZOMETER Upper s Respons Lower s	se zone AND B	Bulk di	isturbed s urbed san	ample	C Cone penetration test	(35)	Undistur	bed sample ue (blows a	e blow o	ount						장한	2543,GI SHEET 1 OF 1
*WATER				N/V rower s	KEY P	Piston	sample		S remeability test of	N*12		I blows/pe			U	U	Geos	phere E	nvironmental	E N.	두 <u>미</u>
H H					ES	Enviro		mpie soil sample	<4			ting ssing 425 m	icron si	eve							
5				DEPTH All depths, level and	thicknesses in metres W	Water	Sample														

CLIENT	: Suffo	lk Coun	ty C	ouncil	PROJECT: Lake Lo	othin	g				G	ROUND	LEVEL	. m					HOLE No. WSC22		
LOGGED				CHECKED BY: SG	EXCAVATION METHOD	:	Window		•		С	oordinat	es:						SHEET 1 OF 1		
FIELDWO TEMPLAT		RILLT EL AGS BH I	ВЕТА	DATE:		·	Jncased	to 4.5	m		D	ATES 01-	Nov-1	 17 - C)1-No	 /-17			PROJECT NO. 2543,6	 61	
Date/Time	Depth		Piez.				Strata		Graphical Representation		ling/Ir	-Situ Testin	g		Lab	ratory	Testing		Additional Tests and Notes		
and Depth	of Casing	of Water	<u>-</u>	Description of	Strata	Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30 40	Depths 2	N	o. Blows	SPT N	<425 %	WC %	PL LI % %	_ r 5 Mg/m	Cu kN/m²			
-			٠ ١ ٠	FLEXIBLE SURFACING				0.00	0 10 20 30 40	0 -									_		
				MADE GROUND (Dark orange be to coarse sand. Gravel of angula to coarse brick, flint and concre	rown very gravelly fine ar to subrounded fine	\bowtie		0.05		0.20 E	S J	1									
				MADE GROUND (Orange brown	fine and medium sand			0.50		1											
				with occasional fine to coarse fli	int)	\bowtie).50 ES	S J	2									
						\bowtie				1											
-	_					\bowtie		4.40		1-									-		
				Orange brown and pale brown fine and medium SAND	mottled slightly silty	× ;	<u> </u>	1.10	1	20 ES	S J	3									
						:× : .															
						×·				}											
				Orange brown and pale grey mo	ottled very sandy CLAY			1.70		80] ES	S J	4									
-	_			2.00 Orange brown horizons pro	esent with depth			-		2 -									_		
				,	·	<u>:-</u> .															
						-:-				1											
						<u>:</u>			2	2.50	D	1									
	-		L	Orange brown and pale grey mo	attled slightly clavey			3.00		3 -									_		
3-11				fine and medium SAND	ottled slightly clayey	.				1											
GDT						<u></u>			3	3.30 E	S J	5									
3 7.						.÷				1											
AGS						$[\div$				1											
STD	7	4.00		3.90 - 4.00 Pocket of dark orang	e brown slightly			4.00		4 -											
GINT				gravelly medium sand Orange fine and medium SAND	/			4.00	<u> </u>			_							Inflow of water at 4m Blowing sands encountered borehole backfilled to 3.7m	at 4.5m	depth,
GPJ (11	1.20 ES	S J	Б							borenole backfilled to 3.7111		
NG.			H					4.50		1									Borehole aborted at 4.5m d	epth due	to refusal
OTHING.										-											
Ä П										5 -											
√- I-]											
2543,GI										}											
	T 5:					<u> </u>	41:40		Charles and the second												- 1
*WATER	▼ Star ▼ Wat	nding water ter strikes	r leve	PIEZOMETER Upper se Respons Lower se	e zone AND B TEST U KEY P J ES	Bulk d Undist Piston Distur Enviro	listurbed sa turbed san sample bed jar sar onmental s	ample (nple I nple		(35) Un FN N = SP1 N*120 includi	ıdistuı ΓN va = Tota ng sea	bed sample lue (blows a al blows/per	blow co fter sea netràtion	ount ting) n	NP		Geospl	nere En	vironmental	HOLE No. WSC22	2543,GI SHEET 1 OF 1
GEL				DEPTH All depths, level and t				oil sample	<42	25 Sample	% pa	ssing 425 mi	cron sie	eve)			•	

SHEET 1 OF 1 1/2017 - 09/11/2017 PROJECT NO. 2543,GI Laboratory Testing Additional Tests and Notes Additional Tests and Notes
Laboratory Testing Additional Tests and Notes
Laboratory Testing Additional Tests and Notes
SPT
Inflow of water at 2.5m
Windowless sample hole completed at 4
Timeswess sumple note completed at 4
Geosphere Environmental Ltd Brightwell Barns, Ipswich Road Brightwell, Suffolk, IP10 BJ Telephone: 01603 298076
ple bl

CLIENT	: Suffo	lk Co	unty	Council	PROJECT: Lake Lo	<u>othin</u>	g Mindou	doss so	I						GRC	DUND	LEVE	L m						HOLE No. BHC28		
LOGGED E				CHECKED BY: DATE:	EXCAVATION METHOD:			less sar	-						GRI	D REFE	RENC	CE:						SHEET 1 OF 1		
FIELDWOI TEMPLATI			ВН ВЕТ.			,	ucaseo	d to 4.0	m						DAT	ES 12/	/10/20	017 -	13/1	10/20)17			PROJECT NO. 2543,0	ان	
ate/Time	Depth	Dept		•	•		Strata	9	Gra	phical R	eprese	ntation	Sa	mpling		u Testin				borato		sting		Additional Tests and Notes		
and Depth	of Casing	of Wat	er Piez "u	Description of	f Strata	Leg	Reduced Level	Depth	0 1		N' Valu 30	e 40	Depths	Type	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r ∨lg/m³	Cu kN/m²			
1	-			CONCRETE		P & 4		0.00					0	1										_		
				MADE GROUND (Orange brow gravel of fine to coarse angular concrete and occasional brick	n slightly clayey sand & to subrounded flint, ragments)			0.18 0.28				· · · · · · · · · · · · · · · · · · ·	<u>.</u>													
				CONCRETE CONCRETE (Concrete recovere	/			0.45					0.50-	В	1									VOC=0ppm (peak)		
				coarse angular to subangular c red brick)	oncrete with occasional			0.60					0.80 0.50- 0.60	1 1	1 2									VOC=1ppm (peak)		
+	-			MADE GROUND (Dark brown s frequent gravel of fine to coars chalk and strong medium dens	e brick, flint, chert,			0.90					1.00	-	3									VOC=0ppm (peak)		
				POSSIBLE MADE GROUND (Sof silty slightly gravelly clay. Grave	t olive brown slightly]	J									voc-oppin (peak)		
				and chert with occasional calca POSSIBLE MADE GROUND (Dar	<u> </u>			1.40					1.40-	-	4									VOC=0ppm (peak)		
				with pale grey veining)									1.80]										,, ., .		
						\bowtie							<u> </u>	1												
+	-			POSSIBLE MADE GROUND (Dar clayey silty medium sand)	k yellow brown slightly			1.90					2	-										_		
													2.20-],	5									VOC=0ppm (peak)		
													2.40	-												
				2.50 - 3.00 Becoming dark grey	brown with depth								2.60-]]	6									VOC=0ppm (peak)		
													2.80	}												
+	-]	_						-					3	-										_		
	7	_												-												
													<u> </u>]												
				Pale grey yellow brown silty fir occasional pale grey banding (2	e to medium SAND with	×		3.50					3.60-	1	7									VOC=0ppm (peak)		
	71	7 200		2		×				:::::	::::		3.90	1,	,									VOC-oppin (peak)		
15 mins		3.89	\dashv \mid			· · · ·		4.00						1										Medium inflow of water at 3		
								4.00						1										Borehole completed at 4.0n 3.0m upon completion	ı. Partial	collap
]												
													<u> </u>	1												
														1												
														-												
	-		L-					-					5	1										-		
WATER	▼ Stan ▼ Wat	ding w er stril	rater lev	rel PIEZOMETER Upper Respon	se zone AND B real TEST U KEY P	Bulk d Undist Piston	disturbed isturbed s turbed sar sample bed jar sa	ample nple	C Con	dard pe e penetr neability	ation t	est	SPTN N = N*:) Undis SPT N 120 = T	turbed value	d sample (blows a ows/per	blow c	ount ting)			Brig	ghtwe	ell Barr	vironmental Ltd ns, Ipswich Road folk, IP10 BJ	HOLE No. BHC28	SHEET 1 OF 1
				DEPTH All depths, level and	ES	Enviro	nmental s	mpie soil sample	:				:425 San				icron sie	eve	7	7	Tel	epho	ne: 01	603 298076		

CLIENT	: Suffo	lk Co	unty C	Council	PROJECT: Lake Lo	othin	g		I							GRO	UND	LEVE	L m						HOLE No. BHC101		
LOGGED E				CHECKED BY: SG	EXCAVATION METHOD:		Window 		•							GRIE	REFE	REN	CE:						SHEET 1 OF 1		
FIELDWOI TEMPLAT			RH RFTA	DATE: 14/08/2017		l	Uncased	to 1.3	m								ES 12/			- 13/	10/2	017			PROJECT NO. 2543,G	il	
ate/Time	Depth	Depth		•		L	Strata)	Gra	phica	l Repr	esenta	tion	Sa	mpling		u Testin		L				esting		Additional Tests and Notes	••	
and Depth	of Casing	of Wate	l ë l	Description o	f Strata	Leg	Reduced Level	Depth	0 1		T 'N' V	alue	40	Depths	Туре	No.	Blows	SPT N	<425 %	wc %	PL %	LL %	r Mg/m	Cu kN/m²			
	-			CONCRETE (Concrete with stee	l rebar (5mm diameter))		a a	0.00	<u> </u>				Ţ	0											No groundwater encounter	ed during	g drillin
				MADE GROUND (Dark brown m with frequent gravel of fine to concrete, clinker and glass)	nedium to coarse sand coarse brick, flint,		4	0.15						0.20	J	1									VOC=0ppm (peak)		
				CONCRETE (Concrete with iron	staining at base)		A	0.28							_										Concrete on west edge exte depth of pit (former founda	nded to I tion)	beyond
				MADE GROUND (Dark brown sa Gravel of fine to coarse brick, f	andy gravelly clay.		#: · · · · · · · · · · · · · · · · · · ·	0.50																			
				with occasional decayed wood 0.60 Clay pipe (12mm diameter gravelly clay with strong hydrod	fragments)) filled with black									0.60	J	2									VOC=1ppm (peak)		
				CONCRETE			4	0.85						•													
_	-			Sandy GRAVEL of flint				1.05						1											_		
						• •								1.20	1	3									VOC=0ppm (peak)		
						0.	•1	1.28						•											Borehole terminated at 1.28 obstruction	sm due to	concr
*WATER	▼ Stan ▼ Wat			PIEZOMETER Upper s Respon Lower s	se zone AND B eal TEST U KEY P	Bulk d Undis Piston Distur	disturbed disturbed sturbed sar sample rbed jar sar	ample nple mple	C Con K Peri	e pen	etratic	n test		(35) PTN N = N*1) Undis SPT N L20 = T	turbed value (d sample (blows a ows/per	blow c	ount iting)		1	Bı Bı	rightw rightw	ell Barı ell, Suf	nvironmental Ltd ns, Ipswich Road ffolk, IP10 BJ	HOLE No. BHC101	SHEET 1 OF 1
				DEPTH All depths, level and			onmental s	oil sample	!				<	425 San	nple %	passin	g 425 m	icron si	eve) le	elepho	ne: U	1603 298076	•	

CLIENT	: Suff	folk	County	Council	PROJECT: Lake Lo	othin	g			GROUND LEVEL m		HOLE No. WSC103
LOGGED		DD:::	T	CHECKED BY: SG	EXCAVATION METHOD:	:	Window		•	GRID REFERENCE:		SHEET 1 OF 1
FIELDWO TEMPLAT			.T AGS BH BET	DATE: 18/10/2017			Jncased	10 4.0		DATES 17/10/2017 - 17/10/	/2017	PROJECT NO. 2543,GI
Date/Time and Depth	Depth of Casing		epth* of Vater	Description o	Strata	Leg	Strata Reduced	Depth	Graphical Representation Samplin SPT 'N' Value Depths	SPT <425 WC PI	ratory Testing LL r Cu	Additional Tests and Notes
Бериі –	Casing	8 '	water	MADE COOLING (Dark and base)		208	Level	0.00	0 10 20 30 40 Depths	No. Blows N % %	% Mg/m³ kN/m²	-
				MADE GROUND (Dark grey bromottled desiccated silty fine to frequent rootlets/roots (<1mm MADE GROUND (Dark grey silty frequent gravel of flint, brick ar	medium sand with 5mm)) /			0.20	0.25 J	1		VOC=1ppm (peak)
					a nonstancy sunnery					2		VOC=1ppm (peak)
				POSSIBLE MADE GROUND (fill) (Orange brown/dark			0.87	0.75 J	3		VOC=3ppm (peak)
	_			grey brown mottled fine to coa subangular to subrounded flint 1.05 Becoming pale brown/darl mottled with depth	rse sand with frequent and chert) corange brown			1.05	1.00- B J 1.20 J 1.00 B J	1 4		VOC=2ppm (peak)
				Dark orange brown gravelly me Gravel of subangular to subrou 1.60 Occasional to frequent gra	nded fine to coarse flint	0		1.35	1.50 J	5		VOC=2ppm (peak)
_	_			Black stained slightly gravelly m			X	2.40	2 -			Partial collapse of sidewalls to 2.26m
		<u>\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ </u>	2.80	with faint heavy hydrocarbon o	dour	0			2.50J	6		VOC=8ppm (peak) Moderate inflow of water at 2.8m
				3.00 Becoming pale grey stained Pale/dark yellow brown silty SA hydrocarbon odour		×		3.10	3.00- 4.00 B	2 7		VOC=2ppm (peak)
_	_		•			×:-,		⁻ 4.00	4			Borehole completed at 4.0m. No further progress due to blowing sands
_	_				,			_	5 -			_
5				<u> </u>								
	¥ Sta ∇ W	andir ater	ng water le strikes	vel PIEZOMETER Upper s Respons Lower s	e zone AND B eal TEST U KEY P	Bulk d Undist Piston Distur	disturbed sa isturbed sa turbed sam sample bed jar san inmental so	ample aple aple	K Permeability test SPT N N = SPT I N*120 = including	sturbed sample blow count I value (blows after seating) Total blows/penetration seating	Geosphere En Brightwell Bari Brightwell, Sut Telephone: 0	1602 200076 ~ O •
į				DEPTH All depths, level and				on sample	<425 Sample s	s passing 425 micron sieve	Protopriorio. 0	1003 296070

Annex C.2

GAS AND GROUNDWATER



MONITORING



kpioratory	Hole Locati	on	BHC01									Date of Installation	20-04-18
eturn Visit #	Monitoring Date	Atmospheric Pressure (mb)		e Content	Carbon Dioxide	Oxygen	Flow Rate	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Weather Conditions	Comments / Pressure Rise or
			(% v/v)	(% LEL)	(% v/v)	(% v/v)	(l/hr)						
1st visit	09-05-2018	1006	<0.1	<2	0.5	19.8	<0.1	nm	nm	4	2.60	Hot, sunny, dry, breezy	
2nd visit	23-05-2018	1002	<0.1	<2	0.5	20.3	+0.9	nm	nm	1	2.40	Hot, sunny, dry, windy	
struments	l Isod:	GFM436 gas ar	alvser / I	DID MultiRA	ΔF lito				NOTE:	n/a	Not applicable		
MARKS:	oscu.	OI WI+30 gas ai	iaiysci / i	TD WIGHT	AL IIIC				NOTE.		Not applicable		
25.0							KEY:					Monitoring Visit	
										1	2	3 4	5 6 KEY:
20.0		-					M	lethane 6 v/v)	0.0)			
							(7	o V/V)					
5 15.0									1.0	, 📙			
Concentration 10.0									_				Groundwater
cer							→ Ca	arbon ioxide	Ξ				Level (mbgl)
– 100								6 v/v)	Depth (m))			
5 10.0									۵				
_							1						
5.0							-		3.0	, 📙			
5.0							 0:	xygen (v/v)	3.0				
5.0	1	2	3	4	5		(%	xygen 6 v/v)					
5.0	1		3 itoring V		5		O: (%	xygen 6 v/v)	3.0 4.0				



xploratory	Hole Location	on	BHC02									Date of Installation	17-08-17	
eturn Visit #	Monitoring Date	Atmospheric Pressure (mb)	Methane	e Content	Carbon Dioxide (% v/v)	Oxygen (% v/v)	Flow Rate (I/hr)	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Weather Conditions	Comments	/ Pressure Rise or Fa
			(70 47 4)	(70 LLL)	(/0 4/ 4/	(/0 0/0)	(4,,							
1st visit	09-05-2018	1006	<0.1	<2	2.4	14.5	<0.1	nm	nm	<0.1	1.30	Hot, sunny, dry, breezy		
2nd visit	23-05-2018	1023	<0.1	<2	3.6	13.1	<0.1	nm	nm	<0.1	1.23	Hot, sunny, dry, windy		
nstrument U	lands	GFM436 gas an	alvaan / F	ND Marris D	NT 1:4-				NOTE:	n/a	Not applicable			
EMARKS:	,seu.	GI W430 gas an	aiysei / r	TID WIGHT	AL III.E				NOTE.	nm	Not measured			
25.0							KEY:					Monitoring Visit	_	KEY:
20.0								ethane v/v)		0.0	2	3 4	5 6	5 KEY:
5 15.0										2.0				
Concentration 15.0 10.0								rbon oxide v/v)	Depth (m)	6.0				Groundwater Level (mbgl)
5.0		•							ă	8.0				
0.0	1	2		4	F		'	ygen v/v)		10.0				
	1	2 3 Mon	itoring V	4 'isit	5	(õ						İ	
ITE	g, Lowestoft	. Cffall.										REPORT	DATE May-18	



xploratory	Hole Locati	on	внсо7									Date of Installation	27-03-18	
eturn Visit #	Monitoring Date	Atmospheric Pressure (mb)		e Content	Carbon Dioxide	Oxygen	Flow Rate	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Weather Conditions	Comments /	Pressure Rise or Fal
			(% v/v)	(% LEL)	(% v/v)	(% v/v)	(l/hr)							
1st visit	09-05-2018	1006	<0.1	<2	<0.1	20.1	<0.1	nm	nm	<0.1	0.97	Hot, sunny, dry, breezy	Peak flow +7.	4 l/hr (at start)
2nd visit	23-05-2018	1023	0.1	1	0.2	20.5	+0.1	nm	nm	<0.1	1.51	Hot, sunny, dry, windy	Peak flow +1.	5 l/hr (at start)
trument U	Jsed:	GFM436 gas an	nalyser / F	PID MultiRA	AE lite				NOTE:	n/a	Not applicable			
MARKS:										nm	Not measured			
25.0						.,,	->.							
25.0						K	Y:		1		2	Monitoring Visit 3 4	5 6	KEY:
20.0						_	- Methan	e	0.0					
_							(% v/v)		2.0					
Concentration 15.0														
entra							— Carbon	<u> </u>	. 4.0				•	Groundwater Level (mbgl)
10.0							Dioxide (% v/v)	Depth (m)	. 6.0					
5.0								۵	8.0					
0.0						_	Oxygen (% v/v)		10.0					
	1	2 3 Moni	toring Vi	4 sit	5	6			12.0					
TE												REPORT	DATE	



ploratory	Hole Location	on	внсов									Date of Installation	16-03-18	
eturn Visit #	Monitoring Date	Atmospheric Pressure (mb)		Content	Carbon Dioxide	Oxygen	Flow Rate	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Weather Conditions	Comments / F	Pressure Rise or Fal
			(% v/v)	(% LEL)	(% v/v)	(% v/v)	(l/hr)							
1st visit	09-05-2018	1010	<0.1	<2	<0.1	17.8	<0.1	nm	nm	<0.1	1.69	Hot, sunny, dry, breezy	Peak flow -0.7	I/hr (at start)
2nd visit	24-05-2018	1021	<0.1	<2	<0.1	19.0	<0.1	nm	nm	<0.1	1.96	Hot, sunny, dry, windy	Peak flow +0.9) I/hr (at start)
trument U	lsed:	GFM436 gas an	alyser / F	PID MultiR/	AE lite				NOTE:	n/a	Not applicable			
MARKS:										nm	Not measured	I		
25.0							KEY	:			1	Monitoring Visit 2 3 4	5 (5 KEY:
20.0								——Met∣		0.0				
20.0		•						(% v,	/v)	2.0				
i 15.0										2.0				
ıntra										4.0				Groundwater Level (mbgl)
Concentration 10.0								Carb Diox (% v,	ide	Depth (m)				2000 (
5.0										8.0				
0.0							-	— ■ — Оху <u>є</u> (% v,	en (v)	10.0				
0.0	1	2	3	4		5	6			12.0				
		Mo	onitoring	y Visit						12.0				
TE												REPORT	DATE	



xploratory	Hole Locati	on	внсо9									Date of Installation	23-04-18	
leturn Visit #	Monitoring Date	Atmospheric Pressure (mb)	Methano	e Content	Carbon Dioxide	Oxygen	Flow Rate (I/hr)	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Weather Conditions	Comments	/ Pressure Rise or Fal
			(% V/V)	(% LEL)	(% v/v)	(% v/v)	(1/111)							
1st visit	09-05-2018	1012	<0.1	<2	<0.1	15.3	-0.3	nm	nm	1	2.32	Hot, sunny, dry, breezy		
2nd visit	24-05-2018	1021	0.1	1	<0.1	19.2	<0.1	nm	nm	<0.1	2.37	Hot, sunny, dry, windy		
strument U	lsed:	GFM436 gas an	alvser / F	PID MultiRA	AF lite				NOTE:	n/a	Not applicable			
MARKS:		G	, .								Not measured			
25.0	T						KEY:					Monitoring Visit		
										1	2	3 4	5	6 KEY:
20.0							→ M	lethane % v/v)	0.0					
_								, -,	2.0					-
Concentration 10.0														_
entra									4.0					Groundwater Level (mbgl)
10.0							D	arbon ioxide	<u>발</u> 등 6.0					
Ö							(%	% v/v)	Depth (m)					_
5.0									8.0					-
							 0	xvgen						-
0.0							(%	% v/v)	10.0]
	1	2 3 Mon	: itoring V	4 'isit	5	(6		12.0					
ITE												REPORT	DATE	



	Hole Locati	on	BHC14									Date of Installation	12-01-18	
eturn Visit #	Monitoring Date	Atmospheric Pressure (mb)	Methan	e Content	Carbon Dioxide	Oxygen	Flow Rate	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Weather Conditions	Comments /	Pressure Rise or Fal
			(% v/v)	(% LEL)	(% v/v)	(% v/v)	(l/hr)							
1st visit	09-05-2018	1007	<0.1	<2	<0.1	18.7	-0.3	nm	nm	3	1.66	Hot, sunny, dry, breezy		
2nd visit	23-05-2018	1023	<0.1	<2	<0.1	19.9	<0.1	nm	nm	<0.1	2.30	Hot, sunny, dry, windy		
trument U	Jsed:	GFM436 gas an	alyser / I	PID MultiRA	AE lite				NOTE:	n/a	Not applicable			
MARKS:										nm	Not measured			
25.0							EY:					Monitoring Visit		
										1	2	3 4	5 6	KEY:
20.0		•					Metha	ane (%	0.	0				
_									0.	5				
5 15.0								_	~ 1	0				Groundwater Level (mbgl)
15.0 15.0 10.0							Carbo Dioxid		ئے تے					zever (magi)
Concentra 0.01								n le (%	Depth (m)	5				Level (mag.)
15.0 Concentration 10.0 5.0						_	Dioxid v/v)	le (%						cool (mgg)
5.0							Dioxid v/v) Oxyge v/v)	le (%	1. Depth (π					
5.0	1	2 3 Mon	} itoring V	4 isit	5		Dioxid v/v) Oxyge	le (%		0				



xploratory	Hole Locati	on	BHC24	(P)								Date of Installation	23-02-18	
eturn Visit #	Monitoring Date	Atmospheric Pressure (mb)	_	e Content	Carbon Dioxide	Oxygen	Flow	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Weather Conditions	Comments	/ Pressure Rise or Fal
			(% v/v)	(% LEL)	(% v/v)	(% v/v)	(l/hr)							
1st visit	09-05-2018	1007	<0.1	<2	<0.1	19.3	<0.1	nm	nm	<0.1	1.81	Hot, sunny, dry, breezy	Peak flow +	50.4 l/hr (at start)
2nd visit	24-05-2018	1025	0.1	1	<0.1	20.4	+0.3	nm	nm	<0.1	1.35	Hot, sunny, dry, windy	Peak flow +	22.8 I/hr (at start)
strument U	Jsed:	GFM436 gas an	alyser / F	PID MultiR	AE lite				NOTE:		Not applicable			
MARKS:										nm	Not measured			
25.0							ŒY:					Monitoring Visit		
										1	2	3 4	5	6 KEY:
20.0		-						lethane % v/v)	0.0					-
5 15.0									2.0					-
entra								arbon	4.0					Groundwater Level (mbgl)
Concentration 15.0 10.0							D	ioxide 6 v/v)	Depth (m)					
5.0									8.0					
0.0	1	2	2	4			1	xygen 6 v/v)	10.0					
	1		3 itoring V	-	5		6							
TE												REPORT	DATE	



xploratory	Hole Location	on	внс24	(GG)								Date of Installation	23-02-18	
Return Visit #	Monitoring Date	Atmospheric Pressure (mb)		e Content (% LEL)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	Flow Rate (I/hr)	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Weather Conditions	Comments /	Pressure Rise or Fal
1st visit	09-05-2018	1007	<0.1	<2	0.3	8.6	<0.1	nm	nm	<0.1	1.42	Hot, sunny, dry, breezy	Peak flow -0.3	3 l/hr
2nd visit	24-05-2018	1025	<0.1	<2	0.6	14.7	<0.1	nm	nm	<0.1	1.24	Hot, sunny, dry, windy		
strument U MARKS:	Jsed:	GFM436 gas an	alyser / I	PID MultiRA	AE lite				NOTE:		Not applicable Not measured			
25.0							CEY:			1	2	Monitoring Visit 3 4	5 6	KEY:
20.0								ethane v/v)	0.0					
1 5.0									0.5					
Concentration 15.0							Die	oxide 5 v/v)	Depth (m) 1.0					Groundwater Level (mbgl)
5.0									2.0					
0.0							1	kygen 5 v/v)	2.5					
	1		3 itoring V	4 ⁄isit	5		6							
TE ke Lothin	g, Lowestoft	, Suffolk										REPORT 2543,GI	DATE May-18	



xploratory	Hole Locati	on	BHC27									Date of Installation	15-01-18	
Return Visit #	Monitoring Date	Atmospheric Pressure (mb)		e Content	Carbon Dioxide	Oxygen	Flow Rate	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Weather Conditions	Comments	/ Pressure Rise or Fal
			(% v/v)	(% LEL)	(% v/v)	(% v/v)	(l/hr)							
1st visit	09-05-2018	1016	<0.1	<2	<0.1	19.2	-0.1	nm	nm	<0.1	1.92	Hot, sunny, dry, breezy		
2nd visit	23-05-2018	1023	<0.1	<2	<0.1	16.8	-0.9	nm	nm	<0.1	2.10	Hot, sunny, dry, windy	Peak flow -	1.6l/hr (at start)
strument L	 Jsed:	GFM436 gas an	nalvser / F	PID MultiRA	AE lite				NOTE:	n/a	Not applicable			
MARKS:										nm	Not measured			
25.0	_						KEY:					Monitoring Visit		
										1	2	3 4	5 6	KEY:
20.0							——Metha (% v/v)		0.0					
<u> </u>							, , ,		2.0					
15.0									4.0					── Groundwater
Concentration 10.0							Carbon Dioxide (% v/v)	2	Oepth (m)					Level (mbgl)
5.0									8.0					
							Oxyger (% v/v)	1	10.0					
0.0		2 3		4	5	6			12.0					
	1		itoring V	isit					12.0					



xploratory	Hole Locati	on	BHC10	2								Date of Installation	11-12-18
leturn Visit #	Monitoring Date	Atmospheric Pressure (mb)		e Content	Carbon Dioxide	Oxygen	Flow Rate	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Weather Conditions	Comments / Pressure Rise or Fa
			(% v/v)	(% LEL)	(% v/v)	(% v/v)	(I/hr)						
1st visit	09-05-2018	1007	<0.1	<2	0.2	20.0	<0.1	nm	nm	<0.1	4.02	Hot, sunny, dry, breezy	
2nd visit	23-05-2018	1023	<0.1	<2	0.1	20.2	<0.1	nm	nm	<0.1	4.14	Hot, sunny, dry, windy	
strument L	Jsed:	GFM436 gas an	nalyser / I	PID MultiR	AE lite				NOTE:		Not applicable Not measured		
25.0						KF	Y:					Monitoring Visit	
									1		2	3 4	5 6 KEY:
20.0						_	—Methar (% v/v)		0.0				
_							(70 0) 0)		2.0				
15.0									-				
entra							← Carbon	_	4.0				Groundwater Lev (mbgl)
Concentration 15.0 10.0							Dioxide (% v/v)	ج ج	6.0				
5.0									8.0				
						_	Oxygen (% v/v)	ı	10.0				
0.0		_											1
	1	2 3 Moni	toring Vi	4 isit	5	6			12.0				

Annex C.3

CHEMICAL TEST DATA





Depot Road Newmarket CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Confirmation Receipt

Report No.: 18-14854-0

Initial Date of Issue:

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Lianne Fountain

Project 2543 GI Lake Loathing

Quotation No.: Q17-10179 Date Received: 25-May-2018

Order No.: Date Instructed: 29-May-2018

No. of Samples: 7

Turnaround (Wkdays): 5 Results Due: 04-Jun-2018

Date Confirmed: 29-May-2018

.B.Ellis

Confirmed By:

Details: Lorraine Ellis, Technical Admin



Summary of Testing

Client: Geosphere Environmental Ltd	C	hemtest Jo	ob No.	18-14854	18-14854	18-14854	18-14854	18-14854	18-14854	18-14854
Quotation No.: Q17-10179	Che	mtest Samp	ple ID:	628019	628909	628910	628911	628912	628913	628914
Order No.:	С	lient Sample	e Ref.:	BHC27	BHC08	BHC102	BHC24 (d)	BHC24 (s)	BHC01	BHC09
		Client Samp	ole ID.:	W1	W1	W1	W1	W1	W1	W1
		Sample	Туре:	WATER	WATER	WATER	WATER	WATER	WATER	WATER
		Top Dept	th (m):	2.10	2.54	2.09	2.74	1.52	2.04	6.03
		Date Sar	mpled:	23-May-2018	24-May-2018	24-May-2018	24-May-2018	24-May-2018	25-May-2018	24-May-2018
Suite										
Lake Lothing Water Suite				Ordered						



Lake Lothing Water Suite

Fluorene

Testing Breakdown

Project: 2543 GI Lake Loathing Client: Geosphere Environmental Ltd Chemtest Job No.: 18-14854 18-14854 18-14854 18-14854 18-14854 18-14854 18-14854 Chemtest Sample ID. Quotation No.: Q17-10179 628019 628909 628910 628911 628912 628913 628914 Order No.: Client Sample Ref BHC27 BHC08 **BHC102** BHC24 (d) BHC24 (s) BHC01 BHC09 Client Sample ID W1 W1 W₁ W₁ W1 W1 W1 Sample Type: WATER WATER WATER WATER WATER WATER WATER Top Depth (m) 2.10 2.54 2.09 2.74 1.52 2.04 6.03 24-May-2018 Date Sampled 23-May-2018 24-May-2018 24-May-2018 24-May-2018 25-May-2018 24-May-2018 SOP Suite Units LOD Determinand Accred. Lake Lothing Water Suite На U 1010 N/A Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Ammonia (Free) as N U 1220 mg/l 0.050 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Sulphate 11 1220 mg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Cyanide (Total) U 1300 0.050 Ordered Ordered Ordered Ordered Ordered Ordered Ordered mg/l IJ Lake Lothing Water Suite Cvanide (Free) 1300 0.050 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ma/l U Lake Lothing Water Suite Arsenic (Dissolved) 1450 µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered IJ 1450 20 Lake Lothing Water Suite Boron (Dissolved) ua/l Ordered Ordered Ordered Ordered Ordered Ordered Ordered U Ordered Lake Lothing Water Suite Cadmium (Dissolved) 1450 μg/l 0.080 Ordered Ordered Ordered Ordered Ordered Ordered U Lake Lothing Water Suite Chromium (Dissolved) 1450 µq/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Copper (Dissolved) 11 1450 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Mercury (Dissolved) U 1450 µg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Nickel (Dissolved) U 1450 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered U 1450 Lake Lothing Water Suite Lead (Dissolved) ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered U 1450 Lake Lothing Water Suite Selenium (Dissolved) µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Zinc (Dissolved) U 1450 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite U 1490 20 Chromium (Hexavalent) ua/l Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Aliphatic TPH >C5-C6 Ν 1675 μg/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Aliphatic TPH >C6-C8 Ν 1675 µq/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered 1675 Lake Lothing Water Suite Aliphatic TPH >C8-C10 Ν µq/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Aliphatic TPH >C10-C12 Ν 1675 ua/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Aliphatic TPH >C12-C16 1675 Ordered Ν µg/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered _ake Lothing Water Suite 1675 Aliphatic TPH >C16-C21 Ν ua/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Aliphatic TPH >C21-C35 Ν 1675 0.10 Ordered Ordered Ordered µq/l Ordered Ordered Ordered Ordered Lake Lothing Water Suite Aliphatic TPH >C35-C44 Ν 1675 0.10 Ordered µg/l Ordered Ordered Ordered Ordered Ordered Ordered Total Aliphatic Hydrocarbons Lake Lothing Water Suite Ν 1675 μg/l 5.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Aromatic TPH >C5-C7 Ν 1675 0.10 Ordered Ordered Ordered Ordered Ordered µg/l Ordered Ordered Lake Lothing Water Suite Aromatic TPH >C7-C8 Ν 1675 Ordered Ordered Ordered ua/l 0.10 Ordered Ordered Ordered Ordered ake Lothing Water Suite Aromatic TPH >C8-C10 Ν 1675 µg/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered 1675 Lake Lothing Water Suite Aromatic TPH >C10-C12 Ν ua/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Aromatic TPH >C12-C16 Ν 1675 0.10 Ordered Ordered Ordered Ordered Ordered μg/l Ordered Ordered Aromatic TPH >C16-C21 ake Lothing Water Suite Ν 1675 µq/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Aromatic TPH >C21-C35 Ν 1675 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ua/l Ν 1675 Ordered ake Lothing Water Suite Aromatic TPH >C35-C44 µg/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ν Lake Lothing Water Suite Total Aromatic Hydrocarbons 1675 ua/l 5.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Total Petroleum Hydrocarbons Ν 1675 μg/l 10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Naphthalene U 1700 μg/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered U Lake Lothing Water Suite Acenaphthylene 1700 ua/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Ordered Acenaphthene U 1700 ua/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered

Ordered

Ordered

Ordered

Ordered

Ordered

Ordered

Ordered

U

1700

μg/l

0.10



Client: Geosphere Environmental Ltd Chemtest Job No.: 18-14854 18-14854 18-14854 18-14854 18-14854 18-14854 18-14854 Chemtest Sample ID. Quotation No.: Q17-10179 628019 628909 628910 628911 628912 628913 628914 Order No.: Client Sample Ref BHC27 BHC08 **BHC102** BHC24 (d) BHC24 (s) BHC01 BHC09 Client Sample ID W1 W1 W₁ W₁ W1 W1 W1 WATER Sample Type: WATER WATER WATER WATER WATER WATER Top Depth (m) 2.10 2.54 2.09 2.74 1.52 2.04 6.03 Date Sampled: 23-May-2018 24-May-2018 24-May-2018 24-May-2018 24-May-2018 25-May-2018 24-May-2018 SOP Suite Units LOD Determinand Accred. Lake Lothing Water Suite Phenanthrene U 1700 µg/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Anthracene U 1700 µg/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Fluoranthene 11 1700 μg/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Pyrene U 1700 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered µq/l IJ Lake Lothing Water Suite 1700 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Benzo[a]anthracene ua/l U Lake Lothing Water Suite Chrysene 1700 µg/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered IJ 1700 Lake Lothing Water Suite Benzo[b]fluoranthene ua/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered U 1700 Lake Lothing Water Suite Benzo[k]fluoranthene μg/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered U Lake Lothing Water Suite Benzo[a]pyrene 1700 ua/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Indeno(1,2,3-c,d)Pyrene U 1700 ua/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Dibenz(a,h)Anthracene U 1700 µq/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Benzola.h.ilpervlene U 1700 ua/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered U 1700 Lake Lothing Water Suite Total Of 16 PAH's ua/l 2.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered U 1760 ake Lothing Water Suite Dichlorodifluoromethane µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Chloromethane U 1760 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Ν 1760 Ordered Ordered Vinvl Chloride ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Bromomethane U 1760 μg/l 5.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite U 1760 2.0 Ordered Ordered Chloroethane µq/l Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Trichlorofluoromethane U 1760 µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1.1-Dichloroethene U 1760 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Trans 1.2-Dichloroethene IJ 1760 Ordered µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered IJ ake Lothing Water Suite 1.1-Dichloroethane 1760 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite cis 1,2-Dichloroethene U 1760 1.0 Ordered Ordered Ordered µg/l Ordered Ordered Ordered Ordered Lake Lothing Water Suite U 1760 Ordered Bromochloromethane µg/l 5.0 Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Trichloromethane U 1760 μg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1,1,1-Trichloroethane U 1760 µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite U 1760 1.0 Ordered Ordered Ordered Ordered Tetrachloromethane ua/l Ordered Ordered Ordered ake Lothing Water Suite 1,1-Dichloropropene U 1760 µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered IJ Lake Lothing Water Suite Benzene 1760 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1.2-Dichloroethane U 1760 2.0 Ordered Ordered Ordered Ordered Ordered ua/l Ordered Ordered Ν ake Lothing Water Suite Trichloroethene 1760 µq/l Ordered Ordered Ordered Ordered Ordered Ordered Ordered 1.0 Lake Lothing Water Suite 1.2-Dichloropropane U 1760 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ua/l U 1760 Ordered ake Lothing Water Suite Dibromomethane µg/l 10 Ordered Ordered Ordered Ordered Ordered Ordered U Lake Lothing Water Suite Bromodichloromethane 1760 μg/l 5.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite cis-1.3-Dichloropropene Ν 1760 μg/l 10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Toluene U 1760 μg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Trans-1.3-Dichloropropene Ν 1760 μg/l 10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Ordered 1,1,2-Trichloroethane U 1760 µg/l 10 Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Tetrachloroethene U 1760 μg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered



Lake Lothing Water Suite

Bis(2-Chloroisopropyl)Ether

Ν

1790

μg/l

0.50

Testing Breakdown

Project: 2543 GI Lake Loathing Client: Geosphere Environmental Ltd Chemtest Job No.: 18-14854 18-14854 18-14854 18-14854 18-14854 18-14854 18-14854 Quotation No.: Q17-10179 Chemtest Sample ID. 628019 628909 628910 628911 628912 628913 628914 Order No.: Client Sample Ref BHC27 BHC08 **BHC102** BHC24 (d) BHC24 (s) BHC01 BHC09 Client Sample ID W1 W1 W₁ W1 W1 W1 W1 WATER Sample Type: WATER WATER WATER WATER WATER WATER Top Depth (m) 2.10 2.54 2.09 2.74 1.52 2.04 6.03 Date Sampled: 23-May-2018 24-May-2018 24-May-2018 24-May-2018 24-May-2018 25-May-2018 24-May-2018 SOP Suite Units LOD Determinand Accred. Lake Lothing Water Suite 1,3-Dichloropropane U 1760 µg/l 2.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Dibromochloromethane U 1760 µg/l 10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered 1.2-Dibromoethane ake Lothing Water Suite U 1760 μg/l 5.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Chlorobenzene Ν 1760 µq/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1.1.1.2-Tetrachloroethane U 1760 2.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ua/l U Lake Lothing Water Suite Ethylbenzene 1760 µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered IJ 1760 Lake Lothing Water Suite m & p-Xvlene ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered U 1760 Lake Lothing Water Suite o-Xvlene μg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered U Lake Lothing Water Suite Styrene 1760 µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Tribromomethane 11 1760 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Isopropylbenzene U 1760 µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Bromobenzene U 1760 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Ν 1760 50 Lake Lothing Water Suite ua/l Ordered Ordered Ordered Ordered Ordered Ordered 1.2.3-Trichloropropane Ordered U ake Lothing Water Suite N-Propylbenzene 1760 µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 2-Chlorotoluene U 1760 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered U Lake Lothing Water Suite 1760 1.0 Ordered Ordered 1.3.5-Trimethylbenzene ua/l Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 4-Chlorotoluene U 1760 μg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite U 1760 Ordered Ordered Ordered Tert-Butvlbenzene µg/l 1.0 Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1,2,4-Trimethylbenzene U 1760 µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Sec-Butvlbenzene U 1760 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite 1760 Ordered Ordered 1.3-Dichlorobenzene Ν µg/l 1.0 Ordered Ordered Ordered Ordered Ordered IJ ake Lothing Water Suite 4-Isopropyltoluene 1760 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1,4-Dichlorobenzene U 1760 1.0 Ordered Ordered Ordered Ordered Ordered µg/l Ordered Ordered Lake Lothing Water Suite U 1760 Ordered Ordered N-Butylbenzene µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1.2-Dichlorobenzene U 1760 μg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1,2-Dibromo-3-Chloropropane U 1760 µg/l 50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1.2.4-Trichlorobenzene U 1760 1.0 Ordered Ordered Ordered Ordered Ordered ua/l Ordered Ordered ake Lothing Water Suite Hexachlorobutadiene U 1760 µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered IJ Lake Lothing Water Suite 1.2.3-Trichlorobenzene 1760 ua/l 2.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Methyl Tert-Butyl Ether Ordered Lake Lothing Water Suite Ν 1760 Ordered Ordered Ordered Ordered Ordered μg/l 1.0 Ordered 1790 ake Lothing Water Suite N-Nitrosodimethylamine Ν µq/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Phenol Ν 1790 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ua/l 2-Chlorophenol Ν 1790 Ordered Ordered Ordered ake Lothing Water Suite µg/l 0.50 Ordered Ordered Ordered Ordered Ν Lake Lothing Water Suite Bis-(2-Chloroethyl)Ether 1790 ua/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1.3-Dichlorobenzene Ν 1790 μg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1.4-Dichlorobenzene Ν 1790 μg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered 1790 Lake Lothing Water Suite 1.2-Dichlorobenzene Ν ua/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Ordered 2-Methylphenol (o-Cresol) Ν 1790 ua/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered

Ordered

Ordered

Ordered

Ordered

Ordered

Ordered

Ordered



Project: 2543 GI Lake Loathing Client: Geosphere Environmental Ltd Chemtest Job No.: 18-14854 18-14854 18-14854 18-14854 18-14854 18-14854 18-14854 Quotation No.: Q17-10179 Chemtest Sample ID. 628019 628909 628910 628911 628912 628913 628914 Order No.: Client Sample Ref BHC27 BHC08 **BHC102** BHC24 (d) BHC24 (s) BHC01 BHC09 Client Sample ID W1 W1 W₁ W1 W1 W1 W1 WATER Sample Type: WATER WATER WATER WATER WATER WATER Top Depth (m) 2.10 2.54 2.09 2.74 1.52 2.04 6.03 Date Sampled 23-May-2018 24-May-2018 24-May-2018 24-May-2018 24-May-2018 25-May-2018 24-May-2018 SOP Suite Determinand Units LOD Accred. Lake Lothing Water Suite Hexachloroethane Ν 1790 µg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite N-Nitrosodi-n-propylamine Ν 1790 µg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite 4-Methylphenol Ν 1790 μg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Nitrobenzene Ν 1790 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered µq/l Lake Lothing Water Suite Ν 1790 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Isophorone ua/l Lake Lothing Water Suite 2-Nitrophenol Ν 1790 µg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Ν 1790 0.50 Lake Lothing Water Suite 2.4-Dimethylphenol ua/l Ordered Ordered Ordered Ordered Ordered Ordered Ordered 1790 Lake Lothing Water Suite Bis(2-Chloroethoxy)Methane Ν μg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 2.4-Dichlorophenol Ν 1790 ua/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite 1.2.4-Trichlorobenzene Ν 1790 ua/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Naphthalene Ν 1790 µq/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered 4-Chloroaniline Lake Lothing Water Suite Ν 1790 ua/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Ν 1790 0.50 Lake Lothing Water Suite Hexachlorobutadiene ua/l Ordered Ordered Ordered Ordered Ordered Ordered Ordered 1790 ake Lothing Water Suite 4-Chloro-3-Methylphenol Ν µg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered



Project: 2543 GI Lake Loathing												
Client: Geosphere Enviro	nmental Ltd		Cher	ntest Jo	ob No.:	18-14854	18-14854	18-14854	18-14854	18-14854	18-14854	18-14854
Quotation No.: Q17-10179		(Chemte	st Sam	ple ID.:	628019	628909	628910	628911	628912	628913	628914
Order No.:	Client Sample Ref.:		BHC27	BHC08	BHC102	BHC24 (d)	BHC24 (s)	BHC01	BHC09			
			Clie	ent Sam	ple ID.:	W1	W1	W1	W1	W1	W1	W1
				Sample		WATER						
				Top Dep		2.10	2.54	2.09	2.74	1.52	2.04	6.03
				Date Sa	mpled:	23-May-2018	24-May-2018	24-May-2018	24-May-2018	24-May-2018	25-May-2018	24-May-2018
Suite	Determinand	Accred.	SOP	Units	LOD							
Lake Lothing Water Suite	Di-N-Butyl Phthalate	N	1790	μg/l	0.50	Ordered						
Lake Lothing Water Suite	Fluoranthene	N	1790	μg/l	0.50	Ordered						
Lake Lothing Water Suite	Pyrene	N	1790	μg/l	0.50	Ordered						
Lake Lothing Water Suite	Butylbenzyl Phthalate	N	1790	μg/l	0.50	Ordered						
Lake Lothing Water Suite	Benzo[a]anthracene	N	1790	μg/l	0.50	Ordered						
Lake Lothing Water Suite	Chrysene	N	1790	μg/l	0.50	Ordered						
Lake Lothing Water Suite	Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	Ordered						
Lake Lothing Water Suite	Di-N-Octyl Phthalate	N	1790	μg/l	0.50	Ordered						
Lake Lothing Water Suite	Benzo[b]fluoranthene	N	1790	μg/l	0.50	Ordered						
Lake Lothing Water Suite	Benzo[k]fluoranthene	N	1790	μg/l	0.50	Ordered						
Lake Lothing Water Suite	Benzo[a]pyrene	N	1790	μg/l	0.50	Ordered						
Lake Lothing Water Suite	Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	Ordered						
Lake Lothing Water Suite	Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	Ordered						
Lake Lothing Water Suite	Benzo[g,h,i]perylene	N	1790	μg/l	0.50	Ordered						
Lake Lothing Water Suite	4-Nitrophenol	N	1790	μg/l	0.50	Ordered						
Lake Lothing Water Suite	Total Phenols	U	1920	mg/l	0.030	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk



Depot Road Newmarket CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Confirmation Receipt

Report No.: 18-15148-0

Initial Date of Issue:

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Lianne Fountain

Project 2543, GI Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 31-May-2018

Order No.: 2543, Gl **Date Instructed:** 31-May-2018

No. of Samples: 2

Turnaround (Wkdays): 3 Results Due: 04-Jun-2018

Date Confirmed: 31-May-2018

.B.Ellis

Confirmed By:

Details: Lorraine Ellis, Technical Admin



Summary of Testing

Client: Geosphere Environmental Ltd	(Chemtest Jo	b No.	18-15148	18-15148
Quotation No.: Q17-10179	Che	mtest Samp	ole ID:	630538	630539
Order No.: 2543, GI	(Client Sample	e Ref.:	BHC02	BHC07
		Client Samp	W2	W2	
	Sample Type:				WATER
		Top Dep	th (m):	1.10	1.15
		Bottom Dept	th (m):	1.40	1.40
		Date Sar	npled:	30-May-2018	30-May-2018
Suite					
Lake Lothing Water Suite				Ordered	Ordered



Client: Geosphere Enviro	nmental Ltd				ob No.:	18-15148	18-15148
Quotation No.: Q17-10179					ple ID.:	630538	630539
Order No.: 2543, GI				nt Samp		BHC02	BHC07
			Clie	ent Sam	ple ID.:	W2	W2
				Sampl	e Type:	WATER	WATER
				Top De	oth (m):	1.10	1.15
			Bot	tom De _l	oth (m):	1.40	1.40
				Date Sa	ampled:	30-May-2018	30-May-201
Suite	Determinand	Accred.	SOP	Units	LOD		
Lake Lothing Water Suite	рН	U	1010		N/A	Ordered	Ordered
Lake Lothing Water Suite	Ammonia (Free) as N	U	1220	mg/l	0.050	Ordered	Ordered
Lake Lothing Water Suite	Sulphate	U	1220	mg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Cyanide (Total)	U	1300	mg/l	0.050	Ordered	Ordered
Lake Lothing Water Suite	Cyanide (Free)	U	1300	mg/l	0.050	Ordered	Ordered
Lake Lothing Water Suite	Arsenic (Dissolved)	U	1450	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Boron (Dissolved)	Ū	1450	μg/l	20	Ordered	Ordered
Lake Lothing Water Suite	Cadmium (Dissolved)	U	1450	μg/l	0.080	Ordered	Ordered
Lake Lothing Water Suite	Chromium (Dissolved)	U	1450	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Copper (Dissolved)	U	1450	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Mercury (Dissolved)	Ū	1450	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Nickel (Dissolved)	Ū	1450	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Lead (Dissolved)	Ū	1450	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Selenium (Dissolved)	Ū	1450	µg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Zinc (Dissolved)	Ū	1450	µg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Chromium (Hexavalent)	Ü	1490	μg/l	20	Ordered	Ordered
Lake Lothing Water Suite	Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aliphatic TPH >C8-C10	N N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	Ordered	Ordered
Lake Lothing Water Suite	Aromatic TPH >C5-C7	N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aromatic TPH >C5-C7 Aromatic TPH >C7-C8	N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aromatic TPH >C8-C10	N	1675			Ordered	
Lake Lothing Water Suite	Aromatic TPH >C10-C12	N	1675	μg/l μg/l	0.10	Ordered	Ordered Ordered
Lake Lothing Water Suite	Aromatic TPH >C10-C12 Aromatic TPH >C12-C16	N	1675		0.10	Ordered	Ordered
		N	1675	μg/l	0.10	Ordered	
Lake Lothing Water Suite	Aromatic TPH > C16-C21	N N		μg/l			Ordered
Lake Lothing Water Suite	Aromatic TPH >C21-C35		1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aromatic TPH >C35-C44	N N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	Ordered	Ordered
Lake Lothing Water Suite	Total Petroleum Hydrocarbons	N	1675	μg/l	10	Ordered	Ordered
Lake Lothing Water Suite	Naphthalene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Acenaphthylene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Acenaphthene	U	1700	μg/l	0.10	Ordered	Ordered



Client: Geosphere Enviro	nmental Ltd			mtest Jo		18-15148	18-15148
Quotation No.: Q17-10179				st Sam		630538	630539
Order No.: 2543, GI			Clie	nt Samp	le Ref.:	BHC02	BHC07
			Cli	ent Sam	ple ID.:	W2	W2
				Sampl	e Type:	WATER	WATER
				Top Dep	oth (m):	1.10	1.15
			Bot	tom Dep	oth (m):	1.40	1.40
				Date Sa	ampled:	30-May-2018	30-May-201
Suite	Determinand	Accred.	SOP	Units	LOD		
Lake Lothing Water Suite	Fluorene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Phenanthrene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Anthracene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Fluoranthene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Pyrene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Benzo[a]anthracene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Chrysene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Benzo[b]fluoranthene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Benzo[k]fluoranthene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Benzo[a]pyrene	Ü	1700	µg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Indeno(1,2,3-c,d)Pyrene	U	1700	µg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Dibenz(a,h)Anthracene	Ü	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Benzo[g,h,i]perylene	Ü	1700	µg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Total Of 16 PAH's	Ü	1700	μg/l	2.0	Ordered	Ordered
Lake Lothing Water Suite	Dichlorodifluoromethane	Ü	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Chloromethane	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Vinyl Chloride	N	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Bromomethane	Ü	1760	μg/l	5.0	Ordered	Ordered
Lake Lothing Water Suite	Chloroethane	Ü	1760	μg/l	2.0	Ordered	Ordered
Lake Lothing Water Suite	Trichlorofluoromethane	Ü	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,1-Dichloroethene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Trans 1,2-Dichloroethene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,1-Dichloroethane	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	cis 1,2-Dichloroethene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Bromochloromethane	U	1760	μg/l	5.0	Ordered	Ordered
Lake Lothing Water Suite	Trichloromethane	U	1760	, , ,	1.0	Ordered	Ordered
•	1,1,1-Trichloroethane	U	1760	μg/l	1.0	Ordered	
Lake Lothing Water Suite		U		μg/l			Ordered
Lake Lothing Water Suite Lake Lothing Water Suite	Tetrachloromethane	U	1760 1760	μg/l	1.0 1.0	Ordered Ordered	Ordered Ordered
	1,1-Dichloropropene	U	1760	μg/l		Ordered	Ordered
Lake Lothing Water Suite	Benzene 1.2 Diablaraathana	U		μg/l	1.0		
Lake Lothing Water Suite	1,2-Dichloroethane		1760	μg/l	2.0	Ordered	Ordered
Lake Lothing Water Suite	Trichloroethene	N	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,2-Dichloropropane	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Dibromomethane	U	1760	μg/l	10	Ordered	Ordered
Lake Lothing Water Suite	Bromodichloromethane	U	1760	μg/l	5.0	Ordered	Ordered
Lake Lothing Water Suite	cis-1,3-Dichloropropene	N	1760	μg/l	10	Ordered	Ordered
Lake Lothing Water Suite	Toluene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Trans-1,3-Dichloropropene	N	1760	μg/l	10	Ordered	Ordered



Client: Geosphere Enviro	nmental Ltd			mtest Jo		18-15148	18-15148
Quotation No.: Q17-10179		(Chemte	st Sam	ple ID.:	630538	630539
Order No.: 2543, GI			Clie	nt Samp	le Ref.:	BHC02	BHC07
			Cli	ent Sam	ple ID.:	W2	W2
				Sampl	e Type:	WATER	WATER
				Top Dep	oth (m):	1.10	1.15
			Bot	tom Dep	1.40	1.40	
				Date Sa	mpled:	30-May-2018	30-May-201
Suite	Determinand	Accred.	SOP	Units	LOD		
Lake Lothing Water Suite	1,1,2-Trichloroethane	U	1760	μg/l	10	Ordered	Ordered
Lake Lothing Water Suite	Tetrachloroethene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,3-Dichloropropane	U	1760	μg/l	2.0	Ordered	Ordered
Lake Lothing Water Suite	Dibromochloromethane	U	1760	μg/l	10	Ordered	Ordered
Lake Lothing Water Suite	1,2-Dibromoethane	U	1760	μg/l	5.0	Ordered	Ordered
Lake Lothing Water Suite	Chlorobenzene	N	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,1,1,2-Tetrachloroethane	U	1760	μg/l	2.0	Ordered	Ordered
Lake Lothing Water Suite	Ethylbenzene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	m & p-Xylene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	o-Xylene	U	1760	µg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Styrene	Ū	1760	µg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Tribromomethane	Ü	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Isopropylbenzene	Ū	1760	µg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Bromobenzene	Ü	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,2,3-Trichloropropane	N	1760	μg/l	50	Ordered	Ordered
Lake Lothing Water Suite	N-Propylbenzene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	2-Chlorotoluene	Ü	1760	µg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,3,5-Trimethylbenzene	U	1760	µg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	4-Chlorotoluene	Ü	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Tert-Butylbenzene	Ü	1760	µg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,2,4-Trimethylbenzene	Ü	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Sec-Butylbenzene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1.3-Dichlorobenzene	N	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	4-Isopropyltoluene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,4-Dichlorobenzene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	N-Butylbenzene	U	1760	μg/l	1.0	Ordered	Ordered
	1,2-Dichlorobenzene	U	1760		1.0	Ordered	Ordered
Lake Lothing Water Suite Lake Lothing Water Suite	1,2-Dibromo-3-Chloropropane	U	1760	μg/l	50	Ordered	Ordered
Lake Lothing Water Suite	1,2,4-Trichlorobenzene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Hexachlorobutadiene	U	1760	μg/l	1.0	Ordered	Ordered
		U	1760	μg/l	_		
Lake Lothing Water Suite Lake Lothing Water Suite	1,2,3-Trichlorobenzene	N N		μg/l	2.0	Ordered	Ordered
	Methyl Tert-Butyl Ether		1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	N-Nitrosodimethylamine	N N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Phenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2-Chlorophenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	1,3-Dichlorobenzene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	1,4-Dichlorobenzene	N	1790	μg/l	0.50	Ordered	Ordered



Client: Geosphere Enviro	nmental Ltd			mtest Jo		18-15148	18-15148
Quotation No.: Q17-10179			Chemte	st Sam	ole ID.:	630538	630539
Order No.: 2543, GI			Clie	nt Samp	le Ref.:	BHC02	BHC07
			Cli	ent Sam	ple ID.:	W2	W2
				Sample	e Type:	WATER	WATER
				Top Dep	oth (m):	1.10	1.15
			Bot	tom Dep	th (m):	1.40	1.40
		Date Sampled:			30-May-2018	30-May-2018	
Suite	Determinand	Accred.	SOP	Units	LOD		
Lake Lothing Water Suite	1,2-Dichlorobenzene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Hexachloroethane	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	4-Methylphenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Nitrobenzene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Isophorone	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2-Nitrophenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2,4-Dimethylphenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2,4-Dichlorophenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Naphthalene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	4-Chloroaniline	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Hexachlorobutadiene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2-Methylnaphthalene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Hexachlorocyclopentadiene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2,4,6-Trichlorophenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2,4,5-Trichlorophenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2-Chloronaphthalene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2-Nitroaniline	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Acenaphthylene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Dimethylphthalate	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2,6-Dinitrotoluene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Acenaphthene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	3-Nitroaniline	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Dibenzofuran	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	4-Chlorophenylphenylether	N N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2,4-Dinitrotoluene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Fluorene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Diethyl Phthalate	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	4-Nitroaniline	N N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2-Methyl-4,6-Dinitrophenol	N N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Azobenzene	N N	1790	μg/l μg/l	0.50	Ordered	Ordered
<u> </u>		N N	1790		0.50	Ordered	
Lake Lothing Water Suite	4-Bromophenylphenyl Ether			μg/l			Ordered
Lake Lothing Water Suite	Hexachlorobenzene	N	1790	μg/l	0.50	Ordered	Ordered



Client: Geosphere Enviro	nmental Ltd		Chemtest Job No.				18-15148
Quotation No.: Q17-10179		(Chemte	st Sam	ple ID.:	630538	630539
Order No.: 2543, GI			Clie	nt Samp	le Ref.:	BHC02	BHC07
			Clie	ent Sam	ple ID.:	W2	W2
				Sampl	е Туре:	WATER	WATER
				Top De	1.10	1.15	
			Bot	tom De	oth (m):	1.40	1.40
				Date Sa	ampled:	30-May-2018	30-May-2018
Suite	Determinand	Accred.	Accred. SOP Units LOD				
Lake Lothing Water Suite	Pentachlorophenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Phenanthrene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Anthracene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Carbazole	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Di-N-Butyl Phthalate	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Fluoranthene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Pyrene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Butylbenzyl Phthalate	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Benzo[a]anthracene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Chrysene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Di-N-Octyl Phthalate	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Benzo[b]fluoranthene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Benzo[k]fluoranthene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Benzo[a]pyrene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Benzo[g,h,i]perylene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	4-Nitrophenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Total Phenols	U	1920	mg/l	0.030	Ordered	Ordered



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk

			17424916	17424917	17424918	17424919
Order details			17424910	17424917	17424916	17424919
		SDG ID.	180423-34	180423-34	180423-34	180423-34
			Authorised	Authorised	Authorised	Authorised
		Project Site		Lowestoft	Lowestoft	Lowestoft
		•	62240712	62240712	62240712	62240712
		-				Neil Balderstone
Sampling details						
	Sam	ple Description		WS02	WS03	WS04
			Authorised	Authorised	Authorised	Authorised
		Sample Depth		0.00-0.20	0.00-0.20	0.00-0.20
			SURFACE_WA	SURFACE_WA	SURFACE_WA	SURFACE_WAT
		S Sample Type				
	AGS Sar	mple Reference				
		Date Sampled	19/04/2018	19/04/2018	19/04/2018	19/04/2018
		Received On	23/04/2018	23/04/2018	23/04/2018	23/04/2018
		Date Complete	30/04/2018	30/04/2018	30/04/2018	30/04/2018
Laboratory data						
Carbon	Organic Carbon, Total	ma/l	<3	<3	<3	<3
Inorganics	Organio Garbon, Total	9/1			ζ3	43
	Alkalinity, Total as CaCO3	mg/l	135	124	122	122
	Ammoniacal Nitrogen as N	mg/l	<0.2	<0.2	<0.2	<0.2
	Apparent Colour	mg/l Pt/Co	27.3	13.7	9.61	11.3
	Chloride	mg/l	18400	18500	18000	18300
	Conductivity @ 20 deg.C	mS/cm	45.8	46.7	46.3	45.1
	Nitrate as NO3	mg/l	<0.3	<0.3	<0.3	<0.3
	рН	pH Units	7.9	7.92	7.93	7.9
	Phosphate (Ortho as PO4)	mg/l	<0.05	<0.05	< 0.05	< 0.05
	Sulphate	mg/l	2640	2620	2610	2600
	Suspended solids, Total	mg/l	42.3	36.8	40.8	34.2
	True Colour	mg/l Pt/Co	1.38	1.95	1.49	1.51
Filtered (Dissolved) Metals						
	Aluminium (diss.filt)		<60	<60	<60	<60
	Arsenic (diss.filt)		<3	<3	<3	<3
	Cadmium (diss.filt)		<0.48	<0.48	<0.48	<0.48
	Chromium (diss.filt)	. •	<6	<6	<6	<6
	Copper (diss.filt)		3.32	1.84	<1.8	<1.8
	Iron (Dis.Filt)	_	<0.114	<0.114	<0.114	<0.114
	Lead (diss.filt)		<1.2	<1.2	<1.2	
	Manganese (diss.filt)		<18	18.5	22.3	18.9
	Mercury (diss.filt)		<0.01	<0.01	<0.01	<0.01
	Nickel (diss.filt)	. •	3.13	<2.4	<2.4	3.32
H-69	Zinc (diss.filt)	μg/l	26.8	19.9	21.2	8.88
Unfiltered (Total) Metals	0.11. (7.11.6)					
	Calcium (Tot. Unfilt.)	•	440	450	415	461
	Magnesium (Tot. Unfilt.)	· ·	1130	1160	1150	1130
	Potassium (Tot. Unfilt.)	•	361	356	355	349
Gasoline Range Organics (Sodium (Tot. Unfilt.)	mg/I	8440	8940	9050	8890
Gasonne Nange Organics (EPH (C6-C10)	ug/l	<100	<100	<100	<100
	GRO >C5-C10		<100	<100	<100	<100
EPH (Extractable Petroleun		r 3r:				1.0
	PH Range >C10 - C40 (aq)	μg/l	<100	<100	<100	<100
•						
Ē	p (TPH CWG)					
E	p (TPH CWG) Benzene	μg/l	<7	<7	<7	<7
E	,	. •	<7 <5	<7 <5	<7 <5	<7 <5
E	Benzene	μg/l				
` TPH Criteria Working Grou	Benzene Ethylbenzene	μg/l μg/l	<5	<5	<5	<5
` TPH Criteria Working Grou	Benzene Ethylbenzene m,p-Xylene	hā\l hā\l ha\l	<5 <8	<5 <8	<5 <8	<5 <8
E TPH Criteria Working Grou	Benzene Ethylbenzene m,p-Xylene I tertiary butyl ether (MTBE)	ha\l ha\l ha\l ha\l	<5 <8 <3	<5 <8 <3	<5 <8 <3	<5 <8 <3
E TPH Criteria Working Grou	Benzene Ethylbenzene m,p-Xylene I tertiary butyl ether (MTBE) o-Xylene	ha\l ha\l ha\l ha\l	<5 <8 <3 <3	<5 <8 <3 <3	<5 <8 <3 <3	<5 <8 <3 <3





Chemtest Ltd.
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CB8 0AL
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Email: info@chemtest.co.uk

Final Report

Report No.:	17-20019-1
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Initial Date of Issue: 07-Aug-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543, GI Lake Lothing L20, Lowestoft

Quotation No.: Date Received: 01-Aug-2017

Order No.: 2543, GI Date Instructed: 01-Aug-2017

No. of Samples: 1

Turnaround (Wkdays): 5 Results Due: 07-Aug-2017

Date Approved: 07-Aug-2017

Approved By:

Details: Robert Monk, Technical Development

Chemist



Client: Geosphere Environmental Ltd		Chei	ob No.:	17-20019	
Quotation No.:			st Sam		491165
Order No.: 2543, GI		Clie	nt Samp	le Ref.:	BHC06
			ent Sam		J3
				e Type:	SOIL
			Top De		0.5
			Date Sa	, ,	28-Jul-2017
Determinand	Accred.	SOP	Units	LOD	
рН	U	1010		N/A	8.0
Ammonia (Free)	U	1220	mg/l	0.010	< 0.010
Sulphate	U	1220	mg/l	1.0	< 1.0
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	3.5
Boron (Dissolved)	U	1450	μg/l	20	37
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Copper (Dissolved)	U	1450	μg/l	1.0	15
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	1.5
Lead (Dissolved)	U	1450	μg/l	1.0	6.3
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Zinc (Dissolved)	U	1450	μg/l	1.0	3.4
Chromium (Hexavalent)	U	1490	μg/l	20	< 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10
Naphthalene	U	1700	μg/l	0.10	< 0.10
Acenaphthylene	U	1700	μg/l	0.10	< 0.10
Acenaphthene	U	1700	μg/l	0.10	< 0.10
Fluorene	U	1700	μg/l	0.10	< 0.10



Client: Geosphere Environmental Ltd		Che	ntest Jo	ob No.:	17-20019
Quotation No.:			st Sam		491165
Order No.: 2543, GI			nt Samp		BHC06
		Clie	ent Sam		J3
			Sample	е Туре:	SOIL
			Top Dep	oth (m):	0.5
			Date Sa	ampled:	28-Jul-2017
Determinand	Accred.	SOP	Units	LOD	
Phenanthrene	U	1700	μg/l	0.10	< 0.10
Anthracene	U	1700	μg/l	0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10
Pyrene	U	1700	μg/l	0.10	< 0.10
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0
Benzene	U	1760	μg/l	1.0	< 1.0
Toluene	U	1760	μg/l	1.0	< 1.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0
N-Nitrosodimethylamine	N	1790	μg/l	0.50	< 0.50
Phenol	N	1790	μg/l	0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
, , , , , , , , , , , , , , , , , , , ,	1 '*	1700	μg/l	0.50	< 0.50



Client: Geosphere Environmental Ltd			ntest Jo		17-20019
Quotation No.:	(st Sam		491165
Order No.: 2543, GI			nt Samp		BHC06
		Cli	ent Sam		J3
				е Туре:	SOIL
			Top Dep		0.5
			Date Sa	ampled:	28-Jul-2017
Determinand	Accred.	SOP	Units	LOD	
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Denzolalbarene	IN	1790	μg/i	0.50	< 0.50



Results - Leachate

Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.:	(Chemtest Sample ID.:				
Order No.: 2543, GI		BHC06				
		J3				
	Sample Type: Top Depth (m): Date Sampled:				SOIL	
					0.5	
					28-Jul-2017	
Determinand	Accred.	SOP	Units	LOD		
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50	
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50	
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	
4-Nitrophenol	N	1790	μg/l	0.50	< 0.50	
Total Phenols	U	1920	mg/l	0.030	< 0.030	



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.:		Chemtest Sample ID.:					
Order No.: 2543, GI		Client Sample Ref.:					
		Client Sample ID.: Sample Type:					
		SOIL					
		0.5					
	Date Sampled:				28-Jul-2017		
		Asbestos Lab:					
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	-		
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		
Moisture	N	2030	%	0.020	11		
Soil Colour	N	2040		N/A	Brown		
Other Material	N	2040		N/A	Stones		
Soil Texture	N	2040		N/A	Sand		
рН	М	2010		N/A	6.9		
Boron (Hot Water Soluble)	М	2120	mg/kg	0.40	0.43		
Sulphate (2:1 Water Soluble) as SO4	М	2120	g/l	0.010	0.011		
Cyanide (Free)	М	2300	mg/kg	0.50	< 0.50		
Cyanide (Total)	М	2300	mg/kg	0.50	< 0.50		
Ammonium (Water Soluble)	М	2120	g/l	0.01	< 0.01		
Sulphate (Total)	М	2430	mg/kg	100	490		
Arsenic	М	2450	mg/kg	1.0	10		
Cadmium	М	2450	mg/kg	0.10	0.10		
Chromium	М	2450	mg/kg	1.0	9.0		
Copper	М	2450		0.50	57		
Mercury	М	2450	mg/kg	0.10	0.36		
Nickel	М	2450	mg/kg	0.50	17		
Lead	М	2450	mg/kg	0.50	85		
Selenium	М	2450	mg/kg	0.20	< 0.20		
Zinc	M	2450	mg/kg	0.50	83		
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C8-C10	М	2680	mg/kg	1.0	3.2		
Aliphatic TPH >C10-C12	М	2680	mg/kg	1.0	12		
Aliphatic TPH >C12-C16	М	2680	mg/kg	1.0	26		
Aliphatic TPH >C16-C21	М	2680	mg/kg	1.0	28		
Aliphatic TPH >C21-C35	М	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	69		
Aromatic TPH >C5-C7	N	2680	,	1.0	< 1.0		
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	2.5		
Aromatic TPH >C8-C10	М	2680	mg/kg	1.0	44		
Aromatic TPH >C10-C12	М	2680	mg/kg	1.0	21		
Aromatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0		



Client: Geosphere Environmental Ltd	Chemtest Job No.:				17-20019 491165
Quotation No.:	(Chemtest Sample ID.:			
Order No.: 2543, GI		Client Sample Ref.:			BHC06
		Cli	ent Sam		J3
	Sample Type:				SOIL
			Top Dep	, ,	0.5
			Date Sa	mpled:	28-Jul-2017
			Asbest	os Lab:	COVENTRY
Determinand	Accred.	SOP		LOD	
Aromatic TPH >C16-C21	U	2680	٥	1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	68
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	140
Naphthalene	М	2700	mg/kg	0.10	< 0.10
Acenaphthylene	М	2700	mg/kg	0.10	< 0.10
Acenaphthene	М	2700	mg/kg	0.10	< 0.10
Fluorene	М	2700	mg/kg	0.10	< 0.10
Phenanthrene	М	2700	mg/kg	0.10	< 0.10
Anthracene	М	2700	mg/kg	0.10	< 0.10
Fluoranthene	М	2700	mg/kg	0.10	< 0.10
Pyrene	М	2700	mg/kg	0.10	< 0.10
Benzo[a]anthracene	М	2700	mg/kg	0.10	< 0.10
Chrysene	М	2700	mg/kg	0.10	< 0.10
Benzo[b]fluoranthene	М	2700	mg/kg	0.10	< 0.10
Benzo[k]fluoranthene	М	2700	mg/kg	0.10	< 0.10
Benzo[a]pyrene	М	2700	mg/kg	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	М	2700	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene	М	2700	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene	М	2700	mg/kg	0.10	< 0.10
Total Of 16 PAH's	М	2700	mg/kg	2.0	< 2.0
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0
Chloromethane	М	2760	μg/kg	1.0	< 1.0
Vinyl Chloride	М	2760	μg/kg	1.0	< 1.0
Bromomethane	М	2760	μg/kg	20	< 20
Chloroethane	U	2760	μg/kg	2.0	< 2.0
Trichlorofluoromethane	М	2760	μg/kg	1.0	< 1.0
1,1-Dichloroethene	М	2760	μg/kg	1.0	< 1.0
Trans 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0
1,1-Dichloroethane	М	2760	μg/kg	1.0	< 1.0
cis 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0
Trichloromethane	М	2760	μg/kg	1.0	< 1.0
1,1,1-Trichloroethane	М	2760	μg/kg	1.0	< 1.0
Tetrachloromethane	М	2760	μg/kg	1.0	< 1.0
	U	2760	μg/kg	1.0	< 1.0
1,1-Dichloropropene	U	2700	µg/kg	1.0	< 1.0



Client: Geosphere Environmental Ltd			ntest Jo		17-20019 491165
Quotation No.:	(Chemtest Sample ID.:			
Order No.: 2543, GI		Client Sample Ref.:			BHC06
		Cli	ent Sam		J3
	Sample Type				SOIL
			Top Dep	, ,	0.5
			Date Sa		28-Jul-2017
			Asbest	os Lab:	COVENTRY
Determinand	Accred.	SOP		LOD	
1,2-Dichloroethane	М	2760)	2.0	< 2.0
Trichloroethene	М	2760		1.0	< 1.0
1,2-Dichloropropane	М	2760	μg/kg	1.0	< 1.0
Dibromomethane	М	2760	μg/kg	1.0	< 1.0
Bromodichloromethane	М	2760		5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10
Toluene	М	2760	μg/kg	1.0	3.9
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10
1,1,2-Trichloroethane	М	2760	μg/kg	10	< 10
Tetrachloroethene	М	2760	μg/kg	1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10
1,2-Dibromoethane	М	2760	μg/kg	5.0	< 5.0
Chlorobenzene	М	2760	μg/kg	1.0	< 1.0
1,1,1,2-Tetrachloroethane	М	2760	μg/kg	2.0	< 2.0
Ethylbenzene	М	2760	μg/kg	1.0	16
m & p-Xylene	М	2760	μg/kg	1.0	58
o-Xylene	М	2760	μg/kg	1.0	570
Styrene	М	2760	μg/kg	1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0
Isopropylbenzene	М	2760	μg/kg	1.0	< 1.0
Bromobenzene	М	2760	μg/kg	1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50
N-Propylbenzene	U	2760	μg/kg	1.0	19
2-Chlorotoluene	М	2760	μg/kg	1.0	< 1.0
1,3,5-Trimethylbenzene	М	2760	μg/kg	1.0	1100
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0
1,2,4-Trimethylbenzene	М	2760	μg/kg	1.0	70
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0
1,3-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0
1,4-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0
	М	2760	μg/kg	1.0	< 1.0
1,2-Dichlorobenzene	IVI				
1,2-Dichlorobenzene 1,2-Dibromo-3-Chloropropane	U	2760		50	< 50
	4		μg/kg μg/kg	50 1.0	< 50 < 1.0



Client: Geosphere Environmental Ltd	Chemtest Job No.:			17-20019	
Quotation No.:	(st Samı		491165
Order No.: 2543, GI			nt Samp		BHC06
		Cli	ent Sam		J3
	Sample Type			e Type:	SOIL
			Top Dep	oth (m):	0.5
			Date Sa	mpled:	28-Jul-2017
			Asbest	os Lab:	COVENTRY
Determinand	Accred.	SOP	Units	LOD	
1,2,3-Trichlorobenzene	U	2760	μg/kg	2.0	< 2.0
Methyl Tert-Butyl Ether	М	2760) י	1.0	< 1.0
N-Nitrosodimethylamine	М	2790	mg/kg	0.50	< 0.50
Phenol	М	2790	mg/kg	0.50	< 0.50
2-Chlorophenol	М	2790	mg/kg	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	М	2790)	0.50	< 0.50
1,3-Dichlorobenzene	М	2790		0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50
1,2-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50
2-Methylphenol	M	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50
N-Nitrosodi-n-propylamine	М	2790		0.50	< 0.50
4-Methylphenol	М	2790	mg/kg	0.50	< 0.50
Nitrobenzene	М	2790	mg/kg	0.50	< 0.50
Isophorone	М	2790		0.50	< 0.50
2-Nitrophenol	N	2790		0.50	< 0.50
2,4-Dimethylphenol	N	2790		0.50	< 0.50
Bis(2-Chloroethoxy)Methane	М	2790	mg/kg	0.50	< 0.50
2,4-Dichlorophenol	М	2790	mg/kg	0.50	< 0.50
1,2,4-Trichlorobenzene	М	2790	mg/kg	0.50	< 0.50
Naphthalene	М	2790	mg/kg	0.50	2.0
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50
Hexachlorobutadiene	М	2790		0.50	< 0.50
4-Chloro-3-Methylphenol	М	2790		0.50	< 0.50
2-Methylnaphthalene	М	2790	mg/kg	0.50	1.3
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50
2,4,6-Trichlorophenol	М	2790		0.50	< 0.50
2,4,5-Trichlorophenol	М	2790		0.50	< 0.50
2-Chloronaphthalene	М	2790	mg/kg	0.50	< 0.50
2-Nitroaniline	М	2790	mg/kg	0.50	< 0.50
Acenaphthylene	М	2790		0.50	< 0.50
Dimethylphthalate	М	2790		0.50	< 0.50
2,6-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50
Acenaphthene	М	2790		0.50	< 0.50
3-Nitroaniline	N	2790	,	0.50	< 0.50
Dibenzofuran	М	2790	J	0.50	< 0.50



Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	17-20019
Quotation No.:	(st Sam		491165
Order No.: 2543, GI		Client Sample Ref.:			BHC06
		Cli	ent Sam		J3
		Sample Type:			SOIL
			Top Dep		0.5
			Date Sa	ampled:	28-Jul-2017
			Asbest		COVENTRY
Determinand	Accred.	SOP		LOD	
4-Chlorophenylphenylether	М	2790)	0.50	< 0.50
2,4-Dinitrotoluene	М	2790)	0.50	< 0.50
Fluorene	М	2790	ט	0.50	< 0.50
Diethyl Phthalate	М	2790		0.50	< 0.50
4-Nitroaniline	М	2790	0 0	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	9	0.50	< 0.50
Azobenzene	М	2790		0.50	< 0.50
4-Bromophenylphenyl Ether	М	2790	ט	0.50	< 0.50
Hexachlorobenzene	М	2790	mg/kg	0.50	< 0.50
Pentachlorophenol	N	2790	0 0	0.50	< 0.50
Phenanthrene	М	2790	5	0.50	< 0.50
Anthracene	М	2790		0.50	< 0.50
Carbazole	М	2790	mg/kg	0.50	< 0.50
Di-N-Butyl Phthalate	М	2790	mg/kg	0.50	< 0.50
Fluoranthene	М	2790	mg/kg	0.50	< 0.50
Pyrene	М	2790) י	0.50	< 0.50
Butylbenzyl Phthalate	М	2790	mg/kg	0.50	< 0.50
Benzo[a]anthracene	М	2790	mg/kg	0.50	< 0.50
Chrysene	М	2790	mg/kg	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50	< 0.50
Benzo[b]fluoranthene	М	2790	mg/kg	0.50	< 0.50
Benzo[k]fluoranthene	М	2790	mg/kg	0.50	< 0.50
Benzo[a]pyrene	М	2790		0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	М	2790	0	0.50	< 0.50
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50	< 0.50
Benzo[g,h,i]perylene	М	2790	ט	0.50	< 0.50
PCB 28	М	2815	mg/kg	0.010	< 0.010
PCB 52	М	2815	5		< 0.010
PCB 90+101	М	2815	mg/kg	0.010	< 0.010
PCB 118	М	2815	0		< 0.010
PCB 153	М	2815	0 0		< 0.010
PCB 138	М	2815	5		< 0.010
PCB 180	М	2815	mg/kg	0.010	< 0.010
Total PCBs (7 Congeners)	N	2815	0	0.10	< 0.10
Total Phenols	М	2920	mg/kg	0.30	< 0.30



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.



SOP	Title	Parameters included	Method summary
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

i mai Keport			
Report No.:	17-20021-1		
Initial Date of Issue:	09-Aug-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing		
Quotation No.:		Date Received:	01-Aug-2017
Order No.:	2543, GI	Date Instructed:	01-Aug-2017
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	09-Aug-2017
Date Approved:	09-Aug-2017		
Approved By:			

Martin Dyer, Laboratory Manager



Results - 2 Stage WAC

Project: 2543, GI Lake Lothin	g
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Project: 2543, GI Lake Lothing									
Chemtest Job No:	17-20021						Landfill W	/aste Acceptano	e Criteria
Chemtest Sample ID:	491172							Limits	
Sample Ref:	BHC06							Stable, Non-	
Sample ID:	J3							reactive	Hazardous
Top Depth(m):	0.5						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	28-Jul-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			1.0	3	5	6
Loss On Ignition	2610	U	%			2.7			10
Total BTEX	2760	U	mg/kg			0.023	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			270	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		
pH	2010	U				7.6		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.018		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using BS	EN 12457-3 at L	/S 10 l/kg
Arsenic	1450	U	0.0068	0.0066	< 0.050	0.066	0.5	2	25
Barium	1450	U	0.048	0.033	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.0093	0.013	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0092	0.0043	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	0.0014	0.0037	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	0.0015	0.017	< 0.010	0.15	0.5	10	50
Antimony	1450	U	0.0042	0.0040	< 0.010	0.040	0.06	0.7	5
Selenium	1450	U	< 0.0010	0.0010	< 0.010	< 0.010	0.1	0.5	7
Zinc	1450	U	0.0037	0.011	< 0.50	< 0.50	4	50	200
Chloride	1220	U	5.6	2.0	11	24	800	15000	25000
Fluoride	1220	U	0.31	0.21	< 1.0	2.2	10	150	500
Sulphate	1220	U	16	7.7	32	87	1000	20000	50000
Total Dissolved Solids	1020	N	150	74	300	830	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	28	16	56	170	500	800	1000

Soild Information	
Dry mass of test portion/kg	0.175
Moisture (%)	11

Leachate Test Information			
Leachant volume 1st extract/l	0.328		
Leachant volume 2nd extract/l	1.400		
Eluant recovered from 1st extract/l	0.214		

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



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- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.:	17-20200-1
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Initial Date of Issue: 09-Aug-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543, GI Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 02-Aug-2017

Order No.: 2543, Gl Date Instructed: 03-Aug-2017

No. of Samples: 1

Turnaround (Wkdays): 5 Results Due: 09-Aug-2017

Date Approved: 09-Aug-2017

Approved By:

Details: Robert Monk, Technical Development

Chemist



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	492029		
Order No.: 2543, GI		Client Sample Ref.:					
		Cli	ent Sam	ple ID.:	J3		
			Sample	е Туре:	SOIL		
			Top Dep	oth (m):	1.00		
			Date Sa	ampled:	31-Jul-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	1		
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		
Moisture	N	2030	%	0.020	14		
рН	U	2010		N/A	6.5		
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.60		
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.097		
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50		
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50		
Ammonium (Extractable)	U	2425	mg/kg	0.50	25		
Sulphate (Total)	U	2430	%	0.010	0.16		
Arsenic	U	2450	mg/kg	1.0	9.2		
Cadmium	U	2450	mg/kg	0.10	0.19		
Chromium	U	2450	mg/kg	1.0	13		
Copper	U	2450	mg/kg	0.50	55		
Mercury	U	2450	mg/kg	0.10	0.23		
Nickel	U	2450	mg/kg	0.50	16		
Lead	U	2450	mg/kg	0.50	98		
Selenium	U	2450	mg/kg	0.20	< 0.20		
Zinc	U	2450	mg/kg	0.50	140		
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	4.9		
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	12		
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	90		
Aliphatic TPH >C35-C44	N	2680	0	1.0	< 1.0		
Total Aliphatic Hydrocarbons	N	2680) י	5.0	110		
Aromatic TPH >C5-C7	N	2680	0	1.0	< 1.0		
Aromatic TPH >C7-C8	N	2680	0	1.0	< 1.0		
Aromatic TPH >C8-C10	U	2680		1.0	< 1.0		
Aromatic TPH >C10-C12	U	2680	0	1.0	< 1.0		
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	2.7		
Aromatic TPH >C21-C35	U	2680)	1.0	170		
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		



Client: Geosphere Environmental Ltd		17-20200 492029					
Quotation No.: Q17-10179		Chemtest Sample ID.:					
Order No.: 2543, GI		Client Sample Ref.:					
		Cli	ent Sam		J3		
				e Type:	SOIL		
			Top Dep	, ,	1.00		
			Date Sa	mpled:	31-Jul-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	180		
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	280		
Naphthalene	U	2700	mg/kg	0.10	< 0.10		
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10		
Acenaphthene	U	2700	mg/kg	0.10	< 0.10		
Fluorene	U	2700	mg/kg	0.10	< 0.10		
Phenanthrene	U	2700)	0.10	< 0.10		
Anthracene	U	2700	mg/kg	0.10	< 0.10		
Fluoranthene	U	2700	mg/kg	0.10	0.73		
Pyrene	U	2700	mg/kg	0.10	0.87		
Benzo[a]anthracene	U	2700	mg/kg	0.10	0.61		
Chrysene	U	2700	mg/kg	0.10	0.30		
Benzo[b]fluoranthene	U	2700		0.10	< 0.10		
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10		
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	2700		0.10	< 0.10		
Dibenz(a,h)Anthracene	U	2700		0.10	< 0.10		
Benzo[g,h,i]perylene	U	2700		0.10	< 0.10		
Total Of 16 PAH's	U	2700	mg/kg	2.0	2.5		
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0		
Chloromethane	U	2760	μg/kg	1.0	< 1.0		
Vinyl Chloride	U	2760		1.0	< 1.0		
Bromomethane	U	2760		20	< 20		
Chloroethane	U	2760		2.0	< 2.0		
Trichlorofluoromethane	U	2760		1.0	< 1.0		
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0		
Trans 1,2-Dichloroethene	U	2760		1.0	< 1.0		
1,1-Dichloroethane	U	2760		1.0	< 1.0		
cis 1,2-Dichloroethene	U	2760	_	1.0	< 1.0		
Bromochloromethane	U	2760		5.0	< 5.0		
Trichloromethane	U	2760	μg/kg	1.0	< 1.0		
1,1,1-Trichloroethane	Ū	2760		1.0	< 1.0		
Tetrachloromethane	U	2760		1.0	< 1.0		
1,1-Dichloropropene	U	2760	-	1.0	< 1.0		
Benzene	U	2760	μg/kg	1.0	< 1.0		
1,2-Dichloroethane	Ü	2760	μg/kg	2.0	< 2.0		
Trichloroethene	U	2760	μg/kg	1.0	< 1.0		



Project: 2543, GI Lake Lothing, Lowestoft Clients Cooperate Fruitenmental Ltd. Chemtest Joh No. 1							
Client: Geosphere Environmental Ltd		Chemtest Job No.: Chemtest Sample ID.:					
Quotation No.: Q17-10179	+ (492029 TPC05		
Order No.: 2543, GI	_	Client Sample Ref.: Client Sample ID.:					
	_	Cile			J3		
				e Type:	SOIL		
			Top Dep	, ,	1.00		
			Date Sa		31-Jul-2017		
=	.			os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
Dibromomethane	U	2760	μg/kg	1.0	< 1.0		
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0		
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10		
Toluene	U	2760	μg/kg	1.0	< 1.0		
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10		
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10		
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0		
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0		
Dibromochloromethane	U	2760	μg/kg	10	< 10		
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0		
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0		
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0		
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0		
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0		
o-Xylene	U	2760	μg/kg	1.0	< 1.0		
Styrene	U	2760	μg/kg	1.0	< 1.0		
Tribromomethane	U	2760	μg/kg	1.0	< 1.0		
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0		
Bromobenzene	U	2760	μg/kg	1.0	< 1.0		
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50		
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0		
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0		
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0		
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0		
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0		
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0		
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0		
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0		
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0		
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0		
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0		
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0		
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50		
1,2,4-Trichlorobenzene	Ū	2760	μg/kg	1.0	< 1.0		
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0		
1,2,3-Trichlorobenzene	Ü	2760	µg/kg	2.0	< 2.0		
Methyl Tert-Butyl Ether	Ü	2760	μg/kg	1.0	< 1.0		
N-Nitrosodimethylamine	Ū		mg/kg	0.50	< 0.50		
			J 9				



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.: 2543, GI		Client Sample Ref.:					
		Cli	ent Sam		J3		
				е Туре:	SOIL		
			Top Dep	, ,	1.00		
			Date Sa		31-Jul-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP		LOD			
Phenol	U	2790	٥	0.50	< 0.50		
2-Chlorophenol	U	2790) י	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	U	2790) י	0.50	< 0.50		
1,3-Dichlorobenzene	U	2790		0.50	< 0.50		
1,4-Dichlorobenzene	N	2790		0.50	< 0.50		
1,2-Dichlorobenzene	U	2790) י	0.50	< 0.50		
2-Methylphenol	U	2790		0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50		
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50		
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50		
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50		
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50		
Isophorone	U	2790	mg/kg	0.50	< 0.50		
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50		
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50		
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50		
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50		
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50		
Naphthalene	U	2790	mg/kg	0.50	< 0.50		
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50		
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50		
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50		
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50		
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50		
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50		
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50		
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50		
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50		
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50		
Acenaphthylene	U	2790		0.50	< 0.50		
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50		
2,6-Dinitrotoluene	U	2790		0.50	< 0.50		
Acenaphthene	U	2790	mg/kg	0.50	< 0.50		
3-Nitroaniline	N	2790		0.50	< 0.50		
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50		
4-Chlorophenylphenylether	U	2790		0.50	< 0.50		
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50		
Fluorene	U	2790	ŭ	0.50	< 0.50		



Client: Geosphere Environmental Ltd		17-20200					
Quotation No.: Q17-10179		Chemtest Sample ID.: Client Sample Ref.:					
Order No.: 2543, GI		TPC05					
		Cli	ent Sam		J3		
			Sample	е Туре:	SOIL		
			Top Dep	oth (m):	1.00		
			Date Sa	mpled:	31-Jul-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50		
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50		
Azobenzene	U	2790	mg/kg	0.50	< 0.50		
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50		
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50		
Pentachlorophenol	N	2790		0.50	< 0.50		
Phenanthrene	U	2790	mg/kg	0.50	< 0.50		
Anthracene	U	2790	mg/kg	0.50	< 0.50		
Carbazole	U	2790	mg/kg	0.50	< 0.50		
Di-N-Butyl Phthalate	U	2790		0.50	< 0.50		
Fluoranthene	U	2790	mg/kg	0.50	1.1		
Pyrene	U	2790	mg/kg	0.50	1.0		
Butylbenzyl Phthalate	U	2790	_ ,	0.50	< 0.50		
Benzo[a]anthracene	U	2790	mg/kg	0.50	0.93		
Chrysene	U	2790		0.50	0.68		
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50		
Di-N-Octyl Phthalate	U	2790		0.50	< 0.50		
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	1.4		
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	0.57		
Benzo[a]pyrene	U	2790	mg/kg	0.50	0.68		
Indeno(1,2,3-c,d)Pyrene	U	2790		0.50	0.54		
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50		
Benzo[g,h,i]perylene	U	2790		0.50	0.63		
PCB 81	N	2815	mg/kg	0.010	< 0.010		
PCB 77	N	2815		0.010	< 0.010		
PCB 105	N	2815		0.010	< 0.010		
PCB 114	N	2815	mg/kg	0.010	< 0.010		
PCB 118	N	2815		0.010	< 0.010		
PCB 123	N	2815		0.010	< 0.010		
PCB 126	N	2815	mg/kg	0.010	< 0.010		
PCB 156	N	2815	mg/kg	0.010	< 0.010		
PCB 157	N	2815	mg/kg	0.010	< 0.010		
PCB 167	N	2815		0.010	< 0.010		
PCB 169	N	2815		0.010	< 0.010		
PCB 189	N	2815		0.010	< 0.010		
Total PCBs (12 Congeners)	N	2815	٥	0.12	< 0.12		
	U	2920)	0.30			



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.: 17-20201-1

Initial Date of Issue: 09-Aug-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543, GI Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 02-Aug-2017

Order No.: 2543, Gl Date Instructed: 03-Aug-2017

No. of Samples: 2

Turnaround (Wkdays): 5 Results Due: 09-Aug-2017

Date Approved: 09-Aug-2017

Approved By:

Details: Robert Monk, Technical Development

Chemist



Client: Geosphere Environmental Ltd			mtest Jo	17-20201	17-20201	
Quotation No.: Q17-10179	(st Sam	492035	492037	
Order No.: 2543, GI		Client Sample Ref.:			TPC103	TPC103
		Cli	ent Sam	•	J2	J4
				e Type:	SOIL	SOIL
			Top Dep	, ,	0.50	1.50
			Date Sa	ampled:	31-Jul-2017	31-Jul-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	12	10
рН	М	2010		N/A	7.4	7.2
Boron (Hot Water Soluble)	М	_	mg/kg	0.40	1.2	< 0.40
Sulphate (2:1 Water Soluble) as SO4	М	2120	g/l	0.010	< 0.010	< 0.010
Cyanide (Free)	М	2300	mg/kg	0.50	< 0.50	< 0.50
Cyanide (Total)	М	2300	mg/kg	0.50	< 0.50	< 0.50
Ammonium (Extractable)	М	2425	mg/kg		28	2.9
Sulphate (Total)	М	2430	%	0.010	0.11	0.022
Arsenic	М	2450	mg/kg		8.2	< 1.0
Cadmium	М	2450	mg/kg	0.10	0.19	< 0.10
Chromium	М	2450	mg/kg	1.0	8.1	4.1
Copper	М	2450	mg/kg	0.50	100	3.7
Mercury	М	2450	mg/kg	0.10	0.34	< 0.10
Nickel	М	2450	mg/kg		10	3.0
Lead	М	2450	mg/kg	0.50	540	15
Selenium	М	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	М	2450	mg/kg	0.50	140	6.7
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	М	2680	mg/kg	1.0	1.4	< 1.0
Aliphatic TPH >C16-C21	М	2680	mg/kg	1.0	12	< 1.0
Aliphatic TPH >C21-C35	М	2680	mg/kg	1.0	2.2	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	16	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	4.2	< 1.0
Aromatic TPH >C21-C35	М	2680	mg/kg	1.0	110	< 1.0
Aromatic TPH >C35-C44	N		mg/kg	1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest Jo	17-20201	17-20201	
Quotation No.: Q17-10179	(st Sam	492035	492037	
Order No.: 2543, GI	Client Sample Ref.:				TPC103	TPC103
		Cli	ent Sam		J2	J4
				e Type:	SOIL	SOIL
			Top Dep	, ,	0.50	1.50
			Date Sa	_	31-Jul-2017	31-Jul-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Total Aromatic Hydrocarbons	N	2680	ט	5.0	120	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	130	< 10
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene	М	2700	mg/kg	0.10	< 0.10	< 0.10
Fluorene	М	2700	mg/kg	0.10	< 0.10	< 0.10
Phenanthrene	М	2700	mg/kg	0.10	1.0	< 0.10
Anthracene	М	2700	mg/kg	0.10	0.21	< 0.10
Fluoranthene	М	2700	mg/kg	0.10	2.3	< 0.10
Pyrene	M	2700	mg/kg	0.10	2.0	< 0.10
Benzo[a]anthracene	М	2700	mg/kg	0.10	2.7	< 0.10
Chrysene	М	2700	mg/kg	0.10	1.3	< 0.10
Benzo[b]fluoranthene	М	2700	mg/kg	0.10	1.8	< 0.10
Benzo[k]fluoranthene	М	2700	mg/kg	0.10	0.80	< 0.10
Benzo[a]pyrene	М	2700	mg/kg	0.10	1.0	< 0.10
Indeno(1,2,3-c,d)Pyrene	М	2700	mg/kg	0.10	0.72	< 0.10
Dibenz(a,h)Anthracene	М	2700	mg/kg	0.10	0.17	< 0.10
Benzo[g,h,i]perylene	М	2700	mg/kg	0.10	0.53	< 0.10
Total Of 16 PAH's	М	2700	mg/kg	2.0	15	< 2.0
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Chloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
Vinyl Chloride	М	2760	μg/kg	1.0	< 1.0	< 1.0
Bromomethane	М	2760	μg/kg	20	< 20	< 20
Chloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Trichlorofluoromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethane	M	2760	μg/kg	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
Trichloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
Tetrachloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Benzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloroethane	М	2760	μg/kg	2.0	< 2.0	< 2.0
Trichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloropropane	М	2760	μg/kg	1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd		Chemtest Job No.:				17-20201
Quotation No.: Q17-10179	(Chemtest Sample ID.:				492037
Order No.: 2543, GI			nt Samp		TPC103	TPC103
		Cli	ent Sam		J2	J4
				e Type:	SOIL	SOIL
			Top Dep	oth (m):	0.50	1.50
			Date Sa	ampled:	31-Jul-2017	31-Jul-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP		LOD		
Dibromomethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
Bromodichloromethane	М	2760		5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760		10	< 10	< 10
Toluene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760		10	< 10	< 10
1,1,2-Trichloroethane	М	2760	100	10	< 10	< 10
Tetrachloroethene	М	2760	1.0	1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10	< 10
1,2-Dibromoethane	М	2760	μg/kg	5.0	< 5.0	< 5.0
Chlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	М	2760	μg/kg	2.0	< 2.0	< 2.0
Ethylbenzene	М	2760		1.0	< 1.0	< 1.0
m & p-Xylene	М	2760		1.0	< 1.0	< 1.0
o-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Styrene	M	2760		1.0	< 1.0	< 1.0
Tribromomethane	U	2760		1.0	< 1.0	< 1.0
Isopropylbenzene	М	2760	100	1.0	< 1.0	< 1.0
Bromobenzene	M	2760	100	1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760		50	< 50	< 50
N-Propylbenzene	U	2760		1.0	< 1.0	< 1.0
2-Chlorotoluene	M	2760		1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	M	2760	י פייו	1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760		1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	2760		1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	M	2760		1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	2760		1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	М	2760		1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760		1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	М	2760		1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	1.0	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	М	2760	100	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760		50	< 50	< 50
1,2,4-Trichlorobenzene	M	2760		1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	2760		1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	1.0.0	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	М	2760		1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	М	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo	17-20201	17-20201	
Quotation No.: Q17-10179	(st Sam		492035	492037
Order No.: 2543, GI		Client Sample Ref.:			TPC103	TPC103
		Cli	ent Sam		J2	J4
				e Type:	SOIL	SOIL
			Top Dep	, ,	0.50	1.50
			Date Sa	ampled:	31-Jul-2017	31-Jul-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Phenol	M	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50	< 0.50	< 0.50
4-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
Nitrobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Isophorone	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Naphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobutadiene	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	M	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylnaphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chloronaphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitroaniline	М	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthylene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Dimethylphthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthene	М	2790	mg/kg	0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenzofuran	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Fluorene	М	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo	17-20201	17-20201	
Quotation No.: Q17-10179	(st Sam	492035 TPC103	492037	
Order No.: 2543, GI		Client Sample Ref.:				TPC103
		Cli	ent Sam		J2	J4
				е Туре:	SOIL	SOIL
			Top De	oth (m):	0.50	1.50
			Date Sa	ampled:	31-Jul-2017	31-Jul-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP		LOD		
Diethyl Phthalate	M	2790	ו	0.50	< 0.50	< 0.50
4-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Azobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	M	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Phenanthrene	M	2790	mg/kg	0.50	1.8	< 0.50
Anthracene	M	2790	mg/kg	0.50	0.59	< 0.50
Carbazole	M	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
Fluoranthene	М	2790	mg/kg	0.50	2.9	< 0.50
Pyrene	М	2790	mg/kg	0.50	2.1	< 0.50
Butylbenzyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]anthracene	М	2790	mg/kg	0.50	1.4	< 0.50
Chrysene	М	2790	mg/kg	0.50	1.1	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	М	2790		0.50	1.6	< 0.50
Benzo[k]fluoranthene	М	2790	mg/kg	0.50	0.55	< 0.50
Benzo[a]pyrene	М	2790	mg/kg	0.50	0.77	< 0.50
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	M	2790		0.50	< 0.50	< 0.50
PCB 28	M	2815	mg/kg	0.010	< 0.010	
PCB 81	N	2815	mg/kg		1 0.0 1 0	< 0.010
PCB 52	M	2815	mg/kg	0.010	< 0.010	1 0.010
PCB 77	N	2815		0.010	1 0.010	< 0.010
PCB 105	N	2815	mg/kg			< 0.010
PCB 90+101	M	2815			< 0.010	1 0.010
PCB 114	N	2815	mg/kg		. 0.010	< 0.010
PCB 118	M	2815	mg/kg	0.010	< 0.010	. 0.010
PCB 118	N	2815	,		. 0.010	< 0.010
PCB 153	M	2815			< 0.010	V 0.010
PCB 133	N	2815	ו		\ 0.010	< 0.010
PCB 138	M	2815	mg/kg		< 0.010	\ 0.010
PCB 126	N	2815	mg/kg		< 0.010	< 0.010
PCB 180	M	2815			< 0.010	\ 0.010
FUD 160	IVI	2015	mg/kg	0.010	< 0.010]



Client: Geosphere Environmental Ltd		Che	mtest J	ob No.:	17-20201	17-20201
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	492035	492037
Order No.: 2543, GI		Clie	nt Samp	le Ref.:	TPC103	TPC103
		Cli	ent Sam	ple ID.:	J2	J4
			Sampl	е Туре:	SOIL	SOIL
			Top Dep	oth (m):	0.50	1.50
			Date Sa	ampled:	31-Jul-2017	31-Jul-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
PCB 156	N	2815	mg/kg	0.010		< 0.010
PCB 157	N	2815	mg/kg	0.010		< 0.010
PCB 167	N	2815	mg/kg	0.010		< 0.010
PCB 169	N	2815	mg/kg	0.010		< 0.010
PCB 189	N	2815	mg/kg		< 0.010	
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12		< 0.12
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10	
Total Phenols	M	2920	mg/kg	0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Details:

rınai Keport			
Report No.:	17-20560-1		
Initial Date of Issue:	14-Aug-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	04-Aug-2017
Order No.:	2543, GI	Date Instructed:	04-Aug-2017
No. of Samples:	3		
Turnaround (Wkdays):	6	Results Due:	11-Aug-2017
Date Approved:	14-Aug-2017		
Approved By:			

Martin Dyer, Laboratory Manager



Client: Geosphere Environmental Ltd			mtest Jo		17-20560	
Quotation No.: Q17-10179	(st Sam	493823	493826	
Order No.: 2543, GI		Client Sample Ref.:			TPC101	TPC06
		Cli	ent Sam		J3	J3
				е Туре:	SOIL	SOIL
			Top Dep	oth (m):	1.80	1.10
			Date Sa	ampled:	01-Aug-2017	01-Aug-2017
Determinand	Accred.	SOP	Units	LOD		
рН	U	1010		N/A	10.0	8.9
Ammonia (Free) as N	U	1220	mg/l	0.010	0.099	0.061
Sulphate	U	1220	mg/l	1.0	8.7	8.2
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	5.3	4.1
Boron (Dissolved)	U	1450	μg/l	20	< 20	< 20
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0	< 1.0
Copper (Dissolved)	U	1450	μg/l	1.0	2.6	2.8
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0	< 1.0
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0	1.4
Selenium (Dissolved)	U	1450	μg/l	1.0	1.3	< 1.0
Zinc (Dissolved)	U	1450	μg/l	1.0	< 1.0	2.1
Chromium (Hexavalent)	U	1490	μg/l	20	< 20	< 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10	< 10
Naphthalene	U	1700	μg/l	0.10	< 0.10	< 0.10
Acenaphthylene	U	1700	μg/l	0.10	< 0.10	< 0.10
Acenaphthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Fluorene	U	1700	μg/l	0.10	< 0.10	< 0.10
Phenanthrene	U	1700	μg/l	0.10	< 0.10	< 0.10



Client: Geosphere Environmental Ltd		Che	mtest Jo	17-20560	17-20560	
Quotation No.: Q17-10179	(Chemte	st Sam	493823	493826	
Order No.: 2543, GI		Clie	nt Samp	TPC101	TPC06	
·		Cli	ent Sam	ple ID.:	J3	J3
			Sample	е Туре:	SOIL	SOIL
			Top Dep	oth (m):	1.80	1.10
			Date Sa	ampled:	01-Aug-2017	01-Aug-2017
Determinand	Accred.	SOP	Units	LOD		
Anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0	< 2.0
Benzene	U	1760	μg/l	1.0	< 1.0	< 1.0
Toluene	U	1760	μg/l	1.0	< 1.0	< 1.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0	< 1.0
Phenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo	17-20560	17-20560	
Quotation No.: Q17-10179			st Sam	493823	493826	
Order No.: 2543, GI	Client Sam				TPC101	TPC06
		Clie	ent Sam		J3	J3
			Sample		SOIL	SOIL
			Top Dep	oth (m):	1.80	1.10
			Date Sa	mpled:	01-Aug-2017	01-Aug-2017
Determinand	Accred.	SOP	Units	LOD		
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50
	N	1790	μg/l	0.50	< 0.50	< 0.50
Renzolkitluoranthene		1130	μy/i	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene				0.50	~ 0.50	~ O 50
Benzo[k]fluoranthene Benzo[a]pyrene Indeno(1,2,3-c,d)Pyrene	N N	1790 1790	μg/l μg/l	0.50	< 0.50 < 0.50	< 0.50 < 0.50



Results - Leachate

Client: Geosphere Environmental Ltd		Che	mtest Jo	17-20560	17-20560	
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	493823	493826
Order No.: 2543, GI		Clie	nt Samp	le Ref.:	TPC101	TPC06
		Cli	ent Sam	ple ID.:	J3	J3
			Sample	SOIL	SOIL	
			Top Dep	oth (m):	1.80	1.10
			Date Sa	mpled:	01-Aug-2017	01-Aug-2017
Determinand	Accred.	SOP	Units	LOD		
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	0.45	0.050



Client: Geosphere Environmental Ltd			mtest Jo		17-20560	17-20560	17-20560
Quotation No.: Q17-10179			st Sam		493823	493825	493826
Order No.: 2543, GI			nt Samp		TPC101	TPC06	TPC06
		Cli	ent Sam	ple ID.:	J3	J2	J3
				е Туре:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	1.80	0.70	1.10
			Date Sa	ampled:	01-Aug-2017	01-Aug-2017	01-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	IN-TRANSIT
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	-	-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected	
Moisture	N	2030	%	0.020	17	13	17
pH	М	2010		N/A	9.9	8.2	8.5
Boron (Hot Water Soluble)	М		mg/kg	0.40	< 0.40	0.66	< 0.40
Sulphate (2:1 Water Soluble) as SO4	М	2120	g/l	0.010	0.027	0.11	0.13
Cyanide (Free)	М	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	М	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Ammonium (Extractable)	М	2425	mg/kg	0.50	< 0.50	6.9	3.6
Sulphate (Total)	М	2430	%	0.010	< 0.010	0.079	0.042
Arsenic	М	2450	mg/kg	1.0	< 1.0	14	8.6
Cadmium	М	2450	mg/kg	0.10	< 0.10	0.16	0.11
Chromium	М	2450	mg/kg	1.0	3.0	10	11
Copper	М	2450	mg/kg	0.50	1.6	480	8.3
Mercury	М	2450	mg/kg	0.10	< 0.10	0.34	< 0.10
Nickel	М	2450	mg/kg	0.50	1.7	17	13
Lead	М	2450	mg/kg	0.50	11	110	12
Selenium	М	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20
Zinc	М	2450	mg/kg	0.50	7.8	230	23
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Organic Matter	M	2625	%	0.40			0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	2.9	< 1.0
Aromatic TPH >C21-C35	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest J		17-20560	17-20560	17-20560
Quotation No.: Q17-10179	(st Sam		493823	493825	493826
Order No.: 2543, GI			nt Samp		TPC101	TPC06	TPC06
		Cli	ent Sam	•	J3	J2	J3
				e Type:	SOIL	SOIL	SOIL
			Top Dep	, ,	1.80	0.70	1.10
			Date Sa	mpled:	01-Aug-2017	01-Aug-2017	01-Aug-201
			Asbest	os Lab:	COVENTRY	COVENTRY	IN-TRANSIT
Determinand	Accred.	SOP		LOD			
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	М	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	М	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluorene	М	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Anthracene	М	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	М	2700	mg/kg	0.10	< 0.10	0.91	< 0.10
Pyrene	М	2700	mg/kg	0.10	< 0.10	0.98	< 0.10
Benzo[a]anthracene	М	2700	mg/kg	0.10	< 0.10	1.0	< 0.10
Chrysene	М	2700	mg/kg	0.10	< 0.10	0.49	< 0.10
Benzo[b]fluoranthene	М	2700	mg/kg	0.10	< 0.10	0.78	< 0.10
Benzo[k]fluoranthene	М	2700	mg/kg	0.10	< 0.10	0.39	< 0.10
Benzo[a]pyrene	М	2700	mg/kg	0.10	< 0.10	0.91	< 0.10
Indeno(1,2,3-c,d)Pyrene	М	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	М	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	М	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	М	2700	mg/kg	2.0	< 2.0	5.5	< 2.0
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Chloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromomethane	М	2760	μg/kg	20	< 20	< 20	< 20
Chloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
cis 1.2-Dichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Benzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	M	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	M	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest J		17-20560	17-20560	17-20560
Quotation No.: Q17-10179	(st Sam		493823	493825	493826
Order No.: 2543, GI			nt Samp		TPC101	TPC06	TPC06
		Cli	ent Sam		J3	J2	J3
				е Туре:	SOIL	SOIL	SOIL
			Top De	oth (m):	1.80	0.70	1.10
			Date Sa	ampled:	01-Aug-2017	01-Aug-2017	01-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	IN-TRANSIT
Determinand	Accred.	SOP	Units	LOD			
1,2-Dichloropropane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	М	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10
Toluene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10
1,1,2-Trichloroethane	М	2760	μg/kg	10	< 10	< 10	< 10
Tetrachloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10	< 10	< 10
1,2-Dibromoethane	М	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	М	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Styrene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50
N-Propylbenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	M	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dicritoropenzene 1,2-Dibromo-3-Chloropropane	U	2760	μg/kg μg/kg	50	< 50	< 1.0 < 50	< 1.0 < 50
	M	2760		1.0	< 50 < 1.0	< 50 < 1.0	< 50 < 1.0
1,2,4-Trichlorobenzene	U	-	μg/kg				
Hexachlorobutadiene		2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd	Chemtest Job No.:				17-20560	17-20560	17-20560
Quotation No.: Q17-10179	(est Sam		493823	493825	493826
Order No.: 2543, GI			nt Samp		TPC101	TPC06	TPC06
	Client Sample ID.:				J3	J2	J3
	Sample Type: Top Depth (m):				SOIL	SOIL	SOIL
					1.80	0.70	1.10
			Date Sa	_	01-Aug-2017	01-Aug-2017	01-Aug-2017
				COVENTRY	COVENTRY	IN-TRANSIT	
Determinand	Accred.	SOP		LOD			
N-Nitrosodimethylamine	М	2790		0.50	< 0.50	< 0.50	< 0.50
Phenol	М	2790	0 0	0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	М	2790	0 0	0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	М	2790		0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	M	2790		0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790		0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	М	2790		0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	М	2790	0	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Isophorone	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Naphthalene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	M	2790		0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	M	2790		0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	М	2790		0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	М	2790		0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	М	2790		0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	М	2790		0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	М	2790		0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	М	2790		0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	М	2790		0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790		0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	М	2790		0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	М	2790		0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Che	mtest J	ob No.:	17-20560	17-20560	17-20560
Quotation No.: Q17-10179	(Chemtest Sample ID.:			493823	493825	493826
Order No.: 2543, GI			nt Samp		TPC101	TPC06	TPC06
		Cli	ent Sam		J3	J2	J3
			Sampl	е Туре:	SOIL	SOIL	SOIL
			Top De	oth (m):	1.80	0.70	1.10
		Date Sampled: 0		01-Aug-2017	01-Aug-2017	01-Aug-2017	
		Asbestos Lab: (COVENTRY	COVENTRY	IN-TRANSIT	
Determinand	Accred.	SOP	Units	LOD			
Fluorene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Azobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Anthracene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Carbazole	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Pyrene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Chrysene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
PCB 28	М	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 81	N	2815	mg/kg	0.010			< 0.010
PCB 52	М	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 77	N	2815		0.010			< 0.010
PCB 105	N	2815	mg/kg	0.010			< 0.010
PCB 90+101	М	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 114	N	2815	mg/kg	0.010			< 0.010
PCB 118	М	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 118	N	2815	mg/kg				< 0.010
PCB 153	М	2815	mg/kg		< 0.010	< 0.010	
PCB 123	N	2815	mg/kg	0.010			< 0.010
PCB 138	М	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 126	N	2815	mg/kg	0.010			< 0.010



Results - Soil

Client: Geosphere Environmental Ltd		Chemtest Job No.:			17-20560	17-20560	17-20560
Quotation No.: Q17-10179	(Chemtest Sample ID.:			493823	493825	493826
Order No.: 2543, GI		Client Sample Ref.: Client Sample ID.: Sample Type: Top Depth (m):		TPC101	TPC06	TPC06	
				J3	J2	J3	
				SOIL	SOIL	SOIL	
				1.80	0.70	1.10	
		Date Sampled:				01-Aug-2017	01-Aug-2017
		Asbestos Lab: (COVENTRY	COVENTRY	IN-TRANSIT	
Determinand	Accred.	SOP	Units	LOD			
PCB 180	M	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 156	N	2815	mg/kg	0.010			< 0.010
PCB 157	N	2815	mg/kg	0.010			< 0.010
PCB 167	N	2815	mg/kg	0.010			< 0.010
PCB 169	N	2815	mg/kg	0.010			< 0.010
PCB 189	N	2815	mg/kg	0.010			< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12			< 0.12
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10	< 0.10	
Total Phenols	М	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Report No.:	17-20561-1		
Initial Date of Issue:	15-Aug-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	04-Aug-2017
Order No.:	2543, GI	Date Instructed:	04-Aug-2017
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	14-Aug-2017
Date Approved:	15-Aug-2017		
Approved By:			

Martin Dyer, Laboratory Manager



Results - 2 Stage WAC

Project. 2545, Greake Lottling, Lowe									
Chemtest Job No:	17-20561						Landfill W	Vaste Acceptant	ce Criteria
Chemtest Sample ID:	493830							Limits	
Sample Ref:	TPC06							Stable, Non-	
Sample ID:	J3							reactive	Hazardous
Top Depth(m):	1.10						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	01-Aug-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			0.27	3	5	6
Loss On Ignition	2610	U	%			1.3			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			< 10	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		
pH	2010	U				8.5		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.047		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using BS	EN 12457-3 at I	/S 10 l/kg
Arsenic	1450	U	0.0030	0.0076	< 0.050	0.070	0.5	2	25
Barium	1450	U	0.0095	0.013	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	0.0016	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0071	0.0044	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	0.0029	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	0.0045	< 0.010	0.039	0.5	10	50
Antimony	1450	U	0.0025	0.0028	< 0.010	0.028	0.06	0.7	5
Selenium	1450	U	0.0015	0.0023	< 0.010	0.022	0.1	0.5	7
Zinc	1450	U	0.0015	0.0051	< 0.50	< 0.50	4	50	200
Chloride	1220	U	3.3	1.4	< 10	16	800	15000	25000
Fluoride	1220	U	0.31	0.24	< 1.0	2.5	10	150	500
Sulphate	1220	U	18	12	35	130	1000	20000	50000
Total Dissolved Solids	1020	N	88	71	170	730	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	11	14	< 50	140	500	800	1000

Soild Information				
Dry mass of test portion/kg	0.175			
Moisture (%)	19			

Leachate Test Information				
Leachant volume 1st extract/l	0.309			
Leachant volume 2nd extract/l	1.400			
Eluant recovered from 1st extract/l	0.218			

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

i mai report			
Report No.:	17-20562-1		
Initial Date of Issue:	15-Aug-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	07-Aug-2017
Order No.:	2543 GI	Date Instructed:	09-Aug-2017
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	15-Aug-2017
Date Approved:	15-Aug-2017		
Approved By:			

Glynn Harvey, Laboratory Manager



Client: Geosphere Environmental Ltd		17-20562					
Quotation No.: Q17-10179		ple ID.:	493835				
Order No.: 2543 GI		BHC06					
		Client Sample ID.:					
			Sample	е Туре:	SOIL		
			Top Der		2.00		
			Date Sa	` '	01-Aug-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	-		
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		
Moisture	N	2030	%	0.020	18		
pH	U	2010		N/A	8.5		
Boron (Hot Water Soluble)	Ü	2120	mg/kg	0.40	0.43		
Sulphate (2:1 Water Soluble) as SO4	Ü	2120	g/l	0.010	0.15		
Cyanide (Free)	Ü	2300)	0.50	< 0.50		
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50		
Ammonium (Extractable)	Ü	2425	mg/kg	0.50	2.4		
Sulphate (Total)	Ü	2430	%	0.010	0.22		
Arsenic	U	2450	mg/kg	1.0	8.9		
Cadmium	Ü	2450	_	0.10	< 0.10		
Chromium	U	2450		1.0	6.2		
Copper	U	2450	,	0.50	5.2		
Mercury	U	2450	•	0.10	< 0.10		
Nickel	U	2450		0.50	6.4		
Lead	U	2450		0.50	54		
Selenium	U	2450	mg/kg	0.20	0.51		
Zinc	U	2450	mg/kg	0.50	16		
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		
Organic Matter	U	2625	%	0.40	0.81		
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C21-C35	U	2680		1.0	< 1.0		
Aliphatic TPH >C35-C44	N	2680		1.0	< 1.0		
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0		
Aromatic TPH >C5-C7	N	2680		1.0	< 1.0		
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C16-C21	U	2680)	1.0	< 1.0		
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0		



Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179		Chemtest Sample ID.:						
Order No.: 2543 GI		Client Sample Ref.:						
		Client Sample ID.:						
			Sample	е Туре:	SOIL			
			Top Dep	oth (m):	2.00			
			Date Sa	mpled:	01-Aug-2017			
			Asbest	os Lab:	COVENTRY			
Determinand	Accred.	SOP	Units	LOD				
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0			
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0			
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10			
Naphthalene	U	2700	mg/kg	0.10	< 0.10			
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10			
Acenaphthene	U	2700		0.10	< 0.10			
Fluorene	U	2700		0.10	< 0.10			
Phenanthrene	U	2700		0.10	< 0.10			
Anthracene	U		mg/kg	0.10	< 0.10			
Fluoranthene	U		mg/kg	0.10	< 0.10			
Pyrene	U		mg/kg	0.10	< 0.10			
Benzo[a]anthracene	U	2700		0.10	< 0.10			
Chrysene	U	2700	mg/kg	0.10	< 0.10			
Benzo[b]fluoranthene	U	2700		0.10	< 0.10			
Benzo[k]fluoranthene	U	2700		0.10	< 0.10			
Benzo[a]pyrene	U	2700		0.10	< 0.10			
Indeno(1,2,3-c,d)Pyrene	U	2700		0.10	< 0.10			
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10			
Benzo[g,h,i]perylene	U		mg/kg	0.10	< 0.10			
Total Of 16 PAH's	U	2700		2.0	< 2.0			
Dichlorodifluoromethane	U	2760		1.0	< 1.0			
Chloromethane	U	2760		1.0	< 1.0			
Vinyl Chloride	U	2760		1.0	< 1.0			
Bromomethane	U	2760		20	< 20			
Chloroethane	U	2760		2.0	< 2.0			
Trichlorofluoromethane	U	2760		1.0	< 1.0			
1,1-Dichloroethene	U	2760		1.0	< 1.0			
Trans 1.2-Dichloroethene	U	2760		1.0	< 1.0			
1,1-Dichloroethane	Ü	2760		1.0	< 1.0			
cis 1,2-Dichloroethene	Ü	2760		1.0	< 1.0			
Bromochloromethane	U	2760		5.0	< 5.0			
Trichloromethane	Ü	2760		1.0	< 1.0			
1,1,1-Trichloroethane	U	2760		1.0	< 1.0			
Tetrachloromethane	U	2760		1.0	< 1.0			
1,1-Dichloropropene	U	2760		1.0	< 1.0			
Benzene	U	2760		1.0	< 1.0			
1,2-Dichloroethane	Ü	2760		2.0	< 2.0			
Trichloroethene	U	2760		1.0	< 1.0			
		00	アヴ′′゚゚゚゚		, 1.0			



Client: Geosphere Environmental Ltd		17-20562 493835						
Quotation No.: Q17-10179	(Chemtest Sample ID.:						
Order No.: 2543 GI		Client Sample Ref.:						
		Client Sample ID.:						
				е Туре:	SOIL			
			Top Dep	, ,	2.00			
			Date Sa		01-Aug-2017			
			Asbest	os Lab:	COVENTRY			
Determinand	Accred.	SOP		LOD				
1,2-Dichloropropane	U	2760)	1.0	< 1.0			
Dibromomethane	U	2760)	1.0	< 1.0			
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0			
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10			
Toluene	U	2760		1.0	< 1.0			
Trans-1,3-Dichloropropene	N	2760)	10	< 10			
1,1,2-Trichloroethane	U	2760		10	< 10			
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0			
1,3-Dichloropropane	U	2760		2.0	< 2.0			
Dibromochloromethane	U	2760	μg/kg	10	< 10			
1,2-Dibromoethane	U	2760)	5.0	< 5.0			
Chlorobenzene	U	2760)	1.0	< 1.0			
1,1,1,2-Tetrachloroethane	U	2760)	2.0	< 2.0			
Ethylbenzene	U	2760	100	1.0	1.9			
m & p-Xylene	U	2760	μg/kg	1.0	3.4			
o-Xylene	U	2760	μg/kg	1.0	2.2			
Styrene	U	2760	μg/kg	1.0	< 1.0			
Tribromomethane	U	2760	0	1.0	< 1.0			
Isopropylbenzene	U	2760	100	1.0	< 1.0			
Bromobenzene	U	2760		1.0	< 1.0			
1,2,3-Trichloropropane	N	2760		50	< 50			
N-Propylbenzene	U	2760	μg/kg	1.0	2.7			
2-Chlorotoluene	U	2760		1.0	< 1.0			
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	8.8			
4-Chlorotoluene	U	2760	100	1.0	< 1.0			
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0			
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	8.1			
Sec-Butylbenzene	U	2760	. 0	1.0	< 1.0			
1,3-Dichlorobenzene	U	2760	0	1.0	< 1.0			
4-Isopropyltoluene	U	2760		1.0	< 1.0			
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0			
N-Butylbenzene	U	2760	0	1.0	< 1.0			
1,2-Dichlorobenzene	U	2760		1.0	< 1.0			
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50			
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0			
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0			
1,2,3-Trichlorobenzene	U	2760)	2.0	< 2.0			
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0			



Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179	(Chemtest Sample ID.:						
Order No.: 2543 GI		Client Sample Ref.:						
		Client Sample ID.:						
			Sample	e Type:	SOIL			
			Top Dep	oth (m):	2.00			
			Date Sa	mpled:	01-Aug-2017			
			Asbest	os Lab:	COVENTRY			
Determinand	Accred.	SOP		LOD				
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50			
Phenol	U	2790) י	0.50	< 0.50			
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50			
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50			
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50			
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50			
1,2-Dichlorobenzene	U	2790		0.50	< 0.50			
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50			
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50			
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50			
N-Nitrosodi-n-propylamine	U	2790		0.50	< 0.50			
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50			
Nitrobenzene	U	2790		0.50	< 0.50			
Isophorone	U	2790		0.50	< 0.50			
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50			
2,4-Dimethylphenol	N	2790		0.50	< 0.50			
Bis(2-Chloroethoxy)Methane	U	2790		0.50	< 0.50			
2,4-Dichlorophenol	U	2790		0.50	< 0.50			
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50			
Naphthalene	U	2790		0.50	< 0.50			
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50			
Hexachlorobutadiene	U	2790		0.50	< 0.50			
4-Chloro-3-Methylphenol	U	2790		0.50	< 0.50			
2-Methylnaphthalene	U	2790		0.50	< 0.50			
4-Nitrophenol	N	2790		0.50	< 0.50			
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50			
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50			
2,4,5-Trichlorophenol	U	2790		0.50	< 0.50			
2-Chloronaphthalene	U	2790)	0.50	< 0.50			
2-Nitroaniline	U	2790		0.50	< 0.50			
Acenaphthylene	U	2790	J	0.50	< 0.50			
Dimethylphthalate	U	2790		0.50	< 0.50			
2,6-Dinitrotoluene	U	2790		0.50	< 0.50			
Acenaphthene	U	2790	ŭ	0.50	< 0.50			
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50			
Dibenzofuran	U	2790		0.50	< 0.50			
4-Chlorophenylphenylether	Ü	2790	5	0.50	< 0.50			
2,4-Dinitrotoluene	Ü	2790)	0.50	< 0.50			



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.: 2543 GI			nt Samp		BHC06		
		Cli	ent Sam		J5		
			Sample	е Туре:	SOIL		
			Top Dep	oth (m):	2.00		
			Date Sa	_	01-Aug-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
Fluorene	U	2790	mg/kg	0.50	< 0.50		
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50		
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50		
Azobenzene	U	2790	mg/kg	0.50	< 0.50		
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50		
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50		
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50		
Phenanthrene	U	2790	mg/kg	0.50	< 0.50		
Anthracene	U	2790	mg/kg	0.50	< 0.50		
Carbazole	U	2790	mg/kg	0.50	< 0.50		
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
Fluoranthene	U	2790	mg/kg	0.50	< 0.50		
Pyrene	U	2790	mg/kg	0.50	< 0.50		
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50		
Chrysene	U	2790	mg/kg	0.50	< 0.50		
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50		
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50		
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50		
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50		
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50		
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50		
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50		
Total Phenols	U	2920		0.30	< 0.30		



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Details:

			•
Report No.:	17-20669-1		
Initial Date of Issue:	15-Aug-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543.91 Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	07-Aug-2017
Order No.:	2543.91	Date Instructed:	09-Aug-2017
No. of Samples:	4		
Turnaround (Wkdays):	5	Results Due:	15-Aug-2017
Date Approved:	15-Aug-2017		
Approved By:			

Keith Jones, Technical Manager



Client: Geosphere Environmental Ltd		17-20669						
Quotation No.: Q17-10179	(Chemtest Sample ID.:						
Order No.: 2543.91		Client Sample Ref.:						
		Client Sample ID.:						
		Sample Type:						
			Top Dep	oth (m):	0.20			
			Date Sa	ampled:	03-Aug-2017			
Determinand	Accred.	SOP	Units	LOD				
рН	U	1010		N/A	8.1			
Ammonia (Free) as N	U	1220	mg/l	0.010	< 0.010			
Sulphate	U	1220	mg/l	1.0	1.1			
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050			
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050			
Arsenic (Dissolved)	U	1450	μg/l	1.0	2.7			
Boron (Dissolved)	U	1450	μg/l	20	27			
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080			
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Copper (Dissolved)	U	1450	μg/l	1.0	4.2			
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50			
Nickel (Dissolved)	U	1450	μg/l	1.0	1.2			
Lead (Dissolved)	U	1450	μg/l	1.0	6.3			
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Zinc (Dissolved)	U	1450	μg/l	1.0	11			
Chromium (Hexavalent)	U	1490	μg/l	20	< 20			
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10			
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10			
Naphthalene	U	1700	μg/l	0.10	< 0.10			
Acenaphthylene	U	1700	μg/l	0.10	< 0.10			
Acenaphthene	U	1700	μg/l	0.10	< 0.10			
Fluorene	U	1700	μg/l	0.10	< 0.10			
Phenanthrene	U	1700	μg/l	0.10	< 0.10			



Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179		Chemtest Sample ID.:						
Order No.: 2543.91		Client Sample Ref.:						
		Client Sample ID.:						
				e Type:	SOIL			
			Top Dep	, ,	0.20			
			Date Sa	ampled:	03-Aug-2017			
Determinand	Accred.	SOP	Units	LOD				
Anthracene	U	1700	μg/l	0.10	< 0.10			
Fluoranthene	U	1700	μg/l	0.10	< 0.10			
Pyrene	U	1700	μg/l	0.10	< 0.10			
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10			
Chrysene	U	1700	μg/l	0.10	< 0.10			
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10			
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10			
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10			
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10			
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0			
Benzene	U	1760	μg/l	1.0	< 1.0			
Toluene	U	1760	μg/l	1.0	< 1.0			
Ethylbenzene	U	1760	μg/l	1.0	< 1.0			
m & p-Xylene	U	1760	μg/l	1.0	< 1.0			
o-Xylene	U	1760	μg/l	1.0	< 1.0			
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0			
Phenol	N	1790	μg/l	0.50	< 0.50			
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50			
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50			
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50			
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50			
Hexachloroethane	N	1790	μg/l	0.50	< 0.50			
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50			
4-Methylphenol	N	1790	μg/l	0.50	< 0.50			
Nitrobenzene	N	1790	μg/l	0.50	< 0.50			
Isophorone	N	1790	μg/l	0.50	< 0.50			
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50			
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50			
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50			
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50			
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50			
Naphthalene	N	1790	μg/l	0.50	< 0.50			
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50			
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50			



Client: Geosphere Environmental Ltd		Chei	ntest Jo	ob No.:	17-20669			
Quotation No.: Q17-10179		Chemtest Sample ID.:						
Order No.: 2543.91		Client Sample Ref.:						
01401 110 20 10.01		Client Sample ID.:						
				e Type:	J1 SOIL			
			Top Dep		0.20			
			Date Sa		03-Aug-2017			
Determinand	Accred.	SOP	Units		00 / tag 2011			
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50			
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50			
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50			
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50			
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50			
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50			
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
Acenaphthylene	N	1790	μg/l	0.50	< 0.50			
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50			
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50			
Acenaphthene	N	1790	μg/l	0.50	< 0.50			
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
Dibenzofuran	N	1790	μg/l	0.50	< 0.50			
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50			
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50			
Fluorene	N	1790	μg/l	0.50	< 0.50			
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50			
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50			
Azobenzene	N	1790	μg/l	0.50	< 0.50			
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50			
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50			
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50			
Phenanthrene	N	1790	μg/l	0.50	< 0.50			
Anthracene	N	1790	μg/l	0.50	< 0.50			
Carbazole	N	1790	μg/l	0.50	< 0.50			
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Fluoranthene	N N	1790	μg/l	0.50	< 0.50			
Pyrene	N	1790	μg/l	0.50	< 0.50			
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50			
Chrysene	N	1790	μg/l	0.50	< 0.50			
Bis(2-Ethylhexyl)Phthalate	N N	1790	μg/l	0.50	< 0.50			
Di-N-Octyl Phthalate	N	1790		0.50	< 0.50			
Benzo[b]fluoranthene	N N	1790	μg/l	0.50				
Benzo[k]fluoranthene	N N	1790	μg/l	0.50	< 0.50 < 0.50			
	N N		μg/l					
Benzo[a]pyrene Indeno(1,2,3-c,d)Pyrene	N N	1790	μg/l	0.50	< 0.50			
	N N	1790	μg/l	0.50	< 0.50			
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50			



Results - Leachate

Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	494333	
Order No.: 2543.91		Clie	le Ref.:	TPC01		
		Cli	ple ID.:	J1		
			е Туре:	SOIL		
			Top Dep	oth (m):	0.20	
			Date Sa	ampled:	03-Aug-2017	
Determinand	Accred.	SOP	Units	LOD		
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	
Total Phenols	U	1920	mg/l	0.030	< 0.030	



Client: Geosphere Environmental Ltd			mtest Jo			17-20669	17-20669	17-20669
Quotation No.: Q17-10179	Chemtest Sample ID.:		494325	494329	494331	494333		
Order No.: 2543.91			nt Samp		TPC03	TPC04	TPC04	TPC01
		Client Sample ID.:		J2	J2	J4	J1	
				e Type:	SOIL	SOIL	SOIL	SOIL
			Top Dep	, ,	0.80	0.55	2.20	0.20
			Date Sa		03-Aug-2017	03-Aug-2017	03-Aug-2017	03-Aug-201
		Asbestos Lab: C		COVENTRY	COVENTRY	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	-	-	-	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbesto: Detected
Moisture	N	2030	%	0.020	2.8	16	7.0	3.7
рН	М	2010		N/A	8.3	9.8	8.8	7.8
Boron (Hot Water Soluble)	М	2120	mg/kg	0.40	< 0.40	< 0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	М	2120	g/l	0.010	< 0.010	0.072	< 0.010	< 0.010
Cyanide (Free)	М	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	М	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Ammonium (Extractable)	М	2425	mg/kg	0.50	1.8	2.0	1.5	2.6
Sulphate (Total)	М	2430	%	0.010	< 0.010	0.13	0.010	0.064
Arsenic	M	2450	mg/kg	1.0	4.6	17	7.6	9.3
Cadmium	M	2450	mg/kg	0.10	< 0.10	0.14	< 0.10	0.21
Chromium	M	2450	mg/kg	1.0	4.2	21	12	7.2
Copper	M	2450	mg/kg	0.50	1.5	66	7.8	21
Mercury	M	2450	mg/kg	0.10	< 0.10	0.30	0.10	0.29
Nickel	M	2450	mg/kg	0.50	3.3	24	11	9.3
Lead	M	2450	mg/kg	0.50	14	110	11	70
Selenium	М	2450	mg/kg	0.20	0.29	0.57	0.28	0.68
Zinc	M	2450	mg/kg	0.50	11	59	18	84
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	М	2625	%	0.40		17		5.9
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	М	2680	mg/kg	1.0	< 1.0	1.6	< 1.0	< 1.0
Aliphatic TPH >C21-C35	М	2680	mg/kg	1.0	< 1.0	57	< 1.0	65
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	59	< 5.0	65
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	1.4	< 1.0	10
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	25	< 1.0	110



Client: Geosphere Environmental Ltd			mtest Jo		17-20669	17-20669	17-20669	17-20669
Quotation No.: Q17-10179	(Chemte	est Sam	ple ID.:	494325	494329	494331	494333
Order No.: 2543.91			nt Samp		TPC03	TPC04	TPC04	TPC01
		Cli	ent Sam		J2	J2	J4	J1
				е Туре:	SOIL	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.80	0.55	2.20	0.20
			Date Sa	ampled:	03-Aug-2017	03-Aug-2017	03-Aug-2017	03-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	27	< 5.0	120
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	85	< 10	190
Naphthalene	М	2700	mg/kg	0.10	< 0.10	0.37	< 0.10	< 0.10
Acenaphthylene	М	2700	mg/kg	0.10	< 0.10	0.10	< 0.10	< 0.10
Acenaphthene	М	2700		0.10	< 0.10	0.13	< 0.10	< 0.10
Fluorene	М	2700		0.10	< 0.10	0.27	< 0.10	< 0.10
Phenanthrene	М	2700	mg/kg	0.10	< 0.10	1.5	< 0.10	0.72
Anthracene	М	2700	0	0.10	< 0.10	0.32	< 0.10	0.34
Fluoranthene	М	2700		0.10	< 0.10	2.1	< 0.10	2.1
Pyrene	М	2700	0 0	0.10	< 0.10	2.3	< 0.10	2.8
Benzo[a]anthracene	М	2700	mg/kg	0.10	< 0.10	1.2	< 0.10	1.2
Chrysene	М	2700		0.10	< 0.10	1.1	< 0.10	1.6
Benzo[b]fluoranthene	M	2700	0 0	0.10	< 0.10	1.3	< 0.10	1.6
Benzo[k]fluoranthene	M	2700		0.10	< 0.10	0.52	< 0.10	0.62
Benzo[a]pyrene	M	2700		0.10	< 0.10	1.0	< 0.10	1.0
Indeno(1,2,3-c,d)Pyrene	M	2700		0.10	< 0.10	0.40	< 0.10	0.48
Dibenz(a,h)Anthracene	M	2700		0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2700	0 0	0.10	< 0.10	0.25	< 0.10	0.24
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	13	< 2.0	13
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinvl Chloride	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	M	2760		20	< 20	< 20	< 20	< 20
Chloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1.2-Dichloroethene	M	2760		1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	M	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1.2-Dichloroethene	M	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	U	2760		5.0	< 1.0 < 5.0	< 5.0	< 5.0	< 1.0 < 5.0
Bromochioromethane Trichloromethane	M	2760	μg/kg μg/kg	1.0	< 5.0 < 1.0	< 5.0 < 1.0	< 5.0 < 1.0	< 5.0 < 1.0
	M			1.0				
1,1,1-Trichloroethane		2760			< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	M	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			ntest Jo		17-20669	17-20669	17-20669	17-20669
Quotation No.: Q17-10179	(st Sam		494325	494329	494331	494333
Order No.: 2543.91			nt Samp		TPC03	TPC04	TPC04	TPC01
		Clie	ent Sam		J2	J2	J4	J1
				e Type:	SOIL	SOIL	SOIL	SOIL
			Top Dep		0.80	0.55	2.20	0.20
			Date Sa		03-Aug-2017	03-Aug-2017	03-Aug-2017	03-Aug-201
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
1,2-Dichloropropane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	М	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10	< 10
Toluene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10	< 10
1,1,2-Trichloroethane	М	2760	μg/kg	10	< 10	< 10	< 10	< 10
Tetrachloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10	< 10	< 10	< 10
1,2-Dibromoethane	М	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	М	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	М	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50	< 50	< 50	< 50
1.2.4-Trichlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	μg/kg μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,4,0 11101101000140110		4100	µy/ny	۷.٠	~ 2.0	~ 2.0	< ∠.U	~ 2.0



Client: Geosphere Environmental Ltd			ntest Jo		17-20669	17-20669	17-20669	17-20669
Quotation No.: Q17-10179	(st Sam		494325	494329	494331	494333
Order No.: 2543.91			nt Samp		TPC03	TPC04	TPC04	TPC01
		Cli	ent Sam		J2	J2	J4	J1
			Sample		SOIL	SOIL	SOIL	SOIL
			Top Dep		0.80	0.55	2.20	0.20
			Date Sa	mpled:	03-Aug-2017	03-Aug-2017	03-Aug-2017	03-Aug-201
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTR
Determinand	Accred.	SOP	Units	LOD				
N-Nitrosodimethylamine	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
- Oniorophonyiphonyiculoi	171	2100	mg/ng	5.50	7 0.50	\ 0.50	\ 0.50	7 0.50



Client: Geosphere Environmental Ltd			mtest J		17-20669	17-20669	17-20669	17-20669
Quotation No.: Q17-10179	(st Sam		494325	494329	494331	494333
Order No.: 2543.91			nt Samp		TPC03	TPC04	TPC04	TPC01
		Cli	ent Sam		J2	J2	J4	J1
				е Туре:	SOIL	SOIL	SOIL	SOIL
			Top De	oth (m):	0.80	0.55	2.20	0.20
			Date Sa	ampled:	03-Aug-2017	03-Aug-2017	03-Aug-2017	03-Aug-201
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Fluorene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	М		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Azobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	М	2790)	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	М	2790	mg/kg	0.50	< 0.50	1.5	< 0.50	< 0.50
Anthracene	М	2790	mg/kg	0.50	< 0.50	0.69	< 0.50	< 0.50
Carbazole	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	М	2790	mg/kg	0.50	< 0.50	3.0	< 0.50	1.2
Pyrene	М	2790	mg/kg	0.50	< 0.50	2.7	< 0.50	1.8
Butylbenzyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	М	2790	mg/kg	0.50	< 0.50	1.9	< 0.50	1.8
Chrysene	М		mg/kg	0.50	< 0.50	1.4	< 0.50	1.1
Bis(2-Ethylhexyl)Phthalate	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	М	2790	mg/kg	0.50	< 0.50	2.1	< 0.50	1.9
Benzo[k]fluoranthene	М	2790	mg/kg	0.50	< 0.50	0.88	< 0.50	0.75
Benzo[a]pyrene	М	2790	mg/kg	0.50	< 0.50	1.4	< 0.50	0.83
Indeno(1,2,3-c,d)Pyrene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	М	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
PCB 28	М	2815	mg/kg	0.010		< 0.010		< 0.010
PCB 81	N	-	mg/kg	0.010	< 0.010		< 0.010	
PCB 52	М		mg/kg			< 0.010		< 0.010
PCB 77	N		mg/kg		< 0.010		< 0.010	
PCB 105	N		mg/kg		< 0.010		< 0.010	
PCB 90+101	М		mg/kg			< 0.010		< 0.010
PCB 114	N	-	mg/kg		< 0.010		< 0.010	
PCB 118	М		mg/kg			< 0.010		< 0.010
PCB 118	N	-	mg/kg	0.010	< 0.010		< 0.010	
PCB 153	М		mg/kg			< 0.010		< 0.010
PCB 123	N	1	mg/kg	0.010	< 0.010	1 2.0.0	< 0.010	
PCB 138	M		mg/kg		, 5.5.5	< 0.010	, 5.0.0	< 0.010
PCB 126	N		mg/kg		< 0.010		< 0.010	



Results - Soil

Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	17-20669	17-20669	17-20669	17-20669
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	494325	494329	494331	494333
Order No.: 2543.91		•		TPC03	TPC04	TPC04	TPC01	
	Client Sample ID.:		J2	J2	J4	J1		
		Sample Type:		SOIL	SOIL	SOIL	SOIL	
		Top Depth (m):		0.80	0.55	2.20	0.20	
		Date Sampled: 03-A		03-Aug-2017	03-Aug-2017	03-Aug-2017	03-Aug-2017	
		Asbestos Lab: CC		COVENTRY	COVENTRY	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
PCB 180	М	2815	mg/kg	0.010		< 0.010		< 0.010
PCB 156	N	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 157	N	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 167	N	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 169	N	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 189	N	2815	mg/kg	0.010	< 0.010		< 0.010	
Total PCBs (12 Congeners)	N	2815 mg/kg 0.12		< 0.12		< 0.12		
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10		< 0.10		< 0.10
Total Phenols	М	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.:	17-20779-1

Initial Date of Issue: 15-Aug-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543 GI, Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 08-Aug-2017

Order No.: 2543, Gl Date Instructed: 09-Aug-2017

No. of Samples: 1

Turnaround (Wkdays): 5 Results Due: 15-Aug-2017

Date Approved: 15-Aug-2017

Approved By:							
The bit call image cannot be objected. The file may have been mount, consent, or deleted. Notify that the left points in the connect file and devalue.							

Details: Keith Jones, Technical Manager

Client: Geosphere Environmental Ltd		17-20779					
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.: 2543, GI			nt Samp		TPC102		
		Client Sample ID.: Sample Type:					
			Top Dep	oth (m):	0.50		
			Date Sa	ampled:	04-Aug-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	ı		
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		
Moisture	N	2030	%	0.020	2.6		
рН	М	2010		N/A	7.5		
Boron (Hot Water Soluble)	М	2120	mg/kg	0.40	0.65		
Sulphate (2:1 Water Soluble) as SO4	М	2120	g/l	0.010	< 0.010		
Cyanide (Free)	M	2300	mg/kg	0.50	< 0.50		
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50		
Ammonium (Extractable)	M	2425	mg/kg	0.50	1.6		
Sulphate (Total)	М	2430	%	0.010	< 0.010		
Arsenic	M	2450	mg/kg	1.0	4.8		
Cadmium	M	2450		0.10	< 0.10		
Chromium	M	2450	mg/kg	1.0	4.0		
Copper	M	2450	mg/kg	0.50	1.8		
Mercury	M	2450	mg/kg	0.10	< 0.10		
Nickel	M	2450	mg/kg	0.50	2.9		
Lead	M	2450	mg/kg	0.50	5.2		
Selenium	M	2450	mg/kg	0.20	0.48		
Zinc	M	2450	mg/kg	0.50	11		
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		
Total Aliphatic Hydrocarbons	N	2680	0	5.0	< 5.0		
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C7-C8	N	2680	0	1.0	< 1.0		
Aromatic TPH >C8-C10	М	2680		1.0	< 1.0		
Aromatic TPH >C10-C12	М	2680		1.0	< 1.0		
Aromatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C21-C35	М	2680)	1.0	< 1.0		
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(st Sam		494807	
Order No.: 2543, GI			nt Samp ent Sam		TPC102	
		J2				
		e Type:	SOIL			
			Top Dep	, ,	0.50	
			Date Sa		04-Aug-2017	
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP		LOD		
Total Aromatic Hydrocarbons	N	2680	0	5.0	< 5.0	
Total Petroleum Hydrocarbons	N	2680	0	10.0	< 10	
Naphthalene	M	2700	mg/kg	0.10	< 0.10	
Acenaphthylene	M	2700	J	0.10	< 0.10	
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	
Fluorene	M	2700	5	0.10	< 0.10	
Phenanthrene	М	2700)	0.10	< 0.10	
Anthracene	M	2700	mg/kg	0.10	< 0.10	
Fluoranthene	М	2700	mg/kg	0.10	0.16	
Pyrene	M	2700	mg/kg	0.10	0.20	
Benzo[a]anthracene	M	2700	5	0.10	< 0.10	
Chrysene	M	2700	mg/kg	0.10	< 0.10	
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	< 0.10	
Benzo[k]fluoranthene	M	2700	0	0.10	< 0.10	
Benzo[a]pyrene	M	2700	mg/kg	0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10	
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	< 0.10	
Total Of 16 PAH's	M	2700	0	2.0	< 2.0	
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	
Chloromethane	M	2760	μg/kg	1.0	< 1.0	
Vinyl Chloride	M	2760	μg/kg	1.0	< 1.0	
Bromomethane	M	2760	μg/kg	20	< 20	
Chloroethane	U	2760	μg/kg	2.0	< 2.0	
Trichlorofluoromethane	M	2760	0	1.0	< 1.0	
1,1-Dichloroethene	M	2760	μg/kg	1.0	< 1.0	
Trans 1,2-Dichloroethene	M	2760	μg/kg	1.0	< 1.0	
1,1-Dichloroethane	М	2760		1.0	< 1.0	
cis 1,2-Dichloroethene	М	2760	0	1.0	< 1.0	
Bromochloromethane	U	2760		5.0	< 5.0	
Trichloromethane	М	2760	μg/kg	1.0	< 1.0	
1,1,1-Trichloroethane	М	2760	μg/kg	1.0	< 1.0	
Tetrachloromethane	М	2760) י	1.0	< 1.0	
1,1-Dichloropropene	U	2760		1.0	< 1.0	
Benzene	М	2760	μg/kg	1.0	< 1.0	
1,2-Dichloroethane	М	2760	μg/kg	2.0	< 2.0	
Trichloroethene	М	2760) י	1.0	< 1.0	
1,2-Dichloropropane	M	2760	μg/kg	1.0	< 1.0	

Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179		Chemtest Sample ID.:						
Order No.: 2543, GI			nt Samp		TPC102			
	Client Sample ID.:							
		Sample Type:						
			Top Dep	oth (m):	0.50			
			Date Sa	ampled:	04-Aug-2017			
			Asbest	os Lab:	COVENTRY			
Determinand	Accred.	SOP	Units	LOD				
Dibromomethane	М	2760	μg/kg	1.0	< 1.0			
Bromodichloromethane	М	2760	μg/kg	5.0	< 5.0			
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10			
Toluene	М	2760	μg/kg	1.0	< 1.0			
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10			
1,1,2-Trichloroethane	М	2760	μg/kg	10	< 10			
Tetrachloroethene	М	2760	μg/kg	1.0	< 1.0			
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0			
Dibromochloromethane	U	2760	μg/kg	10	< 10			
1,2-Dibromoethane	М	2760	μg/kg	5.0	< 5.0			
Chlorobenzene	М	2760		1.0	< 1.0			
1,1,1,2-Tetrachloroethane	М	2760	μg/kg	2.0	< 2.0			
Ethylbenzene	М	2760	μg/kg	1.0	< 1.0			
m & p-Xylene	М	2760	μg/kg	1.0	< 1.0			
o-Xylene	М	2760	μg/kg	1.0	< 1.0			
Styrene	М	2760	μg/kg	1.0	< 1.0			
Tribromomethane	U	2760	μg/kg	1.0	< 1.0			
Isopropylbenzene	М	2760		1.0	< 1.0			
Bromobenzene	М	2760	μg/kg	1.0	< 1.0			
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50			
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0			
2-Chlorotoluene	М	2760	μg/kg	1.0	< 1.0			
1,3,5-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0			
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0			
Tert-Butylbenzene	U	2760		1.0	< 1.0			
1,2,4-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0			
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0			
1,3-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0			
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0			
1,4-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0			
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0			
1,2-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0			
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50			
1,2,4-Trichlorobenzene	M	2760	μg/kg	1.0	< 1.0			
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0			
1,2,3-Trichlorobenzene	Ü	2760	μg/kg	2.0	< 2.0			
Methyl Tert-Butyl Ether	M	2760	μg/kg	1.0	< 1.0			
N-Nitrosodimethylamine	M	2790	mg/kg	0.50	< 0.50			



Client: Geosphere Environmental Ltd	Chemtest Job No				17-20779	
Quotation No.: Q17-10179			st Sam		494807	
Order No.: 2543, GI			nt Samp		TPC102	
		Cli	ent Sam		J2	
				е Туре:	SOIL	
		Top Depth (m):				
			Date Sa	mpled:	04-Aug-2017	
			Asbest		COVENTRY	
Determinand	Accred.	Accred. SOP Units LOD				
Phenol	М	2790	mg/kg	0.50	< 0.50	
2-Chlorophenol	М	2790	5	0.50	< 0.50	
Bis-(2-Chloroethyl)Ether	М	2790	mg/kg	0.50	< 0.50	
1,3-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	
1,2-Dichlorobenzene	М	2790	0	0.50	< 0.50	
2-Methylphenol	М	2790	5	0.50	< 0.50	
Bis(2-Chloroisopropyl)Ether	М	2790	mg/kg	0.50	< 0.50	
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	
N-Nitrosodi-n-propylamine	М	2790	mg/kg	0.50	< 0.50	
4-Methylphenol	М	2790		0.50	< 0.50	
Nitrobenzene	М	2790	mg/kg	0.50	< 0.50	
Isophorone	М	2790		0.50	< 0.50	
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	
Bis(2-Chloroethoxy)Methane	М	2790	mg/kg	0.50	< 0.50	
2,4-Dichlorophenol	М	2790	mg/kg	0.50	< 0.50	
1,2,4-Trichlorobenzene	М	2790	mg/kg	0.50	< 0.50	
Naphthalene	М	2790	mg/kg	0.50	< 0.50	
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	
Hexachlorobutadiene	М	2790	mg/kg	0.50	< 0.50	
4-Chloro-3-Methylphenol	М	2790	mg/kg	0.50	< 0.50	
2-Methylnaphthalene	М	2790	mg/kg	0.50	< 0.50	
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	
Hexachlorocyclopentadiene	N	2790		0.50	< 0.50	
2,4,6-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	
2,4,5-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	
2-Chloronaphthalene	М	2790	mg/kg	0.50	< 0.50	
2-Nitroaniline	М	2790	mg/kg	0.50	< 0.50	
Acenaphthylene	М	2790	mg/kg	0.50	< 0.50	
Dimethylphthalate	М	2790	mg/kg	0.50	< 0.50	
2,6-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50	
Acenaphthene	М	2790	mg/kg	0.50	< 0.50	
3-Nitroaniline	N	2790		0.50	< 0.50	
Dibenzofuran	М	2790	mg/kg	0.50	< 0.50	
4-Chlorophenylphenylether	М	2790		0.50	< 0.50	
2,4-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50	
Fluorene	М	2790	mg/kg	0.50	< 0.50	



Client: Geosphere Environmental Ltd	Chemtest Job No				17-20779
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	494807
Order No.: 2543, GI			nt Samp		TPC102
		Clie	ent Sam		J2
			Sample	e Type:	SOIL
			Top Dep	oth (m):	0.50
			Date Sa	ampled:	04-Aug-2017
			Asbest	os Lab:	COVENTRY
Determinand	Accred.	SOP	Units	LOD	
Diethyl Phthalate	M	2790	mg/kg	0.50	< 0.50
4-Nitroaniline	М	2790	mg/kg	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50
Azobenzene	М	2790	mg/kg	0.50	< 0.50
4-Bromophenylphenyl Ether	M	2790	mg/kg	0.50	< 0.50
Hexachlorobenzene	M	2790	mg/kg	0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50
Phenanthrene	M	2790	mg/kg	0.50	< 0.50
Anthracene	M	2790	mg/kg	0.50	< 0.50
Carbazole	M	2790	mg/kg	0.50	< 0.50
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50	< 0.50
Fluoranthene	M	2790	mg/kg	0.50	< 0.50
Pyrene	M	2790	mg/kg	0.50	< 0.50
Butylbenzyl Phthalate	M	2790	mg/kg	0.50	< 0.50
Benzo[a]anthracene	М	2790	mg/kg	0.50	< 0.50
Chrysene	М	2790	mg/kg	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50	< 0.50
Benzo[b]fluoranthene	M	2790	mg/kg	0.50	< 0.50
Benzo[k]fluoranthene	M	2790	mg/kg	0.50	< 0.50
Benzo[a]pyrene	M	2790	mg/kg	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50	< 0.50
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50	< 0.50
Benzo[g,h,i]perylene	M	2790	mg/kg	0.50	< 0.50
PCB 28	М	2815	mg/kg	0.010	< 0.010
PCB 52	М	2815	mg/kg	0.010	< 0.010
PCB 90+101	М	2815		0.010	< 0.010
PCB 118	М	2815	mg/kg	0.010	< 0.010
PCB 153	М	2815	mg/kg	0.010	< 0.010
PCB 138	М	2815	mg/kg	0.010	< 0.010
PCB 180	М	2815		0.010	< 0.010
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10
Total Phenols	М	2920	mg/kg	0.30	< 0.30



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
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- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

i mai report			
Report No.:	17-20903-1		
Initial Date of Issue:	17-Aug-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	09-Aug-2017
Order No.:	2543, GI	Date Instructed:	09-Aug-2017
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	17-Aug-2017
Date Approved:	17-Aug-2017		
Approved By:			

Glynn Harvey, Laboratory Manager



Results - 2 Stage WAC

Project: 2543, GI Lake Lothing, Lowestoft

Project: 2543, GI Lake Lothing, Lowes	<u>toft</u>								
Chemtest Job No:	17-20903						Landfill W	/aste Acceptano	e Criteria
Chemtest Sample ID:	495407							Limits	
Sample Ref:	TPC03							Stable, Non-	
Sample ID:								reactive	Hazardous
Top Depth(m):	0.80						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	03-Aug-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			< 0.20	3	5	6
Loss On Ignition	2610	U	%			0.55			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			< 10	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		
pH	2010	U				8.3		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.0080		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using BS	EN 12457-3 at L	/S 10 l/kg
Arsenic	1450	U	0.0068	0.0020	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.011	0.0032	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	0.0044	< 0.0010	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.0045	0.0016	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0016	< 0.0010	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	0.0044	0.0011	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	0.0093	0.0021	0.019	0.030	0.5	10	50
Antimony	1450	U	0.0090	0.0018	0.018	0.027	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.1	0.5	7
Zinc	1450	U	0.016	0.0045	< 0.50	< 0.50	4	50	200
Chloride	1220	U	2.1	< 1.0	< 10	< 10	800	15000	25000
Fluoride	1220	U	0.29	0.12	< 1.0	1.4	10	150	500
Sulphate	1220	U	1.9	< 1.0	< 10	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	41	14	82	170	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	17	13	< 50	140	500	800	1000

Soild Information					
Dry mass of test portion/kg	0.175				
Moisture (%)	2.7				

Leachate Test Information				
Leachant volume 1st extract/l	0.345			
Leachant volume 2nd extract/l	1.400			
Eluant recovered from 1st extract/l	0.207			

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.: 17-21231-1

Initial Date of Issue: 01-Sep-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543, GI Lake Lothing

Quotation No.: Q17-10179 Date Received: 14-Aug-2017

Order No.: 2543, Gl Date Instructed: 23-Aug-2017

No. of Samples: 1

Turnaround (Wkdays): 5 Results Due: 30-Aug-2017

Date Approved: 01-Sep-2017

Approved By:

Details: Robert Monk, Technical Development

Chemist



Project: 2543, GI Lake Lothing								
Client: Geosphere Environmental Ltd			ntest Jo		17-21231			
Quotation No.: Q17-10179	ļ (st Sam		496746			
Order No.: 2543, GI			nt Samp		BHC02			
		Clie	ent Sam		J1			
				e Type:	SOIL			
		oth (m):	0.25					
		ampled:	10-Aug-2017					
Determinand	Accred.	SOP	Units					
рН	U	1010		N/A	11.0			
Ammonia (Free) as N	U	1220	mg/l	0.010	0.089			
Sulphate	U	1220	mg/l	1.0	45			
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050			
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050			
Arsenic (Dissolved)	U	1450	μg/l	1.0	1.4			
Boron (Dissolved)	U	1450	μg/l	20	210			
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080			
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Copper (Dissolved)	U	1450	μg/l	1.0	7.4			
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50			
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Zinc (Dissolved)	U	1450	μg/l	1.0	2.8			
Chromium (Hexavalent)	U	1490	μg/l	20	[B] < 20			
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10			
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10			
Naphthalene	U	1700	μg/l	0.10	< 0.10			
Acenaphthylene	U	1700	μg/l	0.10	< 0.10			
Acenaphthene	U	1700	μg/l	0.10	< 0.10			
Fluorene	U	1700	μg/l	0.10	< 0.10			
Phenanthrene	U	1700	μg/l	0.10	< 0.10			



Client: Geosphere Environmental Ltd Chemtest Job No.: 17-21231							
Client: Geosphere Environmental Ltd	,		17-21231 496746				
Quotation No.: Q17-10179 Order No.: 2543, GI	+ '		est Sam nt Samp				
Order No.: 2543, GI	+		ent Sam		BHC02		
		CIII		e Type:	J1 SOIL		
			Sample Top Der		0.25		
		ampled:	10-Aug-2017				
Determinand	Accred.	SOP	Units		10-Aug-2017		
Anthracene	U Accred.	1700	µg/l	0.10	< 0.10		
Fluoranthene	U	1700	μg/l	0.10	< 0.10		
Pyrene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10		
Chrysene	U	1700	μg/l	0.10	< 0.10		
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10		
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10		
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10		
Total Of 16 PAH's	Ü	1700	μg/l	2.0	< 2.0		
Benzene	U	1760	μg/l	1.0	< 1.0		
Toluene	U	1760	μg/l	1.0	< 1.0		
Ethylbenzene	U	1760	μg/l	1.0	< 1.0		
m & p-Xylene	U	1760	μg/l	1.0	< 1.0		
o-Xylene	U	1760	μg/l	1.0	< 1.0		
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0		
Phenol	N	1790	μg/l	0.50	< 0.50		
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50		
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50		
Hexachloroethane	N	1790	μg/l	0.50	< 0.50		
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50		
4-Methylphenol	N	1790	μg/l	0.50	< 0.50		
Nitrobenzene	N	1790	μg/l	0.50	< 0.50		
Isophorone	N	1790	μg/l	0.50	< 0.50		
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50		
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50		
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50		
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50		
Naphthalene	N	1790	μg/l	0.50	< 0.50		
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50		
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50		



Client: Geosphere Environmental Ltd		b No.:	17-21231			
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	496746	
Order No.: 2543, GI			nt Samp		BHC02	
		Cli	ent Sam		J1	
				е Туре:	SOIL	
		Top Depth (m)				
		Date Sampled:				
Determinand	Accred.	SOP	Units	LOD		
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50	
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50	
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50	
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Acenaphthylene	N	1790	μg/l	0.50	< 0.50	
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50	
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Acenaphthene	N	1790	μg/l	0.50	< 0.50	
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Dibenzofuran	N	1790	μg/l	0.50	< 0.50	
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50	
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Fluorene	N	1790	μg/l	0.50	< 0.50	
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50	
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50	
Azobenzene	N	1790	μg/l	0.50	< 0.50	
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50	
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50	
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	
Phenanthrene	N	1790	μg/l	0.50	< 0.50	
Anthracene	N	1790	μg/l	0.50	< 0.50	
Carbazole	N	1790	μg/l	0.50	< 0.50	
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Fluoranthene	N	1790	μg/l	0.50	< 0.50	
Pyrene	N	1790	μg/l	0.50	< 0.50	
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50	
Chrysene	N	1790	μg/l	0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50	
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50	
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50	



Results - Leachate

Client: Geosphere Environmental Ltd	Chemtest Job No				17-21231
Quotation No.: Q17-10179	(Chemte	ple ID.:	496746	
Order No.: 2543, GI		Clie	le Ref.:	BHC02	
		Clie	ple ID.:	J1	
			e Type:	SOIL	
			oth (m):	0.25	
			Date Sa	ampled:	10-Aug-2017
Determinand	Accred.	Accred. SOP Units LOD			
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Project: 2543, GI Lake Lothing							
		17-21231					
(496746			
				BHC02			
	Clie			J1			
				SOIL			
			\ /	0.25			
				10-Aug-2017			
		Asbest	os Lab:	COVENTRY			
Accred.	SOP	Units	LOD				
U	2192		N/A	1			
U	2192	%	0.001	No Asbestos Detected			
N	2030	%	0.020	9.0			
U	2010		N/A	11.0			
U	2120	mg/kg	0.40	4.2			
U	2120	g/l	0.010	0.41			
U	2300	mg/kg	0.50	< 0.50			
U	2300		0.50	< 0.50			
U	2425		0.50	0.89			
U	2430	%		0.20			
U	2450	mg/kg		8.1			
U	2450		0.10	< 0.10			
U	2450		1.0	15			
U	2450		0.50	27			
U	2450		0.10	< 0.10			
U	2450		0.50	14			
U	2450		0.50	27			
U	2450		0.20	< 0.20			
U	2450		0.50	40			
N	2490		0.50	< 0.50			
N	2680	mg/kg	1.0	< 1.0			
N	2680	mg/kg	1.0	< 1.0			
U	2680		1.0	< 1.0			
U	2680	mg/kg	1.0	< 1.0			
U	2680)	1.0	< 1.0			
U	2680			< 1.0			
U	2680			< 1.0			
N	2680		1.0	< 1.0			
N	2680		5.0	< 5.0			
N	2680		1.0	< 1.0			
N	2680			< 1.0			
U	2680			< 1.0			
Ü	2680			< 1.0			
U	2680		1.0	< 1.0			
Ü	2680		1.0	< 1.0			
	_			< 1.0			
l U	1 2000	HIIQ/KO	1.0	\ \ \ 1.U			
	Accred. U	Chemte Clies	Chemtest Sample	U 2192			



Project: 2543, GI Lake Lothing							
Client: Geosphere Environmental Ltd			ntest Jo				
Quotation No.: Q17-10179	<u> </u>		st Sam		496746		
Order No.: 2543, GI			nt Samp		BHC02		
		Clie	ent Sam		J1		
				e Type:	SOIL		
			Top Dep		0.25		
			Date Sa		10-Aug-2017		
			Asbest		COVENTRY		
Determinand	Accred.	SOP		LOD			
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0		
Total Petroleum Hydrocarbons	N	2680		10.0	< 10		
Naphthalene	U	2700) י	0.10	< 0.10		
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10		
Acenaphthene	U	2700	0	0.10	< 0.10		
Fluorene	U	2700	mg/kg	0.10	< 0.10		
Phenanthrene	U	2700	mg/kg	0.10	0.82		
Anthracene	U	2700	mg/kg	0.10	< 0.10		
Fluoranthene	U	2700)	0.10	0.66		
Pyrene	U	2700	_	0.10	0.79		
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10		
Chrysene	U	2700)	0.10	< 0.10		
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10		
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10		
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10		
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10		
Benzo[g,h,i]perylene	U	2700		0.10	< 0.10		
Total Of 16 PAH's	U	2700	mg/kg	2.0	2.3		
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0		
Chloromethane	U	2760	μg/kg	1.0	< 1.0		
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0		
Bromomethane	U	2760	μg/kg	20	< 20		
Chloroethane	U	2760	μg/kg	2.0	< 2.0		
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0		
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0		
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0		
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0		
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0		
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0		
Trichloromethane	U	2760	μg/kg	1.0	< 1.0		
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0		
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0		
1,1-Dichloropropene	U	2760	μg/kg	1.0	< 1.0		
Benzene	U	2760	μg/kg	1.0	< 1.0		
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0		
Trichloroethene	U	2760	μg/kg	1.0	< 1.0		
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0		



Client: Geosphere Environmental Ltd		ob No.:	17-21231		
Quotation No.: Q17-10179	(st Sam		496746
Order No.: 2543, GI			nt Samp		BHC02
		Cli	ent Sam		J1
			Sample	e Type:	SOIL
	Top Depth (m)				0.25
			Date Sa	mpled:	10-Aug-2017
			Asbest	os Lab:	COVENTRY
Determinand	Accred.	SOP		LOD	
Dibromomethane	U	2760)	1.0	< 1.0
Bromodichloromethane	U	2760	0	5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10
Toluene	U	2760		1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760		10	< 10
1,1,2-Trichloroethane	U	2760)	10	< 10
Tetrachloroethene	U	2760		1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0
m & p-Xylene	U	2760		1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0
1,4-Dichlorobenzene	U	2760		1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50
1,2,4-Trichlorobenzene	U	2760		1.0	< 1.0
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	μg/kg	2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760		1.0	< 1.0
	U	2790	mg/kg	0.50	< 0.50



Client: Geosphere Environmental Ltd		Chemtest Job N					
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	496746		
Order No.: 2543, GI			nt Samp		BHC02		
		Clie	ent Sam		J1		
				e Type:	SOIL		
		oth (m):	0.25				
			Date Sa	mpled:	10-Aug-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP		LOD			
Phenol	U	2790	mg/kg	0.50	< 0.50		
2-Chlorophenol	U	2790) י	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50		
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50		
1,4-Dichlorobenzene	N	2790		0.50	< 0.50		
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50		
2-Methylphenol	U	2790		0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50		
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50		
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50		
4-Methylphenol	U	2790		0.50	< 0.50		
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50		
Isophorone	U	2790		0.50	< 0.50		
2-Nitrophenol	N		mg/kg	0.50	< 0.50		
2,4-Dimethylphenol	N		mg/kg	0.50	< 0.50		
Bis(2-Chloroethoxy)Methane	U	2790		0.50	< 0.50		
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50		
1,2,4-Trichlorobenzene	U	2790		0.50	< 0.50		
Naphthalene	U	2790	mg/kg	0.50	< 0.50		
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50		
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50		
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50		
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50		
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50		
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50		
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50		
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50		
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50		
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50		
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50		
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50		
2,6-Dinitrotoluene	U	2790		0.50	< 0.50		
Acenaphthene	U	2790	mg/kg	0.50	< 0.50		
3-Nitroaniline	N	2790		0.50	< 0.50		
Dibenzofuran	U	2790		0.50	< 0.50		
4-Chlorophenylphenylether	U	2790		0.50	< 0.50		
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50		
Fluorene	U	2790		0.50	< 0.50		



Project: 2543, GI Lake Lothing							
Client: Geosphere Environmental Ltd		ob No.:	17-21231				
Quotation No.: Q17-10179	(st Sam		496746		
Order No.: 2543, GI			nt Samp		BHC02		
		Clie	ent Sam		J1		
				e Type:	SOIL		
		oth (m):	0.25				
			Date Sa		10-Aug-2017		
			Asbest		COVENTRY		
Determinand	Accred.	SOP		LOD			
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50		
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	< 0.50		
Azobenzene	U	2790	mg/kg	0.50	< 0.50		
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50		
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50		
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50		
Phenanthrene	U	2790	mg/kg	0.50	< 0.50		
Anthracene	U	2790		0.50	< 0.50		
Carbazole	U	2790	mg/kg	0.50	< 0.50		
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
Fluoranthene	U	2790	mg/kg	0.50	< 0.50		
Pyrene	U	2790	mg/kg	0.50	< 0.50		
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50		
Chrysene	U	2790	mg/kg	0.50	< 0.50		
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50		
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50		
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50		
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50		
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50		
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50		
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50		
PCB 81	N	2815	mg/kg	0.010	< 0.010		
PCB 77	N	2815	mg/kg	0.010	< 0.010		
PCB 105	N	2815	mg/kg	0.010	< 0.010		
PCB 114	N	2815	mg/kg	0.010	< 0.010		
PCB 118	N	2815			< 0.010		
PCB 123	N	2815			< 0.010		
PCB 126	N	2815	mg/kg	0.010	< 0.010		
PCB 156	N		mg/kg		< 0.010		
PCB 157	N		mg/kg		< 0.010		
PCB 167	N	2815			< 0.010		
PCB 169	N	2815	mg/kg		< 0.010		
PCB 189	N	2815	mg/kg		< 0.010		
Total PCBs (12 Congeners)	N	2815		0.12	< 0.12		
Total Phenols	U	2920	mg/kg	0.30	< 0.30		



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
496746	BHC02	J1	10-Aug-2017	В	Amber Glass 250ml
496746	BHC02	J1	10-Aug-2017	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.: 17	7-21370-1
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Initial Date of Issue: 30-Aug-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2546, GI Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 15-Aug-2017

Order No.: 2546. Gl Date Instructed: 23-Aug-2017

No. of Samples: 1

Turnaround (Wkdays): 5 Results Due: 30-Aug-2017

Date Approved: 30-Aug-2017

Approved By:

Details: Robert Monk, Technical Development

Chemist



Client: Geosphere Environmental Ltd		ob No.:	17-21370		
Quotation No.: Q17-10179	(st Sam		497442
Order No.: 2546. GI			nt Samp		BHC02
		Cli	ent Sam		J7
			Sample	e Type:	SOIL
			Top Dep	oth (m):	3
			Date Sa	mpled:	11-Aug-2017
Determinand	Accred.	SOP	Units	LOD	
Moisture	N	2030	%	0.020	13
рН	М	2010		N/A	8.6
Boron (Hot Water Soluble)	М	2120	mg/kg	0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	М	2120	g/l	0.010	0.014
Cyanide (Free)	М	2300	mg/kg	0.50	0.70
Cyanide (Total)	М	2300	mg/kg	0.50	8.4
Ammonium (Extractable)	М	2425	mg/kg	0.50	< 0.50
Sulphate (Total)	М	2430	%	0.010	0.049
Arsenic	М	2450	mg/kg	1.0	< 1.0
Cadmium	М	2450	mg/kg	0.10	< 0.10
Chromium	М	2450	mg/kg	1.0	4.3
Copper	М	2450	mg/kg	0.50	3.5
Mercury	М	2450	mg/kg	0.10	< 0.10
Nickel	М	2450	mg/kg	0.50	2.7
Lead	М	2450	mg/kg	0.50	4.8
Selenium	М	2450	mg/kg	0.20	< 0.20
Zinc	М	2450	mg/kg	0.50	8.8
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Organic Matter	М	2625	%	0.40	< 0.40
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	М	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	0	1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	0	1.0	< 1.0
Aromatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	М	2680	9	1.0	< 1.0
Aromatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C16-C21	U	2680)	1.0	< 1.0
Aromatic TPH >C21-C35	М	2680		1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680)	10.0	< 10
	М	2700	mg/kg	0.10	< 0.10



Client: Geosphere Environmental Ltd		Chemtest Job No				
Quotation No.: Q17-10179	(st Sam		497442	
Order No.: 2546. GI			nt Samp		BHC02	
		Cli	ent Sam		J7	
			Sample	e Type:	SOIL	
			Top Dep	oth (m):	3 11-Aug-2017	
		Date Sampled:				
Determinand	Accred.	SOP	Units	LOD		
Acenaphthylene	М	2700	mg/kg	0.10	< 0.10	
Acenaphthene	М	2700	mg/kg	0.10	< 0.10	
Fluorene	М	2700	mg/kg	0.10	< 0.10	
Phenanthrene	М	2700	mg/kg	0.10	< 0.10	
Anthracene	М	2700	mg/kg	0.10	< 0.10	
Fluoranthene	М	2700	mg/kg	0.10	< 0.10	
Pyrene	М	2700		0.10	< 0.10	
Benzo[a]anthracene	М	2700		0.10	< 0.10	
Chrysene	М	2700	mg/kg	0.10	< 0.10	
Benzo[b]fluoranthene	М	2700	mg/kg	0.10	< 0.10	
Benzo[k]fluoranthene	М	2700	mg/kg	0.10	< 0.10	
Benzo[a]pyrene	М	2700		0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	М	2700	mg/kg	0.10	< 0.10	
Dibenz(a,h)Anthracene	М	2700		0.10	< 0.10	
Benzo[g,h,i]perylene	М	2700	mg/kg	0.10	< 0.10	
Total Of 16 PAH's	М	2700	mg/kg	2.0	< 2.0	
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	
Chloromethane	М	2760	μg/kg	1.0	< 1.0	
Vinyl Chloride	М	2760	μg/kg	1.0	< 1.0	
Bromomethane	М	2760		20	< 20	
Chloroethane	U	2760	μg/kg	2.0	< 2.0	
Trichlorofluoromethane	М	2760		1.0	< 1.0	
1,1-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	
Trans 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	
1,1-Dichloroethane	М	2760	μg/kg	1.0	< 1.0	
cis 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0	
Trichloromethane	М	2760	μg/kg	1.0	< 1.0	
1,1,1-Trichloroethane	М	2760		1.0	< 1.0	
Tetrachloromethane	М	2760	μg/kg	1.0	< 1.0	
1,1-Dichloropropene	U	2760	μg/kg	1.0	< 1.0	
Benzene	М	2760	μg/kg	1.0	< 1.0	
1,2-Dichloroethane	М	2760	μg/kg	2.0	< 2.0	
Trichloroethene	М	2760	μg/kg	1.0	< 1.0	
1,2-Dichloropropane	М	2760	μg/kg	1.0	< 1.0	
Dibromomethane	M	2760	μg/kg	1.0	< 1.0	
Bromodichloromethane	M	2760	μg/kg	5.0	< 5.0	
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	
Toluene	M	2760	μg/kg	1.0	< 1.0	



Project: 2546, GI Lake Lothing, Lowestoft							
Client: Geosphere Environmental Ltd			ntest Jo		17-21370		
Quotation No.: Q17-10179	<u> </u>		st Sam		497442		
Order No.: 2546. GI			nt Samp		BHC02		
		Clie	ent Sam		J7		
				e Type:	SOIL		
			Top Dep	, ,	3		
			Date Sa		11-Aug-2017		
Determinand	Accred.		Units				
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10		
1,1,2-Trichloroethane	M	2760	μg/kg	10	< 10		
Tetrachloroethene	М	2760	μg/kg	1.0	< 1.0		
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0		
Dibromochloromethane	U	2760	μg/kg	10	< 10		
1,2-Dibromoethane	M	2760	μg/kg	5.0	< 5.0		
Chlorobenzene	М	2760	μg/kg	1.0	< 1.0		
1,1,1,2-Tetrachloroethane	М	2760	μg/kg	2.0	< 2.0		
Ethylbenzene	М	2760	μg/kg	1.0	< 1.0		
m & p-Xylene	M	2760		1.0	< 1.0		
o-Xylene	М	2760	μg/kg	1.0	< 1.0		
Styrene	M	2760	μg/kg	1.0	< 1.0		
Tribromomethane	U	2760	μg/kg	1.0	< 1.0		
Isopropylbenzene	M	2760	μg/kg	1.0	< 1.0		
Bromobenzene	M	2760	μg/kg	1.0	< 1.0		
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50		
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0		
2-Chlorotoluene	M	2760	μg/kg	1.0	< 1.0		
1,3,5-Trimethylbenzene	M	2760	μg/kg	1.0	< 1.0		
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0		
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0		
1,2,4-Trimethylbenzene	M	2760	μg/kg	1.0	< 1.0		
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0		
1,3-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0		
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0		
1,4-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0		
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0		
1,2-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0		
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50		
1,2,4-Trichlorobenzene	M	2760	μg/kg	1.0	< 1.0		
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0		
1,2,3-Trichlorobenzene	U	2760	μg/kg	2.0	< 2.0		
Methyl Tert-Butyl Ether	M	2760	μg/kg	1.0	< 1.0		
N-Nitrosodimethylamine	M	2790	mg/kg	0.50	< 0.50		
Phenol	M	2790	mg/kg	0.50	< 0.50		
2-Chlorophenol	М	2790	mg/kg	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	M	2790	mg/kg	0.50	< 0.50		
1,3-Dichlorobenzene	M	2790	mg/kg	0.50	< 0.50		
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50		



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.: 2546. GI		Client Sample Ref.:					
		Client Sample ID.:					
		Sample Type: Top Depth (m):					
		Date Sampled:					
Determinand	Accred.	Accred. SOP Units LOD					
1,2-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50		
2-Methylphenol	М	2790	mg/kg	0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50	< 0.50		
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50		
N-Nitrosodi-n-propylamine	М	2790	mg/kg	0.50	< 0.50		
4-Methylphenol	M	2790	mg/kg	0.50	< 0.50		
Nitrobenzene	М	2790		0.50	< 0.50		
Isophorone	М	2790		0.50	< 0.50		
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50		
2,4-Dimethylphenol	N	2790		0.50	< 0.50		
Bis(2-Chloroethoxy)Methane	М	2790	mg/kg	0.50	< 0.50		
2,4-Dichlorophenol	М	2790		0.50	< 0.50		
1,2,4-Trichlorobenzene	М	2790		0.50	< 0.50		
Naphthalene	М	2790		0.50	< 0.50		
4-Chloroaniline	N	2790	_ ,	0.50	< 0.50		
Hexachlorobutadiene	М	2790	_	0.50	< 0.50		
4-Chloro-3-Methylphenol	М	2790		0.50	< 0.50		
2-Methylnaphthalene	М	2790	_	0.50	< 0.50		
4-Nitrophenol	N	2790		0.50	< 0.50		
Hexachlorocyclopentadiene	N	2790	_	0.50	< 0.50		
2,4,6-Trichlorophenol	М	2790		0.50	< 0.50		
2,4,5-Trichlorophenol	М	2790	5	0.50	< 0.50		
2-Chloronaphthalene	М	2790		0.50	< 0.50		
2-Nitroaniline	М	2790)	0.50	< 0.50		
Acenaphthylene	М	2790		0.50	< 0.50		
Dimethylphthalate	М	2790		0.50	< 0.50		
2,6-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50		
Acenaphthene	М	2790	mg/kg	0.50	< 0.50		
3-Nitroaniline	N	2790		0.50	< 0.50		
Dibenzofuran	М	2790	_	0.50	< 0.50		
4-Chlorophenylphenylether	M	2790	0	0.50	< 0.50		
2,4-Dinitrotoluene	M	2790	٥	0.50	< 0.50		
Fluorene	M	2790		0.50	< 0.50		
Diethyl Phthalate	М	2790	0	0.50	< 0.50		
4-Nitroaniline	M	2790	ŭ	0.50	< 0.50		
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50		
Azobenzene	M	2790		0.50	< 0.50		
4-Bromophenylphenyl Ether	M	2790	9	0.50	< 0.50		
Hexachlorobenzene	M	2790)	0.50	< 0.50		



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179		Chemtest Sample ID.:				
Order No.: 2546. GI		Client Sample Ref.: Client Sample ID.:				
				e Type:	SOIL	
			Top Dep	oth (m):	3	
			Date Sa	ampled:	11-Aug-2017	
Determinand	Accred.	SOP	Units	LOD		
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	
Phenanthrene	М	2790	mg/kg	0.50	< 0.50	
Anthracene	М	2790	mg/kg	0.50	< 0.50	
Carbazole	М	2790	mg/kg	0.50	< 0.50	
Di-N-Butyl Phthalate	М	2790	mg/kg	0.50	< 0.50	
Fluoranthene	М	2790	mg/kg	0.50	< 0.50	
Pyrene	М	2790	mg/kg	0.50	< 0.50	
Butylbenzyl Phthalate	М	2790	mg/kg	0.50	< 0.50	
Benzo[a]anthracene	М	2790	mg/kg	0.50	< 0.50	
Chrysene	М	2790	mg/kg	0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	
Di-N-Octyl Phthalate	М	2790	mg/kg	0.50	< 0.50	
Benzo[b]fluoranthene	М	2790	mg/kg	0.50	< 0.50	
Benzo[k]fluoranthene	М	2790	mg/kg	0.50	< 0.50	
Benzo[a]pyrene	М	2790	mg/kg	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	М	2790	mg/kg	0.50	< 0.50	
Dibenz(a,h)Anthracene	М	2790	mg/kg	0.50	< 0.50	
Benzo[g,h,i]perylene	М	2790	mg/kg	0.50	< 0.50	
PCB 28	М	2815	mg/kg	0.010	< 0.010	
PCB 52	М	2815	mg/kg	0.010	< 0.010	
PCB 90+101	М	2815	mg/kg	0.010	< 0.010	
PCB 118	М	2815	mg/kg	0.010	< 0.010	
PCB 153	М	2815	mg/kg	0.010	< 0.010	
PCB 138	М	2815	mg/kg	0.010	< 0.010	
PCB 180	М	2815	mg/kg	0.010	< 0.010	
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10	
Total Phenols	М	2920	mg/kg	0.30	< 0.30	



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.: 17-21712-1

Initial Date of Issue: 31-Aug-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543.GI Lake Lothing

Quotation No.: Q17-10179 Date Received: 17-Aug-2017

Order No.: 2543, G1 Date Instructed: 23-Aug-2017

No. of Samples: 2

Turnaround (Wkdays): 5 Results Due: 30-Aug-2017

Date Approved: 31-Aug-2017

Approved By:

Details: Robert Monk, Technical Development

Chemist



Project: 2543.Gl Lake Lothing							
Client: Geosphere Environmental Ltd		ob No.: ple ID.:	17-21712				
Quotation No.: Q17-10179	(499158					
Order No.: 2543, G1		IPC01					
		J1					
		SOIL					
			Top Dep		0.30		
		ampled:	15-Aug-2017				
Determinand	Accred.	SOP	Units				
рН	U	1010		N/A	8.3		
Ammonia (Free) as N	U	1220	mg/l	0.010	0.023		
Sulphate	U	1220	mg/l	1.0	23		
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050		
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050		
Arsenic (Dissolved)	U	1450	μg/l	1.0	8.5		
Boron (Dissolved)	U	1450	μg/l	20	22		
Cadmium (Dissolved)	U	1450	μg/l	0.080	0.11		
Chromium (Dissolved)	U	1450	μg/l	1.0	1.5		
Copper (Dissolved)	U	1450	μg/l	1.0	10		
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50		
Nickel (Dissolved)	U	1450	μg/l	1.0	4.4		
Lead (Dissolved)	U	1450	μg/l	1.0	25		
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0		
Zinc (Dissolved)	U	1450	μg/l	1.0	20		
Chromium (Hexavalent)	U	1490	μg/l	20	[B] < 20		
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10		
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0		
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0		
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10		
Naphthalene	U	1700	μg/l	0.10	< 0.10		
Acenaphthylene	U	1700	μg/l	0.10	< 0.10		
Acenaphthene	U	1700	μg/l	0.10	< 0.10		
Fluorene	U	1700	μg/l	0.10	< 0.10		
Phenanthrene	U	1700	μg/l	0.10	< 0.10		



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.: 2543, G1		Client Sample Ref.:					
		Client Sample ID.: Sample Type: Top Depth (m):					
		Date Sampled:					
Determinand	Accred.	Accred. SOP Units LOD					
Anthracene	U	1700	μg/l	0.10	< 0.10		
Fluoranthene	U	1700	μg/l	0.10	< 0.10		
Pyrene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10		
Chrysene	U	1700	μg/l	0.10	< 0.10		
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10		
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10		
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10		
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0		
Benzene	U	1760	μg/l	1.0	< 1.0		
Toluene	U	1760	μg/l	1.0	< 1.0		
Ethylbenzene	U	1760	μg/l	1.0	< 1.0		
m & p-Xylene	U	1760	μg/l	1.0	< 1.0		
o-Xylene	U	1760	μg/l	1.0	< 1.0		
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0		
Phenol	N	1790	μg/l	0.50	< 0.50		
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50		
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50		
Hexachloroethane	N	1790	μg/l	0.50	< 0.50		
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50		
4-Methylphenol	N	1790	μg/l	0.50	< 0.50		
Nitrobenzene	N	1790	μg/l	0.50	< 0.50		
Isophorone	N	1790	μg/l	0.50	< 0.50		
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50		
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50		
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50		
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50		
Naphthalene	N	1790	μg/l	0.50	< 0.50		
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50		
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50		



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.: 2543, G1		Client Sample Ref.:					
		Client Sample ID.: Sample Type: Top Depth (m):					
		Date Sampled:					
Determinand	Accred.	SOP	Units	LOD			
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50		
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50		
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50		
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50		
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50		
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50		
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50		
Acenaphthylene	N	1790	μg/l	0.50	< 0.50		
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50		
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50		
Acenaphthene	N	1790	μg/l	0.50	< 0.50		
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50		
Dibenzofuran	N	1790	μg/l	0.50	< 0.50		
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50		
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50		
Fluorene	N	1790	μg/l	0.50	< 0.50		
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50		
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50		
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50		
Azobenzene	N	1790	μg/l	0.50	< 0.50		
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50		
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50		
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50		
Phenanthrene	N	1790	μg/l	0.50	< 0.50		
Anthracene	N	1790	μg/l	0.50	< 0.50		
Carbazole	N	1790	μg/l	0.50	< 0.50		
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Fluoranthene	N	1790	μg/l	0.50	< 0.50		
Pyrene	N	1790	μg/l	0.50	< 0.50		
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50		
Chrysene	N	1790	μg/l	0.50	< 0.50		
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50		
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50		
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50		
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50		
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50		
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50		



Results - Leachate

Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(Chemte	ple ID.:	499158		
Order No.: 2543, G1		Clie	le Ref.:	IPC01		
		Cli	ent Sam	ple ID.:	J1	
			е Туре:	SOIL		
			oth (m):	0.30		
			ampled:	15-Aug-2017		
Determinand	Accred.	SOP	LOD			
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	
Total Phenols	U	1920	mg/l	0.030	< 0.030	



Client: Geosphere Environmental Ltd		Chemtest Job No.:				17-21712
Quotation No.: Q17-10179	(st Sam	499158	499163	
Order No.: 2543, G1		Client Sample Ref.:				IPC02
		Client Sample ID.:			J1	J2
		Sample Type:				SOIL
			Top Dep	oth (m):	0.30	0.60
			Date Sa	ampled:	15-Aug-2017	15-Aug-2017
		Asbestos Lab:			COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	1	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	2.1	1.8
рН	М	2010		N/A	7.8	7.6
Boron (Hot Water Soluble)	М	2120	mg/kg	0.40	1.5	< 0.40
Sulphate (2:1 Water Soluble) as SO4	М	2120	g/l	0.010	0.014	< 0.010
Cyanide (Free)	М	2300	mg/kg	0.50	< 0.50	< 0.50
Cyanide (Total)	М	2300	mg/kg	0.50	0.50	< 0.50
Ammonium (Extractable)	М	2425	mg/kg	0.50	3.1	0.75
Sulphate (Total)	М	2430	%	0.010	0.13	< 0.010
Arsenic	М	2450	mg/kg	1.0	12	2.1
Cadmium	М	2450	mg/kg	0.10	0.78	0.12
Chromium	М	2450	mg/kg	1.0	62	4.7
Copper	М	2450	mg/kg	0.50	35	6.6
Mercury	М	2450	mg/kg	0.10	0.11	< 0.10
Nickel	М	2450	mg/kg	0.50	18	4.3
Lead	М	2450	mg/kg	0.50	170	28
Selenium	М	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	М	2450	mg/kg	0.50	130	42
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	М	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	М	2680	mg/kg	1.0	47	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	47	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	М	2680	mg/kg	1.0	2.4	< 1.0
Aromatic TPH >C12-C16	М	2680	mg/kg	1.0	13	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	36	< 1.0
Aromatic TPH >C21-C35	М	2680	mg/kg	1.0	200	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd		Che	mtest Jo	17-21712	17-21712	
Quotation No.: Q17-10179			st Sam		499158	499163
Order No.: 2543, G1		Clie	nt Samp	IPC01	IPC02	
		Cli	ent Sam		J1	J2
			Sample	е Туре:	SOIL	SOIL
			Top Dep	oth (m):	0.30	0.60
			Date Sa	mpled:	15-Aug-2017	15-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	250	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	300	< 10
Naphthalene	М	2700	mg/kg	0.10	3.1	< 0.10
Acenaphthylene	М	2700	mg/kg	0.10	1.9	< 0.10
Acenaphthene	М	2700	mg/kg	0.10	5.7	< 0.10
Fluorene	М	2700	mg/kg	0.10	5.8	< 0.10
Phenanthrene	М	2700	mg/kg	0.10	30	0.15
Anthracene	М	2700	mg/kg	0.10	8.8	< 0.10
Fluoranthene	М	2700	mg/kg	0.10	30	0.38
Pyrene	М	2700	mg/kg	0.10	29	0.33
Benzo[a]anthracene	М	2700	mg/kg	0.10	12	< 0.10
Chrysene	M	2700	mg/kg	0.10	16	< 0.10
Benzo[b]fluoranthene	М	2700	mg/kg	0.10	14	< 0.10
Benzo[k]fluoranthene	М	2700	mg/kg	0.10	6.4	< 0.10
Benzo[a]pyrene	М	2700	mg/kg	0.10	12	< 0.10
Indeno(1,2,3-c,d)Pyrene	М	2700	mg/kg	0.10	7.8	< 0.10
Dibenz(a,h)Anthracene	М	2700	mg/kg	0.10	5.1	< 0.10
Benzo[g,h,i]perylene	М	2700	mg/kg	0.10	9.3	< 0.10
Total Of 16 PAH's	М	2700	mg/kg	2.0	200	< 2.0
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Chloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
Vinyl Chloride	М	2760	μg/kg	1.0	< 1.0	< 1.0
Bromomethane	М	2760	μg/kg	20	< 20	< 20
Chloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Trichlorofluoromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
Trichloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
Tetrachloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Benzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloroethane	М	2760	μg/kg	2.0	< 2.0	< 2.0
Trichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloropropane	М	2760	μg/kg	1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd		Che	mtest Jo	17-21712	17-21712	
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	499158	499163
Order No.: 2543, G1		Client Sample Ref.:			IPC01	IPC02
		Cli	ent Sam		J1	J2
			Sample	е Туре:	SOIL	SOIL
			Top Dep	oth (m):	0.30	0.60
			Date Sa	ampled:	15-Aug-2017	15-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Dibromomethane	M	2760	μg/kg	1.0	< 1.0	< 1.0
Bromodichloromethane	M	2760	μg/kg	5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
Toluene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
1,1,2-Trichloroethane	М	2760	μg/kg	10	< 10	< 10
Tetrachloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10	< 10
1,2-Dibromoethane	М	2760	μg/kg	5.0	< 5.0	< 5.0
Chlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	М	2760	μg/kg	2.0	< 2.0	< 2.0
Ethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0
o-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Styrene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Isopropylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Bromobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
2-Chlorotoluene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50	< 50
1,2,4-Trichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	μg/kg	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	М	2760	μg/kg	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	М	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo	17-21712	17-21712	
Quotation No.: Q17-10179			est Sam		499158	499163
Order No.: 2543, G1			nt Samp	IPC01	IPC02	
		Cli	ent Sam		J1	J2
			Sample	е Туре:	SOIL	SOIL
			Top Dep	oth (m):	0.30	0.60
			Date Sa	ampled:	15-Aug-2017	15-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Phenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	M	2790	mg/kg	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
Nitrobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Isophorone	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Naphthalene	М	2790	mg/kg	0.50	0.75	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobutadiene	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylnaphthalene	М	2790	mg/kg	0.50	1.1	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chloronaphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitroaniline	М	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthylene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Dimethylphthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthene	М	2790	mg/kg	0.50	1.6	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenzofuran	М	2790	mg/kg	0.50	1.5	< 0.50
4-Chlorophenylphenylether	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Fluorene	М		mg/kg	0.50	1.6	< 0.50



Client: Geosphere Environmental Ltd		Che	mtest J	17-21712	17-21712	
Quotation No.: Q17-10179	(Chemte	st Sam	499158	499163	
Order No.: 2543, G1		Clie	nt Samp	IPC01	IPC02	
		Cli	ent Sam	ple ID.:	J1	J2
			Sampl	е Туре:	SOIL	SOIL
			Top De	oth (m):	0.30	0.60
			Date Sa	ampled:	15-Aug-2017	15-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Diethyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitroaniline	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Azobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Phenanthrene	М	2790	mg/kg	0.50	9.3	< 0.50
Anthracene	М	2790	mg/kg	0.50	2.9	< 0.50
Carbazole	М	2790	mg/kg	0.50	1.3	< 0.50
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50	5.0	< 0.50
Fluoranthene	М	2790	mg/kg	0.50	9.9	< 0.50
Pyrene	М	2790	mg/kg	0.50	8.0	< 0.50
Butylbenzyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]anthracene	М	2790	mg/kg	0.50	4.4	< 0.50
Chrysene	М	2790	mg/kg	0.50	4.0	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	M	2790	mg/kg	0.50	4.9	< 0.50
Benzo[k]fluoranthene	M	2790	mg/kg	0.50	1.7	< 0.50
Benzo[a]pyrene	M	2790	mg/kg	0.50	4.0	< 0.50
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	M	2790) י	0.50	< 0.50	< 0.50
PCB 28	M	2815	mg/kg	0.010	< 0.010	
PCB 81	N	2815	mg/kg	0.010		< 0.010
PCB 52	M	2815			< 0.010	
PCB 77	N	2815	mg/kg	0.010		< 0.010
PCB 105	N	2815	ט			< 0.010
PCB 90+101	M	2815	mg/kg	0.010	< 0.010	
PCB 114	N	2815				< 0.010
PCB 118	М		mg/kg		< 0.010	
PCB 118	N		mg/kg			< 0.010
PCB 153	М	2815			< 0.010	
PCB 123	N	2815	mg/kg	0.010		< 0.010
PCB 138	М	2815	0		< 0.010	
PCB 126	N	2815	mg/kg	0.010		< 0.010
PCB 180	M	2815	mg/kg	0.010	< 0.010	



Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	17-21712	17-21712
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	499158	499163
Order No.: 2543, G1		Clie	nt Samp	le Ref.:	IPC01	IPC02
		Cli	ent Sam		J1	J2
			Sample	e Type:	SOIL	SOIL
			Top Dep	oth (m):	0.30	0.60
			Date Sa	ampled:	15-Aug-2017	15-Aug-2017
		Asbestos Lab:			COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
PCB 156	N	2815	mg/kg	0.010		< 0.010
PCB 157	N	2815	mg/kg	0.010		< 0.010
PCB 167	N	2815	mg/kg	0.010		< 0.010
PCB 169	N	2815	mg/kg	0.010		< 0.010
PCB 189	N	2815	mg/kg	0.010		< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12		< 0.12
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10	
Total Phenols	M	2920	mg/kg	0.30	< 0.30	< 0.30



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
499158	IPC01	J1	15-Aug-2017	В	Amber Glass 250ml
499158	IPC01	J1	15-Aug-2017	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.:	17-21913-1
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Initial Date of Issue: 31-Aug-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2547 GI Lake Lothing

Quotation No.: Q17-10179 Date Received: 18-Aug-2017

Order No.: 2543 Gl Date Instructed: 23-Aug-2017

No. of Samples: 3

Turnaround (Wkdays): 5 Results Due: 30-Aug-2017

Date Approved: 31-Aug-2017

Approved By:

Details: Robert Monk, Technical Development

Chemist



Project: 2547 Gl Lake Lothing							
Client: Geosphere Environmental Ltd		ob No.:	17-21913 500003				
Quotation No.: Q17-10179	(Chemtest Sample ID.: Client Sample Ref.:					
Order No.: 2543 GI		J4					
		Client Sample ID.:					
				e Type:	SOIL		
			Top Dep		1.20		
			Date Sa		16-Aug-2017		
Determinand	Accred.	SOP	Units				
рН	U	1010		N/A	8.4		
Ammonia (Free) as N	U	1220	mg/l	0.010	0.019		
Sulphate	U	1220	mg/l	1.0	< 1.0		
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050		
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050		
Arsenic (Dissolved)	U	1450	μg/l	1.0	1.7		
Boron (Dissolved)	U	1450	μg/l	20	< 20		
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080		
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0		
Copper (Dissolved)	U	1450	μg/l	1.0	3.2		
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50		
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0		
Lead (Dissolved)	U	1450	μg/l	1.0	2.2		
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0		
Zinc (Dissolved)	U	1450	μg/l	1.0	4.0		
Chromium (Hexavalent)	U	1490	μg/l	20	< 20		
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10		
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0		
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0		
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10		
Naphthalene	U	1700	μg/l	0.10	< 0.10		
Acenaphthylene	U	1700	μg/l	0.10	< 0.10		
Acenaphthene	U	1700	μg/l	0.10	< 0.10		
Fluorene	U	1700	μg/l	0.10	< 0.10		
Phenanthrene	U	1700	μg/l	0.10	< 0.10		



Project: 2547 GI Lake Lothing Client: Geosphere Environmental Ltd Chemtest Job No.: 17-21913							
Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.: 2543 GI		Client Sample Ref.:					
		Client Sample ID.:					
				e Type:	SOIL		
			Top Dep		1.20		
			Date Sa	ampled:	16-Aug-2017		
Determinand	Accred.	SOP	Units	LOD			
Anthracene	U	1700	μg/l	0.10	< 0.10		
Fluoranthene	U	1700	μg/l	0.10	< 0.10		
Pyrene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10		
Chrysene	U	1700	μg/l	0.10	< 0.10		
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10		
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10		
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10		
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0		
Benzene	Ū	1760	μg/l	1.0	< 1.0		
Toluene	Ū	1760	μg/l	1.0	< 1.0		
Ethylbenzene	Ü	1760	μg/l	1.0	< 1.0		
m & p-Xylene	U	1760	μg/l	1.0	< 1.0		
o-Xylene	Ü	1760	μg/l	1.0	< 1.0		
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0		
Phenol	N	1790	μg/l	0.50	< 0.50		
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50		
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,4-Dichlorobenzene	N N	1790	μg/l	0.50	< 0.50		
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50		
Hexachloroethane	N	1790	μg/l	0.50	< 0.50		
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50		
4-Methylphenol	N	1790	μg/l	0.50	< 0.50		
Nitrobenzene	N	1790	μg/l	0.50	< 0.50		
Isophorone	N	1790	μg/l	0.50	< 0.50		
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50		
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50		
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50		
1,2,4-Trichlorobenzene	N N	1790	μg/l μg/l	0.50	< 0.50		
Naphthalene	N	1790		0.50	< 0.50		
4-Chloroaniline	N N	1790	μg/l	0.50	< 0.50		
Hexachlorobutadiene	N N	1790	μg/l	0.50	< 0.50		
пехаснюторитасне	IN	1790	μg/l	U.SU	< 0.50		



Project: 2547 Gl Lake Lothing								
Client: Geosphere Environmental Ltd		ob No.:	17-21913					
Quotation No.: Q17-10179		ple ID.:	500003					
Order No.: 2543 GI		le Ref.:	IPC05					
		ple ID.:	J4					
				e Type:	SOIL			
			Top Dep		1.20			
			Date Sa		16-Aug-2017			
Determinand	Accred.	SOP	Units					
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50			
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50			
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50			
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50			
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50			
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50			
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
Acenaphthylene	N	1790	μg/l	0.50	< 0.50			
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50			
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50			
Acenaphthene	N	1790	μg/l	0.50	< 0.50			
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
Dibenzofuran	N	1790	μg/l	0.50	< 0.50			
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50			
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50			
Fluorene	N	1790	μg/l	0.50	< 0.50			
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50			
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50			
Azobenzene	N	1790	μg/l	0.50	< 0.50			
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50			
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50			
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50			
Phenanthrene	N	1790	μg/l	0.50	< 0.50			
Anthracene	N	1790	μg/l	0.50	< 0.50			
Carbazole	N	1790	μg/l	0.50	< 0.50			
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Fluoranthene	N	1790	μg/l	0.50	< 0.50			
Pyrene	N	1790	μg/l	0.50	< 0.50			
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50			
Chrysene	N	1790	μg/l	0.50	< 0.50			
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50			
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50			
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50			
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50			
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50			
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50			



Results - Leachate

1 TOJECL 2547 Of Lake Louining						
Client: Geosphere Environmental Ltd		Chemtest Job No.:			17-21913	
Quotation No.: Q17-10179	(Chemte	ple ID.:	500003		
Order No.: 2543 GI		Clie	le Ref.:	IPC05		
		Cli	ple ID.:	J4		
		Sample Type:				
			Top Dep	oth (m):	1.20	
			Date Sa	ampled:	16-Aug-2017	
Determinand	Accred.	Accred. SOP Units LOD				
Benzo[g,h,i]perylene	N	N 1790 μg/l 0.50				
Total Phenols	U	1920	mg/l	0.030	< 0.030	



Client: Geosphere Environmental Ltd		Chemtest Job No.:			17-21913	17-21913	17-21913
Quotation No.: Q17-10179	(est Sam		499994	499998	500003
Order No.: 2543 GI			nt Samp		IPC03	IPC04	IPC05
		Cli	ent Sam	•	J3	J3	J4
			Sample	e Type:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.90	0.90	1.20
			Date Sa	ampled:	16-Aug-2017	16-Aug-2017	16-Aug-201
		Asbestos Lab: CO		COVENTRY	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	=	=	-
Asbestos Identification	U	2192	%	0.001	No Asbestos	No Asbestos	No Asbesto
Aspestos Identification	U	2192	70	0.001	Detected	Detected	Detected
Moisture	N	2030	%	0.020	4.3	4.4	1.9
рН	М	2010		N/A	7.6	7.7	7.6
Boron (Hot Water Soluble)	М	2120	mg/kg	0.40	0.44	0.84	< 0.40
Sulphate (2:1 Water Soluble) as SO4	М	2120	g/l	0.010	< 0.010	< 0.010	< 0.010
Cyanide (Free)	М	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	М	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Ammonium (Extractable)	М	2425	mg/kg	0.50	4.7	5.9	3.1
Sulphate (Total)	М	2430	%	0.010	0.017	0.040	< 0.010
Arsenic	М	2450	mg/kg	1.0	4.8	7.0	< 1.0
Cadmium	М	2450	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Chromium	М	2450	mg/kg	1.0	6.6	6.9	3.5
Copper	М	2450	mg/kg	0.50	3.3	11	4.8
Mercury	М	2450		0.10	< 0.10	< 0.10	< 0.10
Nickel	М	2450		0.50	4.8	6.9	2.8
Lead	М	2450		0.50	9.8	44	7.8
Selenium	М	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20
Zinc	М	2450	mg/kg	0.50	14	36	17
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	М	2680		1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680		1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680		1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	0	5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	0	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	9 9	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	0	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	0	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680		1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	Ü	2680	mg/kg	1.0	7.3	13	< 1.0
Aromatic TPH >C21-C35	M	2680		1.0	< 1.0	2.3	< 1.0
Aromatic TPH >C35-C44	N		mg/kg	1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd		Chemtest Job No.:		17-21913	17-21913	17-21913	
Quotation No.: Q17-10179	(est Sam		499994	499998	500003
Order No.: 2543 GI			nt Samp		IPC03	IPC04	IPC05
		Cli	ent Sam	•	J3	J3	J4
			Sampl	e Type:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.90	0.90	1.20
			Date Sa	ampled:	16-Aug-2017	16-Aug-2017	16-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD			
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	7.3	15	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	15	< 10
Naphthalene	М	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	М	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluorene	М		mg/kg	0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	М	2700		0.10	< 0.10	0.62	< 0.10
Anthracene	М	2700	mg/kg	0.10	< 0.10	0.20	< 0.10
Fluoranthene	М	2700	mg/kg	0.10	< 0.10	1.2	< 0.10
Pyrene	М	2700	mg/kg	0.10	< 0.10	1.2	< 0.10
Benzo[a]anthracene	М	2700		0.10	< 0.10	0.96	< 0.10
Chrysene	М	2700	mg/kg	0.10	< 0.10	0.55	< 0.10
Benzo[b]fluoranthene	М	2700		0.10	< 0.10	0.55	< 0.10
Benzo[k]fluoranthene	М	2700	0 0	0.10	< 0.10	0.15	< 0.10
Benzo[a]pyrene	М	_	mg/kg	0.10	< 0.10	0.31	< 0.10
Indeno(1,2,3-c,d)Pyrene	М	2700		0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	M	2700	0 0	0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	М	2700		0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	М	2700		2.0	< 2.0	5.7	< 2.0
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Chloromethane	M	2760		1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromomethane	M	2760		20	< 20	< 20	< 20
Chloroethane	U	2760	1.0.0	2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1.1-Dichloroethane	M	2760		1.0	< 1.0	< 1.0	< 1.0
cis 1.2-Dichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	M	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0
1.1.1-Trichloroethane	M	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	M	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0
Benzene	M	2760		1.0	< 1.0	< 1.0	< 1.0
1.2-Dichloroethane	M	2760	100	2.0	< 1.0	< 1.0	< 1.0
,			μg/kg				_
Trichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd		Chemtest Job No.:				17-21913	17-21913
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	499994	499998	500003
Order No.: 2543 GI		Clie	nt Samp	le Ref.:	IPC03	IPC04	IPC05
		Cli	ent Sam	ple ID.:	J3	J3	J4
			Sample	е Туре:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.90	0.90	1.20
			Date Sa	ampled:	16-Aug-2017	16-Aug-2017	16-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD			
Dibromomethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	М	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10
Toluene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760		10	< 10	< 10	< 10
1,1,2-Trichloroethane	М	2760	μg/kg	10	< 10	< 10	< 10
Tetrachloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760		10	< 10	< 10	< 10
1,2-Dibromoethane	М	2760		5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	М	2760		2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	М	2760		1.0	< 1.0	< 1.0	< 1.0
o-Xylene	М	2760		1.0	< 1.0	< 1.0	< 1.0
Styrene	М	2760		1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	М	2760		1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	М	2760		1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760		50	< 50	< 50	< 50
N-Propylbenzene	U	2760		1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	М	2760		1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	Ü	2760		1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	2760		1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	M	2760	100	1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	M	2760		1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	M	2760		1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760		50	< 50	< 50	< 50
1.2.4-Trichlorobenzene	M	2760		1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	2760		1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	M	2760		1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	M		mg/kg	0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Chemtest Job No.:		17-21913	17-21913	17-21913	
Quotation No.: Q17-10179	(est Sam		499994	499998	500003
Order No.: 2543 GI			nt Samp		IPC03	IPC04	IPC05
		Client Sample ID.:				J3	J4
		Sample Type:			SOIL 0.90	SOIL	SOIL
		Top Depth (m):				0.90	1.20
			Date Sa	ampled:	16-Aug-2017	16-Aug-2017	16-Aug-201
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD			
Phenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	М	2790	0	0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	2790		0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Isophorone	М		mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	+	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N		mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	М	2790		0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	M	2790		0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	М	2790	0 0	0.50	< 0.50	< 0.50	< 0.50
Naphthalene	М		mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790		0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	M		mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	M	2790		0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	M	2790		0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790		0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	M	2790		0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	M	2790	0 0	0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	M		mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	M	2790		0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	M	2790		0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	M	2790	9 9	0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	M	2790	0 0	0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	M	2790		0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N N	2790		0.50	< 0.50	< 0.50	< 0.50
	M		mg/kg mg/kg				
Dibenzofuran 4 Chlorophanulathan	M	i e		0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether		2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	M	2790	5	0.50	< 0.50	< 0.50	< 0.50
Fluorene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo		17-21913	17-21913	17-21913
Quotation No.: Q17-10179	(est Sam		499994	499998	500003
Order No.: 2543 GI			nt Samp		IPC03	IPC04	IPC05
		Cli	ent Sam		J3	J3	J4
		Sample Type:			SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.90	0.90	1.20
			Date Sa	ampled:	16-Aug-2017	16-Aug-2017	16-Aug-2017
		Asbestos Lab: CO		COVENTRY	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD			
Diethyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Azobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	М	2790	0	0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Anthracene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Carbazole	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	М	2790		0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Pyrene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Chrysene	М	2790		0.50	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790		0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	М	2790		0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	М		mg/kg	0.50	< 0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	М	2790		0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	М	2790		0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
PCB 28	М	2815		0.010	< 0.010		< 0.010
PCB 81	N	2815	mg/kg	0.010		< 0.010	
PCB 52	М	2815	0 0	0.010	< 0.010		< 0.010
PCB 77	N	2815	mg/kg	0.010		< 0.010	
PCB 105	N		mg/kg			< 0.010	
PCB 90+101	M		mg/kg		< 0.010		< 0.010
PCB 114	N		mg/kg			< 0.010	3.0.0
PCB 118	M		mg/kg		< 0.010		< 0.010
PCB 118	N		mg/kg			< 0.010	. 3.0.0
PCB 153	M	2815			< 0.010	, 5.5.5	< 0.010
PCB 123	N	2815		0.010	1 0.010	< 0.010	3.010
PCB 138	M	2815		0.010	< 0.010	. 0.010	< 0.010
PCB 126	N		mg/kg	0.010	, 0.010	< 0.010	3 3.0 10
PCB 180	M		mg/kg		< 0.010	. 0.010	< 0.010



Results - Soil

Client: Geosphere Environmental Ltd		Chemtest Job No.:		17-21913	17-21913	17-21913	
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	499994	499998	500003
Order No.: 2543 GI		Clie	nt Samp	le Ref.:	IPC03	IPC04	IPC05
		Client Sample ID.:		J3	J3	J4	
		Sample Type:		SOIL	SOIL	SOIL	
		Top Depth (m):		0.90	0.90	1.20	
		Date Sampled: 16		16-Aug-2017	16-Aug-2017	16-Aug-2017	
		Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD			
PCB 156	N	2815	mg/kg	0.010		< 0.010	
PCB 157	N	2815	mg/kg	0.010		< 0.010	
PCB 167	N	2815	mg/kg	0.010		< 0.010	
PCB 169	N	2815	mg/kg	0.010		< 0.010	
PCB 189	N	2815				< 0.010	
Total PCBs (12 Congeners)	N	2815 mg/kg 0.12			< 0.12		
Total PCBs (7 Congeners)	N	2815	2815 mg/kg 0.10		< 0.10		< 0.10
Total Phenols	M	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

i mai report			
Report No.:	17-21942-1		
Initial Date of Issue:	30-Aug-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	21-Aug-2017
Order No.:	2543,GI	Date Instructed:	23-Aug-2017
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	30-Aug-2017
Date Approved:	30-Aug-2017		
Approved By:			

Glynn Harvey, Laboratory Manager



Project: 2543, GI Lake Lothing Client: Geosphere Environmental Ltd Chemtest Job No.: 17-21942							
Client: Geosphere Environmental Ltd							
Quotation No.: Q17-10179			st Sam	•	500182		
Order No.: 2543,GI			nt Samp		BHC03 J4		
		Client Sample ID.:					
		Sample Type:					
			Top Dep	\ /	1.30		
			Date Sa		15-Aug-2017		
				os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	-		
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		
Moisture	N	2030	%	0.020	9.4		
рН	U	2010		N/A	7.9		
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40		
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.059		
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50		
Cyanide (Total)	U	2300	mg/kg	0.50	5.5		
Ammonium (Extractable)	U	2425	mg/kg	0.50	0.62		
Sulphate (Total)	U	2430	%	0.010	0.047		
Arsenic	U	2450	mg/kg	1.0	< 1.0		
Cadmium	U	2450		0.10	< 0.10		
Chromium	U	2450	mg/kg	1.0	2.4		
Copper	U	2450	mg/kg	0.50	0.99		
Mercury	U	2450	mg/kg	0.10	< 0.10		
Nickel	U	2450	mg/kg	0.50	2.5		
Lead	U	2450	mg/kg	0.50	3.7		
Selenium	U	2450	mg/kg	0.20	< 0.20		
Zinc	U	2450	mg/kg	0.50	7.5		
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0		
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C7-C8	N	2680		1.0	< 1.0		
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		



Project: 2543, GI Lake Lothing								
Client: Geosphere Environmental Ltd			ntest Jo		-			
Quotation No.: Q17-10179	<u> </u>		st Sam		500182			
Order No.: 2543,GI			nt Samp		BHC03			
		ple ID.:	J4					
		e Type:	SOIL					
			Top Dep		1.30			
			Date Sa		15-Aug-2017			
	\perp		Asbest		COVENTRY			
Determinand	Accred.	SOP		LOD				
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0			
Total Petroleum Hydrocarbons	N	2680		10.0	< 10			
Naphthalene	U	2700) י	0.10	< 0.10			
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10			
Acenaphthene	U	2700	0	0.10	< 0.10			
Fluorene	U	2700	mg/kg	0.10	< 0.10			
Phenanthrene	U	2700	mg/kg	0.10	< 0.10			
Anthracene	U	2700	mg/kg	0.10	< 0.10			
Fluoranthene	U	2700	0	0.10	< 0.10			
Pyrene	U	2700		0.10	< 0.10			
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10			
Chrysene	U	2700	5	0.10	< 0.10			
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10			
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10			
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10			
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10			
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10			
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10			
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0			
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0			
Chloromethane	U	2760	μg/kg	1.0	< 1.0			
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0			
Bromomethane	U	2760	μg/kg	20	< 20			
Chloroethane	U	2760	μg/kg	2.0	< 2.0			
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0			
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0			
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0			
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0			
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0			
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0			
Trichloromethane	U	2760	μg/kg	1.0	< 1.0			
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0			
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0			
1,1-Dichloropropene	U	2760	μg/kg	1.0	< 1.0			
Benzene	U	2760	μg/kg	1.0	< 1.0			
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0			
Trichloroethene	U	2760	μg/kg	1.0	< 1.0			
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0			



Project: 2543, GI Lake Lothing					.=
Client: Geosphere Environmental Ltd		ob No.:	17-21942		
Quotation No.: Q17-10179		500182			
Order No.: 2543,GI		BHC03			
		J4			
		e Type:	SOIL		
			Top Dep		1.30
			Date Sa		15-Aug-2017
_			Asbest		COVENTRY
Determinand	Accred.	SOP		LOD	
Dibromomethane	U	2760	μg/kg	1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	μg/kg	2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50



Client: Geosphere Environmental Ltd		17-21942						
Quotation No.: Q17-10179	(Chemtest Sample ID.:						
Order No.: 2543,GI		Client Sample Ref.:						
		Client Sample ID.: Sample Type: Top Depth (m):						
			Date Sa	impled:	15-Aug-2017			
			Asbest	os Lab:	COVENTRY			
Determinand	Accred.	SOP		LOD				
Phenol	U	2790	mg/kg	0.50	< 0.50			
2-Chlorophenol	U	2790) י	0.50	< 0.50			
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50			
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50			
1,4-Dichlorobenzene	N	2790		0.50	< 0.50			
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50			
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50			
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50			
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50			
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50			
4-Methylphenol	U	2790		0.50	< 0.50			
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50			
Isophorone	U	2790		0.50	< 0.50			
2-Nitrophenol	N		mg/kg	0.50	< 0.50			
2,4-Dimethylphenol	N		mg/kg	0.50	< 0.50			
Bis(2-Chloroethoxy)Methane	U	2790		0.50	< 0.50			
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50			
1,2,4-Trichlorobenzene	U	2790		0.50	< 0.50			
Naphthalene	U	2790	mg/kg	0.50	< 0.50			
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50			
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50			
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50			
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50			
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50			
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50			
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50			
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50			
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50			
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50			
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50			
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50			
2,6-Dinitrotoluene	U	2790		0.50	< 0.50			
Acenaphthene	U	2790	mg/kg	0.50	< 0.50			
3-Nitroaniline	N	2790		0.50	< 0.50			
Dibenzofuran	U	2790		0.50	< 0.50			
4-Chlorophenylphenylether	U	2790		0.50	< 0.50			
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50			
Fluorene	U	2790		0.50	< 0.50			



Project: 2543, GI Lake Lothing					
Client: Geosphere Environmental Ltd		ob No.:	-		
Quotation No.: Q17-10179	<u> </u>	500182			
Order No.: 2543,GI		BHC03			
		J4			
		SOIL			
			Top Dep		1.30
			Date Sa		15-Aug-2017
			Asbest		COVENTRY
Determinand	Accred.	SOP		LOD	
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	< 0.50
Azobenzene	U	2790	0	0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50
Anthracene	U	2790		0.50	< 0.50
Carbazole	U	2790	mg/kg	0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	< 0.50
Pyrene	U	2790	mg/kg	0.50	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50
Chrysene	U	2790	mg/kg	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50
PCB 81	N	2815	mg/kg	0.010	< 0.010
PCB 77	N	2815	mg/kg		< 0.010
PCB 105	N	2815			< 0.010
PCB 114	N	2815)		< 0.010
PCB 118	N	2815) י		< 0.010
PCB 123	N	2815	mg/kg	0.010	< 0.010
PCB 126	N	2815			< 0.010
PCB 156	N	2815	mg/kg	0.010	< 0.010
PCB 157	N		mg/kg		< 0.010
PCB 167	N	2815			< 0.010
PCB 169	N	2815	mg/kg		< 0.010
PCB 189	N	2815	mg/kg		< 0.010
Total PCBs (12 Congeners)	N	2815		0.12	< 0.12
Total Phenols	U	2920	mg/kg	0.30	< 0.30



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.: 17-21969-1

Initial Date of Issue: 31-Aug-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543, GI Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 21-Aug-2017

Order No.: 2543,Gl Date Instructed: 24-Aug-2017

No. of Samples: 2

Turnaround (Wkdays): 5 Results Due: 31-Aug-2017

Date Approved: 31-Aug-2017

Approved By:

Details: Robert Monk, Technical Development

Chemist



Client: Geosphere Environmental Ltd			mtest Jo	17-21969	17-21969	
Quotation No.: Q17-10179			st Sam	500309	500311	
Order No.: 2543,GI			nt Samp	TPC02	TPC21	
		Cli	ent Sam	J1	J2	
				e Type:	SOIL	SOIL
			Top De	, ,	0.30	0.25
			Date Sa		17-Aug-2017	17-Aug-2017
			Asbest		COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units			
ACM Type	U	2192		N/A	Cement	-
Asbestos Identification	U	2192	%	0.001	Chrysotile	No Asbestos Detected
Moisture	N	2030	%	0.020	3.4	9.2
рН	M	2010		N/A	11.8	9.6
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.44	< 0.40
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.17	0.013
Cyanide (Free)	M	2300	mg/kg	0.50	< 0.50	< 0.50
Cyanide (Total)	М	2300	mg/kg	0.50	< 0.50	< 0.50
Ammonium (Extractable)	М	2425	mg/kg	0.50	< 0.50	0.78
Sulphate (Total)	М	2430	%	0.010	0.67	0.11
Arsenic	M	2450	mg/kg	1.0	15	11
Cadmium	M	2450	mg/kg	0.10	< 0.10	0.13
Chromium	M	2450	mg/kg	1.0	25	13
Copper	M	2450	mg/kg	0.50	14	11
Mercury	M	2450	mg/kg	0.10	0.11	0.17
Nickel	М	2450	mg/kg	0.50	14	11
Lead	M	2450	mg/kg	0.50	45	53
Selenium	M	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	M	2450	mg/kg	0.50	47	58
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	52
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	52
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	7.8	4.2
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	260
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest Jo	17-21969	17-21969	
Quotation No.: Q17-10179	(st Sam	500309	500311	
Order No.: 2543,GI		Client Sample Ref.:			TPC02	TPC21
	Client Sample ID.:		J1	J2		
·		е Туре:	SOIL	SOIL		
			Top Dep	, ,	0.30	0.25
			Date Sa	mpled:	17-Aug-2017	17-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	7.8	270
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	320
Naphthalene	М	2700	mg/kg	0.10	< 0.10	0.16
Acenaphthylene	М	2700	mg/kg	0.10	< 0.10	0.37
Acenaphthene	M		mg/kg	0.10	< 0.10	0.23
Fluorene	М	2700	mg/kg	0.10	< 0.10	0.40
Phenanthrene	М	2700	mg/kg	0.10	< 0.10	1.8
Anthracene	M	2700	mg/kg	0.10	< 0.10	0.80
Fluoranthene	М	2700	mg/kg	0.10	0.34	4.7
Pyrene	М	2700	mg/kg	0.10	0.18	4.4
Benzo[a]anthracene	М	2700	mg/kg	0.10	< 0.10	2.8
Chrysene	М	2700	mg/kg	0.10	< 0.10	2.8
Benzo[b]fluoranthene	М	2700	mg/kg	0.10	< 0.10	3.8
Benzo[k]fluoranthene	М	2700	mg/kg	0.10	< 0.10	1.5
Benzo[a]pyrene	М	2700	mg/kg	0.10	< 0.10	3.4
Indeno(1,2,3-c,d)Pyrene	М	2700	mg/kg	0.10	< 0.10	2.2
Dibenz(a,h)Anthracene	М	2700	mg/kg	0.10	< 0.10	0.70
Benzo[g,h,i]perylene	М	2700	mg/kg	0.10	< 0.10	2.5
Total Of 16 PAH's	М	2700	mg/kg	2.0	< 2.0	33
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Chloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
Vinyl Chloride	М	2760	μg/kg	1.0	< 1.0	< 1.0
Bromomethane	М	2760	μg/kg	20	< 20	< 20
Chloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Trichlorofluoromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
Trichloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
Tetrachloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Benzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloroethane	М	2760	μg/kg	2.0	< 2.0	< 2.0
Trichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloropropane	М	2760	μg/kg	1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest Jo		17-21969	17-21969
Quotation No.: Q17-10179	(Chemte	st Sam	500309	500311	
Order No.: 2543,GI		Client Sample Ref.: Client Sample ID.: Sample Type:			TPC02	TPC21
					J1	J2
					SOIL	SOIL
	Top Depth (m):		0.30	0.25		
			Date Sa	ampled:	17-Aug-2017	17-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Dibromomethane	M	2760	μg/kg	1.0	< 1.0	< 1.0
Bromodichloromethane	M	2760	μg/kg	5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
Toluene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
1,1,2-Trichloroethane	М	2760	μg/kg	10	< 10	< 10
Tetrachloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10	< 10
1,2-Dibromoethane	М	2760	μg/kg	5.0	< 5.0	< 5.0
Chlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	М	2760	μg/kg	2.0	< 2.0	< 2.0
Ethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0
o-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Styrene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Isopropylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Bromobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
2-Chlorotoluene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50	< 50
1,2,4-Trichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	μg/kg	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	М	2760	μg/kg	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	М	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo	17-21969	17-21969	
Quotation No.: Q17-10179	(st Sam	500309	500311	
Order No.: 2543,GI			nt Samp	TPC02	TPC21	
		Cli	ent Sam	J1	J2	
				e Type:	SOIL	SOIL
			Top Dep	0.30	0.25	
			Date Sa		17-Aug-2017	17-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Phenol	M	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	M	2790	mg/kg	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50	< 0.50	< 0.50
4-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
Nitrobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Isophorone	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Naphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobutadiene	M	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylnaphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chloronaphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitroaniline	М	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthylene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Dimethylphthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthene	М	2790	mg/kg	0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenzofuran	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Fluorene	М	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest J			17-21969
Quotation No.: Q17-10179	(st Sam		500309	500311
Order No.: 2543,GI		Client Sample Ref.: Client Sample ID.:			TPC02	TPC21
					J1	J2
				е Туре:	SOIL	SOIL
			Top De	, ,	0.30	0.25
			Date Sa	ampled:	17-Aug-2017	17-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Diethyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Azobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Phenanthrene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Anthracene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Carbazole	М	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
Fluoranthene	М	2790	mg/kg	0.50	< 0.50	0.88
Pyrene	М	2790	mg/kg	0.50	< 0.50	0.75
Butylbenzyl Phthalate	М	1	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]anthracene	М	2790	mg/kg	0.50	< 0.50	0.56
Chrysene	М	2790	mg/kg	0.50	< 0.50	0.64
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	М	2790	mg/kg	0.50	< 0.50	1.0
Benzo[k]fluoranthene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]pyrene	М	2790	mg/kg	0.50	< 0.50	0.77
Indeno(1,2,3-c,d)Pyrene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	М	2790	mg/kg		< 0.50	< 0.50
Benzo[g,h,i]perylene	М	2790	mg/kg		< 0.50	< 0.50
PCB 28	М	2815	mg/kg			< 0.010
PCB 81	N	2815	mg/kg		< 0.010	
PCB 52	М	2815	mg/kg			< 0.010
PCB 77	N		mg/kg		< 0.010	
PCB 105	N		mg/kg		< 0.010	
PCB 90+101	M	+	mg/kg			< 0.010
PCB 114	N	-	mg/kg		< 0.010	
PCB 118	M	2815	0			< 0.010
PCB 118	N		mg/kg		< 0.010	
PCB 153	M	2815	mg/kg			< 0.010
PCB 123	N	2815	mg/kg		< 0.010	
PCB 138	M	2815				< 0.010
PCB 126	N	2815	0		< 0.010	10.0.0
PCB 180	M		mg/kg			< 0.010



Client: Geosphere Environmental Ltd		Chemtest Job No.:			17-21969	17-21969
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	500309	500311
Order No.: 2543,GI		Clie	nt Samp	le Ref.:	TPC02	TPC21
		Cli	ent Sam	ple ID.:	J1	J2
			Sampl	е Туре:	SOIL	SOIL
			Top Dep	oth (m):	0.30	0.25
		Date Sampled:			17-Aug-2017	17-Aug-2017
		Asbestos Lab:		COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
PCB 156	N	2815	mg/kg	0.010	< 0.010	
PCB 157	N	2815	mg/kg	0.010	< 0.010	
PCB 167	N	2815	mg/kg	0.010	< 0.010	
PCB 169	N	2815	mg/kg	0.010	< 0.010	
PCB 189	N	2815	mg/kg	0.010	< 0.010	
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12	·
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	·	< 0.10
Total Phenols	M	2920	mg/kg	0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



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- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
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CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.:	17-22275-1
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Initial Date of Issue: 01-Sep-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543, GI Lake Lothing

Quotation No.: Q17-10179 Date Received: 23-Aug-2017

Order No.: 2543, Gl Date Instructed: 23-Aug-2017

No. of Samples: 1

Turnaround (Wkdays): 7 Results Due: 01-Sep-2017

Date Approved: 01-Sep-2017

Approved By:

Details: Robert Monk, Technical Development

Chemist



Results - 2 Stage WAC

Project: 2543, GI Lake Lothing									
Chemtest Job No: 17-22275							Landfill W	/aste Acceptand	e Criteria
Chemtest Sample ID:	501892							Limits	
Sample Ref:	IPC02							Stable, Non-	
Sample ID:								reactive	Hazardous
Top Depth(m):	0.60						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	15-Aug-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			0.76	3	5	6
Loss On Ignition	2610	U	%			1.0			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			< 10	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		
рН	2010	U				7.3		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.025		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using BS	EN 12457-3 at I	/S 10 l/kg
Arsenic	1450	U	0.0019	0.0032	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.011	0.026	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	0.00022	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.0039	0.0064	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0023	0.0013	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	0.0011	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	0.0045	0.031	< 0.010	0.28	0.5	10	50
Antimony	1450	U	0.0067	0.0057	0.013	0.058	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.1	0.5	7
Zinc	1450	U	0.0070	0.029	< 0.50	< 0.50	4	50	200
Chloride	1220	U	2.5	2.2	< 10	22	800	15000	25000
Fluoride	1220	U	0.22	0.26	< 1.0	2.6	10	150	500
Sulphate	1220	U	< 1.0	1.8	< 10	16	1000	20000	50000
Total Dissolved Solids	1020	N	39	30	78	310	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	15	17	< 50	170	500	800	1000

Soild Information					
Dry mass of test portion/kg	0.175				
Moisture (%)	2.2				

Leachate Test Information						
Leachant volume 1st extract/l	0.346					
Leachant volume 2nd extract/l	1.400					
Eluant recovered from 1st extract/l	0.184					

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



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- I/S Insufficient Sample
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- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

'-22316-1

Initial Date of Issue: 01-Sep-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2456 GI, Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 23-Aug-2017

Order No.: 2456 Gl Date Instructed: 23-Aug-2017

No. of Samples: 1

Turnaround (Wkdays): 7 Results Due: 01-Sep-2017

Date Approved: 01-Sep-2017

Approved By:

Details: Robert Monk, Technical Development

Chemist



Results - 2 Stage WAC

Project: 2456 GI, Lake Lothing, Lowestoft

Project: 2456 GI, Lake Lotning, Lo	<u>owestort</u>								
Chemtest Job No:	17-22316						Landfill V	/aste Acceptano	ce Criteria
Chemtest Sample ID:	502056							Limits	
Sample Ref:	BHC02							Stable, Non-	
Sample ID:								reactive	Hazardous
Top Depth(m):	3.00						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	11-Aug-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			< 0.20	3	5	6
Loss On Ignition	2610	U	%			0.51			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			< 10	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		
рН	2010	U				7.5		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.0090		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using BS	EN 12457-3 at I	/S 10 l/kg
Arsenic	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.016	0.0068	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.0014	0.0013	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	0.0018	0.0029	< 0.010	0.028	0.5	10	50
Antimony	1450	U	0.0010	< 0.0010	< 0.010	< 0.010	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.1	0.5	7
Zinc	1450	U	0.0035	0.0031	< 0.50	< 0.50	4	50	200
Chloride	1220	U	1.7	11	< 10	100	800	15000	25000
Fluoride	1220	U	0.097	0.097	< 1.0	< 1.0	10	150	500
Sulphate	1220	U	32	6.0	63	85	1000	20000	50000
Total Dissolved Solids	1020	N	70	40	140	430	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	12	12	< 50	120	500	800	1000

Soild Information					
Dry mass of test portion/kg	0.175				
Moisture (%)	14				

Leachate Test Information					
Leachant volume 1st extract/l	0.321				
Leachant volume 2nd extract/l	1.400				
Eluant recovered from 1st extract/l	0.173				

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



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All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

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Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

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All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

i mai report			
Report No.:	17-22419-1		
Initial Date of Issue:	31-Aug-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	24-Aug-2017
Order No.:	2543, GI	Date Instructed:	24-Aug-2017
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	31-Aug-2017
Date Approved:	31-Aug-2017		
Approved By:			

Glynn Harvey, Laboratory Manager



Client: Geosphere Environmental Ltd		17-22419			
Quotation No.: Q17-10179	(502623			
Order No.: 2543, GI		TPC21			
		ple ID.:	J4		
		e Type:	SOIL		
			Top Dep	oth (m):	1.45
		22-Aug-2017			
Determinand	Accred.	SOP	Units	LOD	
Moisture	N	2030	%	0.020	19
рН	U	2010		N/A	8.2
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.53
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010
Cyanide (Free)	U	2300		0.50	< 0.50
Cyanide (Total)	U	2300		0.50	< 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	6.9
Sulphate (Total)	U	2430	%	0.010	< 0.010
Arsenic	U	2450	mg/kg	1.0	16
Cadmium	U	2450	mg/kg	0.10	0.63
Chromium	U	2450	mg/kg	1.0	28
Copper	U	2450	mg/kg	0.50	64
Mercury	U	2450	mg/kg	0.10	0.15
Nickel	U	2450	mg/kg	0.50	47
Lead	U	2450	mg/kg	0.50	88
Selenium	U	2450	mg/kg	0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	150
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	0	1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	9	1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C21-C35	U	2680)	1.0	< 1.0
Aromatic TPH >C35-C44	N	2680		1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10
	U	2700	mg/kg	0.10	< 0.10
Naphthalene	U	2100	mg/kg	0.10	₹ 0.10



Client: Geosphere Environmental Ltd		17-22419 502623				
Quotation No.: Q17-10179	(Chemtest Sample ID.: Client Sample Ref.:				
Order No.: 2543, GI		TPC21				
		J4				
		e Type:	SOIL			
			Top Dep	, ,	1.45	
			Date Sa	mpled:	22-Aug-2017	
Determinand	Accred.	SOP	Units	LOD		
Acenaphthene	U		mg/kg	0.10	< 0.10	
Fluorene	U	2700	mg/kg	0.10	< 0.10	
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	
Anthracene	U	2700	mg/kg	0.10	< 0.10	
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	
Pyrene	U	2700	mg/kg	0.10	< 0.10	
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	
Chrysene	U	2700	5	0.10	< 0.10	
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	
Benzo[g,h,i]perylene	U	2700		0.10	< 0.10	
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	
Chloromethane	U	2760		1.0	< 1.0	
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	
Bromomethane	U	2760	μg/kg	20	< 20	
Chloroethane	U	2760	μg/kg	2.0	< 2.0	
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0	
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0	
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	
1,1-Dichloropropene	U	2760		1.0	< 1.0	
Benzene	U	2760		1.0	< 1.0	
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	
Trichloroethene	U	2760		1.0	< 1.0	
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	
Dibromomethane	U	2760		1.0	< 1.0	
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	
Toluene	U	2760		1.0	< 1.0	
Trans-1,3-Dichloropropene	N	2760		10	< 10	



Client: Geosphere Environmental Ltd		17-22419				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2543, GI		Client Sample Ref.:				
		Cli	ent Sam		J4 SOIL	
		Sample Type:				
			Top Dep	oth (m):	1.45	
			Date Sa	impled:	22-Aug-2017	
Determinand	Accred.	SOP	Units	LOD		
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	
Dibromochloromethane	U	2760	μg/kg	10	< 10	
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	
o-Xylene	U	2760	μg/kg	1.0	< 1.0	
Styrene	U	2760	μg/kg	1.0	< 1.0	
Tribromomethane	U	2760	μg/kg	1.0	< 1.0	
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0	
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0	
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50	
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0	
1,2,3-Trichlorobenzene	U	2760	μg/kg	2.0	< 2.0	
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	
Phenol	U	2790	mg/kg	0.50	< 0.50	
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	



Client: Geosphere Environmental Ltd		17-22419 502623				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2543, GI		TPC21				
		J4				
		e Type:	SOIL			
			Top Dep	oth (m):	1.45	
		Date Sampled:				
Determinand	Accred.	SOP	Units	LOD		
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50	
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	
Isophorone	U	2790		0.50	< 0.50	
2-Nitrophenol	N	2790		0.50	< 0.50	
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	
Bis(2-Chloroethoxy)Methane	U	2790		0.50	< 0.50	
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	
1,2,4-Trichlorobenzene	U	2790		0.50	< 0.50	
Naphthalene	U	2790		0.50	< 0.50	
4-Chloroaniline	N	2790		0.50	< 0.50	
Hexachlorobutadiene	U	2790	_ ,	0.50	< 0.50	
4-Chloro-3-Methylphenol	Ü	2790	_	0.50	< 0.50	
2-Methylnaphthalene	U	2790		0.50	< 0.50	
4-Nitrophenol	N	2790	_	0.50	< 0.50	
Hexachlorocyclopentadiene	N	2790		0.50	< 0.50	
2,4,6-Trichlorophenol	U	2790	٥	0.50	< 0.50	
2,4,5-Trichlorophenol	Ü	2790		0.50	< 0.50	
2-Chloronaphthalene	U	2790	5	0.50	< 0.50	
2-Nitroaniline	Ü	2790		0.50	< 0.50	
Acenaphthylene	Ü	2790		0.50	< 0.50	
Dimethylphthalate	Ü	2790		0.50	< 0.50	
2,6-Dinitrotoluene	Ü	2790		0.50	< 0.50	
Acenaphthene	Ü	2790	mg/kg	0.50	< 0.50	
3-Nitroaniline	N	2790		0.50	< 0.50	
Dibenzofuran	U	2790	٥	0.50	< 0.50	
4-Chlorophenylphenylether	Ü	2790	_	0.50	< 0.50	
2.4-Dinitrotoluene	Ü	2790	0	0.50	< 0.50	
Fluorene	Ü	2790	٥	0.50	< 0.50	
Diethyl Phthalate	U	2790		0.50	< 0.50	
4-Nitroaniline	U	2790	0	0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	2790	ŭ	0.50	< 0.50	
Azobenzene	U	2790	mg/kg	0.50	< 0.50	
		_			< 0.50	
4-Bromonhenylphenyl Ether	1 11	7/UN				
4-Bromophenylphenyl Ether Hexachlorobenzene	U	2790 2790	٥	0.50	< 0.50	



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179		Chemtest Sample ID.:				
Order No.: 2543, GI		Client Sample Ref.:				
		Client Sample ID.:				
				e Type:	SOIL	
			Top Dep		1.45	
			Date Sa	impled:	22-Aug-2017	
Determinand	Accred.	SOP	Units	LOD		
Phenanthrene	U	2790	mg/kg	0.50	< 0.50	
Anthracene	U	2790	mg/kg	0.50	< 0.50	
Carbazole	U	2790	mg/kg	0.50	< 0.50	
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Fluoranthene	U	2790	mg/kg	0.50	< 0.50	
Pyrene	U	2790	mg/kg	0.50	< 0.50	
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50	
Chrysene	U	2790	mg/kg	0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	
PCB 81	N	2815	mg/kg	0.010	< 0.010	
PCB 77	N	2815	mg/kg	0.010	< 0.010	
PCB 105	N	2815	mg/kg	0.010	< 0.010	
PCB 114	N	2815	mg/kg	0.010	< 0.010	
PCB 118	N	2815	mg/kg	0.010	< 0.010	
PCB 123	N	2815	mg/kg	0.010	< 0.010	
PCB 126	N	2815	mg/kg	0.010	< 0.010	
PCB 156	N	2815	mg/kg	0.010	< 0.010	
PCB 157	N	2815	mg/kg	0.010	< 0.010	
PCB 167	N	2815	mg/kg	0.010	< 0.010	
PCB 169	N	2815	mg/kg	0.010	< 0.010	
PCB 189	N	2815	mg/kg	0.010	< 0.010	
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12	
Total Phenols	U	2920	mg/kg	0.30	< 0.30	



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

2420-1

Initial Date of Issue: 01-Sep-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543, GI Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 24-Aug-2017

Order No.: 2543, Gl Date Instructed: 24-Aug-2017

No. of Samples: 3

Turnaround (Wkdays): 5 Results Due: 31-Aug-2017

Date Approved: 01-Sep-2017

Approved By:					
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Details: Keith Jones, Technical Manager



Client: Geosphere Environmental Ltd		17-22420				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2543, GI		Client Sample Ref.:				
		Client Sample ID.:				
			Sampl	e Type:	SOIL	
			Top De	oth (m):	1.00	
			Date Sa	ampled:	21-Aug-2017	
Determinand	Accred.	SOP	Units	LOD		
рН	U	1010		N/A	9.1	
Ammonia (Free) as N	U	1220	mg/l	0.010	0.057	
Sulphate	U	1220	mg/l	1.0	24	
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050	
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050	
Arsenic (Dissolved)	U	1450	μg/l	1.0	7.0	
Boron (Dissolved)	U	1450	μg/l	20	25	
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080	
Chromium (Dissolved)	U	1450	μg/l	1.0	1.9	
Copper (Dissolved)	U	1450	μg/l	1.0	7.4	
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50	
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0	
Lead (Dissolved)	U	1450	μg/l	1.0	2.3	
Selenium (Dissolved)	U	1450	µg/l	1.0	1.6	
Zinc (Dissolved)	U	1450	µg/l	1.0	3.1	
Chromium (Hexavalent)	U	1490	μg/l	20	< 20	
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10	
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10	
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10	
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10	
Naphthalene	U	1700	µg/l	0.10	< 0.10	
Acenaphthylene	U	1700	μg/l	0.10	< 0.10	
Acenaphthene	Ü	1700	μg/l	0.10	< 0.10	
Fluorene	Ü	1700	μg/l	0.10	< 0.10	
Phenanthrene	Ū	1700	μg/l	0.10	< 0.10	



Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	17-22420			
Quotation No.: Q17-10179			st Sam		502630			
Order No.: 2543, GI			nt Samp		TPC23			
		Client Sample ID.:						
		Sample Type:						
		Top Depth (m):						
		Date Sampled:						
Determinand	Accred.	SOP	SOP Units		21-Aug-2017			
Anthracene	U	1700	μg/l	LOD 0.10	< 0.10			
Fluoranthene	U	1700	μg/l	0.10	< 0.10			
Pyrene	U	1700	μg/l	0.10	< 0.10			
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10			
Chrysene	Ū	1700	μg/l	0.10	< 0.10			
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[k]fluoranthene	Ü	1700	μg/l	0.10	< 0.10			
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10			
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10			
Dibenz(a,h)Anthracene	Ü	1700	μg/l	0.10	< 0.10			
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10			
Total Of 16 PAH's	Ü	1700	μg/l	2.0	< 2.0			
Benzene	Ü	1760	μg/l	1.0	< 1.0			
Toluene	Ü	1760	μg/l	1.0	< 1.0			
Ethylbenzene	Ü	1760	μg/l	1.0	< 1.0			
m & p-Xylene	U	1760	μg/l	1.0	< 1.0			
o-Xylene	U	1760	μg/l	1.0	< 1.0			
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0			
Phenol	N	1790	μg/l	0.50	< 0.50			
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50			
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50			
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50			
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50			
Hexachloroethane	N	1790	μg/l	0.50	< 0.50			
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50			
4-Methylphenol	N	1790	μg/l	0.50	< 0.50			
Nitrobenzene	N	1790	μg/l	0.50	< 0.50			
Isophorone	N	1790	μg/l	0.50	< 0.50			
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50			
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50			
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50			
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50			
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50			
Naphthalene	N	1790	μg/l	0.50	< 0.50			
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50			
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50			
			r 9''					



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(st Sam		502630		
Order No.: 2543, GI		Client Sample Ref.:					
		Cli	ent Sam		J3		
				e Type:	SOIL		
			Top Dep	, ,	1.00		
		Date Sampled:					
Determinand	Accred.	SOP	Units	LOD			
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50		
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50		
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50		
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50		
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50		
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50		
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50		
Acenaphthylene	N	1790	μg/l	0.50	< 0.50		
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50		
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50		
Acenaphthene	N	1790	μg/l	0.50	< 0.50		
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50		
Dibenzofuran	N	1790	μg/l	0.50	< 0.50		
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50		
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50		
Fluorene	N	1790	μg/l	0.50	< 0.50		
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50		
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50		
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50		
Azobenzene	N	1790	μg/l	0.50	< 0.50		
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50		
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50		
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50		
Phenanthrene	N	1790	μg/l	0.50	< 0.50		
Anthracene	N	1790	μg/l	0.50	< 0.50		
Carbazole	N	1790	μg/l	0.50	< 0.50		
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Fluoranthene	N	1790	μg/l	0.50	< 0.50		
Pyrene	N	1790	μg/l	0.50	< 0.50		
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50		
Chrysene	N	1790	μg/l	0.50	< 0.50		
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50		
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50		
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50		
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50		
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50		
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50		



Results - Leachate

Client: Geosphere Environmental Ltd		Che	17-22420			
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2543, GI		Client Sample Ref.: TP				
		Cli	J3			
		Sample Type:				
			Top Dep	oth (m):	1.00	
			Date Sa	ampled:	21-Aug-2017	
Determinand	Accred.	SOP	Units	LOD		
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	
Total Phenols	U	1920	mg/l	0.030	< 0.030	



Client: Geosphere Environmental Ltd			mtest Jo		17-22420	17-22420	17-22420
Quotation No.: Q17-10179	(st Sam		502625	502630	502632
Order No.: 2543, GI			nt Samp		TPC22	TPC23	TPC23
		Cli	ent Sam	ple ID.:	J2	J3	J5
				е Туре:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.60	1.00	2.60
			Date Sa	ampled:	21-Aug-2017	21-Aug-2017	21-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	-	-	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	2.8	15	8.4
pH	М	2010		N/A	7.0	8.3	8.0
Boron (Hot Water Soluble)	М		mg/kg	0.40	< 0.40	0.81	0.68
Sulphate (2:1 Water Soluble) as SO4	М	2120	g/l	0.010	< 0.010	0.050	< 0.010
Cyanide (Free)	М	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	М	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Ammonium (Extractable)	М	2425	mg/kg	0.50	3.4	6.1	3.5
Sulphate (Total)	М	2430	%	0.010	< 0.010	0.12	< 0.010
Arsenic	М	2450	mg/kg	1.0	2.2	20	6.5
Cadmium	М	2450	mg/kg	0.10	< 0.10	0.43	< 0.10
Chromium	М	2450	mg/kg	1.0	4.5	21	9.2
Copper	М	2450	mg/kg	0.50	3.2	140	6.0
Mercury	М	2450	mg/kg	0.10	< 0.10	0.16	< 0.10
Nickel	М	2450	mg/kg	0.50	3.6	44	12
Lead	М	2450	mg/kg	0.50	10	270	8.4
Selenium	М	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20
Zinc	М	2450	mg/kg	0.50	55	310	31
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Organic Matter	М	2625	%	0.40			0.47
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	29	< 1.0
Aromatic TPH >C21-C35	М	2680		1.0	< 1.0	150	< 1.0



Client: Geosphere Environmental Ltd			mtest Jo		17-22420	17-22420	17-22420
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	502625	502630	502632
Order No.: 2543, GI		Clie	nt Samp	le Ref.:	TPC22	TPC23	TPC23
		Cli	ent Sam	ple ID.:	J2	J3	J5
			Sampl	e Type:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.60	1.00	2.60
			Date Sa	mpled:	21-Aug-2017	21-Aug-2017	21-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD			
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	7.8	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	190	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	190	< 10
Naphthalene	M	2700	mg/kg	0.10	< 0.10	0.44	< 0.10
Acenaphthylene	М	2700	mg/kg	0.10	< 0.10	0.79	< 0.10
Acenaphthene	М	2700	mg/kg	0.10	< 0.10	0.19	< 0.10
Fluorene	М	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	М	2700	mg/kg	0.10	< 0.10	0.75	< 0.10
Anthracene	M	2700	mg/kg	0.10	< 0.10	0.21	< 0.10
Fluoranthene	M	2700	mg/kg	0.10	< 0.10	1.6	< 0.10
Pyrene	M	2700	mg/kg	0.10	< 0.10	1.6	< 0.10
Benzo[a]anthracene	M	2700	mg/kg	0.10	< 0.10	1.1	< 0.10
Chrysene	M	2700	mg/kg	0.10	< 0.10	0.72	< 0.10
Benzo[b]fluoranthene	М	2700	mg/kg	0.10	< 0.10	1.5	< 0.10
Benzo[k]fluoranthene	М	2700	mg/kg	0.10	< 0.10	1.2	< 0.10
Benzo[a]pyrene	М	2700	mg/kg	0.10	< 0.10	1.1	< 0.10
Indeno(1,2,3-c,d)Pyrene	М	2700	mg/kg	0.10	< 0.10	0.90	< 0.10
Dibenz(a,h)Anthracene	М	2700	mg/kg	0.10	< 0.10	0.19	< 0.10
Benzo[g,h,i]perylene	М	2700	mg/kg	0.10	< 0.10	1.1	< 0.10
Total Of 16 PAH's	М	2700	mg/kg	2.0	< 2.0	13	< 2.0
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Chloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromomethane	М	2760	μg/kg	20	< 20	< 20	< 20
Chloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Benzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	M	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest Jo		17-22420	17-22420	17-22420
Quotation No.: Q17-10179	(st Sam		502625 TPC22	502630	502632
Order No.: 2543, GI		Client Sample Ref.:				TPC23	TPC23
		Cli	ent Sam		J2	J3	J5
				e Type:	SOIL	SOIL	SOIL
			Top Dep	, ,	0.60	1.00	2.60
			Date Sa	ampled:	21-Aug-2017	21-Aug-2017	21-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD			
1,2-Dichloropropane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	M	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10
Toluene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10
1,1,2-Trichloroethane	М	2760	μg/kg	10	< 10	< 10	< 10
Tetrachloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10	< 10	< 10
1,2-Dibromoethane	М	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	М	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Styrene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	Ü	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest Jo		17-22420	17-22420	17-22420
Quotation No.: Q17-10179	(st Sam		502625	502630	502632
Order No.: 2543, GI			nt Samp		TPC22	TPC23	TPC23
		Cli	ent Sam	ple ID.:	J2	J3	J5
				е Туре:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.60	1.00	2.60
			Date Sa	ampled:	21-Aug-2017	21-Aug-2017	21-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD			
N-Nitrosodimethylamine	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Phenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Isophorone	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Naphthalene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene Dimethylphthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
•	M	2790		0.50	< 0.50		
Acenaphthene			mg/kg			< 0.50	< 0.50
3-Nitroaniline	N N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest J		17-22420	17-22420	17-22420
Quotation No.: Q17-10179	(st Sam		502625	502630	502632
Order No.: 2543, GI			nt Samp		TPC22	TPC23	TPC23
		Cli	ent Sam	ple ID.:	J2	J3	J5
				е Туре:	SOIL	SOIL	SOIL
			Top De	oth (m):	0.60	1.00	2.60
			Date Sa	ampled:	21-Aug-2017	21-Aug-2017	21-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD			
Fluorene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Azobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	М	2790	mg/kg	0.50	< 0.50	0.60	< 0.50
Anthracene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Carbazole	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	М	2790	mg/kg	0.50	< 0.50	1.0	< 0.50
Pyrene	М	2790	mg/kg	0.50	< 0.50	0.80	< 0.50
Butylbenzyl Phthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	M	2790	mg/kg	0.50	< 0.50	0.66	< 0.50
Chrysene	M	2790	mg/kg	0.50	< 0.50	0.75	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	M	2790	mg/kg	0.50	< 0.50	1.2	< 0.50
Benzo[k]fluoranthene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	M	2790	mg/kg	0.50	< 0.50	0.63	< 0.50
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
PCB 28	M	2815		0.010	< 0.010	₹ 0.50	< 0.010
PCB 81	N N	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010
PCB 52	M	2815		0.010	< 0.010	V 0.010	< 0.010
PCB 77	N N	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010
PCB 105	N	2815		0.010		< 0.010	
PCB 103	M	2815	mg/kg		< 0.010	V 0.010	< 0.010
PCB 114	N N	2815	mg/kg		\ U.U1U	< 0.010	\ U.U1U
PCB 118	M	2815			< 0.010	\ 0.010	< 0.010
PCB 118	N N	2815	mg/kg		< 0.010	< 0.010	< 0.010
PCB 153	M	2815	0		< 0.010	< 0.010	~ 0.010
		+			< 0.010	.0.010	< 0.010
PCB 123	N M	2815 2815	mg/kg	0.010	z 0 040	< 0.010	< 0.010
PCB 138			mg/kg	0.010	< 0.010	.0.040	< 0.010
PCB 126	N	2815	mg/kg	0.010		< 0.010	1



Results - Soil

Client: Geosphere Environmental Ltd		Che	mtest J	ob No.:	17-22420	17-22420	17-22420
Quotation No.: Q17-10179	(Chemtest Sample ID.:			502625	502630	502632
Order No.: 2543, GI		Client Sample Ref.:		TPC22	TPC23	TPC23	
		Cli	ent Sam	ple ID.:	J2	J3	J5
			Sampl	е Туре:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.60	1.00	2.60
			Date Sa	ampled:	21-Aug-2017	21-Aug-2017	21-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD			
PCB 180	M	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 156	N	2815	mg/kg	0.010		< 0.010	
PCB 157	N	2815	mg/kg	0.010		< 0.010	
PCB 167	N	2815	mg/kg	0.010		< 0.010	
PCB 169	N	2815	mg/kg	0.010		< 0.010	
PCB 189	N	2815	mg/kg	0.010		< 0.010	
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12		< 0.12	
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10		< 0.10
Total Phenols	M	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

i mai report			
Report No.:	17-22844-1		
Initial Date of Issue:	13-Sep-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	30-Aug-2017
Order No.:	2543, GI	Date Instructed:	07-Sep-2017
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	13-Sep-2017
Date Approved:	13-Sep-2017		
Approved By:			

Martin Dyer, Laboratory Manager



Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	17-22844
Quotation No.: Q17-10179		Chemtest Sample ID.:			
Order No.: 2543, GI Determinand		Client Sample Ref.:			
		Client Sample ID.:			
		Sample Type:			
		Top Depth (m): Date Sampled:			
	Accred.	SOP	Units		25-Aug-2017
Hq	U	1010	011110	N/A	8.4
Ammonia (Free) as N	U	1220	mg/l	0.010	0.017
Sulphate	Ü	1220	mg/l	1.0	100
Cyanide (Total)	Ü	1300	mg/l	0.050	< 0.050
Cyanide (Free)	Ü	1300	mg/l	0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	2.3
Boron (Dissolved)	Ü	1450	μg/l	20	68
Cadmium (Dissolved)	Ü	1450	µg/l	0.080	< 0.080
Chromium (Dissolved)	Ü	1450	μg/l	1.0	< 1.0
Copper (Dissolved)	Ü	1450	μg/l	1.0	5.1
Mercury (Dissolved)	Ü	1450	μg/l	0.50	< 0.50
Nickel (Dissolved)	Ü	1450	µg/l	1.0	1.0
Lead (Dissolved)	Ü	1450	μg/l	1.0	2.3
Selenium (Dissolved)	Ü	1450	μg/l	1.0	1.7
Zinc (Dissolved)	Ü	1450	μg/l	1.0	7.8
Chromium (Hexavalent)	U	1490	μg/l	20	[B] < 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10
Naphthalene	U	1700	μg/l	0.10	1.7
Acenaphthylene	U	1700	μg/l	0.10	1.0
Acenaphthene	U	1700	μg/l	0.10	1.2
Fluorene	U	1700	μg/l	0.10	2.1
Phenanthrene	U	1700	μg/l	0.10	2.3



Client: Geosphere Environmental Ltd		Chemtest Job No.:			
Quotation No.: Q17-10179	(st Sam		504746
Order No.: 2543, GI		Clier	nt Samp	le Ref.:	BHC04
		Client Sample ID.:			
				е Туре:	SOIL
			Top Dep	oth (m):	0.90
			Date Sa	ampled:	25-Aug-2017
Determinand	Accred.	SOP	Units	LOD	
Anthracene	U	1700	μg/l	0.10	0.15
Fluoranthene	U	1700	μg/l	0.10	2.2
Pyrene	U	1700	μg/l	0.10	2.1
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	13
Benzene	U	1760	μg/l	1.0	< 1.0
Toluene	U	1760	μg/l	1.0	2.1
Ethylbenzene	U	1760	μg/l	1.0	1.6
m & p-Xylene	U	1760	μg/l	1.0	9.4
o-Xylene	U	1760	μg/l	1.0	4.1
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0
Phenol	N	1790	μg/l	0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50
1 TONGOT HOTODULAGIOTIC	IN	1790	μ 9 /1	0.50	\ U.JU



Project: 2543, Gi Lake Lotning, Lowestort						
Client: Geosphere Environmental Ltd	Chemtest Job No.:				17-22844 504746	
Quotation No.: Q17-10179	(Chemtest Sample ID.: Client Sample Ref.:				
Order No.: 2543, GI		Clier	nt Samp	le Ref.:	BHC04	
	Client Sample ID.:				J3	
				e Type:	SOIL	
			Top Dep		0.90	
			Date Sa		25-Aug-2017	
Determinand	Accred.	SOP	Units	LOD		
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50	
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50	
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50	
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Acenaphthylene	N	1790	μg/l	0.50	< 0.50	
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50	
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Acenaphthene	N	1790	μg/l	0.50	< 0.50	
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Dibenzofuran	N	1790	μg/l	0.50	< 0.50	
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50	
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Fluorene	N	1790	μg/l	0.50	< 0.50	
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50	
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50	
Azobenzene	N	1790	μg/l	0.50	< 0.50	
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50	
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50	
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	
Phenanthrene	N	1790	μg/l	0.50	< 0.50	
Anthracene	N	1790	μg/l	0.50	< 0.50	
Carbazole	N	1790	μg/l	0.50	< 0.50	
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Fluoranthene	N	1790	μg/l	0.50	< 0.50	
Pyrene	N	1790	μg/l	0.50	< 0.50	
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[a]anthracene	N	1790		0.50		
			μg/l		< 0.50	
Chrysene Bis(2-Ethylhexyl)Phthalate	N N	1790	μg/l	0.50	< 0.50	
		1790	μg/l		< 0.50	
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50	
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50	



Results - Leachate

Client: Geosphere Environmental Ltd	Chemtest Job No.:				17-22844
Quotation No.: Q17-10179	(Chemtest Sample ID.:			
Order No.: 2543, GI		Clie	nt Samp	le Ref.:	BHC04
	Client Sample ID.:				J3
	Sample Type:				SOIL
	Top Depth (m):				0.90
			Date Sa	mpled:	25-Aug-2017
Determinand	Accred.	SOP	Units	LOD	
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Client: Geosphere Environmental Ltd		Chemtest Job No.:			
Quotation No.: Q17-10179	(Chemtest Sample ID.:			
Order No.: 2543, GI		Client Sample Ref.:			
		Client Sample ID.:			
			Sample	е Туре:	SOIL
			Top Dep	oth (m):	0.90
			Date Sa	ampled:	25-Aug-2017
			Asbest	os Lab:	COVENTRY
Determinand	Accred.	SOP	Units	LOD	
ACM Type	U	2192		N/A	ı
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected
Moisture	N	2030	%	0.020	2.1
рН	U	2010		N/A	8.2
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	2.3
Sulphate (Total)	U	2430	%	0.010	< 0.010
Arsenic	U	2450	mg/kg	1.0	3.3
Cadmium	U	2450		0.10	0.10
Chromium	U	2450	mg/kg	1.0	8.5
Copper	U	2450	mg/kg	0.50	7.3
Mercury	U	2450	mg/kg	0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	7.0
Lead	U	2450	mg/kg	0.50	40
Selenium	U	2450	mg/kg	0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	86
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	280
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	440
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	720
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	20000
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	510
Total Aliphatic Hydrocarbons	N	2680	0	5.0	22000
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	0	1.0	< 1.0
Aromatic TPH >C8-C10	U	2680		1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	•	1.0	42
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	120
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	490
Aromatic TPH >C21-C35	U	2680)	1.0	7100
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	2900



Client: Geosphere Environmental Ltd		Chemtest Job No.:			
Quotation No.: Q17-10179		Chemtest Sample ID.:			
Order No.: 2543, GI		Client Sample Ref.:			
		Client Sample ID.:			
				e Type:	SOIL
			Top Dep	, ,	0.90
			Date Sa		25-Aug-2017
			Asbest	os Lab:	COVENTRY
Determinand	Accred.	SOP	Units	LOD	
Total Aromatic Hydrocarbons	N	2680	٥	5.0	11000
Total Petroleum Hydrocarbons	N	2680	0	10.0	33000
Naphthalene	U	2700	mg/kg	0.10	< 0.10
Acenaphthylene	U	2700	J	0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10
Fluorene	U	2700	0	0.10	< 0.10
Phenanthrene	U	2700)	0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	0.12
Pyrene	U	2700	mg/kg	0.10	0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0
Bromomethane	U	2760		20	< 20
Chloroethane	U	2760		2.0	< 2.0
Trichlorofluoromethane	U	2760		1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760		1.0	< 1.0
1,1-Dichloroethane	U	2760		1.0	< 1.0
cis 1,2-Dichloroethene	U	2760		1.0	< 1.0
Bromochloromethane	U	2760		5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0
1,1,1-Trichloroethane	U	2760		1.0	< 1.0
Tetrachloromethane	U	2760		1.0	< 1.0
1,1-Dichloropropene	U	2760		1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	9.4
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0
Trichloroethene	Ü	2760		1.0	< 1.0
1,2-Dichloropropane	U	2760	-	1.0	< 1.0



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179		Chemtest Sample ID.:				
Order No.: 2543, GI		Client Sample Ref.:				
		Client Sample ID.:				
			Sample	е Туре:	SOIL	
			Top Dep	oth (m):	0.90	
			Date Sa	mpled:	25-Aug-2017	
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	
Bromodichloromethane	U	2760	ט י	5.0	< 5.0	
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	
Toluene	U	2760	μg/kg	1.0	16	
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	
Dibromochloromethane	U	2760		10	< 10	
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	
Ethylbenzene	U	2760	μg/kg	1.0	7.6	
m & p-Xylene	U	2760	μg/kg	1.0	27	
o-Xylene	U	2760	μg/kg	1.0	15	
Styrene	U	2760	μg/kg	1.0	< 1.0	
Tribromomethane	U	2760	μg/kg	1.0	< 1.0	
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0	
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	
1,3,5-Trimethylbenzene	U	2760	י פייו	1.0	8.9	
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	
Tert-Butylbenzene	U	2760		1.0	< 1.0	
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	12	
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0	
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	
1,2-Dichlorobenzene	U	2760		1.0	< 1.0	
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50	
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0	
1,2,3-Trichlorobenzene	U	2760	μg/kg	2.0	< 2.0	
Methyl Tert-Butyl Ether	U	2760)	1.0	< 1.0	
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	



Client: Geosphere Environmental Ltd	Chemtest Job No.:				17-22844
Quotation No.: Q17-10179	(ole ID.:	504746		
Order No.: 2543, GI		Client Sample Ref.:			
·	Client Sample ID.:				J3
			Sample	е Туре:	SOIL
			Top Dep		0.90
			Date Sa	mpled:	25-Aug-2017
			Asbesto	os Lab:	COVENTRY
Determinand	Accred.	SOP	Units	LOD	
Phenol	U	2790	mg/kg	0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179		Chemtest Sample ID.:				
Order No.: 2543, GI		Client Sample Ref.:				
		Cli	ent Sam		J3	
				e Type:	SOIL	
			Top Dep	, ,	0.90	
			Date Sa	mpled:	25-Aug-2017	
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP		LOD		
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
4-Nitroaniline	U	2790) י	0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	
Azobenzene	U	2790)	0.50	< 0.50	
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	
Hexachlorobenzene	U	2790) י	0.50	< 0.50	
Pentachlorophenol	N	2790		0.50	< 0.50	
Phenanthrene	U	2790	mg/kg	0.50	8.0	
Anthracene	U	2790	mg/kg	0.50	2.7	
Carbazole	U	2790	mg/kg	0.50	< 0.50	
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Fluoranthene	U	2790	mg/kg	0.50	30	
Pyrene	U	2790	mg/kg	0.50	28	
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Benzo[a]anthracene	U	2790	mg/kg	0.50	22	
Chrysene	U	2790	mg/kg	0.50	21	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	31	
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	14	
Benzo[a]pyrene	U	2790	mg/kg	0.50	21	
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	11	
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	3.8	
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	12	
PCB 81	N	2815	mg/kg	0.010	< 0.010	
PCB 77	N	2815	mg/kg	0.010	< 0.010	
PCB 105	N	2815	ו		< 0.010	
PCB 114	N	2815	mg/kg	0.010	< 0.010	
PCB 118	N	2815	mg/kg	0.010	< 0.010	
PCB 123	N	2815	mg/kg	0.010	< 0.010	
PCB 126	N	2815	mg/kg	0.010	< 0.010	
PCB 156	N	2815	mg/kg	0.010	< 0.010	
PCB 157	N	2815	mg/kg		< 0.010	
PCB 167	N	2815	mg/kg	0.010	< 0.010	
PCB 169	N	2815			< 0.010	
PCB 189	N	2815		0.010	< 0.010	
Total PCBs (12 Congeners)	N	2815		0.12	< 0.12	
Total Phenols	U	2920	mg/kg	0.30	< 0.30	



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
504746	BHC04	J3	25-Aug-2017	В	Amber Glass 250ml
504746	BHC04	J3	25-Aug-2017	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

i mai report			
Report No.:	17-23648-1		
Initial Date of Issue:	15-Sep-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	07-Sep-2017
Order No.:		Date Instructed:	07-Sep-2017
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	15-Sep-2017
Date Approved:	15-Sep-2017		
Approved By:			

Martin Dyer, Laboratory Manager



Results - 2 Stage WAC

Project: 2543, GI Lake Lothing, Lowestoft

Project: 2543, Gi Lake Lotning, L	owestort								
Chemtest Job No:	17-23648						Landfill V	laste Acceptant	ce Criteria
Chemtest Sample ID:	508390							Limits	
Sample Ref:								Stable, Non-	
Sample ID:	BHC04							reactive	Hazardous
Top Depth(m):	0.90						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	30-Aug-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			0.42	3	5	6
Loss On Ignition	2610	U	%	1		0.96			10
Total BTEX	2760	U	mg/kg	1		0.085	6		
Total PCBs (7 Congeners)	2815	U	mg/kg	1		< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg	1		21000	500		
Total (Of 17) PAH's	2700	N	mg/kg	1		< 2.0	100		
pH	2010	U		1		7.5		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.0020		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using BS	EN 12457-3 at I	/S 10 l/kg
Arsenic	1450	U	0.0044	0.0043	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.087	0.051	< 0.50	0.57	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	0.0011	0.0010	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.011	0.0057	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.032	0.0092	0.064	0.13	0.5	10	30
Nickel	1450	U	0.0039	0.0014	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	0.0035	0.0035	< 0.010	0.035	0.5	10	50
Antimony	1450	U	0.030	0.019	0.060	0.21	0.06	0.7	5
Selenium	1450	U	0.0038	0.0030	< 0.010	0.031	0.1	0.5	7
Zinc	1450	U	0.031	0.0070	< 0.50	< 0.50	4	50	200
Chloride	1220	U	10	1.1	20	26	800	15000	25000
Fluoride	1220	U	0.87	0.64	1.7	6.8	10	150	500
Sulphate	1220	U	550	76	1100	1600	1000	20000	50000
Total Dissolved Solids	1020	N	720	130	1400	2300	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	30	20	60	220	500	800	1000

Soild Information						
Dry mass of test portion/kg	0.175					
Moisture (%)	2.6					

Leachate Test Information						
Leachant volume 1st extract/l	0.345					
Leachant volume 2nd extract/l	1.400					
Eluant recovered from 1st extract/l	0.295					

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
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 - > "greater than"

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Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.:	17-25501-1
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Initial Date of Issue: 06-Oct-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543, GI Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 28-Sep-2017

Order No.: Date Instructed: 29-Sep-2017

No. of Samples: 5

Turnaround (Wkdays): 5 Results Due: 05-Oct-2017

Date Approved: 06-Oct-2017

Approved By:	
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Details: Robert Monk, Technical Manager



Client: Geosphere Environmental Ltd			ntest Jo		17-25501	17-25501
Quotation No.: Q17-10179	(st Sam		517037	517043
Order No.:			nt Samp		TPC08	BH13CP
		Clie	ent Sam		J6	J6
				е Туре:	SOIL	SOIL
			Top Dep	, ,	2.00	2.00
			Date Sa	mpled:	22-Sep-2017	21-Sep-2017
Determinand	Accred.	SOP	Units	LOD		
рН	U	1010		N/A	7.5	8.0
Ammonia (Free) as N	U	1220	mg/l	0.010	< 0.010	< 0.010
Sulphate	U	1220	mg/l	1.0	4.9	3.7
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	2.3	1.4
Boron (Dissolved)	U	1450	μg/l	20	< 20	< 20
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0	< 1.0
Copper (Dissolved)	U	1450	μg/l	1.0	< 1.0	< 1.0
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50	0.52
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0	< 1.0
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0	< 1.0
Selenium (Dissolved)	U	1450	μg/l	1.0	1.1	< 1.0
Zinc (Dissolved)	U	1450	μg/l	1.0	1.9	< 1.0
Chromium (Hexavalent)	U	1490	μg/l	20	< 20	[B] < 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	18
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	76
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	94
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	8.0
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	110
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	110
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10	210
Naphthalene	U	1700	μg/l	0.10	< 0.10	< 0.10
Acenaphthylene	U	1700	μg/l	0.10	< 0.10	< 0.10
Acenaphthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Fluorene	U	1700	μg/l	0.10	< 0.10	< 0.10
Phenanthrene	U	1700	μg/l	0.10	< 0.10	< 0.10



Project: 2543, GI Lake Lothing, Lowestoft									
Client: Geosphere Environmental Ltd			mtest Jo		17-25501	17-25501			
Quotation No.: Q17-10179	(st Sam		517037	517043			
Order No.:			nt Samp		TPC08	BH13CP			
		Clie	ent Sam		J6	J6			
				e Type:	SOIL	SOIL			
			Top Dep	, ,	2.00	2.00			
			Date Sa		22-Sep-2017	21-Sep-2017			
Determinand	Accred.	SOP	Units	LOD					
Anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Chrysene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0	< 2.0			
Benzene	U	1760	μg/l	1.0	< 1.0	< 1.0			
Toluene	U	1760	μg/l	1.0	< 1.0	< 1.0			
Ethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0			
m & p-Xylene	U	1760	μg/l	1.0	< 1.0	< 1.0			
o-Xylene	U	1760	μg/l	1.0	< 1.0	< 1.0			
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0	< 1.0			
Phenol	N	1790	μg/l	0.50	< 0.50	< 0.50			
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50			
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50	< 0.50			
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50			
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50			
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50			
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50	< 0.50			
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50	< 0.50			
Hexachloroethane	N	1790	μg/l	0.50	< 0.50	< 0.50			
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50	< 0.50			
4-Methylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50			
Nitrobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50			
Isophorone	N	1790	μg/l	0.50	< 0.50	< 0.50			
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50			
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50			
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50	< 0.50			
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50			
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50			
Naphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50			
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50			
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50	< 0.50			



Client: Geosphere Environmental Ltd			mtest Jo		17-25501	17-25501
Quotation No.: Q17-10179	(st Sam		517037	517043
Order No.:			nt Samp		TPC08	BH13CP
		Cli	ent Sam	J6	J6	
				е Туре:	SOIL	SOIL
			Top Dep	2.00	2.00	
			Date Sa	ampled:	22-Sep-2017	21-Sep-2017
Determinand	Accred.	SOP	Units	LOD		
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N N	1790	μg/l μg/l	0.50	< 0.50	< 0.50
	N	1790		0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	IN	1790	μg/l	0.50	< 0.50	< 0.50



Results - Leachate

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Client: Geosphere Environmental Ltd		Che	mtest J	17-25501	17-25501	
Quotation No.: Q17-10179	(Chemte	est Sam	ple ID.:	517037	517043
Order No.:		Clie	nt Samp	le Ref.:	TPC08	BH13CP
		Cli	ent Sam	ple ID.:	J6	J6
			Sampl	SOIL	SOIL	
			Top Dep	oth (m):	2.00	2.00
			Date Sa	ampled:	22-Sep-2017	21-Sep-2017
Determinand	Accred.	SOP	Units			
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030	< 0.030



Client: Geosphere Environmental Ltd			mtest Jo		17-25501	17-25501	17-25501	17-25501	17-25501
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	517025	517031	517037	517043	517044
Order No.:			nt Samp		TPC02	TPC07	TPC08	BH13CP	BH13CP
		Client Sample ID.:			J3	J4	J6	J6	J7
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			1.00	1.50	2.00	2.00	3.00
		Date Sampled		mpled:	22-Sep-2017	21-Sep-2017	22-Sep-2017	21-Sep-2017	21-Sep-201
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTR
Determinand	Accred.	SOP	Units	LOD					
ACM Type	U	2192		N/A	-	-	-	-	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbesto Detected
Moisture	N	2030	%	0.020	7.0	9.6	15	9.6	7.9
pH	M	2010	,,	N/A	8.4	8.7	8.1	9.1	8.3
Boron (Hot Water Soluble)	M		mg/kg	0.40	< 0.40	0.50	1.1	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	< 0.010	< 0.010	0.040	0.084	< 0.010
Cyanide (Free)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Ammonium (Extractable)	M	2425	mg/kg	0.50	1.0	2.3	7.5	< 0.50	0.69
Sulphate (Total)	M	2430	%	0.010	0.021	0.012	0.26	0.23	< 0.010
Arsenic	M	2450	mg/kg	1.0	7.6	9.0	5.8	7.7	26
Cadmium	M	2450	mg/kg	0.10	0.14	< 0.10	< 0.10	< 0.10	< 0.10
Chromium	M	2450	mg/kg	1.0	10	9.9	6.0	8.2	18
Copper	M	2450	mg/kg	0.50	13	11	4.9	3.2	7.6
Mercury	M	2450	mg/kg	0.10	0.18	0.10	< 0.10	< 0.10	< 0.10
Nickel	M	2450	mg/kg	0.50	6.8	9.9	6.5	5.7	14
Lead	M	2450	mg/kg	0.50	74	22	15	5.6	9.8
Selenium	M	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Zinc	M	2450	mg/kg	0.50	240	74	53	15	110
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	M	2625	%	0.40	1.7	1.1	0.88		
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	5.1
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	6.9	71
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	73	270
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	71	240
Aliphatic TPH >C21-C35	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	100
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	150	680
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	22
Aromatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	26	150
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	8.8	< 1.0	< 1.0	< 1.0	57
Aromatic TPH >C21-C35	M		mg/kg	1.0	17	< 1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest J		17-25501	17-25501	17-25501	17-25501	17-25501
Quotation No.: Q17-10179	(st Sam		517025	517031	517037	517043	517044
Order No.:			nt Samp		TPC02	TPC07	TPC08	BH13CP	BH13CP
		Cli	ent Sam		J3	J4	J6	J6	J7
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			1.00	1.50	2.00	2.00	3.00
		Date Sampled:			22-Sep-2017	21-Sep-2017	22-Sep-2017	21-Sep-2017	21-Sep-201
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTR
Determinand	Accred.	SOP	Units	LOD					
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	28	< 5.0	< 5.0	26	230
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	28	< 10	< 10	180	910
Naphthalene	М	2700	mg/kg	0.10	0.69	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	М	2700	mg/kg	0.10	2.7	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	М	2700	mg/kg	0.10	0.79	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	М	2700	mg/kg	0.10	5.1	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	М	2700	mg/kg	0.10	25	1.1	0.33	< 0.10	< 0.10
Anthracene	М	2700	mg/kg	0.10	7.8	0.33	0.11	< 0.10	< 0.10
Fluoranthene	М	2700	mg/kg	0.10	21	1.0	0.61	< 0.10	< 0.10
Pyrene	М	2700	mg/kg	0.10	19	1.1	0.88	< 0.10	< 0.10
Benzo[a]anthracene	M	2700	mg/kg	0.10	12	0.90	0.18	< 0.10	< 0.10
Chrysene	М	2700	mg/kg	0.10	12	0.66	0.23	< 0.10	< 0.10
Benzo[b]fluoranthene	М	2700	mg/kg	0.10	11	0.67	0.49	< 0.10	< 0.10
Benzo[k]fluoranthene	М	2700	mg/kg	0.10	4.3	0.15	0.11	< 0.10	< 0.10
Benzo[a]pyrene	М	2700	mg/kg	0.10	7.8	0.33	0.40	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	М	2700	mg/kg	0.10	5.7	0.54	0.38	< 0.10	< 0.10
Dibenz(a,h)Anthracene	М	2700	mg/kg	0.10	1.4	0.34	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	М	2700	mg/kg	0.10	4.2	0.33	0.18	< 0.10	< 0.10
Total Of 16 PAH's	М	2700	mg/kg	2.0	140	7.5	3.9	< 2.0	< 2.0
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	М	2760	μg/kg	20	< 20	< 20	< 20	< 20	< 20
Chloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	U	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	M	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			ntest Jo		17-25501	17-25501	17-25501	17-25501	17-25501
Quotation No.: Q17-10179	(st Sam		517025	517031	517037	517043	517044
Order No.:			nt Samp		TPC02	TPC07	TPC08	BH13CP	BH13CP
		Clie	ent Sam		J3	J4	J6	J6	J7
				e Type:	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):		1.00	1.50	2.00	2.00	3.00	
		Date Sampled:		22-Sep-2017	21-Sep-2017	22-Sep-2017	21-Sep-2017	21-Sep-201	
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTR
Determinand	Accred.	SOP	Units	LOD					
1,2-Dichloropropane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	М	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10	< 10	< 10
Toluene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10	< 10	< 10
1,1,2-Trichloroethane	М	2760	μg/kg	10	< 10	< 10	< 10	53	160
Tetrachloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10	< 10	< 10	< 10	< 10
1,2-Dibromoethane	M	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	М	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	11	< 1.0
Bromobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50	< 50
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	26	< 1.0
2-Chlorotoluene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	120
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	34	120
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	16	32
1,3-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50	< 50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	Ü	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest Jo			17-25501	17-25501	17-25501	17-25501
Quotation No.: Q17-10179	(st Sam		517025	517031	517037	517043	517044
Order No.:			nt Samp		TPC02	TPC07	TPC08	BH13CP	BH13CP
		Cli	ent Sam		J3	J4	J6	J6	J7
			Sample	e Type:	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.00	1.50	2.00	2.00	3.00
		Date Sampled:		22-Sep-2017	21-Sep-2017	22-Sep-2017	21-Sep-2017	21-Sep-201	
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD					
N-Nitrosodimethylamine	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.5
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	17-25501	17-25501	17-25501	17-25501	17-25501
Quotation No.: Q17-10179	(st Sam		517025	517031	517037	517043	517044
Order No.:			nt Samp		TPC02	TPC07	TPC08	BH13CP	BH13CP
		Cli	ent Sam		J3	J4	J6	J6	J7
				е Туре:	SOIL	SOIL	SOIL	SOIL	SOIL
			Top De		1.00	1.50	2.00	2.00	3.00
	Date Sampled:			22-Sep-2017	21-Sep-2017	22-Sep-2017	21-Sep-2017	21-Sep-201	
		Asbestos Lab		_	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units						
Fluorene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Azobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	М		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	M		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.88
Anthracene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbazole	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	M	2790	mg/kg	0.50	0.63	< 0.50	< 0.50	< 0.50	< 0.50
Pyrene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chrysene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
PCB 28	M	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010	
PCB 81	N	2815	mg/kg	0.010			< 0.010		< 0.010
PCB 52	М	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010	
PCB 77	N	2815	mg/kg	0.010			< 0.010		< 0.010
PCB 105	N	-	mg/kg		_		< 0.010		< 0.010
PCB 90+101	М	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010	
PCB 114	N		mg/kg				< 0.010		< 0.010
PCB 118	М	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010	
PCB 118	N		mg/kg	0.010			< 0.010		< 0.010
PCB 153	М		mg/kg		< 0.010	< 0.010		< 0.010	
PCB 123	N		mg/kg				< 0.010		< 0.010
		_			< 0.010	< 0.010		< 0.010	
PCB 138	M	2010	mg/kg	0.010	< 0.010	< 0.010		< 0.010	



Results - Soil

Client: Geosphere Environmental Ltd		Chai	mtest Jo	sh Na i	17 05501	17.05501	17 OFFO1	17 05501	17 OFF01
•						17-25501	17-25501	17-25501	17-25501
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	517025	517031	517037	517043	517044
Order No.:		Clie	nt Samp	le Ref.:	TPC02	TPC07	TPC08	BH13CP	BH13CP
		Client Sample ID.:			J3	J4	J6	J6	J7
		Sample Type:				SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			1.00	1.50	2.00	2.00	3.00
		Date Sampled:			22-Sep-2017	21-Sep-2017	22-Sep-2017	21-Sep-2017	21-Sep-2017
		Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD					
PCB 180	М	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010	
PCB 156	N	2815	mg/kg	0.010			< 0.010		< 0.010
PCB 157	N	2815	mg/kg	0.010			< 0.010		< 0.010
PCB 167	N	2815	mg/kg	0.010			< 0.010		< 0.010
PCB 169	N	2815	mg/kg	0.010			< 0.010		< 0.010
PCB 189	N	2815	mg/kg	0.010			< 0.010		< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12			< 0.12		< 0.12
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10	< 0.10		< 0.10	
Total Phenols	М	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
517043	BH13CP	J6	21-Sep-2017	В	Amber Glass 250ml
517043	BH13CP	J6	21-Sep-2017	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

9-1

Initial Date of Issue: 12-Oct-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543, GI Lake Lothing

Quotation No.: Q17-10179 Date Received: 03-Oct-2017

Order No.: 2543, Gl Date Instructed: 05-Oct-2017

No. of Samples: 3

Turnaround (Wkdays): 5 Results Due: 11-Oct-2017

Date Approved: 12-Oct-2017

Approved By:								
The bill colleage connect to deployed. The fit may have been record, connect, or stated. Notify that the bill point to the connection and invades.								

Details: Robert Monk, Technical Manager



Project: 2543, GI Lake Lothing								
Client: Geosphere Environmental Ltd				ob No.:				
Quotation No.: Q17-10179	(st Sam	•	519841			
Order No.: 2543, GI			nt Samp		BHC30 J4			
		Client Sample ID.:						
		Sample Type						
		oth (m): ampled:	1.15					
		27-Sep-2017						
Determinand	Accred.		Units					
рН	U	1010		N/A	9.0			
Ammonia (Free) as N	U	1220	mg/l	0.010	0.030			
Sulphate	U	1220	mg/l	1.0	40			
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050			
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050			
Arsenic (Dissolved)	U	1450	μg/l	1.0	2.3			
Boron (Dissolved)	U	1450	μg/l	20	< 20			
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080			
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Copper (Dissolved)	U	1450	μg/l	1.0	1.8			
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50			
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Lead (Dissolved)	U	1450	μg/l	1.0	1.3			
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Zinc (Dissolved)	U	1450	μg/l	1.0	3.5			
Chromium (Hexavalent)	U	1490	μg/l	20	[B] < 20			
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10			
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10			
Naphthalene	U	1700	μg/l	0.10	< 0.10			
Acenaphthylene	U	1700	μg/l	0.10	< 0.10			
Acenaphthene	U	1700	μg/l	0.10	< 0.10			
Fluorene	U	1700	μg/l	0.10	< 0.10			
Phenanthrene	U	1700	μg/l	0.10	< 0.10			



Project: 2543, GI Lake Lothing					
Client: Geosphere Environmental Ltd			ntest Jo		17-26029
Quotation No.: Q17-10179	(st Sam		519841
Order No.: 2543, GI			nt Samp ent Sam		BHC30
		J4			
		e Type:	SOIL		
		oth (m):	1.15		
		mpled:	27-Sep-2017		
Determinand	Accred.	SOP	Units		
Anthracene	U	1700	μg/l	0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10
Pyrene	U	1700	μg/l	0.10	< 0.10
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0
Benzene	U	1760	μg/l	1.0	< 1.0
Toluene	U	1760	μg/l	1.0	< 1.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0
Phenol	N	1790	μg/l	0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50



Project: 2543, GI Lake Lothing								
Client: Geosphere Environmental Ltd		ob No.:	17-26029					
Quotation No.: Q17-10179		519841						
Order No.: 2543, GI		BHC30						
		J4						
		SOIL						
		1.15						
		Date Sampled:						
Determinand	Accred.	SOP		LOD				
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50			
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50			
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50			
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50			
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50			
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50			
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
Acenaphthylene	N	1790	μg/l	0.50	< 0.50			
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50			
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50			
Acenaphthene	N	1790	μg/l	0.50	< 0.50			
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
Dibenzofuran	N	1790	μg/l	0.50	< 0.50			
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50			
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50			
Fluorene	N	1790	μg/l	0.50	< 0.50			
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50			
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50			
Azobenzene	N	1790	μg/l	0.50	< 0.50			
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50			
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50			
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50			
Phenanthrene	N	1790	μg/l	0.50	< 0.50			
Anthracene	N	1790	μg/l	0.50	< 0.50			
Carbazole	N	1790	μg/l	0.50	< 0.50			
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Fluoranthene	N	1790	μg/l	0.50	< 0.50			
Pyrene	N	1790	μg/l	0.50	< 0.50			
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50			
Chrysene	N	1790	μg/l	0.50	< 0.50			
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50			
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50			
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50			
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50			
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50			
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50			



Results - Leachate

Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179		Chemtest Sample ID.:				
Order No.: 2543, GI		Clie	le Ref.:	BHC30		
		Cli	ple ID.:	J4		
			е Туре:	SOIL		
			oth (m):	1.15		
	Date Sampled				27-Sep-2017	
Determinand	Accred.	SOP	Units	LOD		
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	
Total Phenols	U	1920	mg/l	0.030	< 0.030	



Client: Geosphere Environmental Ltd			mtest J		17-26029	17-26029	17-26029
Quotation No.: Q17-10179	(st Sam		519841	519843	519847
Order No.: 2543, GI			nt Samp		BHC30	BHC31	BHC32
		Cli	ent Sam		J4	J2	J3
				е Туре:	SOIL	SOIL	SOIL
			Top De	, ,	1.15	0.40	0.75
			Date Sa	ampled:	27-Sep-2017	27-Sep-2017	27-Sep-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	-	-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected	
Moisture	N	2030	%	0.020	14	13	11
pH	М	2010		N/A	8.9	8.4	8.9
Boron (Hot Water Soluble)	М	2120	mg/kg	0.40	< 0.40	1.5	< 0.40
Sulphate (2:1 Water Soluble) as SO4	М	2120	g/l	0.010	< 0.010	0.048	< 0.010
Cyanide (Free)	М	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	М	2300	mg/kg	0.50	< 0.50	< 0.50	
Ammonium (Extractable)	М	2425	mg/kg	0.50	0.84	3.5	< 0.50
Sulphate (Total)	М	2430	%	0.010	< 0.010	0.29	< 0.010
Arsenic	М	2450	mg/kg	1.0	8.5	41	10
Cadmium	М	2450	mg/kg	0.10	0.14	0.84	0.15
Chromium	М	2450	mg/kg	1.0	11	33	10
Copper	М	2450	mg/kg	0.50	7.4	250	16
Mercury	М	2450	mg/kg	0.10	0.10	0.63	< 0.10
Nickel	М	2450	mg/kg	0.50	12	64	12
Lead	М	2450	mg/kg	0.50	14	1500	21
Selenium	М	2450	mg/kg	0.20	< 0.20	0.73	< 0.20
Zinc	М	2450	mg/kg	0.50	29	330	30
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Organic Matter	М	2625	%	0.40			0.78
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	1.9	< 1.0
Aliphatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	3.3	< 1.0
Aliphatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	14	< 1.0
Aliphatic TPH >C16-C21	М	2680	mg/kg	1.0	< 1.0	56	< 1.0
Aliphatic TPH >C21-C35	М	2680	mg/kg	1.0	< 1.0	120	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	33	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	220	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	7.5	< 1.0
Aromatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	8.6	< 1.0
Aromatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	64	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	330	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	1800	< 1.0



Client: Geosphere Environmental Ltd			mtest Jo		17-26029	17-26029	17-26029
Quotation No.: Q17-10179	(st Sam		519841	519843	519847
Order No.: 2543, GI			nt Samp		BHC30	BHC31	BHC32
		Cli	ent Sam		J4	J2	J3
				е Туре:	SOIL	SOIL	SOIL
			Top Dep	, ,	1.15	0.40	0.75
			Date Sa	ampled:	27-Sep-2017	27-Sep-2017	27-Sep-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD			
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	170	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	2400	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	2600	< 10
Naphthalene	М	2700	mg/kg	0.10	< 0.10	3.0	< 0.10
Acenaphthylene	М	2700		0.10	< 0.10	1.0	< 0.10
Acenaphthene	М	2700	mg/kg	0.10	< 0.10	0.93	< 0.10
Fluorene	М	2700	mg/kg	0.10	< 0.10	1.2	< 0.10
Phenanthrene	М	2700	mg/kg	0.10	< 0.10	8.3	0.14
Anthracene	M	2700	mg/kg	0.10	< 0.10	3.1	< 0.10
Fluoranthene	М	2700	mg/kg	0.10	< 0.10	13	0.20
Pyrene	М	2700	mg/kg	0.10	< 0.10	17	0.30
Benzo[a]anthracene	М	2700	mg/kg	0.10	< 0.10	8.1	< 0.10
Chrysene	М	2700	mg/kg	0.10	< 0.10	10	< 0.10
Benzo[b]fluoranthene	М	2700	mg/kg	0.10	< 0.10	12	< 0.10
Benzo[k]fluoranthene	М	2700	mg/kg	0.10	< 0.10	4.0	< 0.10
Benzo[a]pyrene	М	2700	mg/kg	0.10	< 0.10	12	< 0.10
Indeno(1,2,3-c,d)Pyrene	М	2700	mg/kg	0.10	< 0.10	7.9	< 0.10
Dibenz(a,h)Anthracene	М	2700	mg/kg	0.10	< 0.10	2.4	< 0.10
Benzo[g,h,i]perylene	М	2700	mg/kg	0.10	< 0.10	14	< 0.10
Total Of 16 PAH's	М	2700	mg/kg	2.0	< 2.0	120	< 2.0
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Chloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromomethane	М	2760	μg/kg	20	< 20	< 20	< 20
Chloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Benzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	M	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest Jo		17-26029	17-26029	17-26029
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	519841	519843	519847
Order No.: 2543, GI			nt Samp		BHC30	BHC31	BHC32
		Cli	ent Sam		J4	J2	J3
			Sampl	е Туре:	SOIL	SOIL	SOIL
			Top De	oth (m):	1.15	0.40	0.75
			Date Sa	ampled:	27-Sep-2017	27-Sep-2017	27-Sep-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD			
1,2-Dichloropropane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	М	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10
Toluene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10
1,1,2-Trichloroethane	М	2760	μg/kg	10	< 10	< 10	< 10
Tetrachloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10	< 10	< 10
1,2-Dibromoethane	М	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	M	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Styrene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	Ü	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest J		17-26029	17-26029	17-26029
Quotation No.: Q17-10179	(st Sam		519841	519843	519847
Order No.: 2543, GI			nt Samp		BHC30	BHC31	BHC32
		Cli	ent Sam		J4	J2	J3
				е Туре:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	1.15	0.40	0.75
			Date Sa	ampled:	27-Sep-2017	27-Sep-2017	27-Sep-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD			
N-Nitrosodimethylamine	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Phenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Isophorone	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Naphthalene	М	2790	mg/kg	0.50	< 0.50	0.65	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	М	2790	mg/kg	0.50	< 0.50	0.59	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Che	mtest J	ob No.:	17-26029	17-26029	17-26029
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	519841	519843	519847
Order No.: 2543, GI		Clie	nt Samp	le Ref.:	BHC30	BHC31	BHC32
		Cli	ent Sam	ple ID.:	J4	J2	J3
			Sampl	е Туре:	SOIL	SOIL	SOIL
			Top De	oth (m):	1.15	0.40	0.75
			Date Sa	ampled:	27-Sep-2017	27-Sep-2017	27-Sep-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD			
Fluorene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Azobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	M	2790	mg/kg	0.50	< 0.50	2.9	< 0.50
Anthracene	М	2790	mg/kg	0.50	< 0.50	1.3	< 0.50
Carbazole	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	М	2790	mg/kg	0.50	< 0.50	5.5	< 0.50
Pyrene	М	2790		0.50	< 0.50	7.0	< 0.50
Butylbenzyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	М	2790	mg/kg	0.50	< 0.50	3.9	< 0.50
Chrysene	М	2790	mg/kg	0.50	< 0.50	3.9	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	М	2790	mg/kg	0.50	< 0.50	6.4	< 0.50
Benzo[k]fluoranthene	М	2790	mg/kg	0.50	< 0.50	2.3	< 0.50
Benzo[a]pyrene	М	2790	mg/kg	0.50	< 0.50	4.8	< 0.50
Indeno(1,2,3-c,d)Pyrene	М	2790	mg/kg	0.50	< 0.50	3.5	< 0.50
Dibenz(a,h)Anthracene	М	2790	mg/kg	0.50	< 0.50	1.2	< 0.50
Benzo[g,h,i]perylene	М	2790	mg/kg	0.50	< 0.50	4.9	< 0.50
PCB 28	М	2815	mg/kg	0.010		< 0.010	
PCB 81	N	2815	mg/kg	0.010	< 0.010		
PCB 52	М	2815	mg/kg			< 0.010	
PCB 77	N	2815	mg/kg	0.010	< 0.010		
PCB 105	N	2815	mg/kg		< 0.010		
PCB 90+101	M	2815	mg/kg	0.010		< 0.010	
PCB 114	N	2815			< 0.010		
PCB 118	M	2815	mg/kg			< 0.010	
PCB 118	N	2815			< 0.010		
PCB 153	M	2815	mg/kg			< 0.010	
PCB 123	N	2815	mg/kg		< 0.010		
PCB 138	M	2815	mg/kg			< 0.010	
PCB 126	N		mg/kg		< 0.010		



Results - Soil

Olient Occambana Francisco managerial I tol		Cha	t. a.t. l.	ala Nia a	47.00000	47.00000	47.00000
Client: Geosphere Environmental Ltd			mtest J			17-26029	17-26029
Quotation No.: Q17-10179		Chemte	est Sam	ple ID.:	519841	519843	519847
Order No.: 2543, GI		Client Sample Ref.:		BHC30	BHC31	BHC32	
		Client Sample ID.:		J4	J2	J3	
		Sample Type:		SOIL	SOIL	SOIL	
		Top Depth (m):		1.15	0.40	0.75	
		Date Sampled: 2		27-Sep-2017	27-Sep-2017	27-Sep-2017	
		Asbestos Lab:		COVENTRY	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
PCB 180	М	2815	mg/kg	0.010		< 0.010	
PCB 156	N	2815	mg/kg	0.010	< 0.010		
PCB 157	N	2815	mg/kg	0.010	< 0.010		
PCB 167	N	2815	mg/kg	0.010	< 0.010		
PCB 169	N	2815	mg/kg	0.010	< 0.010		
PCB 189	N	N 2815 mg/kg 0.010		< 0.010			
Total PCBs (12 Congeners)	N	 		< 0.12			
Total PCBs (7 Congeners)	N	N 2815 mg/kg 0.10			< 0.10		
Total Phenols	М	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
519841	BHC30	J4	27-Sep-2017	В	Amber Glass 250ml
519841	BHC30	J4	27-Sep-2017	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

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- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





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Final Report

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Report No.:	17-26235-1		
Initial Date of Issue:	16-Oct-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	06-Oct-2017
Order No.:	2543, GI	Date Instructed:	06-Oct-2017
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	16-Oct-2017
Date Approved:	16-Oct-2017		
Approved By:			



Results - 2 Stage WAC

Project: 2543, GI Lake Lothing, Lowestoft

Project: 2543, Gi Lake Lotning, L	oweston								
Chemtest Job No:	17-26235						Landfill V	laste Acceptano	ce Criteria
Chemtest Sample ID:	520920							Limits	
Sample Ref:	BHC13							Stable, Non-	
Sample ID:								reactive	Hazardous
Top Depth(m):	2.00						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	03-Oct-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			< 0.20	3	5	6
Loss On Ignition	2610	U	%			1.1			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			87	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		
pH	2010	U				9.0		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.0050		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using BS	EN 12457-3 at L	/S 10 l/kg
Arsenic	1450	U	0.0076	0.0093	< 0.050	0.091	0.5	2	25
Barium	1450	U	0.021	0.0095	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	0.0016	0.0016	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.0022	0.0024	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.013	0.0029	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	0.0013	< 0.0010	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	0.0020	< 0.010	0.017	0.5	10	50
Antimony	1450	U	0.0028	0.0012	< 0.010	0.014	0.06	0.7	5
Selenium	1450	U	0.0011	< 0.0010	< 0.010	< 0.010	0.1	0.5	7
Zinc	1450	U	0.0044	0.0013	< 0.50	< 0.50	4	50	200
Chloride	1220	U	9.3	3.2	19	41	800	15000	25000
Fluoride	1220	U	0.37	0.17	< 1.0	2.0	10	150	500
Sulphate	1220	U	130	21	260	360	1000	20000	50000
Total Dissolved Solids	1020	N	260	69	520	960	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	17	14	< 50	140	500	800	1000

Solid Information					
Dry mass of test portion/kg	0.175				
Moisture (%)	4.6				

Leachate Test Information					
Leachant volume 1st extract/l	0.341				
Leachant volume 2nd extract/l	1.400				
Eluant recovered from 1st extract/l	0.251				

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



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- N/E not evaluated
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Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





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Final Report

rınai Kepon			
Report No.:	17-26355-1		
Initial Date of Issue:	18-Oct-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	06-Oct-2017
Order No.:	Q17-10179	Date Instructed:	10-Oct-2017
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	16-Oct-2017
Date Approved:	18-Oct-2017		
Approved By:			



Project: Lake Lothing, Lowestoft Client: Geosphere Environmental Ltd Chemtest Job No.: 17-26355							
Client: Geosphere Environmental Ltd				17-26355			
Quotation No.: Q17-10179	+ '		st Sam		521396		
Order No.: Q17-10179			nt Samp		BHC05		
		Cli	ent Sam		J3 SOIL		
		Sample Type					
		Top Depth (m) Date Sampled					
=	.				03-Oct-2017		
Determinand	Accred.	SOP	Units				
pH	U	1010		N/A	9.5		
Ammonia (Free) as N	U	1220	mg/l	0.010	0.63		
Sulphate	U	1220	mg/l	1.0	24		
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050		
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050		
Arsenic (Dissolved)	U	1450	μg/l	1.0	25		
Boron (Dissolved)	U	1450	μg/l	20	39		
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080		
Chromium (Dissolved)	U	1450	μg/l	1.0	2.4		
Copper (Dissolved)	U	1450	μg/l	1.0	19		
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50		
Nickel (Dissolved)	U	1450	μg/l	1.0	2.3		
Lead (Dissolved)	U	1450	μg/l	1.0	2.9		
Selenium (Dissolved)	U	1450	μg/l	1.0	3.7		
Zinc (Dissolved)	U	1450	μg/l	1.0	2.2		
Chromium (Hexavalent)	U	1490	μg/l	20	< 20		
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	5.8		
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	29		
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	97		
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	6.9		
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10		
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	140		
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0		
Total Petroleum Hydrocarbons	N	1675	μg/l	10	140		
Naphthalene	U	1700	μg/l	0.10	< 0.10		
Acenaphthylene	U	1700	μg/l	0.10	< 0.10		
Acenaphthene	U	1700	μg/l	0.10	< 0.10		
Fluorene	U	1700	μg/l	0.10	< 0.10		
Phenanthrene	U	1700	μg/l	0.10	< 0.10		



Client: Geosphere Environmental Ltd		Chemtest Job No.					
Quotation No.: Q17-10179			st Sam		521396		
Order No.: Q17-10179			nt Samp ent Sam		BHC05		
		J3					
				e Type:	SOIL		
			Top Dep	oth (m):	0.6		
			Date Sa		03-Oct-2017		
Determinand	Accred.	SOP	Units	LOD			
Anthracene	U	1700	μg/l	0.10	< 0.10		
Fluoranthene	U	1700	μg/l	0.10	< 0.10		
Pyrene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10		
Chrysene	U	1700	μg/l	0.10	< 0.10		
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10		
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10		
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10		
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0		
Benzene	U	1760	μg/l	1.0	< 1.0		
Toluene	U	1760	μg/l	1.0	< 1.0		
Ethylbenzene	U	1760	μg/l	1.0	< 1.0		
m & p-Xylene	U	1760	μg/l	1.0	< 1.0		
o-Xylene	U	1760	µg/l	1.0	< 1.0		
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0		
Phenol	N	1790	μg/l	0.50	< 0.50		
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50		
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50		
Hexachloroethane	N	1790	μg/l	0.50	< 0.50		
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50		
4-Methylphenol	N	1790	μg/l	0.50	< 0.50		
Nitrobenzene	N	1790	μg/l	0.50	< 0.50		
Isophorone	N	1790	μg/l	0.50	< 0.50		
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50		
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50		
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50		
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50		
Naphthalene	N	1790	μg/l	0.50	< 0.50		
4-Chloroaniline	N N	1790	μg/l μg/l	0.50	< 0.50		
Hexachlorobutadiene	N N	1790					
mexacillorobutaciene	IN	1790	μg/l	0.50	< 0.50		



Client: Geosphere Environmental Ltd		Chemtest Job No.					
Quotation No.: Q17-10179		Chemtest Sample ID					
Order No.: Q17-10179			nt Samp		BHC05		
		Clie	ent Sam		J3		
		е Туре:	SOIL				
		Top Depth (m)					
		Date Sampled:					
Determinand	Accred.	SOP	Units	LOD			
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50		
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50		
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50		
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50		
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50		
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50		
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50		
Acenaphthylene	N	1790	μg/l	0.50	< 0.50		
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50		
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50		
Acenaphthene	N	1790	μg/l	0.50	< 0.50		
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50		
Dibenzofuran	N	1790	μg/l	0.50	< 0.50		
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50		
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50		
Fluorene	N	1790	μg/l	0.50	< 0.50		
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50		
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50		
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50		
Azobenzene	N	1790	μg/l	0.50	< 0.50		
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50		
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50		
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50		
Phenanthrene	N	1790	μg/l	0.50	< 0.50		
Anthracene	N	1790	μg/l	0.50	< 0.50		
Carbazole	N	1790	μg/l	0.50	< 0.50		
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Fluoranthene	N	1790	μg/l	0.50	< 0.50		
Pyrene	N	1790	μg/l	0.50	< 0.50		
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50		
Chrysene	N	1790	μg/l	0.50	< 0.50		
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50		
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50		
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50		
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50		
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50		
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50		



Results - Leachate

Client: Geosphere Environmental Ltd		Che	ob No.:	17-26355	
Quotation No.: Q17-10179	(Chemte	ple ID.:	521396	
Order No.: Q17-10179		BHC05			
		Cli	ple ID.:	J3	
		е Туре:	SOIL		
			Top Dep	oth (m):	0.6
			Date Sa	ampled:	03-Oct-2017
Determinand	Accred.	SOP	Units	LOD	
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Project: Lake Lothing, Lowestoft						
Client: Geosphere Environmental Ltd		Chemtest Job No.				
Quotation No.: Q17-10179	(st Sam		521396	
Order No.: Q17-10179			nt Samp		BHC05	
		Cli	ent Sam	ple ID.:	J3	
			Sample	e Type:	SOIL	
			Top Dep		0.6	
			Date Sa		03-Oct-2017	
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	
Moisture	N	2030	%	0.020	7.6	
рН	U	2010		N/A	9.1	
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.62	
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.10	
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	
Cyanide (Total)	U	2300	mg/kg	0.50	3.4	
Ammonium (Extractable)	U	2425	mg/kg	0.50	27	
Sulphate (Total)	U	2430	%	0.010	0.063	
Arsenic	U	2450	mg/kg	1.0	9.1	
Cadmium	U	1	mg/kg	0.10	< 0.10	
Chromium	U	2450	mg/kg	1.0	7.8	
Copper	U	2450	mg/kg	0.50	48	
Mercury	U	2450	mg/kg	0.10	0.21	
Nickel	U	2450	mg/kg	0.50	12	
Lead	U		mg/kg	0.50	110	
Selenium	U	2450	mg/kg	0.20	< 0.20	
Zinc	U	2450	mg/kg	0.50	52	
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	2.3	
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	100	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	100	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	1.1	
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	51	
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	



Client: Geosphere Environmental Ltd		Chemtest Job No.				
Quotation No.: Q17-10179	(Chemte	ple ID.:	521396		
Order No.: Q17-10179		Clie	nt Samp	le Ref.:	BHC05	
		Cli	ent Sam	•	J3	
			Sample	e Type:	SOIL	
			Top Dep		0.6	
		Date Sampled:				
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	52	
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	160	
Naphthalene	U	2700	mg/kg	0.10	< 0.10	
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	
Fluorene	U	2700	mg/kg	0.10	< 0.10	
Phenanthrene	U	2700	mg/kg	0.10	1.1	
Anthracene	U	2700	mg/kg	0.10	0.26	
Fluoranthene	U	2700	mg/kg	0.10	1.4	
Pyrene	U	2700	mg/kg	0.10	1.5	
Benzo[a]anthracene	U	2700	5 5	0.10	1.3	
Chrysene	U	2700	mg/kg	0.10	0.66	
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	0.79	
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	0.29	
Benzo[a]pyrene	U	2700	mg/kg	0.10	0.37	
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	0.25	
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	
Benzo[g,h,i]perylene	U	2700		0.10	0.29	
Total Of 16 PAH's	U	2700	mg/kg	2.0	8.2	
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	
Chloromethane	U	2760	μg/kg	1.0	< 1.0	
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	
Bromomethane	U	2760	μg/kg	20	< 20	
Chloroethane	N	2760	μg/kg	2.0	< 2.0	
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	
1,1,1-Trichloroethane	U	2760		1.0	< 1.0	
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	
Benzene	U	2760	μg/kg	1.0	< 1.0	
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	
Trichloroethene	U	2760	100	1.0	< 1.0	
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(est Sam nt Samp		521396	
Order No.: Q17-10179		BHC05				
		J3				
		SOIL				
			Top Dep		0.6	
			Date Sa	ampled:	03-Oct-2017	
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP		LOD		
Dibromomethane	U	2760		1.0	< 1.0	
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	
cis-1,3-Dichloropropene	N	2760	ט י	10	< 10	
Toluene	U	2760	μg/kg	1.0	< 1.0	
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	
Dibromochloromethane	N	2760	μg/kg	10	< 10	
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	
1,1,1,2-Tetrachloroethane	U	2760		2.0	< 2.0	
Ethylbenzene	U	2760	1.0.0	1.0	< 1.0	
m & p-Xylene	U	2760		1.0	< 1.0	
o-Xylene	U	2760	μg/kg	1.0	< 1.0	
Styrene	U	2760	μg/kg	1.0	< 1.0	
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	
1,3,5-Trimethylbenzene	U	2760)	1.0	< 1.0	
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	
Tert-Butylbenzene	N	2760)	1.0	< 1.0	
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	
Sec-Butylbenzene	N	2760		1.0	< 1.0	
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
N-Butylbenzene	N	2760		1.0	< 1.0	
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	
1,2,3-Trichlorobenzene	N	2760	100	2.0	< 2.0	
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	



The right chemistry to deliver results Project: Lake Lothing, Lowestoft	5				
Client: Geosphere Environmental Ltd			mtest Jo		17-26355
Quotation No.: Q17-10179	(521396			
Order No.: Q17-10179		BHC05			
		Cli	ent Sam	ple ID.: e Type:	J3
		SOIL			
			Top Dep Date Sa	, ,	0.6
		03-Oct-2017			
			Asbest		COVENTRY
Determinand	Accred.	SOP	Units	LOD	
Phenol	U	2790	mg/kg	0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50



Project: Lake Lothing, Lowestoft						
Client: Geosphere Environmental Ltd		ob No.:	17-26355			
Quotation No.: Q17-10179	<u> </u>		st Sam		521396	
Order No.: Q17-10179			nt Samp		BHC05	
		Clie	ent Sam		J3	
				e Type:	SOIL	
		oth (m):	0.6			
			Date Sa		03-Oct-2017	
			Asbest		COVENTRY	
Determinand	Accred.	SOP		LOD		
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	< 0.50	
Azobenzene	U		mg/kg	0.50	< 0.50	
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	
Phenanthrene	U	2790	mg/kg	0.50	< 0.50	
Anthracene	U	2790		0.50	< 0.50	
Carbazole	U	2790	mg/kg	0.50	< 0.50	
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Fluoranthene	U	2790	ו	0.50	0.64	
Pyrene	U	2790		0.50	0.52	
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50	
Chrysene	U	2790	mg/kg	0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	
PCB 81	N	2815	mg/kg	0.010	< 0.010	
PCB 77	N	2815	mg/kg		< 0.010	
PCB 105	N	2815			< 0.010	
PCB 114	N	2815	mg/kg		< 0.010	
PCB 118	N	2815) י		< 0.010	
PCB 123	N	2815	mg/kg	0.010	< 0.010	
PCB 126	N	2815			< 0.010	
PCB 156	N	2815	mg/kg	0.010	< 0.010	
PCB 157	N		mg/kg		< 0.010	
PCB 167	N	2815			< 0.010	
PCB 169	N	2815			< 0.010	
PCB 189	N	2815	mg/kg		< 0.010	
Total PCBs (12 Congeners)	N		mg/kg		< 0.12	
Total Phenols	U		mg/kg	0.30	< 0.30	



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

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- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

i illai Keport			
Report No.:	17-26646-1		
Initial Date of Issue:	18-Oct-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 GI, Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	10-Oct-2017
Order No.:		Date Instructed:	10-Oct-2017
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	18-Oct-2017
Date Approved:	18-Oct-2017		
Approved By:			



Results - 2 Stage WAC

Project: 2543 GI, Lake Lothing, Lowestoft

Project: 2543 GI, Lake Lotning, L	owestort								
Chemtest Job No:	17-26646						Landfill V	laste Acceptant	ce Criteria
Chemtest Sample ID:	522627							Limits	
Sample Ref:	BHC05							Stable, Non-	
Sample ID:								reactive	Hazardous
Top Depth(m):	0.60						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	03-Oct-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			1.9	3	5	6
Loss On Ignition	2610	U	%			2.4			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			13	500		
Total (Of 17) PAH's	2700	N	mg/kg			19	100		
pH	2010	U				9.5		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.011		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using BS	EN 12457-3 at I	/S 10 l/kg
Arsenic	1450	U	0.025	0.012	< 0.050	0.14	0.5	2	25
Barium	1450	U	0.030	0.030	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	0.0076	0.0056	< 0.050	0.059	0.5	10	70
Copper	1450	U	0.10	0.012	0.20	0.13	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.023	0.034	< 0.050	0.33	0.5	10	30
Nickel	1450	U	0.013	0.0026	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.5	10	50
Antimony	1450	U	0.014	0.0038	0.028	0.052	0.06	0.7	5
Selenium	1450	U	0.014	0.0063	0.028	0.073	0.1	0.5	7
Zinc	1450	U	0.010	0.0071	< 0.50	< 0.50	4	50	200
Chloride	1220	U	23	270	46	2400	800	15000	25000
Fluoride	1220	U	0.30	0.33	< 1.0	3.3	10	150	500
Sulphate	1220	U	130	140	260	1400	1000	20000	50000
Total Dissolved Solids	1020	N	280	750	560	6900	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	36	20	72	220	500	800	1000

Solid Information					
Dry mass of test portion/kg	0.175				
Moisture (%)	7.1				

Leachate Test Information					
Leachant volume 1st extract/l	0.337				
Leachant volume 2nd extract/l	1.400				
Eluant recovered from 1st extract/l	0.234				

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



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The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

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Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

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- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





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Final Report

i mai report			
Report No.:	17-29274-1		
Initial Date of Issue:	17-Nov-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	03-Nov-2017
Order No.:	2543, GI	Date Instructed:	13-Nov-2017
No. of Samples:	2		
Turnaround (Wkdays):	5	Results Due:	17-Nov-2017
Date Approved:	17-Nov-2017		
Approved By:			



Client: Geosphere Environmental Ltd			mtest Jo	17-29274	17-29274	
Quotation No.: Q17-10179	(est Sam		534724	534740
Order No.: 2543, GI		Clie	nt Samp	le Ref.:	WSC17	WSC19
		Cli	ent Sam	J5	J1	
			Sample	SOIL	SOIL	
			Top Dep	1.60	0.30	
			Date Sa	ampled:	30-Oct-2017	01-Nov-2017
				os Lab:		COVENTRY
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A		-
Asbestos Identification	U	2192	%	0.001		No Asbestos Detected
Moisture	N	2030	%	0.020	8.8	9.7
pH	U	2010		N/A	7.2	8.2
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	0.46
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	< 0.010
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	1.0	4.1
Sulphate (Total)	U	2430	%	0.010	< 0.010	0.048
Arsenic	U	2450	mg/kg	1.0	12	9.9
Cadmium	U	2450		0.10	< 0.10	0.21
Chromium	U	2450	mg/kg	1.0	15	12
Copper	U	2450	mg/kg	0.50	10	47
Mercury	U	2450		0.10	< 0.10	0.13
Nickel	U	2450		0.50	16	24
Lead	U	2450	mg/kg	0.50	12	160
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	40	170
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	0.43	
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680		1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	21
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	21
Aromatic TPH >C5-C7	N	2680		1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680		1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680		1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	84



Client: Geosphere Environmental Ltd			mtest Jo			17-29274
Quotation No.: Q17-10179	(est Sam		534724	534740
Order No.: 2543, GI			nt Samp		WSC17	WSC19
		Cli	ent Sam	J5	J1	
			Sample	SOIL	SOIL	
			Top Dep	1.60	0.30	
			Date Sa	ampled:	30-Oct-2017	01-Nov-2017
			Asbest	os Lab:		COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Aromatic TPH >C35-C44	N	2680	ט	1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	85
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	110
Naphthalene	U	2700	mg/kg	0.10	< 0.10	0.18
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	0.81
Anthracene	U	2700	mg/kg	0.10	< 0.10	0.23
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	2.1
Pyrene	U	2700	mg/kg	0.10	< 0.10	1.9
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	1.3
Chrysene	U	2700	mg/kg	0.10	< 0.10	1.1
Benzo[b]fluoranthene	U	•	mg/kg	0.10	< 0.10	1.5
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	0.53
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	1.1
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	0.70
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	0.70
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	12
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tetrachloromethane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1.2-Dichloroethane	Ü	2760	μg/kg	2.0	< 2.0	< 2.0



Client: Geosphere Environmental Ltd			ntest Jo		17-29274	17-29274
Quotation No.: Q17-10179	(st Sam		534724	534740
Order No.: 2543, GI			nt Samp		WSC17	WSC19
		Clie	ent Sam	J5	J1	
			Sample	SOIL	SOIL	
			Top Dep	1.60	0.30	
			Date Sa	ampled:	30-Oct-2017	01-Nov-2017
			Asbest	os Lab:		COVENTRY
Determinand	Accred.	SOP	Units	LOD		
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1.2.3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0	< 2.0
	IN					< Z.U



Client: Geosphere Environmental Ltd		Chemtest Job No.:				17-29274
Quotation No.: Q17-10179	(Chemtest Sample ID.:			534724	534740
Order No.: 2543, GI		Client Sample Ref.:			WSC17	WSC19
		Client Sample ID.:			J5	J1
		Sample Type:			SOIL 1.60	SOIL
		Top Depth (m):				0.30
		Date Sampled:				01-Nov-2017
		Asbestos Lab:				COVENTRY
Determinand	Accred.	SOP	Units	LOD		
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50
Phenol	U	2790	0	0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	0	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	0	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790		0.50	< 0.50	< 0.50
2-Methylphenol	U	2790		0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790		0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Naphthalene	U	2790	0	0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	0	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthene	U	2790	0	0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Che	mtest J	ob No.:	17-29274	17-29274
Quotation No.: Q17-10179			st Sam		534724	534740
Order No.: 2543, GI			nt Samp		WSC17	WSC19
		Cli	ent Sam		J5	J1
			Sampl	e Type:	SOIL	SOIL
			Top De	1.60	0.30	
			Date Sa	30-Oct-2017	01-Nov-2017	
				os Lab:		COVENTRY
Determinand	Accred.	SOP		LOD		
Fluorene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Diethyl Phthalate	U	2790)	0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790)	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790)	0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50	0.51
Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Carbazole	U	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	< 0.50	1.8
Pyrene	U	2790	mg/kg	0.50	< 0.50	1.5
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50	0.92
Chrysene	U	2790	mg/kg	0.50	< 0.50	0.74
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	1.4
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	0.52
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	0.90
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	0.66
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	0.86
PCB 81	N	2815	mg/kg	0.010		< 0.010
PCB 77	N	2815	mg/kg	0.010		< 0.010
PCB 105	N	2815		0.010		< 0.010
PCB 114	N	2815				< 0.010
PCB 118	N	2815				< 0.010
PCB 123	N	2815	mg/kg	0.010		< 0.010
PCB 126	N	2815	mg/kg	0.010		< 0.010
PCB 156	N	2815	mg/kg	0.010		< 0.010
PCB 157	N	2815				< 0.010
PCB 167	N	2815	mg/kg			< 0.010
PCB 169	N	2815		0.010		< 0.010
PCB 189	N	2815	mg/kg	0.010		< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12		< 0.12



Client: Geosphere Environmental Ltd		Che	mtest Jo	17-29274	17-29274	
Quotation No.: Q17-10179	(Chemte	st Sam	534724	534740	
Order No.: 2543, GI		Clie	nt Samp	WSC17	WSC19	
		Cli	ent Sam	J5	J1	
			Sample	SOIL	SOIL	
			Top Dep	oth (m):	1.60	0.30
			Date Sa	impled:	30-Oct-2017	01-Nov-2017
			Asbest	os Lab:		COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



SOP	Title	Parameters included	Method summary
2920	Phenols in Soils by HPLC	Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote:	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

i illai Keport			
Report No.:	17-29383-1		
Initial Date of Issue:	21-Nov-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	06-Nov-2017
Order No.:	2543, GI	Date Instructed:	13-Nov-2017
No. of Samples:	4		
Turnaround (Wkdays):	5	Results Due:	17-Nov-2017
Date Approved:	21-Nov-2017		
Approved By:			

Martin Dyer, Laboratory Manager



Project: 2543, GI Lake Lothing Client: Geosphere Environmental Ltd Chemtest Job No.: 17-29383								
Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179	(st Sam		535385			
Order No.: 2543, GI			nt Samp		WSC19A			
		ple ID.:	J3					
		e Type:	SOIL					
		oth (m):	1.50					
			Date Sa		02-Nov-2017			
Determinand	Accred.	SOP	Units					
рН	U	1010		N/A	8.4			
Ammonia (Free) as N	U	1220	mg/l	0.010	< 0.010			
Sulphate	U	1220	mg/l	1.0	3.2			
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050			
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050			
Arsenic (Dissolved)	U	1450	μg/l	1.0	1.1			
Boron (Dissolved)	U	1450	μg/l	20	23			
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080			
Chromium (Dissolved)	U	1450	μg/l	1.0	1.3			
Copper (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50			
Nickel (Dissolved)	U	1450	μg/l	1.0	6.3			
Lead (Dissolved)	U	1450	μg/l	1.0	1.1			
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Zinc (Dissolved)	U	1450	μg/l	1.0	5.1			
Chromium (Hexavalent)	U	1490	μg/l	20	[B] < 20			
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10			
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10			
Naphthalene	U	1700	μg/l	0.10	< 0.10			
Acenaphthylene	U	1700	μg/l	0.10	< 0.10			
Acenaphthene	U	1700	μg/l	0.10	< 0.10			
Fluorene	U	1700	μg/l	0.10	< 0.10			
Phenanthrene	U	1700	μg/l	0.10	< 0.10			



Project: 2543, GI Lake Lothing Client: Geosphere Environmental Ltd Chemtest Job No.: 17-29383									
Client: Geosphere Environmental Ltd					17-29383				
Quotation No.: Q17-10179	(st Sam		535385				
Order No.: 2543, GI		le Ref.:	WSC19A						
		ple ID.:	J3						
		e Type:	SOIL						
		oth (m):	1.50						
			Date Sa		02-Nov-2017				
Determinand	Accred.	SOP							
Anthracene	U	1700	μg/l	0.10	< 0.10				
Fluoranthene	U	1700	μg/l	0.10	< 0.10				
Pyrene	U	1700	μg/l	0.10	< 0.10				
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10				
Chrysene	U	1700	μg/l	0.10	< 0.10				
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10				
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10				
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10				
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10				
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10				
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10				
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0				
Benzene	U	1760	μg/l	1.0	< 1.0				
Toluene	U	1760	μg/l	1.0	< 1.0				
Ethylbenzene	U	1760	μg/l	1.0	< 1.0				
m & p-Xylene	U	1760	μg/l	1.0	< 1.0				
o-Xylene	U	1760	μg/l	1.0	< 1.0				
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0				
Phenol	N	1790	μg/l	0.50	< 0.50				
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50				
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50				
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50				
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50				
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50				
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50				
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50				
Hexachloroethane	N	1790	μg/l	0.50	< 0.50				
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50				
4-Methylphenol	N	1790	μg/l	0.50	< 0.50				
Nitrobenzene	N	1790	μg/l	0.50	< 0.50				
Isophorone	N	1790	μg/l	0.50	< 0.50				
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50				
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50				
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50				
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50				
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50				
Naphthalene	N	1790	μg/l	0.50	< 0.50				
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50				
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50				



Project: 2543, GI Lake Lothing					
Client: Geosphere Environmental Ltd			ntest Jo		17-29383
Quotation No.: Q17-10179			st Sam		535385
Order No.: 2543, GI			nt Samp		WSC19A
		Clie	ent Sam	ple ID.: e Type:	J3
		SOIL			
			Top Dep	, ,	1.50
			Date Sa		02-Nov-2017
Determinand	Accred.	SOP	Units		
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50



Results - Leachate

Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179		535385				
Order No.: 2543, GI		WSC19A				
		J3				
			е Туре:	SOIL		
			Top Dep	oth (m):	1.50	
			Date Sa	ampled:	02-Nov-2017	
Determinand	Accred.	Accred. SOP U		LOD		
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	
Total Phenois	U	1920	mg/l	0.030	< 0.030	



Quotation No.: Q17-10179 Order No.: 2543, GI Determinand ACM Type Asbestos Identification Moisture pH Boron (Hot Water Soluble) Sulphate (2:1 Water Soluble) as SO4 Cyanide (Free)	Accred. U	Clie	est Sam Int Sample Int	le Ref.: ple ID.: e Type: oth (m): ampled:	535381 WSC14 J3 SOIL 1.70 02-Nov-2017 COVENTRY No Asbestos Detected 7.7	535385 WSC19A J3 SOIL 1.50 02-Nov-2017 COVENTRY - No Asbestos Detected 3.7	535386 WSC19A J4 SOIL 2.10 02-Nov-2017	535390 WSC22 J2 SOIL 0.50 01-Nov-2017 COVENTRY - No Asbestos Detected
Determinand ACM Type Asbestos Identification Moisture pH Boron (Hot Water Soluble) Sulphate (2:1 Water Soluble) as SO4	U U N U U U U U U	SOP 2192 2192 2030 2010 2120	ent Sam Sample Top Dep Date Sa Asbest Units %	ple ID.: e Type: oth (m): ampled: os Lab: LOD N/A 0.001	J3 SOIL 1.70 02-Nov-2017 COVENTRY - No Asbestos Detected 7.7	J3 SOIL 1.50 02-Nov-2017 COVENTRY - No Asbestos Detected	J4 SOIL 2.10 02-Nov-2017	J2 SOIL 0.50 01-Nov-2017 COVENTRY
ACM Type Asbestos Identification Moisture pH Boron (Hot Water Soluble) Sulphate (2:1 Water Soluble) as SO4	U U N U U U U U U	\$0P 2192 2192 2030 2010 2120	Sample Top Dep Date Sa Asbest Units	e Type: oth (m): ampled: os Lab: LOD N/A 0.001	SOIL 1.70 02-Nov-2017 COVENTRY - No Asbestos Detected 7.7	SOIL 1.50 02-Nov-2017 COVENTRY - No Asbestos Detected	SOIL 2.10 02-Nov-2017	SOIL 0.50 01-Nov-2017 COVENTRY - No Asbestos
ACM Type Asbestos Identification Moisture pH Boron (Hot Water Soluble) Sulphate (2:1 Water Soluble) as SO4	U U N U U U U U U	2192 2192 2192 2030 2010 2120	Top Dep Date Sa Asbest Units %	os Lab: LOD N/A 0.001	1.70 02-Nov-2017 COVENTRY - No Asbestos Detected 7.7	1.50 02-Nov-2017 COVENTRY - No Asbestos Detected	2.10 02-Nov-2017	0.50 01-Nov-201 COVENTRY
ACM Type Asbestos Identification Moisture pH Boron (Hot Water Soluble) Sulphate (2:1 Water Soluble) as SO4	U U N U U U U U U	2192 2192 2192 2030 2010 2120	Date Sa Asbest Units	mpled: os Lab: LOD N/A 0.001	O2-Nov-2017 COVENTRY - No Asbestos Detected 7.7	02-Nov-2017 COVENTRY - No Asbestos Detected	02-Nov-2017	01-Nov-2017 COVENTRY - No Asbestos
ACM Type Asbestos Identification Moisture pH Boron (Hot Water Soluble) Sulphate (2:1 Water Soluble) as SO4	U U N U U U U U U	2192 2192 2030 2010 2120	Asbesto Units % %	os Lab: LOD N/A 0.001 0.020	COVENTRY - No Asbestos Detected 7.7	- No Asbestos Detected		- No Asbestos
ACM Type Asbestos Identification Moisture pH Boron (Hot Water Soluble) Sulphate (2:1 Water Soluble) as SO4	U U N U U U U U U	2192 2192 2030 2010 2120	%	N/A 0.001 0.020	- No Asbestos Detected 7.7	- No Asbestos Detected		- No Asbesto
ACM Type Asbestos Identification Moisture pH Boron (Hot Water Soluble) Sulphate (2:1 Water Soluble) as SO4	U U N U U U U U U	2192 2192 2030 2010 2120	%	N/A 0.001 0.020	No Asbestos Detected 7.7	No Asbestos Detected		
Asbestos Identification Moisture pH Boron (Hot Water Soluble) Sulphate (2:1 Water Soluble) as SO4	U N U U U U U	2192 2030 2010 2120	%	0.001 0.020	No Asbestos Detected 7.7	No Asbestos Detected		
Moisture pH Boron (Hot Water Soluble) Sulphate (2:1 Water Soluble) as SO4	N U U U	2030 2010 2120	%	0.020	Detected 7.7	Detected		
pH Boron (Hot Water Soluble) Sulphate (2:1 Water Soluble) as SO4	U U U	2010 2120				3.7		
Boron (Hot Water Soluble) Sulphate (2:1 Water Soluble) as SO4	U	2120	ma/ka	N/A	a -		5.9	5.0
Boron (Hot Water Soluble) Sulphate (2:1 Water Soluble) as SO4	U		ma/ka		8.6	8.3	8.0	9.1
Sulphate (2:1 Water Soluble) as SO4	Ü		mg/ku	0.40	< 0.40	< 0.40	< 0.40	1.2
,	_		g/l	0.010	< 0.010	< 0.010	< 0.010	0.34
Oyaniac (i icc)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)		2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	< 0.50	0.68	0.67	< 0.50
Sulphate (Total)	Ü	2430	%	0.010	0.051	< 0.010	< 0.010	0.096
Arsenic	Ü	2450	mg/kg	1.0	12	29	1.6	8.0
Cadmium	Ü	2450	mg/kg	0.10	0.23	< 0.10	< 0.10	< 0.10
Chromium	Ü	2450	mg/kg	1.0	16	27	8.2	8.6
Copper	Ü	2450	mg/kg	0.50	20	30	2.2	5.1
Mercury	Ü	2450	mg/kg	0.10	< 0.10	0.10	< 0.10	< 0.10
Nickel	Ü	2450	mg/kg	0.50	17	37	6.2	7.2
Lead	Ü	2450	mg/kg	0.50	150	110	8.4	18
Selenium	Ü	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
Zinc	Ü	2450	mg/kg	0.50	59	130	12	21
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	1 0.00	1 0.00	< 0.40	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	Ü	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	Ü	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	Ü	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16 Aromatic TPH >C16-C21	U	2680		1.0	3.4			16
Aromatic TPH >C16-C21 Aromatic TPH >C21-C35	U	2680	mg/kg mg/kg	1.0	13	< 1.0 < 1.0	< 1.0 < 1.0	1.4



Client: Geosphere Environmental Ltd			mtest Jo			17-29383	17-29383	17-29383
Quotation No.: Q17-10179	(st Sam		535381 WSC14	535385	535386	535390
Order No.: 2543, GI		Client Sample Ref.:				WSC19A	WSC19A	WSC22
		Cli	ent Sam		J3	J3	J4	J2
			Sample	e Type:	SOIL	SOIL	SOIL	SOIL
			Top Dep	oth (m):	1.70	1.50	2.10	0.50
			Date Sa	mpled:	02-Nov-2017	02-Nov-2017	02-Nov-2017	01-Nov-2017
			Asbest	os Lab:	COVENTRY	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	16	< 5.0	< 5.0	18
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	16	< 10	< 10	18
Naphthalene	U	2700	mg/kg	0.10	0.19	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	0.16	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	0.52	< 0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	0.20	< 0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	1.1	0.21	< 0.10	0.36
Pyrene	U	2700	mg/kg	0.10	0.93	0.23	< 0.10	0.30
Benzo[a]anthracene	U	2700	mg/kg	0.10	0.49	< 0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	0.18	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	Ü	2700	mg/kg	0.10	0.39	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	0.27	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	Ü	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	4.4	< 2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinvl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20	< 20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1.2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1.2-Dichloroethene	U	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	N N	2760		5.0	< 5.0	< 5.0	< 5.0	< 1.0 < 5.0
Bromocniorometnane Trichloromethane	U	2760	μg/kg μg/kg	1.0	< 5.0 < 1.0	< 5.0 < 1.0	< 5.0 < 1.0	< 5.0 < 1.0
	U	2760		1.0		_	_	
1,1,1-Trichloroethane Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
			μg/kg		< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			ntest Jo		17-29383	17-29383	17-29383	17-29383
Quotation No.: Q17-10179	(st Sam		535381 WSC14	535385	535386	535390
Order No.: 2543, GI		Client Sample Ref.:				WSC19A	WSC19A	WSC22
		Clie	ent Sam		J3	J3	J4	J2
			Sample	е Туре:	SOIL	SOIL	SOIL	SOIL
			Top Dep	oth (m):	1.70	1.50	2.10	0.50
			Date Sa	ampled:	02-Nov-2017	02-Nov-2017	02-Nov-2017	01-Nov-201
			Asbest	os Lab:	COVENTRY	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD				
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10	< 10
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10	< 10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10	< 10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	N	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1.3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50
1.2.4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,2,0-111011010001120110	U	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd	Chemtest Job No.:		17-29383	17-29383	17-29383	17-29383		
Quotation No.: Q17-10179	(st Sam		535381	535385	535386	535390
Order No.: 2543, GI			nt Samp		WSC14	WSC19A	WSC19A	WSC22
		Cli	ent Sam		J3	J3	J4	J2
			Sample	e Type:	SOIL	SOIL	SOIL	SOIL
			Top Dep	oth (m):	1.70	1.50	2.10	0.50
			Date Sa	mpled:	02-Nov-2017	02-Nov-2017	02-Nov-2017	01-Nov-201
			Asbest	os Lab:	COVENTRY	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD				
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd	Chemtest Job No.:		17-29383	17-29383	17-29383	17-29383		
Quotation No.: Q17-10179			st Sam		535381	535385	535386	535390
Order No.: 2543, GI			nt Samp		WSC14	WSC19A	WSC19A	WSC22
		Cli	ent Sam		J3	J3	J4	J2
			Sample	e Type:	SOIL	SOIL	SOIL	SOIL
			Top Dep	oth (m):	1.70	1.50	2.10	0.50
			Date Sa		02-Nov-2017	02-Nov-2017	02-Nov-2017	01-Nov-2017
			Asbest	os Lab:	COVENTRY	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Fluorene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	1.7	< 0.50	< 0.50	< 0.50
Anthracene	U	2790	mg/kg	0.50	0.54	< 0.50	< 0.50	< 0.50
Carbazole	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	3.0	< 0.50	< 0.50	< 0.50
Pyrene	U	2790	mg/kg	0.50	2.4	< 0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	1.2	< 0.50	< 0.50	< 0.50
Chrysene	U	2790	mg/kg	0.50	1.0	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	1.2	< 0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	0.75	< 0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
PCB 28	U	2815	mg/kg	0.010		< 0.010		
PCB 81	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 52	U	2815	mg/kg	0.010		< 0.010		
PCB 77	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 105	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 90+101	U	2815	mg/kg	0.010		< 0.010		
PCB 114	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 118	U	2815	mg/kg	0.010		< 0.010		
PCB 118	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 153	Ü	2815	mg/kg	0.010		< 0.010		3.0.0
PCB 123	N	2815	mg/kg	0.010	< 0.010	, 5.5.5		< 0.010
PCB 138	Ü	2815	mg/kg	0.010	1 0.010	< 0.010		1 3.0 10
PCB 126	N	2815	mg/kg	0.010	< 0.010			< 0.010



Results - Soil

Client: Geosphere Environmental Ltd		Chemtest Job No.:		17-29383	17-29383	17-29383	17-29383	
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	535381	535385	535386	535390
Order No.: 2543, GI		Clie	nt Samp	le Ref.:	WSC14	WSC19A	WSC19A	WSC22
		Cli	ent Sam	ple ID.:	J3	J3	J4	J2
			Sampl	е Туре:	SOIL	SOIL	SOIL	SOIL
			Top De	oth (m):	1.70	1.50	2.10	0.50
			Date Sa	ampled:	02-Nov-2017	02-Nov-2017	02-Nov-2017	01-Nov-2017
		Asbestos Lab:		COVENTRY	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
PCB 180	U	2815	mg/kg	0.010		< 0.010		
PCB 156	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 157	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 167	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 169	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 189	N	2815	mg/kg	0.010	< 0.010			< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12			< 0.12
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10		< 0.10		
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30	< 0.30



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
535385	WSC19A	J3	02-Nov-2017	В	Amber Glass 250ml
535385	WSC19A	J3	02-Nov-2017	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

i illai Keport			
Report No.:	17-29990-1		
Initial Date of Issue:	22-Nov-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543,GI Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	13-Nov-2017
Order No.:	2543,GI	Date Instructed:	13-Nov-2017
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	21-Nov-2017
Date Approved:	22-Nov-2017		
Approved By:			

Martin Dyer, Laboratory Manager



Results - 2 Stage WAC

Proj	ect:	2543	,GI	Lake	Lothing

Project: 2543,GI Lake Lothing									
Chemtest Job No:	17-29990						Landfill W	/aste Acceptano	ce Criteria
Chemtest Sample ID:	538111							Limits	
Sample Ref:								Stable, Non-	
Sample ID:	WSC14							reactive	Hazardous
Top Depth(m):	1.70						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	02-Nov-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			0.23	3	5	6
Loss On Ignition	2610	U	%			0.92			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			100	500		
Total (Of 17) PAH's	2700	Ν	mg/kg			110	100		
рН	2010	U				9.0		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.016		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using BS	S EN 12457 at L/	S 10 l/kg
Arsenic	1450	U	0.0013	0.0033	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.0068	0.0050	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.0013	0.0019	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0030	0.0021	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	0.0019	0.0011	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	0.0010	0.0042	< 0.010	0.037	0.5	10	50
Antimony	1450	U	0.0042	0.0066	< 0.010	0.063	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.1	0.5	7
Zinc	1450	U	< 0.0010	0.0067	< 0.50	< 0.50	4	50	200
Chloride	1220	U	2.0	< 1.0	< 10	< 10	800	15000	25000
Fluoride	1220	U	0.76	0.67	1.5	6.8	10	150	500
Sulphate	1220	U	17	7.7	34	90	1000	20000	50000
Total Dissolved Solids	1020	N	69	54	140	560	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	17	46	< 50	420	500	800	1000

Solid Information				
Dry mass of test portion/kg	0.175			
Moisture (%)	4.4			

Leachate Test Information					
Leachant volume 1st extract/l	0.342				
Leachant volume 2nd extract/l	1.400				
Eluant recovered from 1st extract/l	0.246				

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.:	17-30076-1		
Initial Date of Issue:	17-Nov-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 G-I - Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	13-Nov-2017
Order No.:	2543, G-I	Date Instructed:	13-Nov-2017
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	17-Nov-2017
Date Approved:	17-Nov-2017		
Approved By:			

Robert Monk, Technical Manager



Project: 2543 G-I - Lake Lothing						
Client: Geosphere Environmental Ltd	Chemtest Job No.:					
Quotation No.: Q17-10179	(st Sam	•	538508	
Order No.: 2543, G-I			nt Samp		WSC23	
		Clie	ent Sam		J1	
				e Type:	SOIL	
			Top De		0.50	
			Date Sa		09-Nov-2017	
Determinand	Accred.	SOP	Units			
рН	U	1010		N/A	9.7	
Ammonia (Free) as N	U	1220	mg/l	0.010	0.053	
Sulphate	U	1220	mg/l	1.0	16	
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050	
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050	
Arsenic (Dissolved)	U	1450	μg/l	1.0	10	
Boron (Dissolved)	U	1450	μg/l	20	37	
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080	
Chromium (Dissolved)	U	1450	μg/l	1.0	1.8	
Copper (Dissolved)	U	1450	μg/l	1.0	2.8	
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50	
Nickel (Dissolved)	U	1450	μg/l	1.0	2.1	
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0	
Selenium (Dissolved)	U	1450	μg/l	1.0	1.1	
Zinc (Dissolved)	U	1450	μg/l	1.0	< 1.0	
Chromium (Hexavalent)	U	1490	μg/l	20	< 20	
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	84	
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	74	
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	60	
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	220	
Total Petroleum Hydrocarbons	N	1675	μg/l	10	220	
Naphthalene	U	1700	μg/l	0.10	< 0.10	
Acenaphthylene	U	1700	μg/l	0.10	< 0.10	
Acenaphthene	U	1700	μg/l	0.10	< 0.10	
Fluorene	U	1700	μg/l	0.10	< 0.10	
Phenanthrene	U	1700	μg/l	0.10	8.4	



Project: 2543 G-I - Lake Lothing					
Client: Geosphere Environmental Ltd	Chemtest Job No.:			17-30076	
Quotation No.: Q17-10179	Chemtest Sample ID.:				538508
Order No.: 2543, G-I	Client Sample Ref.:				WSC23
		Clie	ent Sam		J1
				e Type:	SOIL
			Top Dep		0.50
			Date Sa		09-Nov-2017
Determinand	Accred.	SOP		LOD	
Anthracene	U	1700	μg/l	0.10	2.8
Fluoranthene	U	1700	μg/l	0.10	7.6
Pyrene	U	1700	μg/l	0.10	6.7
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	26
Benzene	U	1760	μg/l	1.0	< 1.0
Toluene	U	1760	μg/l	1.0	< 1.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0
Phenol	N	1790	μg/l	0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50



Project: 2543 G-I - Lake Lothing						
Client: Geosphere Environmental Ltd	Chemtest Job No.:				17-30076	
Quotation No.: Q17-10179	(st Sam		538508	
Order No.: 2543, G-I	Client Sample Ref.:				WSC23	
		Clie	ent Sam		J1	
				e Type:	SOIL	
			Top Dep		0.50	
			Date Sa		09-Nov-2017	
Determinand	Accred.	SOP	Units			
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50	
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50	
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50	
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Acenaphthylene	N	1790	μg/l	0.50	< 0.50	
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50	
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Acenaphthene	N	1790	μg/l	0.50	0.92	
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Dibenzofuran	N	1790	μg/l	0.50	< 0.50	
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50	
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Fluorene	N	1790	μg/l	0.50	< 0.50	
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50	
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50	
Azobenzene	N	1790	μg/l	0.50	< 0.50	
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50	
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50	
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	
Phenanthrene	N	1790	μg/l	0.50	5.6	
Anthracene	N	1790	μg/l	0.50	1.9	
Carbazole	N	1790	μg/l	0.50	1.8	
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Fluoranthene	N	1790	μg/l	0.50	9.5	
Pyrene	N	1790	μg/l	0.50	7.5	
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[a]anthracene	N	1790	μg/l	0.50	1.3	
Chrysene	N	1790	μg/l	0.50	0.94	
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50	
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50	
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50	



Results - Leachate

1 TO COLL ZO TO O T LUNC LOTTING					
Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	17-30076
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	538508
Order No.: 2543, G-I		Clie	nt Samp	le Ref.:	WSC23
		Client Sample ID.:			J1
	Sample Type:			е Туре:	SOIL
			Top Dep	oth (m):	0.50
			Date Sa	ampled:	09-Nov-2017
Determinand	Accred.	SOP	Units	LOD	
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Project: 2543 G-I - Lake Lothing					
Client: Geosphere Environmental Ltd	Chemtest Job No.:			17-30076	
Quotation No.: Q17-10179	Chemtest Sample ID.:				538508
Order No.: 2543, G-I	Client Sample Ref.:				WSC23
		Clie	ent Sam		J1
				e Type:	SOIL
			Top Dep	\ /	0.50
			Date Sa		09-Nov-2017
			Asbest	os Lab:	COVENTRY
Determinand	Accred.	SOP	Units	LOD	
ACM Type	U	2192		N/A	=
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected
Moisture	N	2030	%	0.020	7.8
pH	U	2010		N/A	8.7
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.58
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.032
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	0.51
Sulphate (Total)	U	2430	%	0.010	0.21
Arsenic	U	2450	mg/kg	1.0	12
Cadmium	U	2450	mg/kg	0.10	0.17
Chromium	U	2450	mg/kg	1.0	24
Copper	U	2450	mg/kg	0.50	36
Mercury	U	2450	mg/kg	0.10	0.19
Nickel	U	2450	mg/kg	0.50	27
Lead	U	2450	mg/kg	0.50	120
Selenium	U	2450	mg/kg	0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	71
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	22
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	38
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	39
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	100
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	12
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	74
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	360
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	2700
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	490



Project: 2543 G-I - Lake Lothing					
Client: Geosphere Environmental Ltd	Chemtest Job No.:				
Quotation No.: Q17-10179	(st Sam		538508
Order No.: 2543, G-I			nt Samp		WSC23
		Clie	ent Sam		J1
				e Type:	SOIL
			Top Dep		0.50
			Date Sa		09-Nov-2017
			Asbest		COVENTRY
Determinand	Accred.	SOP		LOD	
Total Aromatic Hydrocarbons	N	2680	0	5.0	3700
Total Petroleum Hydrocarbons	N	2680) י	10.0	3800
Naphthalene	U	2700) י	0.10	0.73
Acenaphthylene	U		mg/kg	0.10	2.4
Acenaphthene	U	2700	0	0.10	1.1
Fluorene	U	2700	mg/kg	0.10	1.3
Phenanthrene	U	2700	mg/kg	0.10	11
Anthracene	U	2700	mg/kg	0.10	4.9
Fluoranthene	U	2700	J	0.10	42
Pyrene	U	2700		0.10	45
Benzo[a]anthracene	U	2700	0	0.10	20
Chrysene	U	2700	5	0.10	22
Benzo[b]fluoranthene	U	2700	0	0.10	32
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	12
Benzo[a]pyrene	U	2700	mg/kg	0.10	26
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	18
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	5.1
Benzo[g,h,i]perylene	U	2700		0.10	16
Total Of 16 PAH's	U	2700	mg/kg	2.0	260
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0



Project: 2543 G-I - Lake Lothing					
Client: Geosphere Environmental Ltd			ntest Jo		17-30076
Quotation No.: Q17-10179			st Sam		538508
Order No.: 2543, G-I			nt Samp		WSC23
		Clie	ent Sam		J1
				e Type:	SOIL
			Top Dep		0.50
			Date Sa		09-Nov-2017
			Asbest	os Lab:	COVENTRY
Determinand	Accred.	SOP		LOD	
Dibromomethane	U	2760	μg/kg	1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50



Project: 2543 G-I - Lake Lothing					
Client: Geosphere Environmental Ltd	Chemtest Job No.:			17-30076 538508	
Quotation No.: Q17-10179	,	Chemtest Sample ID.:			
Order No.: 2543, G-I		Client Sample Ref.:			WSC23
		Clie	ent Sam		J1
			Sample		SOIL
			Top Dep		0.50
			Date Sa		09-Nov-2017
			Asbest		COVENTRY
Determinand	Accred.	SOP		LOD	0.50
Phenol	U	2790	mg/kg	0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790		0.50	< 0.50
1,3-Dichlorobenzene	U	2790	0	0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	0.88
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	0.75
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	0.94



Client: Geosphere Environmental Ltd		Chemtest Job No.:			17-30076
Quotation No.: Q17-10179			st Sam		538508
Order No.: 2543, G-I		Client Sample Ref.:			WSC23
		Clie	ent Sam		J1
				e Type:	SOIL
			Top Dep	` '	0.50
			Date Sa		09-Nov-2017
			Asbest	os Lab:	COVENTRY
Determinand	Accred.	SOP	Units	LOD	
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	8.3
Anthracene	U	2790	mg/kg	0.50	4.0
Carbazole	U	2790	mg/kg	0.50	1.3
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	25
Pyrene	U	2790	mg/kg	0.50	24
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	12
Chrysene	U	2790	mg/kg	0.50	12
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	19
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	7.6
Benzo[a]pyrene	U	2790	mg/kg	0.50	16
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	12
PCB 28	U	2815	mg/kg	0.010	< 0.010
PCB 52	U	2815	mg/kg	0.010	< 0.010
PCB 90+101	U	2815	mg/kg	0.010	< 0.010
PCB 118	U	2815	mg/kg	0.010	< 0.010
PCB 153	U	2815	mg/kg	0.010	< 0.010
PCB 138	U	2815	mg/kg	0.010	< 0.010
PCB 180	U	2815	mg/kg	0.010	< 0.010
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10
Total Phenols	U	2920	mg/kg	0.30	< 0.30



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk





Chemtest Ltd. **Depot Road** Newmarket CB8 0AL Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report			
Report No.:	17-31448-1		
Initial Date of Issue:	04-Dec-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 GI Lake Lothing, L14		
Quotation No.:	Q17-10179	Date Received:	24-Nov-2017
Order No.:	2543 GI	Date Instructed:	24-Nov-2017
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	30-Nov-2017
Date Approved:	04-Dec-2017		
Approved By:			

Glynn Harvey, Laboratory Manager



Client: Geosphere Environmental Ltd		Chemtest Job No.: Chemtest Sample ID.:				
Quotation No.: Q17-10179	С				545141	
Order No.: 2543 GI			Sample		BHC103	
		Client Sample ID.:			8	
			Sample		SOIL	
			op Dept		4.5	
			ate Sar		22-Nov-2017	
Determinand	Accred.	SOP				
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10	
Naphthalene	U	1700	μg/l	0.10	< 0.10	
Acenaphthylene	U	1700	μg/l	0.10	< 0.10	
Acenaphthene	U	1700	μg/l	0.10	< 0.10	
Fluorene	U	1700	μg/l	0.10	< 0.10	
Phenanthrene	U	1700	μg/l	0.10	< 0.10	
Anthracene	U	1700	μg/l	0.10	< 0.10	
Fluoranthene	U	1700	μg/l	0.10	< 0.10	
Pyrene	U	1700	μg/l	0.10	< 0.10	
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10	
Chrysene	U	1700	μg/l	0.10	< 0.10	
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10	
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10	
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10	
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10	
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10	
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0	
Benzene	U	1760	μg/l	1.0	< 1.0	
Toluene	U	1760	μg/l	1.0	< 1.0	
Ethylbenzene	U	1760	μg/l	1.0	< 1.0	
m & p-Xylene	U	1760	μg/l	1.0	< 1.0	
o-Xylene	U	1760	μg/l	1.0	< 1.0	
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0	
Phenol	N	1790	μg/l	0.50	< 0.50	



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	С	hemtes			545141	
Order No.: 2543 GI			Sample		BHC103	
		Client Sample ID.:			8	
			Sample		SOIL	
		T	op Dept	th (m):	4.5	
			ate Sar		22-Nov-2017	
Determinand	Accred.	SOP	Units			
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50	
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50	
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50	
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50	
Hexachloroethane	N	1790	μg/l	0.50	< 0.50	
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50	
4-Methylphenol	N	1790	μg/l	0.50	< 0.50	
Nitrobenzene	N	1790	μg/l	0.50	< 0.50	
Isophorone	N	1790	μg/l	0.50	< 0.50	
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50	
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50	
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50	
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50	
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50	
Naphthalene	N	1790	μg/l	0.50	< 0.50	
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50	
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50	
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50	
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50	
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50	
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Acenaphthylene	N	1790	μg/l	0.50	< 0.50	
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50	
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Acenaphthene	N	1790	μg/l	0.50	< 0.50	
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Dibenzofuran	N	1790	μg/l	0.50	< 0.50	
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50	
2.4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Fluorene	N	1790	μg/l	0.50	< 0.50	
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50	
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	1790		0.50	< 0.50	
·	N N	1790	μg/l	0.50		
Azobenzene 4 Promonhandahand Ethar			μg/l		< 0.50	
4-Bromophenylphenyl Ether	N N	1790	μg/l	0.50	< 0.50	
Hexachlorobenzene	IN	1790	μg/l	0.50	< 0.50	



Results - Leachate

1 Toject. 2545 Of Lake Lourning, L14						
Client: Geosphere Environmental Ltd		Chemtest Job No.				
Quotation No.: Q17-10179	C	Chemtest Sample ID.				
Order No.: 2543 GI		Client	e Ref.:	BHC103		
		Clie	nt Samp	le ID.:	8	
			Sample	Type:	SOIL	
		T	op Dept	th (m):	4.5	
			ate Sar	npled:	22-Nov-2017	
Determinand	Accred.	SOP	Units	LOD		
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	
Phenanthrene	N	1790	μg/l	0.50	< 0.50	
Anthracene	N	1790	μg/l	0.50	< 0.50	
Carbazole	N	1790	μg/l	0.50	< 0.50	
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Fluoranthene	N	1790	μg/l	0.50	< 0.50	
Pyrene	N	1790	μg/l	0.50	< 0.50	
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50	
Chrysene	N	1790	μg/l	0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50	
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50	
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50	
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	



Client: Geosphere Environmental Ltd		ob No.:	17-31448		
Quotation No.: Q17-10179		ple ID.:	545141		
Order No.: 2543 GI		(Client Samp	le Ref.:	BHC103
			Client Sam	ple ID.:	8
			Sampl	e Type:	SOIL
			Top De	pth (m):	4.5
			Date Sa	ampled:	22-Nov-2017
Determinand	Accred.	SOP	Units	LOD	
Moisture	N	2030	%	0.020	7.9
рН	U	2010		N/A	8.7
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	2.0
Sulphate (Total)	U	2430	%	0.010	< 0.010
Arsenic	U	2450	mg/kg	1.0	8.5
Cadmium	U	2450	mg/kg	0.10	< 0.10
Chromium	U	2450	mg/kg	1.0	6.4
Copper	U	2450	mg/kg	0.50	5.0
Mercury	U	2450	mg/kg	0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	5.2
Lead	U	2450	mg/kg	0.50	3.5
Selenium	U	2450	mg/kg	0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	18
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10



Client: Geosphere Environmental Ltd	Chemtest Job No.:				17-31448
Quotation No.: Q17-10179			mtest Sam	•	545141
Order No.: 2543 GI		(Client Samp Client Sam		BHC103
		8			
				e Type:	SOIL
			Top De		4.5
				ampled:	22-Nov-201
Determinand	Accred.	SOP	Units	LOD	
Anthracene	U	2700	mg/kg	0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10
Pyrene	U	2700	mg/kg	0.10	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0
cis 1,2-Dichloroethene	Ü	2760	μg/kg	1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0
1,1,1-Trichloroethane	Ü	2760	μg/kg	1.0	< 1.0
Tetrachloromethane	Ü	2760	µg/kg	1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dichloroethane	Ü	2760	μg/kg	2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0
1,2-Dichloropropane	Ü	2760	μg/kg μg/kg	1.0	< 1.0
Dibromomethane	Ü	2760	μg/kg μg/kg	1.0	< 1.0
Bromodichloromethane	Ü	2760	μg/kg μg/kg	5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg μg/kg	10	< 10
Toluene	U	2760	μg/kg μg/kg	1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg μg/kg	1.0	< 1.0
1,1,2-Trichloroethane	U	2760	μg/kg μg/kg	10	< 10
Tetrachloroethene	U	2760		1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg μg/kg	2.0	< 2.0
Dibromochloromethane	N N			10	< 10
	U	2760	µg/kg		
1,2-Dibromoethane		2760	μg/kg	5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0



Client: Geosphere Environmental Ltd		ob No.:	17-31448		
Quotation No.: Q17-10179	Chemtest Sample ID.:				545141
Order No.: 2543 GI		(Client Samp		BHC103
			Client Sam		8
				e Type:	SOIL
			Top Dep		4.5
			Date Sa		22-Nov-2017
Determinand	Accred.	SOP	Units	LOD	
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0
o-Xylene	U	2760	1.0 µg/kg	1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50



Client: Geosphere Environmental Ltd		17-31448			
Quotation No.: Q17-10179		ple ID.:	545141		
Order No.: 2543 GI		(Client Samp		BHC103
			Client Sam		8
				е Туре:	SOIL
				pth (m):	4.5
			Date Sa	ampled:	22-Nov-2017
Determinand	Accred.	SOP	Units	LOD	
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50
2-Nitroaniline	Ü	2790	mg/kg	0.50	< 0.50
Acenaphthylene	Ü	2790	mg/kg	0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50
4-Nitroaniline	Ü	2790	mg/kg	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50
Hexachlorobenzene	Ü	2790	mg/kg	0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50
Anthracene	Ü	2790	mg/kg	0.50	< 0.50
Carbazole	Ü	2790	mg/kg	0.50	< 0.50
Di-N-Butyl Phthalate	Ü	2790	mg/kg	0.50	< 0.50
Fluoranthene	Ü	2790	mg/kg	0.50	< 0.50
Pyrene	Ü	2790	mg/kg	0.50	< 0.50
Butylbenzyl Phthalate	Ü	2790	mg/kg	0.50	< 0.50
Benzo[a]anthracene	Ü	2790	mg/kg	0.50	< 0.50
Chrysene	Ü	2790	mg/kg	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50
Di-N-Octyl Phthalate	Ü	2790	mg/kg	0.50	< 0.50
Benzo[b]fluoranthene	Ü	2790	mg/kg	0.50	< 0.50



Project: 2545 Gi Lake Lotning, L14						
Client: Geosphere Environmental Ltd		C	ob No.:	17-31448		
Quotation No.: Q17-10179		Che	ple ID.:	545141		
Order No.: 2543 GI		(le Ref.:	BHC103		
			Client Sam	ple ID.:	8	
			Sampl	е Туре:	SOIL	
			Top De	pth (m):	4.5	
			Date Sa	ampled:	22-Nov-2017	
Determinand	Accred.	SOP	Units	LOD		
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	
PCB 28	U	2815	mg/kg	0.010	< 0.010	
PCB 52	U	2815	mg/kg	0.010	< 0.010	
PCB 90+101	U	2815	mg/kg	0.010	< 0.010	
PCB 118	U	2815	mg/kg	0.010	< 0.010	
PCB 153	U	2815	mg/kg	0.010	< 0.010	
PCB 138	U	2815	mg/kg	0.010	< 0.010	
PCB 180	U	2815	mg/kg	0.010	< 0.010	
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10	
Total Phenols	U	2920	mg/kg	0.30	< 0.30	



SOP	Title	Parameters included	Method summary
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



SOP	Title	Parameters included	Method summary
2920	Phenols in Soils by HPLC	Phenol, Methylphenols, Dimethylphenols, 1-	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd. **Depot Road** Newmarket CB8 0AL Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report			
Report No.:	17-31794-1		
Initial Date of Issue:	06-Dec-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	254391 L14 Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	29-Nov-2017
Order No.:	254391	Date Instructed:	29-Nov-2017
No. of Samples:	4		
Turnaround (Wkdays):	5	Results Due:	05-Dec-2017
Date Approved:	06-Dec-2017		
Approved By:			

Martin Dyer, Laboratory Manager



Client: Geosphere Environmental Ltd		Chemtest Job No.							
Quotation No.: Q17-10179	(st Sam		546616				
Order No.: 254391			nt Samp		BH102				
		Cli	ent Sam		V1				
				е Туре:	SOIL				
			Top De		0.30				
				ampled:	24-Nov-2017				
Determinand	Accred.	SOP	Units						
pH	U	1010		N/A	10.4				
Ammonia (Free) as N	U	1220		0.010	0.057				
Sulphate	U	1220		1.0	17				
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050				
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050				
Arsenic (Dissolved)	U	1450	μg/l	1.0	6.7				
Boron (Dissolved)	U	1450	μg/l	20	< 20				
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080				
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0				
Copper (Dissolved)	U	1450	μg/l	1.0	32				
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50				
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0				
Lead (Dissolved)	U	1450	μg/l	1.0	14				
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0				
Zinc (Dissolved)	U	1450	μg/l	1.0	< 1.0				
Chromium (Hexavalent)	U	1490	μg/l	20	< 20				
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10				
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10				
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10				
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10				
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10				
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10				
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10				
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10				
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0				
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10				
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10				
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10				
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10				
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10				
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10				
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10				
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0				
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10				
Naphthalene	U	1700	μg/l	0.10	< 0.10				
Acenaphthylene	U	1700	μg/l	0.10	< 0.10				
Acenaphthene	U	1700	μg/l	0.10	< 0.10				
Fluorene	U	1700	μg/l	0.10	< 0.10				
Phenanthrene	U	1700	μg/l	0.10	< 0.10				
Anthracene	U	1700	μg/l	0.10	< 0.10				
Fluoranthene	U	1700	μg/l	0.10	< 0.10				
Pyrene	U	1700	μg/l	0.10	< 0.10				



Client: Geosphere Environmental Ltd		Chei	ntest Jo	ob No.:	17-31794
Quotation No.: Q17-10179			st Sam		546616
Order No.: 254391			nt Samp		BH102
			ent Sam		V1
				e Type:	SOIL
		oth (m):	0.30		
			Date Sa		24-Nov-2017
Determinand	Accred.	SOP	Units	LOD	
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	Ü	1700	μg/l	0.10	< 0.10
Benzo[g,h,i]perylene	Ü	1700	μg/l	0.10	< 0.10
Total Of 16 PAH's	Ü	1700	μg/l	2.0	< 2.0
Benzene	Ü	1760	μg/l	1.0	< 1.0
Toluene	Ü	1760	μg/l	1.0	< 1.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0
Phenol	N	1790	µg/l	0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50



Client: Geosphere Environmental Ltd		ob No.:	17-31794		
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	546616
Order No.: 254391		Clie	nt Samp	le Ref.:	BH102
		Cli	ent Sam		V1
			Sampl	е Туре:	SOIL
			Top De	oth (m):	0.30
			Date Sa	ampled:	24-Nov-2017
Determinand	Accred.	SOP	Units	LOD	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Client: Geosphere Environmental Ltd		Chemtest Job No.:				17-31794	17-31794	17-31794
Quotation No.: Q17-10179			mtest Sam		546616	546618	546620	546621
Order No.: 254391		(Client Samp		BH102	BH102	BHC27	BHC27
			Client San		V1	V3	V2	V3
				le Type:	SOIL	SOIL	SOIL	SOIL
				pth (m):	0.30	1.50	0.60	1.60
				ampled:	24-Nov-2017	24-Nov-2017	24-Nov-2017	24-Nov-201
				COVENTRY		COVENTRY		
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	Fibres/Clumps		-	
Asbestos Identification	U	2192	%	0.001	Chrysotile		No Asbestos Detected	
Moisture	N	2030	%	0.020	11	6.0	15	24
рН	U	2010		N/A	11.2	8.6	9.5	7.7
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	1.1	0.81	1.9
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.23	0.055	0.15	0.043
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50	0.90	< 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	< 0.50	1.8	0.94	3.3
Sulphate (Total)	U	2430	%	0.010	0.26	0.029	0.22	0.098
Arsenic	U	2450	mg/kg	1.0	32	10	25	25
Cadmium	U	2450	mg/kg	0.10	0.88	< 0.10	0.85	0.16
Chromium	U	2450	mg/kg	1.0	18	12	21	24
Copper	U	2450	mg/kg	0.50	77	6.0	57	14
Mercury	U	2450	mg/kg	0.10	0.34	0.14	0.40	0.16
Nickel	U	2450	mg/kg	0.50	32	11	22	24
Lead	U	2450	mg/kg	0.50	330	47	250	44
Selenium	U	2450	mg/kg	0.20	0.54	< 0.20	< 0.20	0.31
Zinc	U	2450	mg/kg	0.50	670	59	1600	110
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		< 0.40		1.1
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	2.7	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	2.9	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	33	46	78	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	34	49	81	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	1.0	29	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	24	88	23	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	200	170	130	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	230	280	150	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	260	330	230	< 10



Client: Geosphere Environmental Ltd			hemtest J		17-31794	17-31794	17-31794	17-31794
Quotation No.: Q17-10179			mtest Sam		546616	546618	546620	546621
Order No.: 254391		(Client Samp	ole Ref.:	BH102	BH102	BHC27	BHC27
			Client Sam		V1	V3	V2	V3
			Samp	le Type:	SOIL	SOIL	SOIL	SOIL
			Top De	pth (m):	0.30	1.50	0.60	1.60
				ampled:	24-Nov-2017	24-Nov-2017	24-Nov-2017	24-Nov-2017
			Asbest	tos Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	3.6	< 0.10	1.6	< 0.10
Anthracene	U	2700	mg/kg	0.10	0.26	< 0.10	0.36	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	4.0	< 0.10	4.2	0.23
Pyrene	U	2700	mg/kg	0.10	3.3	< 0.10	4.0	0.24
Benzo[a]anthracene	U	2700	mg/kg	0.10	1.0	< 0.10	2.6	< 0.10
Chrysene	U	2700	mg/kg	0.10	1.7	< 0.10	3.3	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	1.7	< 0.10	4.1	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	0.54	< 0.10	1.7	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	1.2	< 0.10	2.7	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	0.72	< 0.10	1.9	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.55	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	0.66	< 0.10	1.8	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	19	< 2.0	29	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20	< 20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	Ü	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	µg/kg	10	< 10	< 10	< 10	< 10
Toluene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10	< 10



Client: Geosphere Environmental Ltd			Chemtest J		17-31794	17-31794	17-31794	17-31794
Quotation No.: Q17-10179		Che	mtest Sam	ple ID.:	546616	546618	546620	546621
Order No.: 254391		(Client Samp	le Ref.:	BH102	BH102	BHC27	BHC27
			Client Sam		V1	V3	V2	V3
				e Type:	SOIL	SOIL	SOIL	SOIL
			Top De	oth (m):	0.30	1.50	0.60	1.60
				24-Nov-2017	24-Nov-2017	24-Nov-2017	24-Nov-2017	
			Asbest	os Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10	< 10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10	< 10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	1.0 µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd	Chemtest Job No.:			17-31794	17-31794	17-31794	17-31794	
Quotation No.: Q17-10179			mtest Sam		546616	546618	546620	546621
Order No.: 254391		(Client Samp		BH102	BH102	BHC27	BHC27
			Client Sam		V1	V3	V2	V3
				е Туре:	SOIL	SOIL	SOIL	SOIL
				pth (m):	0.30	1.50	0.60	1.60
				ampled:	24-Nov-2017	24-Nov-2017	24-Nov-2017	24-Nov-2017
	Asbestos Lab:				COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	1.2	< 0.50	1.7	< 0.50
Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	0.57	< 0.50
Carbazole	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbazole		2130						



Results - Soil

Client: Geosphere Environmental Ltd		Chemtest Job No.:		17-31794	17-31794	17-31794	17-31794	
Quotation No.: Q17-10179			mtest Sam		546616	546618	546620	546621
Order No.: 254391		(Client Samp	ole Ref.:	BH102	BH102	BHC27	BHC27
			Client San		V1	V3	V2	V3
				le Type:	SOIL	SOIL	SOIL	SOIL
			Top De	pth (m):	0.30	1.50	0.60	1.60
			Date S	ampled:	24-Nov-2017	24-Nov-2017	24-Nov-2017	24-Nov-2017
			Asbes	tos Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
Fluoranthene	U	2790	mg/kg	0.50	1.9	< 0.50	5.7	< 0.50
Pyrene	U	2790	mg/kg	0.50	1.6	< 0.50	4.8	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	0.89	< 0.50	3.9	< 0.50
Chrysene	U	2790	mg/kg	0.50	1.2	< 0.50	3.7	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	1.5	< 0.50	5.2	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	2.1	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	0.79	< 0.50	3.2	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	0.61	< 0.50	2.6	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	1.0	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	0.70	< 0.50	2.8	< 0.50
PCB 28	U	2815	mg/kg	0.010		< 0.010	< 0.010	
PCB 81	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 52	U	2815	mg/kg	0.010		< 0.010	< 0.010	
PCB 77	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 105	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 90+101	U	2815	mg/kg	0.010		< 0.010	< 0.010	
PCB 114	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 118	U	2815	mg/kg	0.010		< 0.010	< 0.010	
PCB 118	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 153	U	2815	mg/kg	0.010		< 0.010	< 0.010	
PCB 123	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 138	U	2815	mg/kg	0.010		< 0.010	< 0.010	
PCB 126	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 180	U	2815	mg/kg	0.010		< 0.010	< 0.010	
PCB 156	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 157	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 167	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 169	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 189	N	2815	mg/kg	0.010	< 0.010			< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12			< 0.12
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10		< 0.10	< 0.10	
Total Phenois	Ü	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	, , , ,
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.



SOP	Title	Parameters included	Method summary
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd. **Depot Road** Newmarket CB8 0AL Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report			
Report No.:	17-31797-1		
Initial Date of Issue:	07-Dec-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	254391 L14 Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	29-Nov-2017
Order No.:	254391	Date Instructed:	29-Nov-2017
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	07-Dec-2017
Date Approved:	07-Dec-2017		
Approved By:			

Martin Dyer, Laboratory Manager



Results - 2 Stage WAC

Project: 254391 L14 Lake Lothing

Project: 254391 L14 Lake Lothing									
Chemtest Job No:	17-31797						Landfill V	Vaste Acceptano	e Criteria
Chemtest Sample ID:	546633							Limits	
Sample Ref:	V1							Stable, Non-	
Sample ID:	BHC102							reactive	Hazardous
Top Depth(m):	0.30						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	24-Nov-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			7.2	3	5	6
Loss On Ignition	2610	U	%			11			10
Total BTEX	2760	U	mg/kg			< 0.010	6		-
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			140	500		
Total (Of 17) PAH's	2700	N	mg/kg			18	100		
pН	2010	U				11.0		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.11		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using B	S EN 12457 at L	S 10 l/kg
Arsenic	1450	U	0.0023	0.0028	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.090	0.032	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	0.042	0.013	0.083	0.17	0.5	10	70
Copper	1450	U	0.014	0.0064	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.012	0.0034	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.5	10	50
Antimony	1450	U	0.0044	0.0038	< 0.010	0.039	0.06	0.7	5
Selenium	1450	U	0.0021	0.0017	< 0.010	0.017	0.1	0.5	7
Zinc	1450	U	0.0010	< 0.0010	< 0.50	< 0.50	4	50	200
Chloride	1220	U	19	3.5	38	55	800	15000	25000
Fluoride	1220	U	0.24	0.19	< 1.0	2.0	10	150	500
Sulphate	1220	U	70	24	140	300	1000	20000	50000
Total Dissolved Solids	1020	N	260	180	520	1900	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	19	12	< 50	130	500	800	1000

Solid Information				
Dry mass of test portion/kg	0.175			
Moisture (%)	13			

Leachate Test Information				
Leachant volume 1st extract/l	0.325			
Leachant volume 2nd extract/l	1.400			
Eluant recovered from 1st extract/l	0.225			

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

· mai report			
Report No.:	17-32753-1		
Initial Date of Issue:	14-Dec-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 GI L14 Lake Loathing		
Quotation No.:		Date Received:	07-Dec-2017
Order No.:	2543 GI	Date Instructed:	07-Dec-2017
No. of Samples:	3		
Turnaround (Wkdays):	5	Results Due:	13-Dec-2017
Date Approved:	13-Dec-2017		
Approved By:			

Robert Monk, Technical Manager



Client: Geosphere Environmental Ltd			mtest J		17-32753	17-32753	17-32753
Quotation No.:	Chemtest Sample ID.:			551527	551529	551535	
Order No.: 2543 GI		Client Sample Ref.:			BHC102	BHC102	BHC102
	Client Sample ID.:				J4	J6	J12
			Sampl	e Type:	SOIL	SOIL	SOIL
			Top De	. ,	2.50	4.50	10.50
			Date Sa	ampled:	04-Dec-2017	04-Dec-2017	04-Dec-2017
Determinand	Accred.	SOP	Units	LOD			
Moisture	N	2030	%	0.020	20	2.7	15
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	70	2.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	220	15	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	190	21	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	100	18	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	580	56	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	4.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	110	1.4	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	49	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	38	11	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	200	13	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	780	69	< 10
Naphthalene	U	2700		0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700		0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.15
Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.17
Benzo[a]anthracene	U	2700		0.10	< 0.10	< 0.10	< 0.10
Chrysene	U	2700		0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700		0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700		0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700		0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	0	0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700		0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	Ü	2700	9. 9	0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700		2.0	< 2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760		1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U	2760		1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760		1.0	< 1.0	< 1.0	< 1.0
Bromomethane	Ü	2760	µg/kg	20	< 20	< 20	< 20
Chloroethane	N	2760		2.0	< 2.0	< 2.0	< 2.0



Client: Geosphere Environmental Ltd	Chemtest Job No.:			17-32753	17-32753	17-32753	
Quotation No.:	Chemtest Sample ID.:			551527	551529	551535	
Order No.: 2543 GI	Client Sample Ref.: Client Sample ID.: Sample Type: Top Depth (m):			BHC102	BHC102	BHC102	
				J4	J6	J12	
				SOIL	SOIL	SOIL	
				2.50	4.50	10.50	
			Date Sa		04-Dec-2017	04-Dec-2017	04-Dec-2017
Determinand	Accred.	SOP	Units	LOD			
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760		1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760		1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760		1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760		1.0	< 1.0	< 1.0	< 1.0
Benzene	U	2760		1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760		2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U	2760		1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760		5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760		10	< 10	< 10	< 10
Toluene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760		10	< 10	< 10	< 10
1,1,2-Trichloroethane	Ü	2760		10	< 10	< 10	< 10
Tetrachloroethene	Ü	2760	1.0.0	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760		2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10	< 10
1,2-Dibromoethane	Ü	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760		2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Styrene	Ü	2760		1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	N	2760		1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760		1.0	110	< 1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760		50	< 50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	190	< 1.0	< 1.0
2-Chlorotoluene	U	2760		1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	N N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760		1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg μg/kg	1.0	2800	< 1.0	< 1.0
	N			1.0	110		
Sec-Butylbenzene 1,3-Dichlorobenzene	U	2760 2760	μg/kg μg/kg	1.0	< 1.0	< 1.0 < 1.0	< 1.0 < 1.0



Results - Soil

Client: Geosphere Environmental Ltd		Chemtest Job No.:			17-32753	17-32753	17-32753
Quotation No.:	(Chemtest Sample ID.:			551527	551529	551535
Order No.: 2543 GI		Clie	nt Samp	le Ref.:	BHC102	BHC102	BHC102
		Cli	ent Sam	ple ID.:	J4	J6	J12
			Sampl	е Туре:	SOIL	SOIL	SOIL
			Top De	oth (m):	2.50	4.50	10.50
			Date Sa	ampled:	04-Dec-2017	04-Dec-2017	04-Dec-2017
Determinand	Accred.	SOP	Units	LOD			
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0



SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

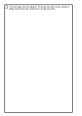
Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd. Depot Road Newmarket CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Report No.:	17-33041-1		
Initial Date of Issue:	18-Dec-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 GI, L14 Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	11-Dec-2017
Order No.:	2543, GI	Date Instructed:	11-Dec-2017
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	15-Dec-2017
Date Approved:	18-Dec-2017		
Approved By:			

Robert Monk, Technical Manager



Client: Geosphere Environmental Ltd				ob No.:	17-33041	
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2543, GI			nt Samp		BHC101	
		Client Sample ID.:				
				е Туре:	SOIL	
			Top De		2.10	
				ampled:	07-Dec-2017	
Determinand	Accred.	SOP	Units	LOD		
рН	U	1010		N/A	9.8	
Ammonia (Free) as N	U	1220	mg/l	0.010	0.12	
Sulphate	U	1220	mg/l	1.0	82	
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050	
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050	
Arsenic (Dissolved)	U	1450	μg/l	1.0	2.9	
Boron (Dissolved)	U	1450	μg/l	20	< 20	
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080	
Chromium (Dissolved)	U	1450	μg/l	1.0	2.0	
Copper (Dissolved)	U	1450	μg/l	1.0	4.3	
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50	
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0	
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0	
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0	
Zinc (Dissolved)	U	1450	μg/l	1.0	4.3	
Chromium (Hexavalent)	U	1490	μg/l	20	< 20	
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10	
Naphthalene	U	1700	μg/l	0.10	< 0.10	
Acenaphthylene	U	1700	μg/l	0.10	< 0.10	
Acenaphthene	U	1700	μg/l	0.10	< 0.10	
Fluorene	U	1700	μg/l	0.10	< 0.10	
Phenanthrene	U	1700	μg/l	0.10	< 0.10	
Anthracene	U	1700	μg/l	0.10	< 0.10	
Fluoranthene	U	1700	μg/l	0.10	< 0.10	
Pyrene	U	1700	μg/l	0.10	< 0.10	



Client: Geosphere Environmental Ltd				ob No.:	17-33041 552743		
Quotation No.: Q17-10179		Chemtest Sample ID.:					
Order No.: 2543, GI		Client Sample Ref.:					
		Client Sample ID.:					
				e Type:	SOIL		
			Top De _l		2.10		
				ampled:	07-Dec-2017		
Determinand	Accred.	SOP	Units	LOD			
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10		
Chrysene	U	1700	μg/l	0.10	< 0.10		
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10		
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10		
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10		
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0		
Benzene	U	1760	μg/l	1.0	< 1.0		
Toluene	U	1760	μg/l	1.0	< 1.0		
Ethylbenzene	U	1760	μg/l	1.0	< 1.0		
m & p-Xylene	U	1760	μg/l	1.0	< 1.0		
o-Xylene	U	1760	μg/l	1.0	< 1.0		
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0		
Phenol	N	1790	μg/l	0.50	< 0.50		
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50		
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50		
Hexachloroethane	N	1790	μg/l	0.50	< 0.50		
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50		
4-Methylphenol	N	1790	μg/l	0.50	< 0.50		
Nitrobenzene	N	1790	μg/l	0.50	< 0.50		
Isophorone	N	1790	μg/l	0.50	< 0.50		
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50		
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50		
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50		
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50		
Naphthalene	N	1790	μg/l	0.50	< 0.50		
4-Chloroaniline	N N	1790	μg/l	0.50	< 0.50		
Hexachlorobutadiene	N N	1790	μg/l	0.50	< 0.50		
4-Chloro-3-Methylphenol	N N	1790	μg/l	0.50	< 0.50		
2-Methylnaphthalene		1790	μg/l	0.50	< 0.50		
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50		
2,4,6-Trichlorophenol 2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50		
2.4.5-Trichiorophenoi	N	1790	μg/l	0.50	< 0.50		



Client: Geosphere Environmental Ltd	nvironmental Ltd Chemtest Job No.:				
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	552743
Order No.: 2543, GI		le Ref.:	BHC101		
		Cli	ent Sam	ple ID.:	J4
			Sampl	е Туре:	SOIL
			Top De	oth (m):	2.10
			Date Sa		07-Dec-2017
Determinand	Accred.	SOP	Units	LOD	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Client: Geosphere Environmental Ltd		17-33041					
Quotation No.: Q17-10179	(552743					
Order No.: 2543, GI		Client Sample Ref.: Client Sample ID.:					
		J4					
		Sample Type:					
			Top Dep		2.10		
			Date Sa	ampled:	07-Dec-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	-		
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		
Moisture	N	2030	%	0.020	5.3		
рН	U	2010		N/A	10.3		
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40		
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.12		
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50		
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50		
Ammonium (Extractable)	U	2425	mg/kg	0.50	2.6		
Sulphate (Total)	U	2430	%	0.010	0.34		
Arsenic	U	2450	mg/kg	1.0	16		
Cadmium	U	2450		0.10	< 0.10		
Chromium	U	2450	mg/kg	1.0	21		
Copper	U	2450	mg/kg	0.50	9.1		
Mercury	U	2450	mg/kg	0.10	< 0.10		
Nickel	U	2450	mg/kg	0.50	16		
Lead	U	2450	mg/kg	0.50	19		
Selenium	U	2450		0.20	< 0.20		
Zinc	U	2450	mg/kg	0.50	29		
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	8.1		
Aliphatic TPH >C12-C16	U	2680		1.0	100		
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	210		
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	29		
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	350		
Aromatic TPH >C5-C7	N	2680		1.0	< 1.0		
Aromatic TPH >C7-C8	N	2680		1.0	< 1.0		
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C10-C12	U	2680		1.0	< 1.0		
Aromatic TPH >C12-C16	U		mg/kg	1.0	52		
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	810		
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		
Total Aromatic Hydrocarbons	N	2680		5.0	860		
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	1200		
Total Petroleum Hydrocarbons	11	2700		10.0	1200		



Client: Geosphere Environmental Ltd			mtest Jo		17-33041 552743	
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2543, GI			nt Samp ent Sam		BHC101	
		J4				
	Sample Type:					
			Top Dep		2.10	
			Date Sa		07-Dec-2017	
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	
Fluorene	U	2700	mg/kg	0.10	< 0.10	
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	
Anthracene	U	2700	mg/kg	0.10	< 0.10	
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	
Pyrene	U	2700	mg/kg	0.10	< 0.10	
Benzo[a]anthracene	U	2700		0.10	< 0.10	
Chrysene	U	2700	mg/kg	0.10	< 0.10	
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	
Benzo[a]pyrene	U	2700		0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	U	2700		0.10	< 0.10	
Dibenz(a,h)Anthracene	U	2700		0.10	< 0.10	
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	
Total Of 16 PAH's	U	2700		2.0	< 2.0	
Dichlorodifluoromethane	N	2760		1.0	< 1.0	
Chloromethane	U	2760		1.0	< 1.0	
Vinyl Chloride	U	2760		1.0	< 1.0	
Bromomethane	U	2760		20	< 20	
Chloroethane	N	2760		2.0	< 2.0	
Trichlorofluoromethane	U	2760		1.0	< 1.0	
1,1-Dichloroethene	Ü	2760		1.0	< 1.0	
Trans 1,2-Dichloroethene	U	2760		1.0	< 1.0	
1,1-Dichloroethane	U	2760		1.0	< 1.0	
cis 1,2-Dichloroethene	Ü	2760		1.0	< 1.0	
Bromochloromethane	N	2760		5.0	< 5.0	
Trichloromethane	U	2760		1.0	< 1.0	
1.1.1-Trichloroethane	U	2760		1.0	< 1.0	
Tetrachloromethane	Ü	2760		1.0	< 1.0	
1,1-Dichloropropene	N	2760		1.0	< 1.0	
Benzene	Ü	2760		1.0	< 1.0	
1,2-Dichloroethane	Ü	2760		2.0	< 2.0	
Trichloroethene	Ü	2760		1.0	< 1.0	
1,2-Dichloropropane	U	2760		1.0	< 1.0	
Dibromomethane	Ü	2760		1.0	< 1.0	
Bromodichloromethane	Ü	2760		5.0	< 5.0	
cis-1,3-Dichloropropene	N	2760		10	< 10	
Toluene	Ü	2760		1.0	< 1.0	
Trans-1,3-Dichloropropene	N	2760		10	< 10	
1,1,2-Trichloroethane	Ü		μg/kg	10	< 10	
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Client: Geosphere Environmental Ltd	17-33041				
Quotation No.: Q17-10179			st Sam	ob No.:	552743
Order No.: 2543, GI	<u> </u>		nt Samp		BHC101
01d01140 2040, 01		ple ID.:	J4		
		SOIL			
			Top Der	e Type:	2.10
			Date Sa		07-Dec-2017
				os Lab:	COVENTRY
Determinand	Accred.	SOP	Units	LOD	
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10
1,2-Dibromoethane	U	2760		5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50
N-Propylbenzene	N	2760		1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0
Hexachlorobutadiene	N	2760		1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760		2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50
2-Chlorophenol	U		5	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U		mg/kg	0.50	< 0.50
1,3-Dichlorobenzene	U		mg/kg	0.50	< 0.50
1,4-Dichlorobenzene	N		mg/kg	0.50	< 0.50
1,2-Dichlorobenzene	U		mg/kg	0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50



Client: Geosphere Environmental Ltd	nt: Geosphere Environmental Ltd Chemtest Job No.:				
Quotation No.: Q17-10179			st Sam		552743
Order No.: 2543, GI		Clie	nt Samp	le Ref.:	BHC101
	Client Sample ID.:				
			Sample	e Type:	SOIL
			Top Dep	oth (m):	2.10
			Date Sa		07-Dec-2017
				os Lab:	COVENTRY
Determinand	Accred.	SOP	Units		
N-Nitrosodi-n-propylamine	U	2790	mg/kg		< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Nitrobenzene	U		mg/kg		< 0.50
Isophorone	U		mg/kg	0.50	< 0.50
2-Nitrophenol	N		mg/kg	0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50
Hexachlorobutadiene	U	2790		0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50
4-Nitrophenol	N	2790		0.50	< 0.50
Hexachlorocyclopentadiene	N	2790		0.50	< 0.50
2,4,6-Trichlorophenol	U			0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50
2-Nitroaniline	U		mg/kg	0.50	< 0.50
Acenaphthylene	U		mg/kg	0.50	< 0.50
Dimethylphthalate	U	1	mg/kg	0.50	< 0.50
2,6-Dinitrotoluene	U		mg/kg	0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50
Diethyl Phthalate	U		mg/kg	0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790		0.50	< 0.50
Hexachlorobenzene	Ü	2790)	0.50	< 0.50
Pentachlorophenol	N	_	mg/kg	0.50	< 0.50
Phenanthrene	Ü		mg/kg	0.50	< 0.50
Anthracene	Ü	2790	mg/kg	0.50	< 0.50
Carbazole	Ü	2790	mg/kg	0.50	< 0.50
Di-N-Butyl Phthalate	Ü	2790	mg/kg	0.50	< 0.50
Fluoranthene	U		mg/kg	0.50	< 0.50



Client: Geosphere Environmental Ltd	ent: Geosphere Environmental Ltd Chemtest Job No.:						
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.: 2543, GI		Client Sample Ref.:					
		Clie	ent Sam	ple ID.:	J4		
				е Туре:	SOIL		
			Top Dep	oth (m):	2.10		
			Date Sa		07-Dec-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
Pyrene	U	2790	mg/kg	0.50	< 0.50		
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50		
Chrysene	U	2790	mg/kg	0.50	< 0.50		
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50		
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50		
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50		
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50		
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50		
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50		
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50		
PCB 28	U	2815)	0.010	< 0.010		
PCB 52	U	2815	mg/kg	0.010	< 0.010		
PCB 90+101	U	2815	mg/kg	0.010	< 0.010		
PCB 118	U	2815	mg/kg	0.010	< 0.010		
PCB 153	U	2815	mg/kg	0.010	< 0.010		
PCB 138	U	2815	mg/kg	0.010	< 0.010		
PCB 180	U	2815	mg/kg	0.010	< 0.010		
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10		
Total Phenols	U	2920	mg/kg	0.30	< 0.30		



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection



SOP	Title	Parameters included	Method summary
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

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- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Details:



Chemtest Ltd. **Depot Road** Newmarket CB8 0AL

Tel: 01638 606070

Final Report			Email: info@chemiest.co.u
Report No.:	17-33044-1		
Initial Date of Issue:	19-Dec-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 GI, L14 Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	11-Dec-2017
Order No.:	2543 GI	Date Instructed:	11-Dec-2017
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	19-Dec-2017
Date Approved:	19-Dec-2017		
Approved By:			

Martin Dyer, Laboratory Manager



Results - 2 Stage WAC

Project: 2543 GI, L14 Lake Lothing

Project: 2543 GI, L14 Lake Lothing									
Chemtest Job No:	17-33044						Landfill V	Vaste Acceptano	ce Criteria
Chemtest Sample ID:	552760							Limits	
Sample Ref:	BHC101							Stable, Non-	
Sample ID:	J4							reactive	Hazardous
Top Depth(m):	2.10						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	07-Dec-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			0.38	3	5	6
Loss On Ignition	2610	U	%			3.1			10
Total BTEX	2760	U	mg/kg			0.039	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			1500	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		
pH	2010	U				10.5		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.097		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using B	S EN 12457 at L/	'S 10 l/kg
Arsenic	1450	U	0.0018	0.0012	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.020	0.0044	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	0.0090	0.0018	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.0029	< 0.0010	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0052	< 0.0010	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.06	0.7	5
Selenium	1450	U	0.0027	0.0012	< 0.010	0.014	0.1	0.5	7
Zinc	1450	U	0.0070	0.0029	< 0.50	< 0.50	4	50	200
Chloride	1220	U	66	16	130	230	800	15000	25000
Fluoride	1220	U	0.19	0.17	< 1.0	1.7	10	150	500
Sulphate	1220	U	53	20	110	250	1000	20000	50000
Total Dissolved Solids	1020	N	250	120	500	1400	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	23	13	< 50	150	500	800	1000

Solid Information					
Dry mass of test portion/kg	0.175				
Moisture (%)	6.2				

Leachate Test Information					
Leachant volume 1st extract/l	0.339				
Leachant volume 2nd extract/l	1.400				
Eluant recovered from 1st extract/l	0.259				

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
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2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



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If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

· mai report			
Report No.:	17-33607-1		
Initial Date of Issue:	21-Dec-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 GI, L14 Lake Loathing, Lowestoft		
Quotation No.:		Date Received:	15-Dec-2017
Order No.:	2543 GI	Date Instructed:	15-Dec-2017
No. of Samples:	3		
Turnaround (Wkdays):	5	Results Due:	21-Dec-2017
Date Approved:	21-Dec-2017		
Approved By:			

Martin Dyer, Laboratory Manager



Client: Geosphere Environmental Ltd			mtest Jo		17-33607	17-33607	17-33607
Quotation No.:			est Sam		555523	555525	555531
Order No.: 2543 GI		Clie	nt Samp	le Ref.:	BHC101	BHC101	BHC101
		Client Sample ID.:				J8	J14
	Sample Type:			SOIL	SOIL	SOIL	
			Top Dep		3.00	4.00	10.00
			Date Sa	ampled:	12-Dec-2017	12-Dec-2017	13-Dec-201
Determinand	Accred.	SOP	Units	LOD			
Moisture	N	2030	%	0.020	15	25	20
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	60	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	260	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	270	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	450	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	1000	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	3.8	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	110	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	50	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	200	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	360	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	1400	< 10	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700		0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700		2.0	< 2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U	2760		1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U	2760		20	< 20	< 20	< 20
Chloroethane	N	2760		2.0	< 2.0	< 2.0	< 2.0



Client: Geosphere Environmental Ltd			mtest J		17-33607	17-33607	17-33607
Quotation No.:	(st Sam		555523	555525	555531
Order No.: 2543 GI			nt Samp		BHC101	BHC101	BHC101
		Cli	ent Sam		J6	J8	J14
				e Type:	SOIL	SOIL	SOIL
			Top De	. ,	3.00	4.00	10.00
			Date Sa		12-Dec-2017	12-Dec-2017	13-Dec-2017
Determinand	Accred.	SOP	Units	LOD			
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760		1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760) -	1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10
1,1,2-Trichloroethane	U	2760	μg/kg	10	56	< 10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	7.0	< 1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	13	< 1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	36	11	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	11	9.3	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0





Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	17-33607	17-33607	17-33607
Quotation No.:	(Chemtest Sample ID.:		555523	555525	555531	
Order No.: 2543 GI		Client Sample Ref.:		BHC101	BHC101	BHC101	
		Cli	ent Sam	ple ID.:	J6	J8	J14
			Sampl	е Туре:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	3.00	4.00	10.00
			Date Sa	ampled:	12-Dec-2017	12-Dec-2017	13-Dec-2017
Determinand	Accred.	SOP	Units	LOD			
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg 1.0		< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg 2.0		< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0



SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd. **Depot Road** Newmarket CB8 0AL Tel: 01638 606070

Email: info@chemtest.co.uk

Interim Repo	rt		
Report No.:	18-00159-0		
Initial Date of Issue:			
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 GI Lake Lothing		
Quotation No.:		Date Received:	04-Jan-2018
Order No.:	2543 GI	Date Instructed:	05-Jan-2018
No. of Samples:	5		
Turnaround (Wkdays):	10	Results Due:	18-Jan-2018
Date Approved:			
Approved By:			
Details:			



Client: Geosphere Environmental Ltd				ob No.:	
Quotation No.:	(st Sam		559757
Order No.: 2543 GI			nt Samp		WSC19A
		Cli	ent Sam		J2
				е Туре:	SOIL
			Top De		0.80 02-Jan-2018
		Date Sampled:			
Determinand	Accred.	SOP	Units		
рН	U	1010		N/A	8.3
Ammonia (Free) as N	U	1220	mg/l	0.010	< 0.010
Sulphate	U	1220	mg/l	1.0	2.9
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	7.9
Boron (Dissolved)	U	1450	μg/l	20	< 20
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Copper (Dissolved)	U	1450	μg/l	1.0	1.5
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0
Lead (Dissolved)	U	1450	μg/l	1.0	5.2
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Zinc (Dissolved)	U	1450	μg/l	1.0	4.9
Chromium (Hexavalent)	U	1490	μg/l	20	< 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10
Naphthalene	U	1700	μg/l	0.10	< 0.10
Acenaphthylene	U	1700	μg/l	0.10	< 0.10
Acenaphthene	U	1700	μg/l	0.10	< 0.10
Fluorene	U	1700	μg/l	0.10	< 0.10
Phenanthrene	U	1700	μg/l	0.10	< 0.10
Anthracene	U	1700	μg/l	0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10
Pyrene	U	1700	μg/l	0.10	< 0.10



Client: Geosphere Environmental Ltd Chemtest Job No.:						
Quotation No.:			st Sam		18-00159 559757	
Order No.: 2543 GI			nt Samp		WSC19A	
			ent Sam		J2	
				e Type:	SOIL	
			Top Dep		0.80	
			Date Sa	ampled:	02-Jan-2018	
Determinand	Accred.	SOP		LOD		
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10	
Chrysene	U	1700	μg/l	0.10	< 0.10	
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10	
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10	
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10	
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10	
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10	
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0	
Benzene	U	1760	μg/l	1.0	< 1.0	
Toluene	U	1760	μg/l	1.0	< 1.0	
Ethylbenzene	U	1760	μg/l	1.0	< 1.0	
m & p-Xylene	U	1760	μg/l	1.0	< 1.0	
o-Xylene	U	1760	μg/l	1.0	< 1.0	
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0	
Phenol	N	1790	μg/l	0.50	< 0.50	
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50	
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50	
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50	
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50	
Hexachloroethane	N	1790	μg/l	0.50	< 0.50	
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50	
4-Methylphenol	N	1790	μg/l	0.50	< 0.50	
Nitrobenzene	N	1790	μg/l	0.50	< 0.50	
Isophorone	N	1790	μg/l	0.50	< 0.50	
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50	
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50	
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50	
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50	
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50	
Naphthalene	N	1790	μg/l	0.50	< 0.50	
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50	
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50	
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50	
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50	
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50	
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50	



Client: Geosphere Environmental Ltd		Chei	ob No.:	18-00159	
Quotation No.:	(Chemte	st Sam	ple ID.:	559757
Order No.: 2543 GI		Clier	nt Samp	le Ref.:	WSC19A
		Clie	ent Sam	ple ID.:	J2
			Sampl	е Туре:	SOIL
			Top Dep	oth (m):	0.80
		ampled:	02-Jan-2018		
Determinand	Accred.	SOP	Units	LOD	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Client: Geosphere Environmental Ltd				ob No.:	18-00159	18-00159	18-00159	18-00159
Quotation No.:			est Sam		559757	559759	559762	559763
Order No.: 2543 GI			nt Samp		WSC19A	WSC19A	WSC21	WSC21
		Cli	ent Sam		J2	J4	J2	J3
				e Type:	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):		0.80	2.40	0.75	1.75	
				ampled:	02-Jan-2018	02-Jan-2018	02-Jan-2018	02-Jan-2018
				os Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	-		-	
Asbestos Identification	U	2192	%	0.001	No Asbestos		No Asbestos	
					Detected		Detected	
Moisture	N	2030	%	0.020	4.8	4.6	3.8	12
рН	U	2010		N/A	8.2	8.2	8.3	8.0
Boron (Hot Water Soluble)	U	2120	9. 9	0.40	0.40	< 0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Cyanide (Free)	U	2300		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	U	2300	9 9		< 0.50	< 0.50	< 0.50	< 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	1.2	1.2	1.1	1.7
Sulphate (Total)	U	2430	%	0.010	< 0.010	< 0.010	< 0.010	0.018
Arsenic	U	2450		1.0	< 1.0	< 1.0	< 1.0	13
Cadmium	U	2450	3 3	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chromium	U	2450		1.0	3.2	2.4	5.0	7.9
Copper	U	2450)	0.50	5.4	1.8	2.9	5.5
Mercury	U	2450			< 0.10	< 0.10	< 0.10	< 0.10
Nickel	U	2450		0.50	2.1	1.4	2.9	5.3
Lead	U	2450			54	4.4	5.6	6.4
Selenium	U	2450		0.20	< 0.20	< 0.20	< 0.20	< 0.20
Zinc	U	2450	0 0	0.50	16	8.1	11	18
Chromium (Hexavalent)	N	2490		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		< 0.40		< 0.40
Aliphatic TPH >C5-C6	N	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	0 0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	0 0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	0 0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	0	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	9. 9	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	0 0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	0 0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680		5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10	< 10



Client: Geosphere Environmental Ltd			mtest Jo		18-00159	18-00159	18-00159	18-00159
Quotation No.:			est Sam		559757	559759	559762	559763
Order No.: 2543 GI		Clie	nt Samp	le Ref.:	WSC19A	WSC19A	WSC21	WSC21
		Cli	ent Sam	ple ID.:	J2	J4	J2	J3
			Sampl	e Type:	SOIL	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.80	2.40	0.75	1.75
			Date Sa		02-Jan-2018	02-Jan-2018	02-Jan-2018	02-Jan-2018
			Asbest		COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700		0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20	< 20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1.2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1.1-Dichloroethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	Ü	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10	< 10
Cis-1,3-Dichioroproperie Toluene	U	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N N	2760		1.0	< 10	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest Jo		18-00159	18-00159	18-00159	18-00159
Quotation No.:	(est Sam		559757	559759	559762	559763
Order No.: 2543 GI			nt Samp		WSC19A	WSC19A	WSC21	WSC21
		Cli	ent Sam	•	J2	J4	J2	J3
				e Type:	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):		0.80	2.40	0.75	1.75	
			Date Sa		02-Jan-2018	02-Jan-2018	02-Jan-2018	02-Jan-2018
				os Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10	< 10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10	< 10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	U	2760)	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1.2.4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50
1.2.4-Trichlorobenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	0 0	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
1.3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50
,	N	2790	3. 3					
1,4-Dichlorobenzene			mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2/90	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo		18-00159	18-00159	18-00159	18-00159
Quotation No.:		Chemte	est Sam	ole ID.:	559757	559759	559762	559763
Order No.: 2543 GI		Clie	nt Samp	le Ref.:	WSC19A	WSC19A	WSC21	WSC21
		Cli	ent Sam	ple ID.:	J2	J4	J2	J3
			Sample	e Type:	SOIL	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.80	2.40	0.75	1.75
			Date Sa		02-Jan-2018	02-Jan-2018	02-Jan-2018	02-Jan-2018
			Asbest	os Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	0 0	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	0 0	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluorene	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Azobenzene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	U	2790	0 0	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Anthracene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbazole	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50

Results - Soil

Client: Geosphere Environmental Ltd		Chemtest Job No.:		18-00159	18-00159	18-00159	18-00159	
Quotation No.:	(st Sam		559757	559759	559762	559763
Order No.: 2543 GI			nt Samp		WSC19A	WSC19A	WSC21	WSC21
		Cli	ent Sam		J2	J4	J2	J3
			Sampl		SOIL	SOIL	SOIL	SOIL
		Top Depth (m):		0.80	2.40	0.75	1.75	
			Date Sa		02-Jan-2018	02-Jan-2018	02-Jan-2018	02-Jan-2018
			Asbest		COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
Fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	U		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	U		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chrysene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
PCB 28	U	2815	mg/kg	0.010			< 0.010	
PCB 81	N	2815	mg/kg	0.010	< 0.010			
PCB 52	U	2815	mg/kg	0.010			< 0.010	
PCB 77	N	2815	mg/kg	0.010	< 0.010			
PCB 105	N	2815	mg/kg	0.010	< 0.010			
PCB 90+101	U	2815	mg/kg	0.010			< 0.010	
PCB 114	N	2815	mg/kg	0.010	< 0.010			
PCB 118	U		mg/kg	0.010			< 0.010	
PCB 118	N	2815	mg/kg	0.010	< 0.010			
PCB 153	U	2815	mg/kg	0.010			< 0.010	
PCB 123	N	2815	mg/kg	0.010	< 0.010			
PCB 138	U	2815	mg/kg	0.010			< 0.010	
PCB 126	N		mg/kg	0.010	< 0.010			
PCB 180	U		mg/kg	0.010			< 0.010	
PCB 156	N	2815	mg/kg	0.010	< 0.010			
PCB 157	N		mg/kg	0.010	< 0.010			
PCB 167	N		mg/kg	0.010	< 0.010			
PCB 169	N	2815	mg/kg	0.010	< 0.010			
PCB 189	N		mg/kg	0.010	< 0.010			
Total PCBs (12 Congeners)	N		mg/kg	0.12	< 0.12			
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10			< 0.10	
Total Phenois	Ü		mg/kg	0.30	< 0.30	< 0.30	< 0.30	< 0.30



Results - 2 Stage WAC

Project: 2543 GI Lake Lothing

Project: 2543 GI Lake Lothing	10.00150			1			1 WIII W	M1- A1	- 0-111-	
Chemtest Job No:	18-00159						Landfill Waste Acceptance Criteria			
Chemtest Sample ID:	559758							Limits		
Sample Ref:	WSC19A							Stable, Non-		
Sample ID:	J3							reactive	Hazardous	
Top Depth(m):	1.40						Inert Waste	hazardous	Waste	
Bottom Depth(m):							Landfill	waste in non-	Landfill	
Sampling Date:	02-Jan-2018							hazardous		
Determinand	SOP	Accred.	Units					Landfill		
Total Organic Carbon	2625	U	%			< 0.20	3	5	6	
Loss On Ignition	2610	U	%			0.40			10	
Total BTEX	2760	U	mg/kg			< 0.010	6		-	
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		-	
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			< 10	500		-	
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		-	
рН	2010	U				8.3		>6	-	
Acid Neutralisation Capacity	2015	N	mol/kg			0.052		To evaluate	To evaluate	
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test	
			mg/l	mg/l	mg/kg	mg/kg 10:1	using B	S EN 12457 at L/	S 10 l/kg	
Arsenic	1450	U	To Follow	To Follow	To Follow	To Follow	0.5	2	25	
Barium	1450	U	To Follow	To Follow	To Follow	To Follow	20	100	300	
Cadmium	1450	U	To Follow	To Follow	To Follow	To Follow	0.04	1	5	
Chromium	1450	U	To Follow	To Follow	To Follow	To Follow	0.5	10	70	
Copper	1450	U	To Follow	To Follow	To Follow	To Follow	2	50	100	
Mercury	1450	U	To Follow	To Follow	To Follow	To Follow	0.01	0.2	2	
Molybdenum	1450	U	To Follow	To Follow	To Follow	To Follow	0.5	10	30	
Nickel	1450	U	To Follow	To Follow	To Follow	To Follow	0.4	10	40	
Lead	1450	U	To Follow	To Follow	To Follow	To Follow	0.5	10	50	
Antimony	1450	U	To Follow	To Follow	To Follow	To Follow	0.06	0.7	5	
Selenium	1450	U	To Follow	To Follow	To Follow	To Follow	0.1	0.5	7	
Zinc	1450	U	To Follow	To Follow	To Follow	To Follow	4	50	200	
Chloride	1220	U	4.5	2.2	< 10	25	800	15000	25000	
Fluoride	1220	U	0.10	0.099	< 1.0	< 1.0	10	150	500	
Sulphate	1220	U	3.3	< 1.0	< 10	< 10	1000	20000	50000	
Total Dissolved Solids	1020	N	To Follow	To Follow	To Follow	To Follow	4000	60000	100000	
Phenol Index	1920	U	To Follow	To Follow	To Follow	To Follow	1	-	-	
Dissolved Organic Carbon	1610	U	To Follow	To Follow	To Follow	To Follow	500	800	1000	

Solid Information						
Dry mass of test portion/kg	0.175					
Moisture (%)	5.6					

Leachate Test Information						
Leachant volume 1st extract/l	0.340					
Leachant volume 2nd extract/l	1.400					
Eluant recovered from 1st extract/l	0.261					

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.



SOP	Title	Parameters included	Method summary
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

i mai report			
Report No.:	18-00159-1		
Initial Date of Issue:	18-Jan-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 GI Lake Lothing		
Quotation No.:		Date Received:	04-Jan-2018
Order No.:	2543 GI	Date Instructed:	05-Jan-2018
No. of Samples:	5		
Turnaround (Wkdays):	10	Results Due:	18-Jan-2018
Date Approved:	18-Jan-2018		
Approved By:			

Martin Dyer, Laboratory Manager



Client: Geosphere Environmental Ltd		Che	ntest Jo	ob No.:	18-00159
Quotation No.:			st Sam		559757
Order No.: 2543 GI			nt Samp		WSC19A
			ent Sam		J2
		Sample Type:			
			Top De		SOIL 0.80
			Date Sa	ampled:	02-Jan-2018
Determinand	Accred.	SOP			
рН	U	1010		N/A	8.3
Ammonia (Free) as N	U	1220	mg/l	0.010	< 0.010
Sulphate	U	1220	mg/l	1.0	2.9
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	7.9
Boron (Dissolved)	U	1450	μg/l	20	< 20
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Copper (Dissolved)	U	1450	μg/l	1.0	1.5
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0
Lead (Dissolved)	U	1450	μg/l	1.0	5.2
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Zinc (Dissolved)	U	1450	μg/l	1.0	4.9
Chromium (Hexavalent)	U	1490	μg/l	20	< 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10
Naphthalene	U	1700	μg/l	0.10	< 0.10
Acenaphthylene	U	1700	μg/l	0.10	< 0.10
Acenaphthene	U	1700	μg/l	0.10	< 0.10
Fluorene	U	1700	μg/l	0.10	< 0.10
Phenanthrene	U	1700	μg/l	0.10	< 0.10
Anthracene	U	1700	μg/l	0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10
Pyrene	U	1700	μg/l	0.10	< 0.10



Client: Geosphere Environmental Ltd		Che	ntest Jo	ob No.:	18-00159
Quotation No.:			st Sam		559757
Order No.: 2543 GI			nt Samp		WSC19A
			ent Sam		J2
				e Type:	SOIL
			Top Dep		0.80
			Date Sa	ampled:	02-Jan-2018
Determinand	Accred.	SOP		LOD	
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0
Benzene	U	1760	μg/l	1.0	< 1.0
Toluene	U	1760	μg/l	1.0	< 1.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0
Phenol	N	1790	μg/l	0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50



Client: Geosphere Environmental Ltd		Chei	ntest Jo	ob No.:	18-00159
Quotation No.:	(Chemte	st Sam	ple ID.:	559757
Order No.: 2543 GI		Clier	nt Samp	le Ref.:	WSC19A
		Clie	ent Sam	ple ID.:	J2
			Sampl	е Туре:	SOIL
			Top Dep	oth (m):	0.80
			Date Sa	ampled:	02-Jan-2018
Determinand	Accred.	SOP	Units	LOD	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Client: Geosphere Environmental Ltd			mtest J		18-00159	18-00159	18-00159	18-00159
Quotation No.:			st Sam		559757	559759	559762	559763
Order No.: 2543 GI		Clie	nt Samp	le Ref.:	WSC19A	WSC19A	WSC21	WSC21
		Cli	ent Sam	ple ID.:	J2	J4	J2	J3
			Sampl	е Туре:	SOIL	SOIL	SOIL	SOIL
			Top De	oth (m):	0.80	2.40	0.75	1.75
				ampled:	02-Jan-2018	02-Jan-2018	02-Jan-2018	02-Jan-2018
			Asbest	os Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	-		-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		No Asbestos Detected	
Moisture	N	2030	%	0.020	4.8	4.6	3.8	12
pH	Ü	2010	70	N/A	8.2	8.2	8.3	8.0
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.40	< 0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	Ü	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Cyanide (Free)	Ü	2300	Ü	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	Ü	2300	0 0		< 0.50	< 0.50	< 0.50	< 0.50
Ammonium (Extractable)	Ü	2425	mg/kg		1.2	1.2	1.1	1.7
Sulphate (Total)	Ü	2430	%	0.010	< 0.010	< 0.010	< 0.010	0.018
Arsenic	Ü	2450		1.0	< 1.0	< 1.0	< 1.0	13
Cadmium	Ü	2450	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chromium	Ü	2450	0 0	1.0	3.2	2.4	5.0	7.9
Copper	Ü	2450	mg/kg	0.50	5.4	1.8	2.9	5.5
Mercury	Ü	2450	0	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Nickel	Ü	2450		0.50	2.1	1.4	2.9	5.3
Lead	Ü	2450		0.50	54	4.4	5.6	6.4
Selenium	Ü	2450		0.20	< 0.20	< 0.20	< 0.20	< 0.20
Zinc	U	2450	0 0	0.50	16	8.1	11	18
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		< 0.40		< 0.40
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	Ü	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	Ü	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680		5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	9 9	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	0		< 10	< 10	< 10	< 10



Client: Geosphere Environmental Ltd			mtest Jo		18-00159	18-00159	18-00159	18-00159
Quotation No.:			est Sam		559757	559759	559762	559763
Order No.: 2543 GI		Clie	nt Samp	le Ref.:	WSC19A	WSC19A	WSC21	WSC21
		Cli	ent Sam	ple ID.:	J2	J4	J2	J3
			Sampl	e Type:	SOIL	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.80	2.40	0.75	1.75
			Date Sa		02-Jan-2018	02-Jan-2018	02-Jan-2018	02-Jan-2018
			Asbest		COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700		0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20	< 20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1.2-Dichloroethene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1.1-Dichloroethane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	Ü	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10	< 10
Cis-1,3-Dichioroproperie Toluene	U	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N N	2760		1.0	< 10	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest Jo		18-00159	18-00159	18-00159	18-00159
Quotation No.:	(est Sam		559757	559759	559762	559763
Order No.: 2543 GI			nt Samp		WSC19A	WSC19A	WSC21	WSC21
		Cli	ent Sam	•	J2	J4	J2	J3
				e Type:	SOIL	SOIL	SOIL	SOIL
			Top Dep		0.80	2.40	0.75	1.75
			Date Sa		02-Jan-2018	02-Jan-2018	02-Jan-2018	02-Jan-2018
				os Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10	< 10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10	< 10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	U	2760)	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1.2.4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50
1.2.4-Trichlorobenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	0 0	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
1.3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50
,	N	2790	3. 3					
1,4-Dichlorobenzene			mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2/90	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo		18-00159	18-00159	18-00159	18-00159
Quotation No.:		Chemte	est Sam	ole ID.:	559757	559759	559762	559763
Order No.: 2543 GI		Clie	nt Samp	le Ref.:	WSC19A	WSC19A	WSC21	WSC21
		Cli	ent Sam	ple ID.:	J2	J4	J2	J3
			Sample	e Type:	SOIL	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.80	2.40	0.75	1.75
			Date Sa		02-Jan-2018	02-Jan-2018	02-Jan-2018	02-Jan-2018
			Asbest	os Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	0 0	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	0 0	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluorene	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Azobenzene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	U	2790	0 0	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Anthracene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbazole	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50

Results - Soil

Client: Geosphere Environmental Ltd			mtest Jo		18-00159	18-00159	18-00159	18-00159
Quotation No.:			st Sam		559757	559759	559762	559763
Order No.: 2543 GI			nt Samp		WSC19A	WSC19A	WSC21	WSC21
		Cli	ent Sam		J2	J4	J2	J3
			Sampl		SOIL	SOIL	SOIL	SOIL
			Top De		0.80	2.40	0.75	1.75
			Date Sa		02-Jan-2018	02-Jan-2018	02-Jan-2018	02-Jan-2018
			Asbest		COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	_				
Fluoranthene	U		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pyrene	U		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chrysene	U		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
PCB 28	U	2815	mg/kg	0.010			< 0.010	
PCB 81	N	2815	mg/kg	0.010	< 0.010			
PCB 52	U	2815	mg/kg	0.010			< 0.010	
PCB 77	N	2815	mg/kg	0.010	< 0.010			
PCB 105	N	2815	mg/kg	0.010	< 0.010			
PCB 90+101	U	2815	mg/kg	0.010			< 0.010	
PCB 114	N	2815	mg/kg	0.010	< 0.010			
PCB 118	U	2815	mg/kg	0.010			< 0.010	
PCB 118	N	1	mg/kg	0.010	< 0.010			
PCB 153	U	2815	mg/kg	0.010			< 0.010	
PCB 123	N		mg/kg	0.010	< 0.010			
PCB 138	U	2815	mg/kg	0.010			< 0.010	
PCB 126	N	2815	mg/kg	0.010	< 0.010			
PCB 180	U	2815	mg/kg	0.010			< 0.010	
PCB 156	N		mg/kg	0.010	< 0.010			
PCB 157	N	2815	mg/kg	0.010	< 0.010			
PCB 167	N		mg/kg	0.010	< 0.010			
PCB 169	N		mg/kg	0.010	< 0.010			
PCB 189	N		mg/kg	0.010	< 0.010			
Total PCBs (12 Congeners)	N		mg/kg	0.12	< 0.12			
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10			< 0.10	
Total Phenois	Ü		mg/kg	0.30	< 0.30	< 0.30	< 0.30	< 0.30



Results - 2 Stage WAC

Project: 2543 GI Lake Lothing

Project: 2543 GI Lake Lothing									
Chemtest Job No:	18-00159						Landfill V	Vaste Acceptano	ce Criteria
Chemtest Sample ID:	559758							Limits	
Sample Ref:	WSC19A							Stable, Non-	
Sample ID:	J3							reactive	Hazardous
Top Depth(m):	1.40						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	02-Jan-2018							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			< 0.20	3	5	6
Loss On Ignition	2610	U	%			0.40			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			< 10	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		
pH	2010	U				8.3		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.052		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using B	S EN 12457 at L/	S 10 l/kg
Arsenic	1450	U	0.0012	< 0.0010	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.0042	0.0058	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0018	< 0.0010	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	0.0011	< 0.010	< 0.010	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.1	0.5	7
Zinc	1450	U	< 0.0010	< 0.0010	< 0.50	< 0.50	4	50	200
Chloride	1220	U	4.5	2.2	< 10	25	800	15000	25000
Fluoride	1220	U	0.10	0.099	< 1.0	< 1.0	10	150	500
Sulphate	1220	U	3.3	< 1.0	< 10	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	53	31	110	340	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	8.4	7.7	< 50	78	500	800	1000

Solid Information				
Dry mass of test portion/kg	0.175			
Moisture (%)	5.6			

Leachate Test Information					
Leachant volume 1st extract/l	0.340				
Leachant volume 2nd extract/l	1.400				
Eluant recovered from 1st extract/l	0.261				

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.:	18-00228-1		
Initial Date of Issue:	12-Jan-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543/GI Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	05-Jan-2018
Order No.:	2543/G1	Date Instructed:	05-Jan-2018
No. of Samples:	2		
Turnaround (Wkdays):	5	Results Due:	11-Jan-2018
Date Approved:	11-Jan-2018		
Approved By:			

Glynn Harvey, Laboratory Manager



Client: Geosphere Environmental Ltd		Chemtest Job No.:			18-00228	18-00228
Quotation No.: Q17-10179		Chemtest Sample ID.:				560163
Order No.: 2543/G1		Clie	nt Samp	le Ref.:	BHC14	BHC14
		Cli	ent Sam		J5	J7
			Sampl	е Туре:	SOIL	SOIL
			Top Dep	pth (m):	3.10	5.10
				ampled:	03-Jan-2018	03-Jan-2018
Determinand	Accred.	SOP	Units	LOD		
Moisture	N	2030	%	0.020	16	11
рН	U	2010		N/A	9.3	8.3
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120		0.010	< 0.010	< 0.010
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Ammonium (Extractable)	U	2425		0.50	< 0.50	< 0.50
Sulphate (Total)	U	2430	%	0.010	< 0.010	< 0.010
Arsenic	U	2450		1.0	5.1	5.1
Cadmium	U	2450		0.10	< 0.10	< 0.10
Chromium	U	2450		1.0	4.6	5.1
Copper	U	2450	mg/kg	0.50	3.5	3.8
Mercury	U	2450		0.10	< 0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	4.6	4.4
Lead	U	2450		0.50	3.2	2.7
Selenium	U	2450		0.20	< 0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	13	10
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter	U	2625		0.40		< 0.40
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[C] < 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680		1.0	[C] < 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680		1.0	[C] < 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	[C] < 1.0	< 1.0
Aliphatic TPH >C12-C16	U		mg/kg	1.0	[C] < 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	[C] < 1.0	< 1.0
Aliphatic TPH >C21-C35	U		mg/kg	1.0	[C] < 1.0	< 1.0
Aliphatic TPH >C35-C44	N		mg/kg	1.0	[C] < 1.0	< 1.0
Total Aliphatic Hydrocarbons	N		mg/kg	5.0	[C] < 5.0	< 5.0
Aromatic TPH >C5-C7	N		mg/kg	1.0	[C] < 1.0	< 1.0
Aromatic TPH >C7-C8	N		mg/kg	1.0	[C] < 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680		1.0	[C] < 1.0	< 1.0
Aromatic TPH >C10-C12	U	1	mg/kg	1.0	[C] < 1.0	< 1.0
Aromatic TPH >C12-C16	Ü	2680	0	1.0	[C] < 1.0	< 1.0
Aromatic TPH >C16-C21	Ü	2680		1.0	[C] < 1.0	< 1.0
Aromatic TPH >C21-C35	Ü	2680	0 0	1.0	[C] < 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	0 0	1.0	[C] < 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	0 0	5.0	[C] < 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	0 0	10.0	[C] < 10	< 10
Naphthalene	Ü		mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	Ü	2700		0.10	< 0.10	< 0.10
Acenaphthene	Ü	2700		0.10	< 0.10	< 0.10
Fluorene	Ü		mg/kg		< 0.10	< 0.10
		~		00		



Client: Geosphere Environmental Ltd		Chemtest Job No.:			18-00228	18-00228
Quotation No.: Q17-10179	(st Sam		560161	560163
Order No.: 2543/G1			nt Samp		BHC14	BHC14
		Client Sample ID.:			J5	J7
			Sampl	e Type:	SOIL	SOIL
			Top De		3.10	5.10
			Date Sa		03-Jan-2018	03-Jan-2018
Determinand	Accred.	SOP	Units	LOD		
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U		mg/kg	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U		mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U		mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700		0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700		0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700		0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700		2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	[C] < 1.0	< 1.0
Chloromethane	U	2760	. 0	1.0	[C] < 1.0	< 1.0
Vinyl Chloride	U	2760		1.0	[C] < 1.0	< 1.0
Bromomethane	Ü	2760		20	[C] < 20	< 20
Chloroethane	N	2760	μg/kg	2.0	[C] < 2.0	< 2.0
Trichlorofluoromethane	Ü	2760	μg/kg	1.0	[C] < 1.0	< 1.0
1,1-Dichloroethene	Ü	2760		1.0	[C] < 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760		1.0	[C] < 1.0	< 1.0
1,1-Dichloroethane	Ü		μg/kg	1.0	[C] < 1.0	< 1.0
cis 1,2-Dichloroethene	Ü	2760		1.0	[C] < 1.0	< 1.0
Bromochloromethane	N	2760		5.0	[C] < 5.0	< 5.0
Trichloromethane	Ü	2760		1.0	[C] < 1.0	< 1.0
1,1,1-Trichloroethane	Ü	2760		1.0	[C] < 1.0	< 1.0
Tetrachloromethane	Ü	2760		1.0	[C] < 1.0	< 1.0
1,1-Dichloropropene	N	2760		1.0	[C] < 1.0	< 1.0
Benzene	Ü	2760		1.0	[C] < 1.0	< 1.0
1,2-Dichloroethane	Ü	2760		2.0	[C] < 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	[C] < 1.0	< 1.0
1,2-Dichloropropane	Ü	2760	μg/kg	1.0	[C] < 1.0	< 1.0
Dibromomethane	Ü	2760	μg/kg	1.0	[C] < 1.0	< 1.0
Bromodichloromethane	Ü	2760	. 0	5.0	[C] < 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	. 0	10	[C] < 10	< 10
Toluene	U	2760		1.0	[C] < 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	1.0	[C] < 1.0	< 1.0
1,1,2-Trichloroethane	U	2760	μg/kg	10	[C] < 10	< 10
Tetrachloroethene	U	2760		1.0	[C] < 1.0	< 1.0
1,3-Dichloropropane	N	2760		2.0	[C] < 1.0 [C] < 2.0	< 2.0
Dibromochloromethane	N N	2760		10	[C] < 2.0 [C] < 10	< 10
	U		9			
1,2-Dibromoethane	U	2/60	μg/kg	5.0	[C] < 5.0	< 5.0



Client: Geosphere Environmental Ltd		Chemtest Job No.:				18-00228
Quotation No.: Q17-10179		Chemte	est Sam	ple ID.:	560161	560163
Order No.: 2543/G1			nt Samp		BHC14	BHC14
		Client Sample ID.:			J5	J7
				е Туре:	SOIL	SOIL
			Top Dep		3.10	5.10
			Date Sa	ampled:	03-Jan-2018	03-Jan-2018
Determinand	Accred.	SOP	Units	LOD		
Chlorobenzene	U	2760	μg/kg	1.0	[C] < 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	[C] < 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	[C] < 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	[C] < 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	[C] < 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	[C] < 1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	[C] < 1.0	< 1.0
Isopropylbenzene	U	2760		1.0	[C] < 1.0	< 1.0
Bromobenzene	U	2760		1.0	[C] < 1.0	< 1.0
1,2,3-Trichloropropane	N	2760		50	[C] < 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	[C] < 1.0	< 1.0
2-Chlorotoluene	U	2760		1.0	[C] < 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	[C] < 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	[C] < 1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	[C] < 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760		1.0	[C] < 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	[C] < 1.0	< 1.0
1,3-Dichlorobenzene	U	2760		1.0	[C] < 1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	[C] < 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	[C] < 1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	[C] < 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	[C] < 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	[C] < 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	[C] < 1.0	< 1.0
Hexachlorobutadiene	N	2760		1.0	[C] < 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	[C] < 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760		1.0	[C] < 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
1,4-Dichlorobenzene	N	2790		0.50	[C] < 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
2-Methylphenol	U	2790		0.50	[C] < 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790		0.50	[C] < 0.50	< 0.50
Hexachloroethane	N	2790		0.50	[C] < 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790		0.50	[C] < 0.50	< 0.50
4-Methylphenol	U	2790		0.50	[C] < 0.50	< 0.50
Nitrobenzene	U	2790		0.50	[C] < 0.50	< 0.50
Isophorone	U	2790		0.50	[C] < 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	[C] < 0.50	< 0.50



Client: Geosphere Environmental Ltd		Chemtest Job No.:				18-00228
Quotation No.: Q17-10179	(Chemtest Sample ID.:				560163
Order No.: 2543/G1			nt Samp		BHC14	BHC14
		Client Sample ID.:			J5	J7
			Sampl	е Туре:	SOIL	SOIL
			Top De		3.10	5.10
			Date Sa	ampled:	03-Jan-2018	03-Jan-2018
Determinand	Accred.	SOP	Units	LOD		
2,4-Dimethylphenol	N	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Hexachlorobutadiene	U	2790		0.50	[C] < 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
4-Nitrophenol	N	2790		0.50	[C] < 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	[C] < 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790		0.50	[C] < 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
2,6-Dinitrotoluene	U	2790		0.50	[C] < 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
3-Nitroaniline	N	2790		0.50	[C] < 0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
4-Chlorophenylphenylether	U	2790		0.50	[C] < 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
4-Nitroaniline	U	2790		0.50	[C] < 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	[C] < 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790		0.50	[C] < 0.50	< 0.50
Hexachlorobenzene	U	2790		0.50	[C] < 0.50	< 0.50
Pentachlorophenol	N	2790		0.50	[C] < 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Anthracene	U	2790		0.50	[C] < 0.50	< 0.50
Carbazole	U	2790	0	0.50	[C] < 0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	0	0.50	[C] < 0.50	< 0.50
Fluoranthene	U	2790		0.50	[C] < 0.50	< 0.50
Pyrene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Butylbenzyl Phthalate	U	2790		0.50	[C] < 0.50	< 0.50
Benzo[a]anthracene	Ü	2790	0	0.50	[C] < 0.50	< 0.50
Chrysene	Ü	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Di-N-Octyl Phthalate	Ü	2790	mg/kg	0.50	[C] < 0.50	< 0.50





					18-00228	
Client: Geosphere Environmental Ltd		Chemtest Job No.:				18-00228
Quotation No.: Q17-10179	(Chemte	est Sam	ple ID.:	560161	560163
Order No.: 2543/G1		Clie	nt Samp	le Ref.:	BHC14	BHC14
		Cli	ent Sam	ple ID.:	J5	J7
			Sampl	е Туре:	SOIL	SOIL
			Top De	oth (m):	3.10	5.10
		Date Sampled:			03-Jan-2018	03-Jan-2018
Determinand	Accred.	SOP	Units	LOD		
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
560161	BHC14	J5	03-Jan-2018	С	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Report No.:	18-00330-1
nitial Date of Issue:	12-Jan-2018

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543,GL Lake Lothing

Quotation No.: Q17-10179 Date Received: 08-Jan-2018

Order No.: 2543,GL Date Instructed: 08-Jan-2018

No. of Samples: 1

Turnaround (Wkdays): 5 Results Due: 12-Jan-2018

Date Approved: 11-Jan-2018

Approved By:				
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Details: Robert Monk, Technical Manager



Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179	(Chemtest Sample ID.:						
Order No.: 2543,GL			nt Samp		BHC102 W1			
		Client Sample ID.:						
		Sample Type:						
				ampled:	04-Jan-2018			
Determinand	Accred.	SOP	Units	LOD				
рН	U	1010		N/A	8.4			
Ammonia (Free) as N	U	1220	mg/l	0.010	0.25			
Sulphur	N	1220	mg/l	1.0	18			
Sulphate	U	1220	mg/l	1.0	53			
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050			
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050			
Arsenic (Dissolved)	U	1450	μg/l	1.0	9.2			
Boron (Dissolved)	U	1450	μg/l	20	150			
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080			
Chromium (Dissolved)	U	1450	μg/l	1.0	5.1			
Copper (Dissolved)	U	1450	μg/l	1.0	8.8			
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50			
Nickel (Dissolved)	U	1450	μg/l	1.0	9.9			
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Selenium (Dissolved)	U	1450	μg/l	1.0	2.2			
Zinc (Dissolved)	U	1450	μg/l	1.0	24			
Chromium (Hexavalent)	U	1490	μg/l	20	< 20			
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10			
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10			
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10			
Naphthalene	U	1700	μg/l	0.10	< 0.10			
Acenaphthylene	U	1700	μg/l	0.10	< 0.10			
Acenaphthene	U	1700	μg/l	0.10	< 0.10			
Fluorene	U	1700	μg/l	0.10	< 0.10			
Phenanthrene	U	1700	μg/l	0.10	< 0.10			
Anthracene	U	1700	μg/l	0.10	< 0.10			
Fluoranthene	U	1700	μg/l	0.10	< 0.10			



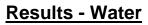
Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179	(Chemtest Sample ID.:						
Order No.: 2543,GL		Clie	nt Samp	le Ref.:	BHC102			
		Client Sample ID.:						
		Sample Type:						
			Date Sa	ampled:	04-Jan-2018			
Determinand	Accred.	SOP	Units	LOD				
Pyrene	U	1700	μg/l	0.10	< 0.10			
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10			
Chrysene	U	1700	μg/l	0.10	< 0.10			
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10			
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10			
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10			
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10			
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0			
Dichlorodifluoromethane	U	1760	μg/l	1.0	< 1.0			
Chloromethane	U	1760	μg/l	1.0	< 1.0			
Vinyl Chloride	N	1760	μg/l	1.0	< 1.0			
Bromomethane	U	1760	μg/l	5.0	< 5.0			
Chloroethane	U	1760	μg/l	2.0	< 2.0			
Trichlorofluoromethane	U	1760	μg/l	1.0	< 1.0			
1,1-Dichloroethene	U	1760	μg/l	1.0	< 1.0			
Trans 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0			
1,1-Dichloroethane	U	1760	μg/l	1.0	< 1.0			
cis 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0			
Bromochloromethane	U	1760	μg/l	5.0	< 5.0			
Trichloromethane	U	1760	μg/l	1.0	< 1.0			
1,1,1-Trichloroethane	U	1760	μg/l	1.0	< 1.0			
Tetrachloromethane	U	1760	μg/l	1.0	< 1.0			
1,1-Dichloropropene	U	1760	μg/l	1.0	< 1.0			
Benzene	U	1760	μg/l	1.0	< 1.0			
1,2-Dichloroethane	U	1760	μg/l	2.0	< 2.0			
Trichloroethene	N	1760	μg/l	1.0	< 1.0			
1,2-Dichloropropane	U	1760	μg/l	1.0	< 1.0			
Dibromomethane	U	1760	μg/l	10	< 10			
Bromodichloromethane	U	1760	μg/l	5.0	< 5.0			
cis-1,3-Dichloropropene	N	1760	μg/l	10	< 10			
Toluene	U	1760	μg/l	1.0	< 1.0			
Trans-1,3-Dichloropropene	N	1760	μg/l	10	< 10			
1,1,2-Trichloroethane	U	1760	μg/l	10	< 10			
Tetrachloroethene	U	1760	μg/l	1.0	< 1.0			
1,3-Dichloropropane	U	1760	μg/l	2.0	< 2.0			
Dibromochloromethane	U	1760	μg/l	10	< 10			
1,2-Dibromoethane	U	1760	μg/l	5.0	< 5.0			
Chlorobenzene	N	1760	μg/l	1.0	< 1.0			
1,1,1,2-Tetrachloroethane	U	1760	μg/l	2.0	< 2.0			
Ethylbenzene	U	1760	μg/l	1.0	< 1.0			
m & p-Xylene	U	1760	μg/l	1.0	< 1.0			



Client: Geosphere Environmental Ltd			mtest Jo		18-00330
Quotation No.: Q17-10179	(st Sam		560625
Order No.: 2543,GL			nt Samp		BHC102
		Cli	ent Sam		W1
				e Type:	WATER
			Date Sa		04-Jan-2018
Determinand	Accred.	SOP		LOD	
o-Xylene	U	1760	μg/l	1.0	< 1.0
Styrene	U	1760	μg/l	1.0	< 1.0
Tribromomethane	U	1760	μg/l	1.0	< 1.0
Isopropylbenzene	U	1760	μg/l	1.0	< 1.0
Bromobenzene	U	1760	μg/l	1.0	< 1.0
1,2,3-Trichloropropane	N	1760	μg/l	50	< 50
N-Propylbenzene	U	1760	μg/l	1.0	< 1.0
2-Chlorotoluene	U	1760	μg/l	1.0	< 1.0
1,3,5-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0
4-Chlorotoluene	U	1760	μg/l	1.0	< 1.0
Tert-Butylbenzene	U	1760	μg/l	1.0	< 1.0
1,2,4-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0
Sec-Butylbenzene	U	1760	μg/l	1.0	< 1.0
1,3-Dichlorobenzene	N	1760	μg/l	1.0	< 1.0
4-Isopropyltoluene	U	1760	μg/l	1.0	< 1.0
1,4-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0
N-Butylbenzene	U	1760	μg/l	1.0	< 1.0
1,2-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	1760	μg/l	50	< 50
1,2,4-Trichlorobenzene	U	1760	μg/l	1.0	< 1.0
Hexachlorobutadiene	U	1760	μg/l	1.0	< 1.0
1,2,3-Trichlorobenzene	U	1760	μg/l	2.0	< 2.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0
N-Nitrosodimethylamine	N	1790	μg/l	0.50	< 0.50
Phenol	N	1790	μg/l	0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo		18-00330
Quotation No.: Q17-10179	(st Sam		560625
Order No.: 2543,GL			nt Samp		BHC102
		Cli	ent Sam		W1
				e Type:	WATER
			Date Sa		04-Jan-2018
Determinand	Accred.	SOP		LOD	
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
4-Nitrophenol	N	1790	μg/l	0.50	< 0.50





Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2543,GL		Client Sample Ref.:				
		Client Sample ID.				
		Sample Type				
		Date Sampled: 04-Jan-20				
Determinand	Accred.	SOP	Units	LOD		
Total Phenols	U	1920	mg/l	0.030	< 0.030	



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Amended Report

Report No.:	18-00330-2		
Initial Date of Issue:	12-Jan-2018	Date of Re-Issue:	18-Jan-2018
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543,GL Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	08-Jan-2018
Order No.:	2543,GL	Date Instructed:	08-Jan-2018
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	12-Jan-2018
Date Approved:	18-Jan-2018		
Approved By:			

Glynn Harvey, Laboratory Manager



Client: Geosphere Environmental Ltd				ob No.:	18-00330
Quotation No.: Q17-10179			st Sam		560625
Order No.: 2543,GL			nt Samp		BHC102
		Clie	ent Sam	ple ID.:	W1
			Sampl	e Type:	WATER
		Date Sampled:			
Determinand	Accred.	SOP	Units	LOD	
рН	U	1010		N/A	8.4
Ammonia (Free) as N	U	1220	mg/l	0.010	0.25
Sulphur	N	1220	mg/l	1.0	18
Sulphate	U	1220	mg/l	1.0	53
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	9.2
Boron (Dissolved)	U	1450	μg/l	20	150
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	5.1
Copper (Dissolved)	U	1450	μg/l	1.0	8.8
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	9.9
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0
Selenium (Dissolved)	U	1450	μg/l	1.0	2.2
Zinc (Dissolved)	U	1450	μg/l	1.0	24
Chromium (Hexavalent)	U	1490	μg/l	20	< 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	27
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	210
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	440
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	150
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	820
Total Petroleum Hydrocarbons	N	1675	μg/l	10	820
Naphthalene	U	1700	μg/l	0.10	< 0.10
Acenaphthylene	U	1700	μg/l	0.10	< 0.10
Acenaphthene	U	1700	μg/l	0.10	< 0.10
Fluorene	U	1700	μg/l	0.10	< 0.10
Phenanthrene	U	1700	μg/l	0.10	< 0.10
Anthracene	U	1700	μg/l	0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10



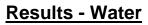
Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	18-00330
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	560625
Order No.: 2543,GL		Clie	nt Samp	le Ref.:	BHC102
		Cli	ent Sam	ple ID.:	W1
			Sampl	е Туре:	WATER
		Date Sampled:			
Determinand	Accred.	SOP	Units	LOD	
Pyrene	U	1700	μg/l	0.10	< 0.10
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0
Dichlorodifluoromethane	U	1760	μg/l	1.0	< 1.0
Chloromethane	U	1760	μg/l	1.0	< 1.0
Vinyl Chloride	N	1760	μg/l	1.0	< 1.0
Bromomethane	U	1760	μg/l	5.0	< 5.0
Chloroethane	U	1760	μg/l	2.0	< 2.0
Trichlorofluoromethane	U	1760	μg/l	1.0	< 1.0
1,1-Dichloroethene	U	1760	μg/l	1.0	< 1.0
Trans 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0
1,1-Dichloroethane	U	1760	μg/l	1.0	< 1.0
cis 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0
Bromochloromethane	U	1760	μg/l	5.0	< 5.0
Trichloromethane	U	1760	μg/l	1.0	< 1.0
1,1,1-Trichloroethane	U	1760	μg/l	1.0	< 1.0
Tetrachloromethane	U	1760	μg/l	1.0	< 1.0
1,1-Dichloropropene	U	1760	μg/l	1.0	< 1.0
Benzene	U	1760	μg/l	1.0	< 1.0
1,2-Dichloroethane	U	1760	μg/l	2.0	< 2.0
Trichloroethene	N	1760	μg/l	1.0	< 1.0
1,2-Dichloropropane	U	1760	μg/l	1.0	< 1.0
Dibromomethane	U	1760	μg/l	10	< 10
Bromodichloromethane	U	1760	μg/l	5.0	< 5.0
cis-1,3-Dichloropropene	N	1760	μg/l	10	< 10
Toluene	U	1760	μg/l	1.0	< 1.0
Trans-1,3-Dichloropropene	N	1760	μg/l	10	< 10
1,1,2-Trichloroethane	U	1760	μg/l	10	< 10
Tetrachloroethene	U	1760	μg/l	1.0	< 1.0
1,3-Dichloropropane	U	1760	μg/l	2.0	< 2.0
Dibromochloromethane	U	1760	μg/l	10	< 10
1,2-Dibromoethane	U	1760	μg/l	5.0	< 5.0
Chlorobenzene	N	1760	μg/l	1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	1760	μg/l	2.0	< 2.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0



Client: Geosphere Environmental Ltd	Chemtest Job No.: 18-00330				
Quotation No.: Q17-10179	(st Sam		560625
Order No.: 2543,GL	`		nt Samp		BHC102
Order No.: 2040,0E			ent Sam		W1
		- Cili		e Type:	WATER
			Date Sa		04-Jan-2018
Determinand	Accred.	SOP		LOD	04 0 411 2 010
o-Xylene	U	1760	µg/l	1.0	< 1.0
Styrene	Ü	1760	μg/l	1.0	< 1.0
Tribromomethane	Ü	1760	μg/l	1.0	< 1.0
Isopropylbenzene	Ü	1760	μg/l	1.0	1.5
Bromobenzene	Ü	1760	μg/l	1.0	< 1.0
1,2,3-Trichloropropane	N	1760	μg/l	50	< 50
N-Propylbenzene	Ü	1760	μg/l	1.0	1.4
2-Chlorotoluene	Ü	1760	μg/l	1.0	< 1.0
1,3,5-Trimethylbenzene	Ü	1760	μg/l	1.0	< 1.0
4-Chlorotoluene	Ü	1760	μg/l	1.0	< 1.0
Tert-Butylbenzene	Ü	1760	μg/l	1.0	< 1.0
1,2,4-Trimethylbenzene	Ū	1760	μg/l	1.0	11
Sec-Butylbenzene	Ü	1760	μg/l	1.0	< 1.0
1,3-Dichlorobenzene	N	1760	μg/l	1.0	< 1.0
4-Isopropyltoluene	U	1760	μg/l	1.0	< 1.0
1,4-Dichlorobenzene	Ū	1760	μg/l	1.0	< 1.0
N-Butylbenzene	U	1760	μg/l	1.0	< 1.0
1,2-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	1760	μg/l	50	< 50
1,2,4-Trichlorobenzene	U	1760	μg/l	1.0	< 1.0
Hexachlorobutadiene	U	1760	μg/l	1.0	< 1.0
1,2,3-Trichlorobenzene	U	1760	μg/l	2.0	< 2.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0
N-Nitrosodimethylamine	N	1790	μg/l	0.50	< 0.50
Phenol	N	1790	μg/l	0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo		18-00330
Quotation No.: Q17-10179	(st Sam		560625
Order No.: 2543,GL			nt Samp		BHC102
		Cli	ent Sam		W1
				e Type:	WATER
			Date Sa		04-Jan-2018
Determinand	Accred.	SOP		LOD	
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
4-Nitrophenol	N	1790	μg/l	0.50	< 0.50





Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2543,GL		Client Sample Ref.:				
		Client Sample ID.				
		Sample Type				
		Date Sampled: 04-Jan-20				
Determinand	Accred.	SOP	Units	LOD		
Total Phenols	U	1920	mg/l	0.030	< 0.030	



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd. **Depot Road** Newmarket CB8 0AL

Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report			
Report No.:	18-00356-1		
Initial Date of Issue:	15-Jan-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543,GI Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	09-Jan-2018
Order No.:	2543,GI	Date Instructed:	09-Jan-2018
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	15-Jan-2018
Date Approved:	15-Jan-2018		
Approved By:			



Client: Geosphere Environmental Ltd		Chemtest Job No			
Quotation No.: Q17-10179			st Sam		560719
Order No.: 2543,GI			nt Samp		BHC02
		Cli	ent Sam		W1
				e Type:	WATER
		Date Sampled:			05-Jan-2018
Determinand	Accred.	SOP	Units	_	
pH	U	1010		N/A	6.9
Ammonia (Free) as N	U	1220	mg/l	0.010	< 0.010
Sulphur	N	1220	mg/l	1.0	22
Sulphate	U	1220	mg/l	1.0	65
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	3.1
Boron (Dissolved)	U	1450	μg/l	20	110
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	6.0
Copper (Dissolved)	U	1450	μg/l	1.0	1.0
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	3.4
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0
Selenium (Dissolved)	U	1450	μg/l	1.0	2.5
Zinc (Dissolved)	U	1450	μg/l	1.0	12
Chromium (Hexavalent)	U	1490	μg/l	20	< 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10
Naphthalene	U	1700	μg/l	0.10	< 0.10
Acenaphthylene	U	1700	μg/l	0.10	< 0.10
Acenaphthene	U	1700	μg/l	0.10	< 0.10
Fluorene	U	1700	μg/l	0.10	< 0.10
Phenanthrene	U	1700	μg/l	0.10	< 0.10
Anthracene	U	1700	μg/l	0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10



Client: Geosphere Environmental Ltd		Chemtest Job No			
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	560719
Order No.: 2543,GI			nt Samp		BHC02
		Cli	ent Sam	ple ID.:	W1
			Sampl	е Туре:	WATER
		Date Sampled:			05-Jan-2018
Determinand	Accred.	SOP	Units	LOD	
Pyrene	U	1700	μg/l	0.10	< 0.10
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0
Dichlorodifluoromethane	U	1760	μg/l	1.0	< 1.0
Chloromethane	U	1760	μg/l	1.0	< 1.0
Vinyl Chloride	N	1760	μg/l	1.0	< 1.0
Bromomethane	U	1760	μg/l	5.0	< 5.0
Chloroethane	U	1760	μg/l	2.0	< 2.0
Trichlorofluoromethane	U	1760	μg/l	1.0	< 1.0
1,1-Dichloroethene	U	1760	μg/l	1.0	< 1.0
Trans 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0
1,1-Dichloroethane	U	1760	μg/l	1.0	< 1.0
cis 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0
Bromochloromethane	U	1760	μg/l	5.0	< 5.0
Trichloromethane	U	1760	μg/l	1.0	< 1.0
1,1,1-Trichloroethane	U	1760	μg/l	1.0	< 1.0
Tetrachloromethane	U	1760	μg/l	1.0	< 1.0
1,1-Dichloropropene	U	1760	μg/l	1.0	< 1.0
Benzene	U	1760	μg/l	1.0	< 1.0
1,2-Dichloroethane	U	1760	μg/l	2.0	< 2.0
Trichloroethene	N	1760	μg/l	1.0	< 1.0
1,2-Dichloropropane	U	1760	μg/l	1.0	< 1.0
Dibromomethane	U	1760	μg/l	10	< 10
Bromodichloromethane	U	1760	μg/l	5.0	< 5.0
cis-1,3-Dichloropropene	N	1760	μg/l	10	< 10
Toluene	U	1760	μg/l	1.0	< 1.0
Trans-1,3-Dichloropropene	N	1760	μg/l	10	< 10
1,1,2-Trichloroethane	U	1760	μg/l	10	< 10
Tetrachloroethene	U	1760	μg/l	1.0	< 1.0
1,3-Dichloropropane	U	1760	μg/l	2.0	< 2.0
Dibromochloromethane	U	1760	μg/l	10	< 10
1,2-Dibromoethane	U	1760	μg/l	5.0	< 5.0
Chlorobenzene	N	1760	μg/l	1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	1760	μg/l	2.0	< 2.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0



Client: Geosphere Environmental Ltd		Chei	ntest Jo	h No ·	18-00356
Quotation No.: Q17-10179	(ole ID.:	560719		
Order No.: 2543,GI	`		nt Samp		BHC02
01d01110 2040;01			ent Sam		W1
		- Cili		e Type:	WATER
			Date Sa		05-Jan-2018
Determinand	Accred.	SOP		LOD	00 0411 2010
o-Xylene	U	1760	µg/l	1.0	< 1.0
Styrene	Ū	1760	μg/l	1.0	< 1.0
Tribromomethane	Ū	1760	μg/l	1.0	< 1.0
Isopropylbenzene	Ū	1760	μg/l	1.0	< 1.0
Bromobenzene	U	1760	μg/l	1.0	< 1.0
1,2,3-Trichloropropane	N	1760	μg/l	50	< 50
N-Propylbenzene	U	1760	μg/l	1.0	< 1.0
2-Chlorotoluene	U	1760	μg/l	1.0	< 1.0
1,3,5-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0
4-Chlorotoluene	Ü	1760	μg/l	1.0	< 1.0
Tert-Butylbenzene	Ü	1760	μg/l	1.0	< 1.0
1,2,4-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0
Sec-Butylbenzene	U	1760	μg/l	1.0	< 1.0
1,3-Dichlorobenzene	N	1760	μg/l	1.0	< 1.0
4-Isopropyltoluene	U	1760	μg/l	1.0	< 1.0
1,4-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0
N-Butylbenzene	U	1760	μg/l	1.0	< 1.0
1,2-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	1760	μg/l	50	< 50
1,2,4-Trichlorobenzene	U	1760	μg/l	1.0	< 1.0
Hexachlorobutadiene	U	1760	μg/l	1.0	< 1.0
1,2,3-Trichlorobenzene	U	1760	μg/l	2.0	< 2.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0
N-Nitrosodimethylamine	N	1790	μg/l	0.50	< 0.50
Phenol	N	1790	μg/l	0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50



Client: Geosphere Environmental Ltd		Che	ntest Jo	ob No :	18-00356
Quotation No.: Q17-10179	(st Sam		560719
Order No.: 2543,GI	<u> </u>		nt Samp		BHC02
C1001 140 2545,01			ent Sam		W1
		0111		e Type:	WATER
			Date Sa		05-Jan-2018
Determinand	Accred.	SOP	Units	LOD	00 0011 2010
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
4-Nitrophenol	N	1790	μg/l	0.50	< 0.50





Client: Geosphere Environmental Ltd		Chemtest Job No.:			18-00356
Quotation No.: Q17-10179		Chemtest Sample ID.:			560719
Order No.: 2543,GI		Client Sample Ref.:			BHC02
		Client Sample ID.:			W1
		Sample Type:			WATER
		Date Sampled:		05-Jan-2018	
Determinand	Accred.	SOP	Units	LOD	
Total Phenols	U	1920	mg/l	0.030	< 0.030



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070

Final Report				Email: inio@chemiest.co.u
Report No.:	18-00959-1			
Initial Date of Issue:	23-Jan-2018			
Client	Geosphere Environment	al Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ			
Contact(s):	Stephen Gilchrist			
Project	2543,GI Lake Lothing			
Quotation No.:	Q17-10179		Date Received:	15-Jan-2018
Order No.:	2543,GI		Date Instructed:	15-Jan-2018
No. of Samples:	1			
Turnaround (Wkdays):	7		Results Due:	23-Jan-2018
Date Approved:	23-Jan-2018			
Approved By:				

Martin Dyer, Laboratory Manager



Results - 2 Stage WAC

Project: 2543,GI Lake Lothing

Project: 2543,GI Lake Lotning									
Chemtest Job No:	18-00959						Landfill V	Vaste Acceptano	e Criteria
Chemtest Sample ID:	563299							Limits	
Sample Ref:	TPC23A							Stable, Non-	
Sample ID:	J1							reactive	Hazardous
Top Depth(m):	1.1						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	11-Jan-2018							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			6.1	3	5	6
Loss On Ignition	2610	U	%			4.3			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			120	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		
рН	2010	U				11.0		>6	-
Acid Neutralisation Capacity	2015	N	mol/kg			0.29		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using B	S EN 12457 at L/	S 10 l/kg
Arsenic	1450	U	0.0033	0.0089	< 0.050	0.080	0.5	2	25
Barium	1450	U	0.019	0.012	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	0.0036	0.0035	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.0069	0.012	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.037	0.016	0.073	0.19	0.5	10	30
Nickel	1450	U	< 0.0010	0.0010	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	0.0028	< 0.010	0.024	0.5	10	50
Antimony	1450	U	0.0090	0.013	0.018	0.12	0.06	0.7	5
Selenium	1450	U	0.0015	0.0015	< 0.010	0.015	0.1	0.5	7
Zinc	1450	U	0.0044	0.011	< 0.50	< 0.50	4	50	200
Chloride	1220	U	27	5.8	54	92	800	15000	25000
Fluoride	1220	U	1.3	0.61	2.6	7.2	10	150	500
Sulphate	1220	U	110	25	210	380	1000	20000	50000
Total Dissolved Solids	1020	N	230	67	460	930	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	12	8.2	< 50	88	500	800	1000

Solid Information				
Dry mass of test portion/kg	0.175			
Moisture (%)	11			

Leachate Test Information				
Leachant volume 1st extract/l	0.328			
Leachant volume 2nd extract/l	1.400			
Eluant recovered from 1st extract/l	0.278			

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

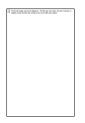
Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Report No.:	18-01626-1		
Initial Date of Issue:	26-Jan-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 91 Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	19-Jan-2018
Order No.:		Date Instructed:	22-Jan-2018
No. of Samples:	3		
Turnaround (Wkdays):	5	Results Due:	26-Jan-2018
Date Approved:	26-Jan-2018		
Approved By:			



Client: Geosphere Environmental Ltd			mtest Jo		18-01626	18-01626	18-01626
Quotation No.: Q17-10179	(st Sam		566454	566457	566472
Order No.:			nt Samp		BHC15	BHC15	BHC22
		Cli	ent Sam		J7	J10	J4
				е Туре:	SOIL	SOIL	SOIL
			Top De		3.7	6.7	2.0
	·			17-Jan-2018	17-Jan-2018	17-Jan-2018	
Determinand	Accred.	SOP	Units				
Moisture	N	2030	%	0.020	12	12	16
рН	U	2010		N/A	8.7	8.3	9.4
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	< 0.40	0.86
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	< 0.010	0.13
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Ammoniacal Nitrogen	U	2425	mg/kg	0.50	< 0.50	< 0.50	0.73
Sulphate (Total)	U	2430	mg/kg	100	< 100	< 100	3500
Arsenic	U	2450	mg/kg	1.0	2.5	3.3	18
Cadmium	U	2450	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Chromium	U	2450	mg/kg	1.0	4.3	6.2	25
Copper	U	2450	mg/kg	0.50	2.4	2.6	19
Mercury	U	2450	mg/kg	0.10	0.16	< 0.10	0.11
Nickel	U	2450	mg/kg	0.50	5.1	4.2	30
Lead	U	2450	mg/kg	0.50	2.9	2.0	12
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20	0.80
Zinc	U	2450	mg/kg	0.50	9.6	8.8	38
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		< 0.40	0.62
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10



Client: Geosphere Environmental Ltd			mtest Jo		18-01626	18-01626	18-01626
Quotation No.: Q17-10179	(est Sam		566454	566457	566472
Order No.:			nt Samp		BHC15	BHC15	BHC22
		Cli	ent Sam		J7	J10	J4
				e Type:	SOIL	SOIL	SOIL
			Top Dep		3.7	6.7	2.0
			Date Sa	ampled:	17-Jan-2018	17-Jan-2018	17-Jan-2018
Determinand	Accred.	SOP	Units	LOD			
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromomethane	Ü	2760	μg/kg	20	< 20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Benzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	Ü	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	Ü	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,2-Trichloroethane	U	2760	μg/kg μg/kg	10	< 10	< 10	< 10
Tetrachloroethene	U	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0
	N						
1,3-Dichloropropane		2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10	< 10



Client: Geosphere Environmental Ltd			mtest Jo		18-01626	18-01626	18-01626
Quotation No.: Q17-10179	(st Sam		566454	566457	566472
Order No.:			nt Samp		BHC15	BHC15	BHC22
		Cli	ent Sam		J7	J10	J4
				e Type:	SOIL	SOIL	SOIL
			Top De		3.7	6.7	2.0
	·		17-Jan-2018	17-Jan-2018	17-Jan-2018		
Determinand	Accred.	SOP	Units	LOD			
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo		18-01626	18-01626	18-01626
Quotation No.: Q17-10179			est Sam		566454	566457	566472
Order No.:			nt Samp		BHC15	BHC15	BHC22
		Cli	ent Sam		J7	J10	J4
				e Type:	SOIL	SOIL	SOIL
			Top Dep		3.7	6.7	2.0
			Date Sa	ampled:	17-Jan-2018	17-Jan-2018	17-Jan-2018
Determinand	Accred.	SOP	Units	LOD			
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790		0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790		0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Carbazole	U	2790	0	0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Chrysene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50



Results - Soil

Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	18-01626	18-01626	18-01626
Quotation No.: Q17-10179		Chemte	est Sam	ple ID.:	566454	566457	566472
Order No.:		Clie	nt Samp	le Ref.:	BHC15	BHC15	BHC22
		Cli	ent Sam	ple ID.:	J7	J10	J4
			Sampl	е Туре:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	3.7	6.7	2.0
		Date Sampled:				17-Jan-2018	17-Jan-2018
Determinand	Accred.	SOP	Units	LOD			
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

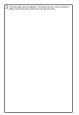
Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd. Depot Road Newmarket CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Report No.:	18-02499-1		
Initial Date of Issue:	06-Feb-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	29-Jan-2018
Order No.:	2543, GI	Date Instructed:	31-Jan-2018
No. of Samples:	2		
Turnaround (Wkdays):	5	Results Due:	06-Feb-2018
Date Approved:	06-Feb-2018		
Approved By:			



Client: Geosphere Environmental Ltd			mtest Jo		18-02499	18-02499
Quotation No.: Q17-10179	(st Sam		570546	570549
Order No.: 2543, GI			nt Samp		BHC17	BHC17
		Cli	ent Sam		J6 SOIL	J9
		Sample Type:				SOIL
		Top Depth (m):				5.30
			Date Sa		23-Jan-2018	23-Jan-2018
Determinand	Accred.	SOP				
Moisture	N	2030	%	0.020	20	14
рН	U	2010		N/A	6.0	
Boron (Hot Water Soluble)	U		mg/kg	0.40	< 0.40	
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.021	
Cyanide (Free)	U		mg/kg	0.50	< 0.50	
Cyanide (Total)	U		mg/kg	0.50	< 0.50	
Ammonium (Extractable)	U	2425		0.50	3.0	
Sulphate (Total)	U	2430	%	0.010	0.088	
Arsenic	U		mg/kg	1.0	18	
Cadmium	U	2450	0	0.10	0.21	
Chromium	U	2450	mg/kg	1.0	26	
Copper	U	2450	mg/kg	0.50	20	
Mercury	U	2450	mg/kg	0.10	0.31	
Nickel	U	2450	mg/kg	0.50	33	
Lead	U	2450) י	0.50	22	
Selenium	U	2450		0.20	< 0.20	
Zinc	U	2450	mg/kg	0.50	46	
Chromium (Hexavalent)	N	2490	0	0.50	< 0.50	
Organic Matter	U	2625	%	0.40	0.76	
Aliphatic TPH >C5-C6	N	2680) י	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N		mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	0	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680		1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680		1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680		10.0	< 10	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	U		mg/kg	0.10	< 0.10	< 0.10
Acenaphthene	U	2700		0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10



Client: Geosphere Environmental Ltd			mtest Jo		18-02499	18-02499
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	570546	570549
Order No.: 2543, GI			nt Samp		BHC17	BHC17
		Cli	ent Sam		J6	J9
	Sample Type:			SOIL	SOIL	
			Top Dep	oth (m):	2.50	5.30
			Date Sa	ampled:	23-Jan-2018	23-Jan-2018
Determinand	Accred.	SOP	Units	LOD		
Phenanthrene	U	2700	mg/kg	0.10	0.51	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	1.5	< 0.10
Pyrene	U	2700	mg/kg	0.10	1.5	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	0.90	< 0.10
Chrysene	U	2700	mg/kg	0.10	0.98	< 0.10
Benzo[b]fluoranthene	U	2700		0.10	1.0	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	0.57	< 0.10
Benzo[a]pyrene	U	2700		0.10	0.85	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700		0.10	0.40	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	0.51	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	8.7	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0
Chloromethane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0
Vinyl Chloride	Ü	2760	µg/kg	1.0	< 1.0	< 1.0
Bromomethane	Ü	2760	μg/kg	20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Trichlorofluoromethane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	Ü	2760		1.0	< 1.0	< 1.0
1.1-Dichloroethane	Ü	2760		1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0
Trichloromethane	U	2760		1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	Ü	2760		1.0	< 1.0	< 1.0
Tetrachloromethane	Ü	2760	µg/kg	1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Benzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloroethane	Ü	2760	μg/kg	2.0	< 2.0	< 2.0
Trichloroethene	Ü	2760		1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Dibromomethane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
Toluene	U	2760		1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N		μg/kg	10	< 10	< 1.0
1,1,2-Trichloroethane	U	2760		10	< 10	< 10
Tetrachloroethene	Ü	2760		1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg μg/kg	10	< 10	< 10
1.2-Dibromoethane	U	2760	μg/kg μg/kg	5.0	< 5.0	< 5.0



Client: Geosphere Environmental Ltd			mtest Jo		18-02499	18-02499
Quotation No.: Q17-10179			est Sam		570546	570549
Order No.: 2543, GI			nt Samp		BHC17	BHC17
		Cli	ent Sam		J6 SOIL	J9
		Sample Type:				SOIL
		Top Depth (m):				5.30
			Date Sa		23-Jan-2018	23-Jan-2018
Determinand	Accred.	SOP				
Chlorobenzene	U	2760		1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760		2.0	< 2.0	< 2.0
Ethylbenzene	U	2760		1.0	< 1.0	< 1.0
m & p-Xylene	U	2760		1.0	< 1.0	< 1.0
o-Xylene	U	2760		1.0	< 1.0	< 1.0
Styrene	U	2760		1.0	< 1.0	< 1.0
Tribromomethane	N	2760		1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760		1.0	< 1.0	< 1.0
Bromobenzene	U	2760		1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760		50	< 50	< 50
N-Propylbenzene	N	2760		1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760		1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760		1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760		1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760		1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760		1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	U	2760	100	1.0	< 1.0	< 1.0
4-Isopropyltoluene	N	2760		1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760		1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760		1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760		1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760		50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760		1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760		1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760		2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760		1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50
Phenol	U	2790	5	0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790		0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylphenol	U	2790		0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790		0.50	< 0.50	< 0.50
Hexachloroethane	N	2790		0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790		0.50	< 0.50	< 0.50
4-Methylphenol	U	2790		0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Isophorone	U	2790		0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo		18-02499	18-02499
Quotation No.: Q17-10179			st Sam		570546	570549
Order No.: 2543, GI			nt Samp		BHC17	BHC17
		Cli	ent Sam		J6 SOIL	J9
		Sample Type:				SOIL
			Top De	. ,	2.50	5.30
			Date Sa		23-Jan-2018	23-Jan-2018
Determinand	Accred.	SOP				
2,4-Dimethylphenol	N	2790	0	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U		mg/kg	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U		mg/kg	0.50	< 0.50	< 0.50
Naphthalene	U		mg/kg	0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	0	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790		0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790		0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790		0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthylene	U	2790		0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790		0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790		0.50	< 0.50	< 0.50
Dibenzofuran	U		mg/kg	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790		0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Carbazole	U	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
Fluoranthene	U	2790		0.50	< 0.50	< 0.50
Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	U	2790		0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Chrysene	U	2790		0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50





Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	18-02499	18-02499
Quotation No.: Q17-10179	(Chemte	st Sam	570546	570549	
Order No.: 2543, GI		Clie	nt Samp	BHC17	BHC17	
		Cli	ent Sam	J6	J9	
			Sampl	SOIL	SOIL	
			Top Dep	2.50	5.30	
			Date Sa	23-Jan-2018	23-Jan-2018	
Determinand	Accred.	SOP	Units	LOD		
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Total Phenols	U	2920	mg/kg	0.30	< 0.30	



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	GC-MŚ	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

i illai Neport			
Report No.:	18-02644-1		
Initial Date of Issue:	08-Feb-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	Lake Lothing, Lowestoft 2543 GI		
Quotation No.:	Q17-10179	Date Received:	30-Jan-2018
Order No.:		Date Instructed:	01-Feb-2018
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	07-Feb-2018
Date Approved:	08-Feb-2018		
Approved By:			



Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179		Chemtest Sample ID.:						
Order No.:		Clie	nt Samp	le Ref.: e Type:	BHC18			
		SOIL						
			Top De		0.1			
				ampled:	26-Jan-2018			
Determinand	Accred.	SOP	Units					
рН	U	1010		N/A	8.7			
Ammonia (Free) as N	U	1220	mg/l	0.050	0.14			
Sulphate	U	1220	mg/l	1.0	15			
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050			
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050			
Arsenic (Dissolved)	U	1450	μg/l	1.0	1.7			
Boron (Dissolved)	U	1450	μg/l	20	< 20			
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080			
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Copper (Dissolved)	U	1450	μg/l	1.0	1.2			
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50			
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Lead (Dissolved)	U	1450	μg/l	1.0	1.8			
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Zinc (Dissolved)	U	1450	μg/l	1.0	3.0			
Chromium (Hexavalent)	U	1490	μg/l	20	< 20			
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10			
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10			
Naphthalene	U	1700	μg/l	0.10	< 0.10			
Acenaphthylene	U	1700	μg/l	0.10	< 0.10			
Acenaphthene	U	1700	μg/l	0.10	< 0.10			
Fluorene	U	1700	μg/l	0.10	< 0.10			
Phenanthrene	U	1700	μg/l	0.10	< 0.10			
Anthracene	U	1700	μg/l	0.10	< 0.10			
Fluoranthene	U	1700	μg/l	0.10	< 0.10			
Pyrene	U	1700	μg/l	0.10	< 0.10			
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10			



Client: Geosphere Environmental Ltd		Chemtest Job No.						
Quotation No.: Q17-10179	(st Sam		571137			
Order No.:		Clie	nt Samp	le Ref.:	BHC18			
			Sampl	е Туре:	SOIL			
			Top Dep		0.1			
			Date Sa	ampled:	26-Jan-2018			
Determinand	Accred.	SOP	Units	LOD				
Chrysene	U	1700	μg/l	0.10	< 0.10			
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10			
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10			
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10			
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10			
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0			
Benzene	U	1760	μg/l	1.0	< 1.0			
Toluene	U	1760	μg/l	1.0	< 1.0			
Ethylbenzene	U	1760	μg/l	1.0	< 1.0			
m & p-Xylene	U	1760	μg/l	1.0	< 1.0			
o-Xylene	U	1760	μg/l	1.0	< 1.0			
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0			
Phenol	N	1790	μg/l	0.50	< 0.50			
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50			
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50			
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50			
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50			
Hexachloroethane	N	1790	μg/l	0.50	< 0.50			
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50			
4-Methylphenol	N	1790	μg/l	0.50	< 0.50			
Nitrobenzene	N	1790	μg/l	0.50	< 0.50			
Isophorone	N	1790	μg/l	0.50	< 0.50			
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50			
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50			
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50			
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50			
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50			
Naphthalene	N	1790	μg/l	0.50	< 0.50			
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50			
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50			
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50			
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50			
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50			
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50			
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50			
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50			
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
Acenaphthylene	N	1790	μg/l	0.50	< 0.50			





Client: Geosphere Environmental Ltd		18-02644			
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	571137
Order No.:		Clier	nt Samp	le Ref.:	BHC18
			Sampl	е Туре:	SOIL
			Top De	oth (m):	0.1
			Date Sa	ampled:	26-Jan-2018
Determinand	Accred.				
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Project: Lake Lothing, Lowestoff 2543 GI Client: Geosphere Environmental Ltd Chemtest Job No.:								
Client: Geosphere Environmental Ltd		ple ID.:	18-02644 571137					
Quotation No.: Q17-10179 Order No.:	 '		nt Samp					
Order No.:		Cilei		e Type:	BHC18 SOIL			
				,,				
		oth (m): ampled:	0.1					
				os Lab:	26-Jan-2018 COVENTRY			
Determinand	Accred.	SOP	Units		COVENTRY			
ACM Type	U Accrea.	2192	Ullits	N/A	-			
ACM Type	- 0	2192		IN/A	No Asbestos			
Asbestos Identification	U	2192	%	0.001	Detected			
Moisture	N	2030	%	0.020	6.8			
рН	U	2010		N/A	8.4			
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.91			
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010			
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50			
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50			
Ammonium (Extractable)	U	2425	mg/kg	0.50	2.0			
Sulphate (Total)	U	2430	%	0.010	0.057			
Arsenic	U	2450	mg/kg	1.0	12			
Cadmium	U	2450	mg/kg	0.10	0.12			
Chromium	U	2450	mg/kg	1.0	14			
Copper	U	2450	mg/kg	0.50	36			
Mercury	U	2450	mg/kg	0.10	0.80			
Nickel	U	2450	mg/kg	0.50	18			
Lead	U	2450	mg/kg	0.50	52			
Selenium	U	2450	mg/kg	0.20	0.25			
Zinc	U	2450	mg/kg	0.50	83			
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50			
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0			
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0			
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0			
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0			
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0			
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0			
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	12			
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0			
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	12			
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0			
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0			
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0			
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0			
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0			
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0			
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	24			
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0			
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	24			
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	36			
Naphthalene	U	2700	mg/kg	0.10	0.44			
Acenaphthylene	U	2700	mg/kg	0.10	0.99			



Client: Geosphere Environmental Ltd	:: Geosphere Environmental Ltd Chemtest Job No.:							
Quotation No.: Q17-10179	(st Sam		571137			
Order No.:		Clie	nt Samp		BHC18			
				e Type:	SOIL			
		oth (m):	0.1					
			Date Sa	_	26-Jan-2018			
			Asbest	os Lab:	COVENTRY			
Determinand	Accred.	SOP	Units	LOD				
Acenaphthene	U	2700		0.10	0.57			
Fluorene	U	2700	ט	0.10	0.40			
Phenanthrene	U	2700	mg/kg	0.10	4.4			
Anthracene	U	2700	mg/kg	0.10	2.2			
Fluoranthene	U		mg/kg	0.10	15			
Pyrene	U	2700	mg/kg	0.10	14			
Benzo[a]anthracene	U	2700	5	0.10	7.5			
Chrysene	U	2700	mg/kg	0.10	6.7			
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	9.2			
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	3.8			
Benzo[a]pyrene	U	2700	mg/kg	0.10	7.3			
Indeno(1,2,3-c,d)Pyrene	U	2700		0.10	4.8			
Dibenz(a,h)Anthracene	U	2700		0.10	1.3			
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	5.1			
Total Of 16 PAH's	U	2700		2.0	84			
Dichlorodifluoromethane	N	2760		1.0	< 1.0			
Chloromethane	U	2760		1.0	< 1.0			
Vinyl Chloride	U	2760		1.0	< 1.0			
Bromomethane	U	2760	μg/kg	20	< 20			
Chloroethane	N	2760		2.0	< 2.0			
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0			
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0			
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0			
1,1-Dichloroethane	U	2760		1.0	< 1.0			
cis 1,2-Dichloroethene	U	2760)	1.0	< 1.0			
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0			
Trichloromethane	U	2760		1.0	< 1.0			
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0			
Tetrachloromethane	U	2760		1.0	< 1.0			
1,1-Dichloropropene	N	2760)	1.0	< 1.0			
Benzene	U	2760		1.0	< 1.0			
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0			
Trichloroethene	Ü	2760	μg/kg	1.0	< 1.0			
1,2-Dichloropropane	Ü	2760	μg/kg	1.0	< 1.0			
Dibromomethane	Ü	2760	μg/kg	1.0	< 1.0			
Bromodichloromethane	Ü	2760	μg/kg	5.0	< 5.0			
cis-1,3-Dichloropropene	N	2760		10	< 10			
Toluene	Ü	2760		1.0	< 1.0			
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10			
1.1.2-Trichloroethane	Ü	2760		10	< 10			
Tetrachloroethene	U	2760	י	1.0	< 1.0			
1,3-Dichloropropane	N	2760)	2.0	< 2.0			



Client: Geosphere Environmental Ltd		ob No.:	18-02644		
Quotation No.: Q17-10179	(ple ID.:	571137		
Order No.:		Clie	nt Samp		BHC18
				е Туре:	SOIL
			Top Dep		0.1
			Date Sa	ampled:	26-Jan-2018
			Asbest	os Lab:	COVENTRY
Determinand	Accred.	SOP	Units	LOD	
Dibromochloromethane	N	2760	μg/kg	10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0
Chlorobenzene	U	2760		1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0
o-Xylene	U	2760		1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0
Tribromomethane	N	2760		1.0	< 1.0
Isopropylbenzene	U	2760		1.0	< 1.0
Bromobenzene	U	2760		1.0	< 1.0
1,2,3-Trichloropropane	N	2760		50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0
4-Chlorotoluene	N	2760		1.0	< 1.0
Tert-Butylbenzene	N	2760		1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760		1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,3-Dichlorobenzene	U	2760		1.0	< 1.0
4-Isopropyltoluene	N	2760		1.0	< 1.0
1,4-Dichlorobenzene	U	2760		1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760		50	< 50
1,2,4-Trichlorobenzene	U	2760		1.0	< 1.0
Hexachlorobutadiene	N	2760		1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760		1.0	< 1.0
N-Nitrosodimethylamine	U	2790		0.50	< 0.50
Phenol	Ü	2790		0.50	< 0.50
2-Chlorophenol	Ü	2790	5	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	Ü	2790		0.50	< 0.50
1,3-Dichlorobenzene	Ü	2790		0.50	< 0.50
1,4-Dichlorobenzene	N		mg/kg		< 0.50
1,2-Dichlorobenzene	Ü		mg/kg		< 0.50
2-Methylphenol	U		mg/kg	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	Ü		mg/kg	0.50	< 0.50
Hexachloroethane	N		mg/kg	0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50
4-Methylphenol	U	2790		0.50	< 0.50
Nitrobenzene	Ü	2790		0.50	< 0.50



Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179	(Chemtest Sample ID.						
Order No.:		Clie	nt Samp		BHC18			
				e Type:	SOIL			
			Top Dep		0.1			
			Date Sa		26-Jan-2018			
			Asbest		COVENTRY			
Determinand	Accred.	SOP						
Isophorone	U	_	mg/kg	0.50	< 0.50			
2-Nitrophenol	N	2790		0.50	< 0.50			
2,4-Dimethylphenol	N	2790		0.50	< 0.50			
Bis(2-Chloroethoxy)Methane	U	2790		0.50	< 0.50			
2,4-Dichlorophenol	U	2790)	0.50	< 0.50			
1,2,4-Trichlorobenzene	U	2790	9	0.50	< 0.50			
Naphthalene	U	2790	mg/kg	0.50	< 0.50			
4-Chloroaniline	N	2790		0.50	< 0.50			
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50			
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50			
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50			
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50			
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50			
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50			
2,4,5-Trichlorophenol	U	2790		0.50	< 0.50			
2-Chloronaphthalene	U	2790		0.50	< 0.50			
2-Nitroaniline	U	2790		0.50	< 0.50			
Acenaphthylene	U	2790		0.50	< 0.50			
Dimethylphthalate	U	2790		0.50	< 0.50			
2,6-Dinitrotoluene	U	2790		0.50	< 0.50			
Acenaphthene	U	2790	mg/kg	0.50	< 0.50			
3-Nitroaniline	N		mg/kg	0.50	< 0.50			
Dibenzofuran	U		mg/kg	0.50	< 0.50			
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50			
2,4-Dinitrotoluene	U	2790		0.50	< 0.50			
Fluorene	U	2790		0.50	< 0.50			
Diethyl Phthalate	U	2790		0.50	< 0.50			
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50			
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	< 0.50			
Azobenzene	U	2790		0.50	< 0.50			
4-Bromophenylphenyl Ether	U	2790		0.50	< 0.50			
Hexachlorobenzene	U	2790		0.50	< 0.50			
Pentachlorophenol	N	2790		0.50	< 0.50			
Phenanthrene	U	2790		0.50	< 0.50			
Anthracene	U	2790		0.50	< 0.50			
Carbazole	U	2790	mg/kg	0.50	< 0.50			
Di-N-Butyl Phthalate	U		mg/kg	0.50	< 0.50			
Fluoranthene	U		mg/kg	0.50	1.1			
Pyrene	U	2790		0.50	1.0			
Butylbenzyl Phthalate	U	2790		0.50	< 0.50			
Benzo[a]anthracene	Ü	2790		0.50	0.69			



Project: Lake Lotning, Lowestoft 2543 Gi						
Client: Geosphere Environmental Ltd		Chemtest Job No.:			18-02644	
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.:		Client Sample Ref.:				
				е Туре:	SOIL	
			Top Dep	oth (m):	0.1	
			Date Sa	ampled:	26-Jan-2018	
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	1.1	
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	
Benzo[a]pyrene	U	2790	mg/kg	0.50	0.77	
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	0.57	
PCB 81	N	2815	mg/kg	0.010	< 0.010	
PCB 77	N	2815	mg/kg	0.010	< 0.010	
PCB 105	N	2815	mg/kg	0.010	< 0.010	
PCB 114	N	2815	mg/kg	0.010	< 0.010	
PCB 118	N	2815	mg/kg	0.010	< 0.010	
PCB 123	N	2815	mg/kg	0.010	< 0.010	
PCB 126	N	2815	mg/kg	0.010	< 0.010	
PCB 156	N	2815	mg/kg	0.010	< 0.010	
PCB 157	N	2815	mg/kg	0.010	< 0.010	
PCB 167	N	2815	mg/kg	0.010	< 0.010	
PCB 169	N	2815	mg/kg	0.010	< 0.010	
PCB 189	N	2815	mg/kg	0.010	< 0.010	
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12	
Total Phenols	U	2920	mg/kg	0.30	< 0.30	



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection



SOP	Title	Parameters included	Method summary
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

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- I/S Insufficient Sample
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- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Amended Report

Report No.:	18-02840-2		
Initial Date of Issue:	12-Feb-2018	Date of Re-Issue:	15-Feb-2018
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	01-Feb-2018
Order No.:		Date Instructed:	01-Feb-2018
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	09-Feb-2018
Date Approved:	12-Feb-2018		
Approved By:			

Robert Monk, Technical Manager



Results - 2 Stage WAC

Project: 2543 GI Lake Lothing, Lowestoft

Project: 2543 GI Lake Lothing, Lov							1 10111 1		
Chemtest Job No:	18-02840						Landfill V	Vaste Acceptano	e Criteria
Chemtest Sample ID:	572076							Limits	
Sample Ref:	BHC18							Stable, Non-	
Sample ID:	J1							reactive	Hazardous
Top Depth(m):	0.1						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	26-Jan-2018							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			2.2	3	5	6
Loss On Ignition	2610	U	%			3.5			10
Total BTEX	2760	U	mg/kg			< 0.010	6		-
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			26	500		
Total (Of 17) PAH's	2700	N	mg/kg			63	100		
рН	2010	U				8.9	-	>6	-
Acid Neutralisation Capacity	2015	N	mol/kg			0.016		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using B	S EN 12457 at L/	S 10 l/kg
Arsenic	1450	U	< 0.0010	0.0041	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.0023	0.018	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.0026	0.0084	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0017	0.0021	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	0.0079	< 0.050	0.066	0.4	10	40
Lead	1450	U	< 0.0010	0.0098	< 0.010	0.082	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.1	0.5	7
Zinc	1450	U	< 0.0010	0.021	< 0.50	< 0.50	4	50	200
Chloride	1220	U	1.0	4.6	< 10	40	800	15000	25000
Fluoride	1220	U	1.3	0.39	2.6	5.4	10	150	500
Sulphate	1220	U	5.5	21	11	180	1000	20000	50000
Total Dissolved Solids	1020	N	50	23	100	270	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	15	14	< 50	140	500	800	1000

Solid Information					
Dry mass of test portion/kg	0.175				
Moisture (%)	9.3				

Leachate Test Information					
Leachant volume 1st extract/l	0.332				
Leachant volume 2nd extract/l	1.400				
Eluant recovered from 1st extract/l	0.289				

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



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Details:



Chemtest Ltd. Depot Road Newmarket CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Report No.:	18-02978-1		
Initial Date of Issue:	12-Feb-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543,GI Lake Lothing, Lowestoft		
Quotation No.:		Date Received:	01-Feb-2018
Order No.:	2543 GI	Date Instructed:	01-Feb-2018
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	09-Feb-2018
Date Approved:	12-Feb-2018		
Approved By:			

Robert Monk, Technical Manager



Results - 2 Stage WAC

Project: 2543,GI Lake Lothing, Lowestoft

Project: 2543,Gl Lake Lothing, Lowes									
Chemtest Job No:	18-02978						Landfill V	Vaste Acceptano	ce Criteria
Chemtest Sample ID:	572715							Limits	
Sample Ref:	BHC17							Stable, Non-	
Sample ID:								reactive	Hazardous
Top Depth(m):	2.50						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:								hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			[A] 0.23	3	5	6
Loss On Ignition	2610	U	%			3.6			10
Total BTEX	2760	U	mg/kg			[A] < 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			[A] < 10	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		
рН	2010	U				9.1		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.041		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using B	S EN 12457 at L	/S 10 l/kg
Arsenic	1450	U	0.0017	0.0041	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.0091	0.032	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	0.0089	0.028	< 0.050	0.25	0.5	10	70
Copper	1450	U	0.0026	0.0061	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0041	0.0027	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	0.0036	0.014	< 0.050	0.12	0.4	10	40
Lead	1450	U	0.0019	0.0058	< 0.010	0.051	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.06	0.7	5
Selenium	1450	U	0.0020	0.0013	< 0.010	0.014	0.1	0.5	7
Zinc	1450	U	0.012	0.025	< 0.50	< 0.50	4	50	200
Chloride	1220	U	< 1.0	1.5	< 10	12	800	15000	25000
Fluoride	1220	U	0.12	0.29	< 1.0	2.6	10	150	500
Sulphate	1220	U	23	21	45	210	1000	20000	50000
Total Dissolved Solids	1020	N	43	55	84	530	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	27	14	53	160	500	800	1000

Solid Information					
Dry mass of test portion/kg	0.175				
Moisture (%)	19				

Leachate Test Information					
Leachant volume 1st extract/l	0.309				
Leachant volume 2nd extract/l	1.400				
Eluant recovered from 1st extract/l	0.308				

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
572715	BHC17			Α	Amber Glass 250ml
572715	BHC17			Α	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

· mai report			
Report No.:	18-03574-1		
Initial Date of Issue:	19-Feb-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 91 LAKE LOTHING, LOWESTOFT		
Quotation No.:	Q17-10179	Date Received:	07-Feb-2018
Order No.:		Date Instructed:	09-Feb-2018
No. of Samples:	2		
Turnaround (Wkdays):	5	Results Due:	15-Feb-2018
Date Approved:	16-Feb-2018		
Approved By:			

Glynn Harvey, Laboratory Manager



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.:			nt Samp		BHC19 J6		
		Client Sample ID.:					
				e Type:	SOIL		
			Top De		3.00		
				ampled:	05-Feb-2018		
Determinand	Accred.	SOP	Units				
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	310		
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10		
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	310		
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	7.9		
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	7.9		
Total Petroleum Hydrocarbons	N	1675	μg/l	10	320		
Naphthalene	U	1700	μg/l	0.10	< 0.10		
Acenaphthylene	U	1700	μg/l	0.10	< 0.10		
Acenaphthene	U	1700	μg/l	0.10	< 0.10		
Fluorene	U	1700	μg/l	0.10	< 0.10		
Phenanthrene	U	1700	μg/l	0.10	< 0.10		
Anthracene	U	1700	μg/l	0.10	< 0.10		
Fluoranthene	U	1700	μg/l	0.10	< 0.10		
Pyrene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10		
Chrysene	U	1700	μg/l	0.10	< 0.10		
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10		
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10		
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10		
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0		
Phenol	N	1790	μg/l	0.50	< 0.50		
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50		
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50		



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	575449	
Order No.:		Clie	nt Samp	le Ref.:	BHC19	
		Cli	ent Sam	ple ID.:	J6	
				е Туре:	SOIL	
			Top De	oth (m):	3.00	
			Date Sa	ampled:	05-Feb-2018	
Determinand	Accred.	SOP	Units	LOD		
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50	
Hexachloroethane	N	1790	μg/l	0.50	< 0.50	
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50	
4-Methylphenol	N	1790	μg/l	0.50	< 0.50	
Nitrobenzene	N	1790	μg/l	0.50	< 0.50	
Isophorone	N	1790	μg/l	0.50	< 0.50	
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50	
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50	
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50	
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50	
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50	
Naphthalene	N	1790	μg/l	0.50	< 0.50	
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50	
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50	
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50	
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50	
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50	
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Acenaphthylene	N	1790	μg/l	0.50	< 0.50	
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50	
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Acenaphthene	N	1790	μg/l	0.50	< 0.50	
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Dibenzofuran	N	1790	μg/l	0.50	< 0.50	
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50	
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Fluorene	N	1790	μg/l	0.50	< 0.50	
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50	
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50	
Azobenzene	N	1790	μg/l	0.50	< 0.50	
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50	
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50	
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	
Phenanthrene	N	1790	μg/l	0.50	< 0.50	
Anthracene	N	1790	μg/l	0.50	< 0.50	
Carbazole	N	1790	μg/l	0.50	< 0.50	
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Fluoranthene	N	1790	μg/l	0.50	< 0.50	



Results - Leachate

TIOLOGI. 2545 51 LAKE LOTTIMO, LOWLOTOLI						
Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	575449	
Order No.:			nt Samp		BHC19	
		Cli	ent Sam	ple ID.:	J6	
			Sampl	е Туре:	SOIL	
			Top De	oth (m):	3.00	
			Date Sa	ampled:	05-Feb-2018	
Determinand	Accred.	SOP	Units	LOD		
Pyrene	N	1790	μg/l	0.50	< 0.50	
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50	
Chrysene	N	1790	μg/l	0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50	
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50	
Dibenz(a,h)Anthracene	N	< 0.50				
Benzo[g,h,i]perylene	N 1790 μg/l 0.50 < 0. N 1790 μg/l 0.50 < 0.					
Total Phenols	U	1920	mg/l	0.030	< 0.030	



Client: Geosphere Environmental Ltd		Chemtest Job No.:				18-03574
Quotation No.: Q17-10179	(st Sam		575449	575450
Order No.:			nt Samp		BHC19	BHC19
		Cli	ent Sam		J6	J7
				e Type:	SOIL	SOIL
			Top De		3.00	4.00
			Date Sa		05-Feb-2018	05-Feb-2018
Determinand	Accred.		Units			
Moisture	N	2030	%	0.020	17	15
Aliphatic TPH >C5-C6	N		mg/kg		< 1.0	< 1.0
Aliphatic TPH >C6-C8	N		mg/kg		< 1.0	< 1.0
Aliphatic TPH >C8-C10	U		mg/kg		< 1.0	< 1.0
Aliphatic TPH >C10-C12	U		mg/kg		< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	50	33
Aliphatic TPH >C16-C21	U	2680	mg/kg		< 1.0	< 1.0
Aliphatic TPH >C21-C35	U		mg/kg		< 1.0	< 1.0
Aliphatic TPH >C35-C44	N		mg/kg		< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N		mg/kg	5.0	50	33
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg		< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680			< 5.0	< 5.0
Total Petroleum Hydrocarbons	N		mg/kg		50	34
Naphthalene	U		mg/kg		< 0.10	< 0.10
Acenaphthylene	U		mg/kg		< 0.10	< 0.10
Acenaphthene	U		mg/kg	0.10	< 0.10	< 0.10
Fluorene	U		mg/kg		< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Pyrene	U	2700	mg/kg		< 0.10	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg		< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg		< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700		2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20	< 20
Chloroethane	N	2760		2.0	< 2.0	< 2.0



Client: Geosphere Environmental Ltd		Chemtest Job No.:				18-03574
Quotation No.: Q17-10179		Chemtest Sample ID.:			575449	575450
Order No.:			nt Samp		BHC19	BHC19
		Client Sample ID.:			J6	J7
				e Type:	SOIL	SOIL
			Top De		3.00	4.00
			Date Sa		05-Feb-2018	05-Feb-2018
Determinand	Accred.	SOP		LOD		
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760		1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760		1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Benzene	U	2760		1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Trichloroethene	U	2760		1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760		1.0	< 1.0	< 1.0
Dibromomethane	U	2760		1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760		5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
Toluene	U	2760		1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760		10	< 10	< 10
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10
Tetrachloroethene	U	2760		1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
Chlorobenzene	U	2760		1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760		2.0	< 2.0	< 2.0
Ethylbenzene	U	2760		1.0	< 1.0	< 1.0
m & p-Xylene	U	2760		1.0	< 1.0	< 1.0
o-Xylene	U	2760		1.0	< 1.0	< 1.0
Styrene	U	2760		1.0	< 1.0	< 1.0
Tribromomethane	N	2760		1.0	2.5	< 1.0
Isopropylbenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0
Bromobenzene	Ü	2760		1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50
N-Propylbenzene	N	2760		1.0	< 1.0	< 1.0
2-Chlorotoluene	Ü	2760	1.0.0	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760		1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1.3-Dichlorobenzene	U	2760		1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd		Chemtest Job No.:				18-03574
Quotation No.: Q17-10179	(st Sam		575449	575450
Order No.:			nt Samp		BHC19	BHC19
		Client Sample ID.:			J6	J7
				e Type:	SOIL	SOIL
			Top Dep		3.00	4.00
			Date Sa		05-Feb-2018	05-Feb-2018
Determinand	Accred.		Units			
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760		1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760		1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790		0.50	< 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N		mg/kg	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachloroethane	N	2790		0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U		mg/kg	0.50	< 0.50	< 0.50
4-Methylphenol	U		mg/kg	0.50	< 0.50	< 0.50
Nitrobenzene	U	_	mg/kg	0.50	< 0.50	< 0.50
Isophorone	U		mg/kg	0.50	< 0.50	< 0.50
2-Nitrophenol	N		mg/kg	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N		mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitrophenol	N		mg/kg	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	0	0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Chemtest Job No.:				18-03574
Quotation No.: Q17-10179		Chemtest Sample ID.:			575449	575450
Order No.:			nt Samp		BHC19	BHC19
		Cli	ent Sam		J6	J7
				e Type:	SOIL	SOIL
			Top De		3.00	4.00
			Date Sa		05-Feb-2018	05-Feb-2018
Determinand	Accred.	SOP	Units	LOD		
Acenaphthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790		0.50	< 0.50	< 0.50
Dibenzofuran	U	2790		0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790		0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Fluorene	U	2790	mg/kg		< 0.50	< 0.50
Diethyl Phthalate	U	2790		0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	< 0.50	< 0.50
Azobenzene	U	2790		0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790		0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790		0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790		0.50	< 0.50	< 0.50
Phenanthrene	U	2790		0.50	< 0.50	< 0.50
Anthracene	U	2790	0	0.50	< 0.50	< 0.50
Carbazole	U	2790		0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	Ü	2790	0	0.50	< 0.50	< 0.50
Fluoranthene	Ü	2790		0.50	< 0.50	< 0.50
Pyrene	Ü	2790		0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	U	2790		0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	0		< 0.50	< 0.50
Chrysene	U	2790			< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790		0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	0	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	0	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	Ü	2790		0.50	< 0.50	< 0.50
Benzo[a]pyrene	U	2790		0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	3 3	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	Ü	2790		0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	Ü	2790			< 0.50	< 0.50
PCB 28	U	2815			< 0.010	
PCB 81	N	2815				< 0.010
PCB 52	Ü	2815			< 0.010	21212
PCB 77	N	2815				< 0.010
PCB 105	N	2815				< 0.010
PCB 90+101	Ü	2815	0		< 0.010	
PCB 114	N	2815		0.010		< 0.010
PCB 118	Ü	2815			< 0.010	1 0.0.0
PCB 118	N	2815				< 0.010
PCB 153	U	2815			< 0.010	1 0.010
PCB 123	N	2815			1 0.010	< 0.010
PCB 138	U	2815			< 0.010	V 0.010





Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	18-03574	18-03574
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	575449	575450
Order No.:		Clie	nt Samp	le Ref.:	BHC19	BHC19
		Cli	ent Sam	ple ID.:	J6	J7
				е Туре:	SOIL	SOIL
			Top Dep	oth (m):	3.00	4.00
			Date Sa	ampled:	05-Feb-2018	05-Feb-2018
Determinand	Accred.	SOP	Units	LOD		
PCB 126	N	2815	mg/kg	0.010		< 0.010
PCB 180	U	2815	mg/kg	0.010	< 0.010	
PCB 156	N	2815	mg/kg	0.010		< 0.010
PCB 157	N	2815	mg/kg	0.010		< 0.010
PCB 167	N	2815	mg/kg	0.010		< 0.010
PCB 169	N	2815	mg/kg	0.010		< 0.010
PCB 189	N	2815	mg/kg	0.010		< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12		< 0.12
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10	
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Chemtest Ltd. Depot Road Newmarket CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Details:

Report No.:	18-05699-1			
Initial Date of Issue:	05-Mar-2018			
Client	Geosphere Envi	ronmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ	•		
Contact(s):	Stephen Gilchris Joe Glenwright	st		
Project	2543,91 LAKE L	OTHING		
Quotation No.:	Q17-10179		Date Received:	27-Feb-2018
Order No.:	2543,91		Date Instructed:	27-Feb-2018
No. of Samples:	2			
Turnaround (Wkdays):	5		Results Due:	05-Mar-2018
Date Approved:	05-Mar-2018			
Approved By:				

Martin Dyer, Laboratory Manager



Client: Geosphere Environmental Ltd			mtest Jo	18-05699 585039	18-05699	
Quotation No.: Q17-10179		Chemtest Sample ID.:				585049
Order No.: 2543,91		Client Sample Ref.:			BHC20	BHC24
		Cli	ent Sam	•	J7	J6
				e Type:	SOIL	SOIL
			Top De		4.7	2.5
			Date Sa		22-Feb-2018	22-Feb-2018
Determinand	Accred.	SOP	Units			
Moisture	N	2030	%	0.020	9.5	11
pH	U	2010		N/A	10.4	8.5
Boron (Hot Water Soluble)	U		mg/kg	0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.034	< 0.010
Cyanide (Free)	U		mg/kg	0.50	< 0.50	< 0.50
Cyanide (Total)	U		mg/kg		< 0.50	< 0.50
Ammoniacal Nitrogen	U		mg/kg	0.50	3.9	1.2
Sulphate (Total)	U		mg/kg	100	150	< 100
Arsenic	U	2450	mg/kg	1.0	3.6	1.5
Cadmium	U	2450	mg/kg	0.10	< 0.10	< 0.10
Chromium	U	2450	mg/kg	1.0	10	3.4
Copper	U	2450	mg/kg	0.50	3.9	1.3
Mercury	U	2450	mg/kg	0.10	< 0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	6.1	1.5
Lead	U	2450	mg/kg	0.50	5.5	4.4
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	12	4.2
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	< 0.40	< 0.40
Aliphatic TPH >C5-C6	N		mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U		mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg		< 10	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg		< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10



Client: Geosphere Environmental Ltd			mtest Jo	18-05699 585039	18-05699	
Quotation No.: Q17-10179	(Chemtest Sample ID.:				585049
Order No.: 2543,91			nt Samp	BHC20	BHC24	
		Cli	ent Sam		J7	J6
				е Туре:	SOIL	SOIL
			Top Dep		4.7	2.5
			Date Sa		22-Feb-2018	22-Feb-2018
Determinand	Accred.	SOP	Units			
Phenanthrene	U		mg/kg		< 0.10	< 0.10
Anthracene	U		mg/kg		< 0.10	< 0.10
Fluoranthene	U		mg/kg		< 0.10	< 0.10
Pyrene	U		mg/kg	0.10	< 0.10	< 0.10
Benzo[a]anthracene	U		mg/kg	0.10	< 0.10	< 0.10
Chrysene	U		mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U		mg/kg	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U		mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10
1,2-Dibromoethane	U	2760		5.0	< 5.0	< 5.0



Client: Geosphere Environmental Ltd			mtest Jo	18-05699	18-05699	
Quotation No.: Q17-10179		Chemtest Sample ID.:			585039	585049
Order No.: 2543,91			nt Samp	BHC20	BHC24	
		Cli	ent Sam		J7	J6
				е Туре:	SOIL	SOIL
			Top Dep		4.7	2.5
			Date Sa		22-Feb-2018	22-Feb-2018
Determinand	Accred.	SOP	Units			
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylphenol	U	2790	mg/kg		< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg		< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo	18-05699	18-05699	
Quotation No.: Q17-10179	(Chemtest Sample ID.:			585039	585049
Order No.: 2543,91			nt Samp	BHC20	BHC24	
		Cli	ent Sam	J7	J6	
			Sampl	e Type:	SOIL	SOIL
			Top Dep		4.7	2.5
			Date Sa		22-Feb-2018	22-Feb-2018
Determinand	Accred.	SOP	Units	_		
2,4-Dimethylphenol	N		mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U		mg/kg	0.50	< 0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitroaniline	U		mg/kg	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N		mg/kg	0.50	< 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Anthracene	Ü	2790	mg/kg	0.50	< 0.50	< 0.50
Carbazole	Ü	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	Ü	2790	mg/kg	0.50	< 0.50	< 0.50
Fluoranthene	Ü	2790	mg/kg	0.50	< 0.50	< 0.50
Pyrene	Ü	2790	mg/kg	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	Ü	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]anthracene	Ü	2790	mg/kg	0.50	< 0.50	< 0.50
Chrysene	Ü	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U		mg/kg		< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Che	mtest Jo	18-05699	18-05699	
Quotation No.: Q17-10179	(est Sam	585039	585049	
Order No.: 2543,91			nt Samp		BHC20	BHC24
		Cli	ent Sam		J7	J6
				е Туре:	SOIL	SOIL
			Top De		4.7	2.5
			Date Sa		22-Feb-2018	22-Feb-2018
Determinand	Accred.	SOP	Units	LOD		
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	< 0.50
PCB 28	U	2815	mg/kg	0.010		< 0.010
PCB 81	N	2815	mg/kg	0.010	< 0.010	
PCB 52	U	2815	mg/kg	0.010		< 0.010
PCB 77	N	2815	mg/kg	0.010	< 0.010	
PCB 105	N	2815	mg/kg	0.010	< 0.010	
PCB 90+101	U	2815	mg/kg	0.010		< 0.010
PCB 114	N	2815	mg/kg	0.010	< 0.010	
PCB 118	U	2815	mg/kg	0.010		< 0.010
PCB 118	N	2815	mg/kg	0.010	< 0.010	
PCB 153	U	2815	mg/kg	0.010		< 0.010
PCB 123	N	2815	mg/kg	0.010	< 0.010	
PCB 138	U	2815	mg/kg	0.010		< 0.010
PCB 126	N	2815	mg/kg	0.010	< 0.010	
PCB 180	U	2815	mg/kg	0.010		< 0.010
PCB 156	N	2815	mg/kg	0.010	< 0.010	
PCB 157	N	2815	mg/kg	0.010	< 0.010	
PCB 167	N	2815	mg/kg	0.010	< 0.010	
PCB 169	N	2815	mg/kg	0.010	< 0.010	
PCB 189	N	2815	mg/kg	0.010	< 0.010	
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12	
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10		< 0.10
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Chemtest Ltd. Depot Road Newmarket CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Details:

Report No.:	18-05699-1			
Initial Date of Issue:	05-Mar-2018			
Client	Geosphere Envi	ronmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ	•		
Contact(s):	Stephen Gilchris Joe Glenwright	st		
Project	2543,91 LAKE L	OTHING		
Quotation No.:	Q17-10179		Date Received:	27-Feb-2018
Order No.:	2543,91		Date Instructed:	27-Feb-2018
No. of Samples:	2			
Turnaround (Wkdays):	5		Results Due:	05-Mar-2018
Date Approved:	05-Mar-2018			
Approved By:				

Martin Dyer, Laboratory Manager



Client: Geosphere Environmental Ltd			mtest Jo	18-05699 585039	18-05699	
Quotation No.: Q17-10179		Chemtest Sample ID.:				585049
Order No.: 2543,91		Client Sample Ref.:			BHC20	BHC24
		Cli	ent Sam	•	J7	J6
				e Type:	SOIL	SOIL
			Top De		4.7	2.5
			Date Sa		22-Feb-2018	22-Feb-2018
Determinand	Accred.	SOP	Units			
Moisture	N	2030	%	0.020	9.5	11
pH	U	2010		N/A	10.4	8.5
Boron (Hot Water Soluble)	U		mg/kg	0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.034	< 0.010
Cyanide (Free)	U		mg/kg	0.50	< 0.50	< 0.50
Cyanide (Total)	U		mg/kg		< 0.50	< 0.50
Ammoniacal Nitrogen	U		mg/kg	0.50	3.9	1.2
Sulphate (Total)	U		mg/kg	100	150	< 100
Arsenic	U	2450	mg/kg	1.0	3.6	1.5
Cadmium	U	2450	mg/kg	0.10	< 0.10	< 0.10
Chromium	U	2450	mg/kg	1.0	10	3.4
Copper	U	2450	mg/kg	0.50	3.9	1.3
Mercury	U	2450	mg/kg	0.10	< 0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	6.1	1.5
Lead	U	2450	mg/kg	0.50	5.5	4.4
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	12	4.2
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	< 0.40	< 0.40
Aliphatic TPH >C5-C6	N		mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U		mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg		< 10	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg		< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10



Client: Geosphere Environmental Ltd			mtest Jo	18-05699 585039	18-05699	
Quotation No.: Q17-10179	(Chemtest Sample ID.:				585049
Order No.: 2543,91			nt Samp	BHC20	BHC24	
		Cli	ent Sam		J7	J6
				е Туре:	SOIL	SOIL
			Top Dep		4.7	2.5
			Date Sa		22-Feb-2018	22-Feb-2018
Determinand	Accred.	SOP	Units			
Phenanthrene	U		mg/kg		< 0.10	< 0.10
Anthracene	U		mg/kg		< 0.10	< 0.10
Fluoranthene	U		mg/kg		< 0.10	< 0.10
Pyrene	U		mg/kg	0.10	< 0.10	< 0.10
Benzo[a]anthracene	U		mg/kg	0.10	< 0.10	< 0.10
Chrysene	U		mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U		mg/kg	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U		mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10
1,2-Dibromoethane	U	2760		5.0	< 5.0	< 5.0



Client: Geosphere Environmental Ltd			mtest Jo	18-05699	18-05699	
Quotation No.: Q17-10179		Chemtest Sample ID.:			585039	585049
Order No.: 2543,91			nt Samp	BHC20	BHC24	
		Cli	ent Sam		J7	J6
				е Туре:	SOIL	SOIL
			Top Dep		4.7	2.5
			Date Sa		22-Feb-2018	22-Feb-2018
Determinand	Accred.	SOP	Units			
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylphenol	U	2790	mg/kg		< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg		< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo	18-05699	18-05699	
Quotation No.: Q17-10179	(est Sam	585039 BHC20	585049	
Order No.: 2543,91		Client Sample Ref.:				BHC24
		Client Sample ID.:			J7	J6
			Sampl	e Type:	SOIL	SOIL
			Top De		4.7	2.5
			Date Sa	ampled:	22-Feb-2018	22-Feb-2018
Determinand	Accred.		Units	_		
2,4-Dimethylphenol	N		mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg		< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitroaniline	U		mg/kg	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N		mg/kg	0.50	< 0.50	< 0.50
Azobenzene	U		mg/kg	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobenzene	U	•	mg/kg		< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg		< 0.50	< 0.50
Anthracene	Ü	2790	mg/kg	0.50	< 0.50	< 0.50
Carbazole	Ü	2790	mg/kg		< 0.50	< 0.50
Di-N-Butyl Phthalate	Ü	2790	mg/kg	0.50	< 0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Pyrene	Ü	2790	mg/kg	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	Ü	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]anthracene	Ü	2790	mg/kg	0.50	< 0.50	< 0.50
Chrysene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg		< 0.50	< 0.50
Di-N-Octyl Phthalate	U		mg/kg		< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Che	mtest Jo	18-05699	18-05699	
Quotation No.: Q17-10179			st Sam	585039	585049	
Order No.: 2543,91			nt Samp		BHC20	BHC24
		Cli	ent Sam		J7	J6
				е Туре:	SOIL	SOIL
			Top Dep		4.7	2.5
			Date Sa		22-Feb-2018	22-Feb-2018
Determinand	Accred.	SOP	Units	LOD		
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	< 0.50
PCB 28	U	2815	mg/kg	0.010		< 0.010
PCB 81	N	2815	mg/kg	0.010	< 0.010	
PCB 52	U	2815	mg/kg	0.010		< 0.010
PCB 77	N	2815	mg/kg	0.010	< 0.010	
PCB 105	N	2815	mg/kg	0.010	< 0.010	
PCB 90+101	U	2815	mg/kg	0.010		< 0.010
PCB 114	N	2815	mg/kg	0.010	< 0.010	
PCB 118	U	2815	mg/kg	0.010		< 0.010
PCB 118	N	2815	mg/kg	0.010	< 0.010	
PCB 153	U	2815	mg/kg	0.010		< 0.010
PCB 123	N	2815	mg/kg	0.010	< 0.010	
PCB 138	U	2815	mg/kg	0.010		< 0.010
PCB 126	N	2815	mg/kg	0.010	< 0.010	
PCB 180	U	2815	mg/kg	0.010		< 0.010
PCB 156	N	2815	mg/kg	0.010	< 0.010	
PCB 157	N	2815	mg/kg	0.010	< 0.010	
PCB 167	N	2815	mg/kg	0.010	< 0.010	
PCB 169	N	2815	mg/kg	0.010	< 0.010	
PCB 189	N	2815	mg/kg	0.010	< 0.010	
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12	
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10		< 0.10
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Report No.:	18-06475-1		
Initial Date of Issue:	17-Apr-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist Lianne Fountain		
Project	2543 GI Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	08-Mar-2018
Order No.:		Date Instructed:	04-Apr-2018
No. of Samples:	2		
Turnaround (Wkdays):	5	Results Due:	10-Apr-2018
Date Approved:	11-Apr-2018		
Approved By:			

Robert Monk, Technical Manager



Client: Geosphere Environmental Ltd		Job No.:	18-06475					
Quotation No.: Q17-10179		Chemt	est San	nple ID.:	588382			
Order No.:		Client Sample Ref.:						
		BHC26 J2						
		Client Sample ID.: Sample Type:						
				epth (m):	0.7			
			Date S	Sampled:	26-Feb-2018			
Determinand	Accred.	SOP	Units	LOD				
pH	U	1010		N/A	7.6			
Ammonia (Free) as N	U	1220	mg/l	0.050	< 0.050			
Sulphate	U	1220	mg/l	1.0	9.9			
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050			
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050			
Arsenic (Dissolved)	U	1450	μg/l	1.0	1.9			
Boron (Dissolved)	U	1450	μg/l	20	41			
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080			
Chromium (Dissolved)	U	1450	μg/l	1.0	1.2			
Copper (Dissolved)	U	1450	μg/l	1.0	4.6			
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50			
Nickel (Dissolved)	U	1450	μg/l	1.0	1.1			
Lead (Dissolved)	U	1450	μg/l	1.0	3.7			
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Zinc (Dissolved)	U	1450	μg/l	1.0	3.4			
Chromium (Hexavalent)	U	1490	μg/l	20	[B] < 20			
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	[B] < 0.10			
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	[B] < 0.10			
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	[B] < 0.10			
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	[B] < 0.10			
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	[B] < 0.10			
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	[B] < 0.10			
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	[B] < 0.10			
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	[B] < 0.10			
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	[B] < 5.0			
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	[B] < 0.10			
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	[B] < 0.10			
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	[B] < 0.10			
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	[B] < 0.10			
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	[B] < 0.10			
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	[B] < 0.10			
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	[B] < 0.10			
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	[B] < 5.0			
Total Petroleum Hydrocarbons	N	1675	μg/l	10	[B] < 10			
Naphthalene	U	1700	μg/l	0.10	< 0.10			
Acenaphthylene	U	1700	μg/l	0.10	< 0.10			
Acenaphthene	U	1700	μg/l	0.10	< 0.10			
Fluorene	U	1700	μg/l	0.10	< 0.10			
Phenanthrene	U	1700	μg/l	0.10	< 0.10			
Anthracene	U	1700	μg/l	0.10	< 0.10			
Fluoranthene	U	1700	μg/l	0.10	< 0.10			
Pyrene	U	1700	μg/l	0.10	< 0.10			



Results - Leachate

Project. 2545 Gi Lake Lottling					18-06475			
Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179		Chemtest Sample ID.:						
Order No.:		Cli	ent Sam	ple Ref.:	BHC26			
		С	lient Sai	mple ID.:	J2			
			Samp	ole Type:	SOIL			
			Top Do	epth (m):	0.7			
			Date S	Sampled:	26-Feb-2018			
Determinand	Accred.	SOP	Units	LOD				
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10			
Chrysene	U	1700	μg/l	0.10	< 0.10			
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10			
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10			
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10			
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10			
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0			
Benzene	U	1760	μg/l	1.0	[B] < 1.0			
Toluene	U	1760	μg/l	1.0	[B] < 1.0			
Ethylbenzene	U							
m & p-Xylene	U	1.5						
o-Xylene	U	[B] < 1.0						
Methyl Tert-Butyl Ether	N	1760	μg/l mg/l	0.0010	[B] < 0.0010			
Total Phenols	U	1920	mg/l	0.030	< 0.030			



Client: Geosphere Environmental Ltd			mtest Jo	18-06475	18-06475	
Quotation No.: Q17-10179			st Sam	588382	588384	
Order No.:		Client Sample Ref.:				BHC26
		Cli	ent Sam		J2	J4
			Sampl	e Type:	SOIL	SOIL
			Top De		0.7	2.3
			Date Sa		26-Feb-2018	26-Feb-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	
Moisture	N	2030	%	0.020	8.7	16
pH	U	2010		N/A	[B] 8.8	[B] 4.8
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.71	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.016	0.020
Cyanide (Free)	U	2300	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Ammonium (Extractable)	U	2425	mg/kg		[B] 2.3	[B] 2.2
Sulphate (Total)	U	2430	%	0.010	[B] 0.026	[B] 0.033
Arsenic	U	2450	mg/kg	1.0	4.7	25
Cadmium	U	2450	mg/kg	0.10	0.22	< 0.10
Chromium	U	2450	mg/kg	1.0	6.8	29
Copper	U	2450	mg/kg	0.50	9.0	12
Mercury	U	2450	mg/kg	0.10	< 0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	7.3	16
Lead	U	2450	mg/kg	0.50	19	11
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	27	54
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		[B] 0.47
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[B] < 5.0	[B] < 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[B] < 5.0	[B] < 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[B] < 10	[B] < 10



Client: Geosphere Environmental Ltd			mtest Jo	18-06475	18-06475	
Quotation No.: Q17-10179	(est Sam		588382	588384
Order No.:		Client Sample Ref.:			BHC26	BHC26
		Cli	ent Sam		J2	J4
				e Type:	SOIL	SOIL
			Top Dep	. ,	0.7	2.3
			Date Sa		26-Feb-2018	26-Feb-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units			
Naphthalene	U		mg/kg		[B] < 0.10	[B] < 0.10
Acenaphthylene	U		mg/kg		[B] < 0.10	[B] < 0.10
Acenaphthene	U		mg/kg		[B] < 0.10	[B] < 0.10
Fluorene	U		mg/kg	0.10	[B] < 0.10	[B] < 0.10
Phenanthrene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Anthracene	U		mg/kg	0.10	[B] < 0.10	[B] < 0.10
Fluoranthene	U		mg/kg	0.10	[B] < 0.10	[B] < 0.10
Pyrene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Chrysene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	[B] < 2.0	[B] < 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Chloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromomethane	U	2760	μg/kg	20	[B] < 20	[B] < 20
Chloroethane	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromochloromethane	N	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
Trichloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Benzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Trichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Dibromomethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	[B] < 10	[B] < 10
Toluene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	[B] < 10	[B] < 10



Client: Geosphere Environmental Ltd			mtest Jo		18-06475	18-06475
Quotation No.: Q17-10179			est Sam	588382	588384	
Order No.:			nt Samp		BHC26	BHC26
		Cli	ent Sam		J2	J4
				e Type:	SOIL	SOIL
			Top De	oth (m):	0.7	2.3
			Date Sa		26-Feb-2018	26-Feb-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
1,1,2-Trichloroethane	U	2760	μg/kg	10	[B] < 10	[B] < 10
Tetrachloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Dibromochloromethane	N	2760	μg/kg	10	[B] < 10	[B] < 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
Chlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Ethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
m & p-Xylene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
o-Xylene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Styrene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tribromomethane	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	[B] < 50	[B] < 50
N-Propylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	[B] < 50	[B] < 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Phenol	U	2790	mg/kg		[B] < 0.50	[B] < 0.50
2-Chlorophenol	U		mg/kg		[B] < 0.50	[B] < 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg		[B] < 0.50	[B] < 0.50
1,3-Dichlorobenzene	U	2790	mg/kg		[B] < 0.50	[B] < 0.50
1,4-Dichlorobenzene	N	2790	mg/kg		[B] < 0.50	[B] < 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methylphenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50



Client: Geosphere Environmental Ltd			ntest Jo		18-06475	18-06475
Quotation No.: Q17-10179	(st Sam	588382	588384	
Order No.:		Client Sample Ref.:				BHC26
		Cli	ent Sam	ple ID.:	J2	J4
			Sampl	e Type:	SOIL	SOIL
			Top De		0.7	2.3
			Date Sa	ampled:	26-Feb-2018	26-Feb-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP		LOD		
Hexachloroethane	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
N-Nitrosodi-n-propylamine	U	2790		0.50	[B] < 0.50	[B] < 0.50
4-Methylphenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Nitrobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Isophorone	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Naphthalene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chloro-3-Methylphenol	U	2790		0.50	[B] < 0.50	[B] < 0.50
2-Methylnaphthalene	U	2790	0	0.50	[B] < 0.50	[B] < 0.50
4-Nitrophenol	N	2790	0	0.50	[B] < 0.50	[B] < 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4,6-Trichlorophenol	U	2790		0.50	[B] < 0.50	[B] < 0.50
2,4,5-Trichlorophenol	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Chloronaphthalene	U	2790		0.50	[B] < 0.50	[B] < 0.50
2-Nitroaniline	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
Acenaphthylene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dimethylphthalate	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,6-Dinitrotoluene	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Acenaphthene	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
3-Nitroaniline	N	2790		0.50	[B] < 0.50	[B] < 0.50
Dibenzofuran	U	2790	5 5	0.50	[B] < 0.50	[B] < 0.50
4-Chlorophenylphenylether	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
2,4-Dinitrotoluene	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
Fluorene	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
Diethyl Phthalate	Ü	2790	ט	0.50	[B] < 0.50	[B] < 0.50
4-Nitroaniline	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	[B] < 0.50	[B] < 0.50
Azobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Bromophenylphenyl Ether	U	2790	ט	0.50	[B] < 0.50	[B] < 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Phenanthrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Carbazole	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Out Du2010	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50



Client: Geosphere Environmental Ltd		Che	mtest Jo	18-06475	18-06475	
Quotation No.: Q17-10179		Chemte	st Sam	588382	588384	
Order No.:		Clie	nt Samp	le Ref.:	BHC26	BHC26
		Cli	ent Sam		J2	J4
			Sampl	е Туре:	SOIL	SOIL
			Top Dep		0.7	2.3
			Date Sa		26-Feb-2018	26-Feb-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Chrysene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
PCB 28	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 52	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 90+101	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 118	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 153	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 138	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 180	U	2815	mg/kg	0.010	[B] < 0.010	
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	[B] < 0.10	
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
588382	BHC26	J2	26-Feb-2018	В	Amber Glass 250ml
588382	BHC26	J2	26-Feb-2018	В	Plastic Tub 500g
588384	BHC26	J4	26-Feb-2018	В	Amber Glass 250ml
588384	BHC26	J4	26-Feb-2018	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
		Aliphatics: >C5-C6, >C6-C8,>C8-C10,	



SOP	Title	Parameters included	Method summary
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Report No.:	18-06475-1		
Initial Date of Issue:	17-Apr-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist Lianne Fountain		
Project	2543 GI Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	08-Mar-2018
Order No.:		Date Instructed:	04-Apr-2018
No. of Samples:	2		
Turnaround (Wkdays):	5	Results Due:	10-Apr-2018
Date Approved:	11-Apr-2018		
Approved By:			

Robert Monk, Technical Manager



Client: Geosphere Environmental Ltd		Che	emtest .	Job No.:	18-06475
Quotation No.: Q17-10179		Chemt	est San	nple ID.:	588382
Order No.:		Clie	ent Sam	ple Ref.:	BHC26
		С		mple ID.:	J2
			Samp	ole Type:	SOIL
				epth (m):	0.7
			Date S	Sampled:	26-Feb-2018
Determinand	Accred.	SOP	Units	LOD	
pH	U	1010		N/A	7.6
Ammonia (Free) as N	U	1220	mg/l	0.050	< 0.050
Sulphate	U	1220	mg/l	1.0	9.9
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	1.9
Boron (Dissolved)	U	1450	μg/l	20	41
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	1.2
Copper (Dissolved)	U	1450	μg/l	1.0	4.6
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	1.1
Lead (Dissolved)	U	1450	μg/l	1.0	3.7
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Zinc (Dissolved)	U	1450	μg/l	1.0	3.4
Chromium (Hexavalent)	U	1490	μg/l	20	[B] < 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	[B] < 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	[B] < 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	[B] < 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	[B] < 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	[B] < 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	[B] < 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	[B] < 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	[B] < 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	[B] < 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	[B] < 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	[B] < 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	[B] < 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	[B] < 0.10
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	[B] < 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	[B] < 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	[B] < 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	[B] < 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	[B] < 10
Naphthalene	U	1700	μg/l	0.10	< 0.10
Acenaphthylene	U	1700	μg/l	0.10	< 0.10
Acenaphthene	U	1700	μg/l	0.10	< 0.10
Fluorene	U	1700	μg/l	0.10	< 0.10
Phenanthrene	U	1700	μg/l	0.10	< 0.10
Anthracene	U	1700	μg/l	0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10
Pyrene	U	1700	μg/l	0.10	< 0.10



Results - Leachate

Project. 2545 Gi Lake Lottling						
Client: Geosphere Environmental Ltd		Chemtest Job No.:			18-06475	
Quotation No.: Q17-10179		Chemtest Sample ID.:				
Order No.:		Cli	ent Sam	ple Ref.:	BHC26	
		С	lient Sai	mple ID.:	J2	
			Samp	ole Type:	SOIL	
			Top Do	epth (m):	0.7	
			Date S	Sampled:	26-Feb-2018	
Determinand	Accred.	SOP	Units	LOD		
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10	
Chrysene	U	1700	μg/l	0.10	< 0.10	
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10	
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10	
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10	
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10	
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10	
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0	
Benzene	U	1760	μg/l	1.0	[B] < 1.0	
Toluene	U	1760	μg/l	1.0	[B] < 1.0	
Ethylbenzene	U	1760	μg/l	1.0	[B] < 1.0	
m & p-Xylene	U	1760	μg/l	1.0	[B] < 1.0	
o-Xylene	U	1760	μg/l	1.0	[B] < 1.0	
Methyl Tert-Butyl Ether	N	1760	mg/l	0.0010	[B] < 0.0010	
Total Phenols	U	1920	mg/l	0.030	< 0.030	



Client: Geosphere Environmental Ltd			mtest Jo		18-06475	18-06475
Quotation No.: Q17-10179			st Sam		588382	588384
Order No.:			nt Samp		BHC26	BHC26
		Cli	ent Sam		J2	J4
			Sampl	e Type:	SOIL	SOIL
			Top De		0.7	2.3
			Date Sa		26-Feb-2018	26-Feb-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	
Moisture	N	2030	%	0.020	8.7	16
pH	U	2010		N/A	[B] 8.8	[B] 4.8
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.71	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.016	0.020
Cyanide (Free)	U	2300	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Ammonium (Extractable)	U	2425	mg/kg		[B] 2.3	[B] 2.2
Sulphate (Total)	U	2430	%	0.010	[B] 0.026	[B] 0.033
Arsenic	U	2450	mg/kg	1.0	4.7	25
Cadmium	U	2450	mg/kg	0.10	0.22	< 0.10
Chromium	U	2450	mg/kg	1.0	6.8	29
Copper	U	2450	mg/kg	0.50	9.0	12
Mercury	U	2450	mg/kg	0.10	< 0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	7.3	16
Lead	U	2450	mg/kg	0.50	19	11
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	27	54
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		[B] 0.47
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[B] < 5.0	[B] < 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[B] < 5.0	[B] < 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[B] < 10	[B] < 10



Client: Geosphere Environmental Ltd			mtest Jo		18-06475	18-06475
Quotation No.: Q17-10179	(est Sam		588382	588384
Order No.:			nt Samp		BHC26	BHC26
		Cli	ent Sam		J2	J4
				e Type:	SOIL	SOIL
			Top Dep	. ,	0.7	2.3
			Date Sa		26-Feb-2018	26-Feb-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units			
Naphthalene	U		mg/kg		[B] < 0.10	[B] < 0.10
Acenaphthylene	U		mg/kg		[B] < 0.10	[B] < 0.10
Acenaphthene	U		mg/kg		[B] < 0.10	[B] < 0.10
Fluorene	U		mg/kg	0.10	[B] < 0.10	[B] < 0.10
Phenanthrene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Anthracene	U		mg/kg	0.10	[B] < 0.10	[B] < 0.10
Fluoranthene	U		mg/kg	0.10	[B] < 0.10	[B] < 0.10
Pyrene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Chrysene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	[B] < 2.0	[B] < 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Chloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromomethane	U	2760	μg/kg	20	[B] < 20	[B] < 20
Chloroethane	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromochloromethane	N	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
Trichloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Benzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Trichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Dibromomethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	[B] < 10	[B] < 10
Toluene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	[B] < 10	[B] < 10



Client: Geosphere Environmental Ltd			mtest Jo		18-06475	18-06475
Quotation No.: Q17-10179		Chemtest Sample ID.:			588382	588384
Order No.:			nt Samp		BHC26	BHC26
		Cli	ent Sam		J2	J4
				e Type:	SOIL	SOIL
			Top De	oth (m):	0.7	2.3
			Date Sa		26-Feb-2018	26-Feb-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
1,1,2-Trichloroethane	U	2760	μg/kg	10	[B] < 10	[B] < 10
Tetrachloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Dibromochloromethane	N	2760	μg/kg	10	[B] < 10	[B] < 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
Chlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Ethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
m & p-Xylene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
o-Xylene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Styrene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tribromomethane	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	[B] < 50	[B] < 50
N-Propylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	[B] < 50	[B] < 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Phenol	U	2790	mg/kg		[B] < 0.50	[B] < 0.50
2-Chlorophenol	U		mg/kg		[B] < 0.50	[B] < 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg		[B] < 0.50	[B] < 0.50
1,3-Dichlorobenzene	U	2790	mg/kg		[B] < 0.50	[B] < 0.50
1,4-Dichlorobenzene	N	2790	mg/kg		[B] < 0.50	[B] < 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methylphenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50



Client: Geosphere Environmental Ltd			mtest Jo		18-06475	18-06475
Quotation No.: Q17-10179	(st Sam		588382	588384
Order No.:			nt Samp		BHC26	BHC26
		Cli	ent Sam	ple ID.:	J2	J4
			Sampl	e Type:	SOIL	SOIL
			Top De		0.7	2.3
			Date Sa	ampled:	26-Feb-2018	26-Feb-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP		LOD		
Hexachloroethane	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
N-Nitrosodi-n-propylamine	U	2790		0.50	[B] < 0.50	[B] < 0.50
4-Methylphenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Nitrobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Isophorone	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Naphthalene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chloro-3-Methylphenol	U	2790		0.50	[B] < 0.50	[B] < 0.50
2-Methylnaphthalene	U	2790	0	0.50	[B] < 0.50	[B] < 0.50
4-Nitrophenol	N	2790	0	0.50	[B] < 0.50	[B] < 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4,6-Trichlorophenol	U	2790		0.50	[B] < 0.50	[B] < 0.50
2,4,5-Trichlorophenol	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Chloronaphthalene	U	2790		0.50	[B] < 0.50	[B] < 0.50
2-Nitroaniline	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
Acenaphthylene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dimethylphthalate	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,6-Dinitrotoluene	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Acenaphthene	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
3-Nitroaniline	N	2790		0.50	[B] < 0.50	[B] < 0.50
Dibenzofuran	U	2790	5 5	0.50	[B] < 0.50	[B] < 0.50
4-Chlorophenylphenylether	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
2,4-Dinitrotoluene	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
Fluorene	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
Diethyl Phthalate	Ü	2790	ט	0.50	[B] < 0.50	[B] < 0.50
4-Nitroaniline	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	[B] < 0.50	[B] < 0.50
Azobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Bromophenylphenyl Ether	U	2790	ט	0.50	[B] < 0.50	[B] < 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Phenanthrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Carbazole	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Out Du2010	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50



Client: Geosphere Environmental Ltd		Chemtest Job No.:			18-06475	18-06475
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	588382	588384
Order No.:		Clie	nt Samp	le Ref.:	BHC26	BHC26
		Cli	ent Sam		J2	J4
			Sampl	е Туре:	SOIL	SOIL
			Top Dep		0.7	2.3
			Date Sa		26-Feb-2018	26-Feb-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Chrysene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
PCB 28	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 52	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 90+101	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 118	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 153	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 138	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 180	U	2815	mg/kg	0.010	[B] < 0.010	
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	[B] < 0.10	
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
588382	BHC26	J2	26-Feb-2018	В	Amber Glass 250ml
588382	BHC26	J2	26-Feb-2018	В	Plastic Tub 500g
588384	BHC26	J4	26-Feb-2018	В	Amber Glass 250ml
588384	BHC26	J4	26-Feb-2018	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
		Aliphatics: >C5-C6, >C6-C8,>C8-C10,	



SOP	Title	Parameters included	Method summary
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Report No.:	18-06487-1
report No	10 00-01 1

Initial Date of Issue: 17-Apr-2018

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Lianne Fountain

Project 2543 GI Lake Lothing

Quotation No.: Q17-10179 Date Received: 08-Mar-2018

Order No.: Date Instructed: 27-Mar-2018

No. of Samples: 2

Turnaround (Wkdays): 9 Results Due: 10-Apr-2018

Date Approved: 11-Apr-2018 Subcon Results Due: 10-Apr-2018

Approved By:

Details: Robert Monk, Technical Manager



Client: Geosphere Environmental Ltd		18-06487			
Quotation No.: Q17-10179		588453			
Order No.:		Clie	ent Sam	ple Ref.:	BHC23
		CI		mple ID.: ble Type:	J2
		SOIL			
		0.8			
		05-Mar-2018			
Determinand	Accred.	SOP	Units	LOD	
pH	U	1010		N/A	7.1
Ammonia (Free) as N	U	1220	mg/l	0.050	< 0.050
Sulphate	U	1220	mg/l	1.0	6.4
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	1.1
Boron (Dissolved)	U	1450	μg/l	20	25
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Copper (Dissolved)	U	1450	μg/l	1.0	1.6
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0
Lead (Dissolved)	U	1450	μg/l	1.0	1.8
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Zinc (Dissolved)	U	1450	μg/l	1.0	2.8
Chromium (Hexavalent)	U	1490	μg/l	20	[B] < 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	[B] < 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	[B] < 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	[B] < 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	[B] < 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	[B] < 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	[B] < 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	[B] < 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	[B] < 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	[B] < 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	[B] < 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	[B] < 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	[B] < 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	[B] < 0.10
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	[B] < 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	[B] < 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	[B] < 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	[B] < 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	[B] < 10
Naphthalene	U	1700	μg/l	0.10	< 0.10
Acenaphthylene	U	1700	μg/l	0.10	< 0.10
Acenaphthene	U	1700	μg/l	0.10	< 0.10
Fluorene	U	1700	μg/l	0.10	< 0.10
Phenanthrene	U	1700	μg/l	0.10	< 0.10
Anthracene	U	1700	μg/l	0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10
Pyrene	U	1700	μg/l	0.10	< 0.10



Results - Leachate

Project. 2545 Gi Lake Lottling					18-06487				
Client: Geosphere Environmental Ltd		Chemtest Job No.:							
Quotation No.: Q17-10179		Chemtest Sample ID.:							
Order No.:		Clie	ent Sam	ple Ref.:	BHC23				
	Client Sample ID.:								
			Samp	ole Type:	SOIL				
			Top Do	epth (m):	0.8				
			Date S	Sampled:	05-Mar-2018				
Determinand	Accred.	SOP	Units	LOD					
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10				
Chrysene	U	1700	μg/l	0.10	< 0.10				
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10				
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10				
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10				
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10				
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10				
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10				
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0				
Benzene	U	1760	μg/l	1.0	[B] < 1.0				
Toluene	U	1760	μg/l	1.0	[B] < 1.0				
Ethylbenzene	U	1760	μg/l	1.0	[B] < 1.0				
m & p-Xylene	U	1760	μg/l	1.0	[B] < 1.0				
o-Xylene	U	1760	μg/l	1.0	[B] < 1.0				
Methyl Tert-Butyl Ether	N	1760	mg/l	0.0010	[B] < 0.0010				
Total Phenols	U	1920	mg/l	0.030	< 0.030				



Client: Geosphere Environmental Ltd		Chemtest Job No.:			18-06487	18-06487
Quotation No.: Q17-10179	(st Sam	588453	588456	
Order No.:			nt Samp		BHC23	BHC23
		Cli	ent Sam	J2	J5	
			Sampl	SOIL	SOIL	
			Top De	` '	0.8	3.0
			Date Sa	ampled:	05-Mar-2018	05-Mar-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	
Moisture	N	2030	%	0.020	5.9	14
PΗ	U	2010		N/A	7.3	8.2
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	< 0.010
Cyanide (Free)	U	2300	mg/kg		[B] < 0.50	[B] < 0.50
Cyanide (Total)	U	2300	mg/kg		[B] < 0.50	[B] < 0.50
Ammonium (Extractable)	U	2425			1.4	0.68
Sulphate (Total)	U	2430	%	0.010	< 0.010	< 0.010
Arsenic	U	2450	mg/kg	1.0	3.3	1.3
Cadmium	U		mg/kg	0.10	< 0.10	< 0.10
Chromium	U		mg/kg	1.0	4.0	2.3
Copper	U	2450	mg/kg		1.0	0.63
Mercury	U	2450	mg/kg		< 0.10	< 0.10
Nickel	U	2450	mg/kg		3.2	1.9
Lead	U	2450	mg/kg		3.8	1.9
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	U	1	mg/kg		6.7	3.9
Chromium (Hexavalent)	N	2490	mg/kg		< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		< 0.40
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C6-C8	N		mg/kg		[B] < 1.0	[B] < 1.0
Aliphatic TPH >C8-C10	U		mg/kg		[B] < 1.0	[B] < 1.0
Aliphatic TPH >C10-C12	U		mg/kg		[B] < 1.0	[B] < 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[B] < 5.0	[B] < 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg		[B] < 1.0	[B] < 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg		[B] < 1.0	[B] < 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C16-C21	U	2680			[B] < 1.0	[B] < 1.0
Aromatic TPH >C21-C35	Ü	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C35-C44	N		mg/kg		[B] < 1.0	[B] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg		[B] < 5.0	[B] < 5.0
Total Petroleum Hydrocarbons	N		mg/kg		[B] < 10	[B] < 10



Client: Geosphere Environmental Ltd			mtest Jo	18-06487	18-06487	
Quotation No.: Q17-10179	(est Sam	588453	588456	
Order No.:			nt Samp		BHC23	BHC23
		Cli	ent Sam	J2	J5	
			Sampl	SOIL	SOIL	
			Top Dep	0.8	3.0	
			Date Sa		05-Mar-2018	05-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units			
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg		< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg		< 0.10	< 0.10
Fluorene	U	2700	mg/kg		< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	0.52	< 0.10
Pyrene	U	2700	mg/kg	0.10	0.42	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Chloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromomethane	U	2760	μg/kg	20	[B] < 20	[B] < 20
Chloroethane	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromochloromethane	N	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
Trichloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Benzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Trichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Dibromomethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	[B] < 10	[B] < 10
Toluene	Ü	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	[B] < 10	[B] < 10



Client: Geosphere Environmental Ltd			mtest Jo	18-06487	18-06487	
Quotation No.: Q17-10179			est Sam	588453	588456	
Order No.:		Client Sample Ref.:			BHC23	BHC23
		Cli	ent Sam	J2	J5	
			Sampl	SOIL	SOIL	
			Top De		0.8	3.0
			Date Sa		05-Mar-2018	05-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
1,1,2-Trichloroethane	U	2760	μg/kg	10	[B] < 10	[B] < 10
Tetrachloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Dibromochloromethane	N	2760	μg/kg	10	[B] < 10	[B] < 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
Chlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Ethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
m & p-Xylene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
o-Xylene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Styrene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tribromomethane	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	[B] < 50	[B] < 50
N-Propylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	[B] < 50	[B] < 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Hexachlorobutadiene	N	2760	µg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
N-Nitrosodimethylamine	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
Phenol	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Chlorophenol	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis-(2-Chloroethyl)Ether	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,3-Dichlorobenzene	U		mg/kg		[B] < 0.50	[B] < 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methylphenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
			i iiiu/NU	0.00		



Client: Geosphere Environmental Ltd		Chemtest Job No.:			18-06487	18-06487
Quotation No.: Q17-10179	(Chemtest Sample ID.:			588453	588456
Order No.:			nt Samp		BHC23	BHC23
		Cli	ent Sam	J2 SOIL	J5 SOIL	
			Sampl			
			Top Dep	. ,	0.8	3.0
			Date Sa		05-Mar-2018	05-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Hexachloroethane	N	2790	ט	0.50	[B] < 0.50	[B] < 0.50
N-Nitrosodi-n-propylamine	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Methylphenol	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Nitrobenzene	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Isophorone	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Nitrophenol	N		mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dimethylphenol	N		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Naphthalene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4,5-Trichlorophenol	U	2790		0.50	[B] < 0.50	[B] < 0.50
2-Chloronaphthalene	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Acenaphthylene	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Acenaphthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dibenzofuran	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Fluorene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Azobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Phenanthrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Carbazole	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50



Client: Geosphere Environmental Ltd			mtest Jo	18-06487	18-06487	
Quotation No.: Q17-10179	(est Sam	588453	588456	
Order No.:		Client Sample Ref.:				BHC23
		Cli	ent Sam		J2	J5
				e Type:	SOIL	SOIL
			Top Dep		0.8	3.0
			Date Sa		05-Mar-2018	05-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Pyrene	U	2790	0 0	0.50	[B] < 0.50	[B] < 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Chrysene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dibenz(a,h)Anthracene	U	2790		0.50	[B] < 0.50	[B] < 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
PCB 81	N	2815	mg/kg	0.010	< 0.010	
PCB 77	N	2815	mg/kg	0.010	< 0.010	
PCB 105	N	2815	mg/kg	0.010	< 0.010	
PCB 114	N	2815	mg/kg	0.010	< 0.010	
PCB 118	N	2815	mg/kg	0.010	< 0.010	
PCB 123	N	2815	mg/kg	0.010	< 0.010	
PCB 126	N	2815	mg/kg	0.010	< 0.010	
PCB 156	N	2815	mg/kg	0.010	< 0.010	
PCB 157	N	2815			< 0.010	
PCB 167	N	2815			< 0.010	
PCB 169	N	2815			< 0.010	
PCB 189	N	2815			< 0.010	
Total PCBs (12 Congeners)	N	2815		0.12	< 0.12	
Total Phenols	U	2920		0.30	< 0.30	< 0.30



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
588453	BHC23	J2	05-Mar-2018	В	Amber Glass 250ml
588453	BHC23	J2	05-Mar-2018	В	Plastic Tub 500g
588456	BHC23	J5	05-Mar-2018	В	Amber Glass 250ml
588456	BHC23	J5	05-Mar-2018	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
		Aliphatics: >C5-C6, >C6-C8,>C8-C10,	



SOP	Title	Parameters included	Method summary
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Report No.:	18-06487-1
report No	10 00-01 1

Initial Date of Issue: 17-Apr-2018

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Lianne Fountain

Project 2543 GI Lake Lothing

Quotation No.: Q17-10179 Date Received: 08-Mar-2018

Order No.: Date Instructed: 27-Mar-2018

No. of Samples: 2

Turnaround (Wkdays): 9 Results Due: 10-Apr-2018

Date Approved: 11-Apr-2018 Subcon Results Due: 10-Apr-2018

Approved By:

Details: Robert Monk, Technical Manager



Client: Geosphere Environmental Ltd		18-06487					
Quotation No.: Q17-10179		588453					
Order No.:		BHC23					
		Client Sample ID.:					
			Samp	ole Type:	SOIL		
				epth (m):	0.8		
			Date S	Sampled:	05-Mar-2018		
Determinand	Accred.	SOP	Units	LOD			
рН	U	1010		N/A	7.1		
Ammonia (Free) as N	U	1220	mg/l	0.050	< 0.050		
Sulphate	U	1220	mg/l	1.0	6.4		
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050		
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050		
Arsenic (Dissolved)	U	1450	μg/l	1.0	1.1		
Boron (Dissolved)	U	1450	μg/l	20	25		
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080		
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0		
Copper (Dissolved)	U	1450	μg/l	1.0	1.6		
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50		
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0		
Lead (Dissolved)	U	1450	μg/l	1.0	1.8		
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0		
Zinc (Dissolved)	U	1450	μg/l	1.0	2.8		
Chromium (Hexavalent)	U	1490	μg/l	20	[B] < 20		
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	[B] < 0.10		
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	[B] < 0.10		
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	[B] < 0.10		
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	[B] < 0.10		
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	[B] < 0.10		
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	[B] < 0.10		
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	[B] < 0.10		
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	[B] < 0.10		
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	[B] < 5.0		
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	[B] < 0.10		
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	[B] < 0.10		
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	[B] < 0.10		
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	[B] < 0.10		
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	[B] < 0.10		
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	[B] < 0.10		
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	[B] < 0.10		
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	[B] < 5.0		
Total Petroleum Hydrocarbons	N	1675	μg/l	10	[B] < 10		
Naphthalene	U	1700	μg/l	0.10	< 0.10		
Acenaphthylene	U	1700	μg/l	0.10	< 0.10		
Acenaphthene	U	1700	μg/l	0.10	< 0.10		
Fluorene	U	1700	μg/l	0.10	< 0.10		
Phenanthrene	U	1700	μg/l	0.10	< 0.10		
Anthracene	U	1700	μg/l	0.10	< 0.10		
Fluoranthene	U	1700	μg/l	0.10	< 0.10		
Pyrene	U	1700	μg/l	0.10	< 0.10		



Results - Leachate

Project. 2545 Gi Lake Lottling					18-06487		
Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179		Chemtest Sample ID.:					
Order No.:		Clie	ent Sam	ple Ref.:	BHC23		
		С	lient Saı	mple ID.:	J2		
			Samp	ole Type:	SOIL		
			Top Do	epth (m):	0.8		
			Date S	Sampled:	05-Mar-2018		
Determinand	Accred.	SOP	Units	LOD			
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10		
Chrysene	U	1700	μg/l	0.10	< 0.10		
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10		
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10		
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10		
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0		
Benzene	U	1760	μg/l	1.0	[B] < 1.0		
Toluene	U	1760	μg/l	1.0	[B] < 1.0		
Ethylbenzene	U	1760	μg/l	1.0	[B] < 1.0		
m & p-Xylene	U	1760	μg/l	1.0	[B] < 1.0		
o-Xylene	U	1760	μg/l	1.0	[B] < 1.0		
Methyl Tert-Butyl Ether	N	1760	mg/l	0.0010	[B] < 0.0010		
Total Phenols	U	1920	mg/l	0.030	< 0.030		



Client: Geosphere Environmental Ltd			mtest J		18-06487	
Quotation No.: Q17-10179			est Sam		588453	588456
Order No.:		Client Sample Ref.:			BHC23	BHC23
		Cli	ent Sam		J2	J5
			Sampl	e Type:	SOIL	SOIL
			Top De	. ,	0.8	3.0
			Date Sa	ampled:	05-Mar-2018	05-Mar-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	
Moisture	N	2030	%	0.020	5.9	14
рН	U	2010		N/A	7.3	8.2
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	< 0.010
Cyanide (Free)	U	2300	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	1.4	0.68
Sulphate (Total)	U	2430	%	0.010	< 0.010	< 0.010
Arsenic	U	2450	mg/kg	1.0	3.3	1.3
Cadmium	U	2450	mg/kg	0.10	< 0.10	< 0.10
Chromium	U		mg/kg	1.0	4.0	2.3
Copper	U	2450	mg/kg	0.50	1.0	0.63
Mercury	U	2450	mg/kg	0.10	< 0.10	< 0.10
Nickel	U	2450	mg/kg		3.2	1.9
Lead	U	2450	mg/kg	0.50	3.8	1.9
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	6.7	3.9
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		< 0.40
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C8-C10	U		mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[B] < 5.0	[B] < 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C16-C21	U	2680		1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C35-C44	N		mg/kg	1.0	[B] < 1.0	[B] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[B] < 5.0	[B] < 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg		[B] < 10	[B] < 10



Client: Geosphere Environmental Ltd			mtest Jo	18-06487	18-06487	
Quotation No.: Q17-10179	(est Sam		588453	588456
Order No.:			nt Samp		BHC23	BHC23
		Cli	ent Sam		J2	J5
			Sampl	e Type:	SOIL	SOIL
			Top De	. ,	0.8	3.0
			Date Sa	ampled:	05-Mar-2018	05-Mar-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	U		mg/kg		< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluorene	U		mg/kg		< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	0.52	< 0.10
Pyrene	U	2700	mg/kg	0.10	0.42	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Chloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromomethane	U	2760	μg/kg	20	[B] < 20	[B] < 20
Chloroethane	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromochloromethane	N	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
Trichloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Benzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Trichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Dibromomethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	[B] < 10	[B] < 10
Toluene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	[B] < 10	[B] < 10



Client: Geosphere Environmental Ltd			mtest Jo	18-06487	18-06487	
Quotation No.: Q17-10179	(st Sam		588453	588456
Order No.:		Client Sample Ref.:			BHC23	BHC23
		Cli	ent Sam		J2	J5
				e Type:	SOIL	SOIL
			Top De		0.8	3.0
			Date Sa		05-Mar-2018	05-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
1,1,2-Trichloroethane	U	2760	μg/kg	10	[B] < 10	[B] < 10
Tetrachloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Dibromochloromethane	N	2760	μg/kg	10	[B] < 10	[B] < 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
Chlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Ethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
m & p-Xylene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
o-Xylene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Styrene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tribromomethane	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	[B] < 50	[B] < 50
N-Propylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	[B] < 50	[B] < 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Methyl Tert-Butyl Ether	Ü	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
N-Nitrosodimethylamine	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
Phenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Chlorophenol	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis-(2-Chloroethyl)Ether	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,3-Dichlorobenzene	Ü		mg/kg		[B] < 0.50	[B] < 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methylphenol	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
L Montyphonol	U	2790		0.50	[B] < 0.50	[B] < 0.50



Client: Geosphere Environmental Ltd			mtest Jo	18-06487	18-06487	
Quotation No.: Q17-10179	(st Sam		588453	588456
Order No.:			nt Samp		BHC23	BHC23
		Cli	ent Sam		J2	J5
				e Type:	SOIL	SOIL
			Top Dep	. ,	0.8	3.0
			Date Sa		05-Mar-2018	05-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Hexachloroethane	N	2790	ט	0.50	[B] < 0.50	[B] < 0.50
N-Nitrosodi-n-propylamine	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Methylphenol	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Nitrobenzene	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Isophorone	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Nitrophenol	N		mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dimethylphenol	N		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Naphthalene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4,5-Trichlorophenol	U	2790		0.50	[B] < 0.50	[B] < 0.50
2-Chloronaphthalene	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Acenaphthylene	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Acenaphthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dibenzofuran	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Fluorene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Azobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Phenanthrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Carbazole	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50



Client: Geosphere Environmental Ltd			mtest Jo	18-06487	18-06487	
Quotation No.: Q17-10179	(est Sam	588453	588456	
Order No.:			nt Samp		BHC23	BHC23
		Cli	ent Sam		J2	J5
			Sampl	e Type:	SOIL	SOIL
			Top Dep		0.8	3.0
			Date Sa	ampled:	05-Mar-2018	05-Mar-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Chrysene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
PCB 81	N	2815	mg/kg	0.010	< 0.010	
PCB 77	N	2815	mg/kg	0.010	< 0.010	
PCB 105	N	2815	mg/kg	0.010	< 0.010	
PCB 114	N	2815	mg/kg	0.010	< 0.010	
PCB 118	N	2815	mg/kg	0.010	< 0.010	
PCB 123	N	2815	mg/kg	0.010	< 0.010	
PCB 126	N	2815			< 0.010	
PCB 156	N	2815			< 0.010	
PCB 157	N	2815			< 0.010	
PCB 167	N	2815			< 0.010	
PCB 169	N	2815			< 0.010	
PCB 189	N	2815			< 0.010	
Total PCBs (12 Congeners)	N	2815		0.12	< 0.12	
Total Phenols	U	2920		0.30	< 0.30	< 0.30



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
588453	BHC23	J2	05-Mar-2018	В	Amber Glass 250ml
588453	BHC23	J2	05-Mar-2018	В	Plastic Tub 500g
588456	BHC23	J5	05-Mar-2018	В	Amber Glass 250ml
588456	BHC23	J5	05-Mar-2018	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
		Aliphatics: >C5-C6, >C6-C8,>C8-C10,	



SOP	Title	Parameters included	Method summary
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Chemtest Ltd. Depot Road Newmarket CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Details:

Report No.:	18-06961-1		
Initial Date of Issue:	03-Apr-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	254JGI Lake Lothing, L34		
Quotation No.:	Q17-10179	Date Received:	13-Mar-2018
Order No.:		Date Instructed:	27-Mar-2018
No. of Samples:	2		
Turnaround (Wkdays):	4	Results Due:	03-Apr-2018
Date Approved:	03-Apr-2018		
Approved By:			

Robert Monk, Technical Manager



Client: Geosphere Environmental Ltd		Chemtest Job No.:				18-06961
Quotation No.: Q17-10179		Chemtest Sample ID.:			590907	590914
Order No.:			nt Samp		BHC32	BHC32
		Cli	ent Sam		J2	J8
			Sampl	e Type:	SOIL	SOIL
			Top De	. ,	0.6	4.5
			Date Sa	ampled:	07-Mar-2018	08-Mar-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	
Moisture	N	2030	%	0.020	12	16
рН	U	2010		N/A	8.9	8.6
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.55	1.1
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	0.056
Cyanide (Free)	U	2300	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	0.75	13
Sulphate (Total)	U	2430	%	0.010	< 0.010	0.34
Arsenic	U	2450	mg/kg	1.0	7.9	9.8
Cadmium	U		mg/kg	0.10	< 0.10	< 0.10
Chromium	U		mg/kg	1.0	10	8.9
Copper	U	2450	mg/kg	0.50	43	4.6
Mercury	U	2450	mg/kg	0.10	0.19	< 0.10
Nickel	U	2450	mg/kg		12	8.9
Lead	U	2450	mg/kg	0.50	22	8.4
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	32	18
Chromium (Hexavalent)	N		mg/kg	0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		0.90
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C6-C8	N		mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C8-C10	U		mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C10-C12	U		mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[B] < 5.0	[B] < 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C16-C21	U	2680		1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C21-C35	Ü	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C35-C44	N		mg/kg	1.0	[B] < 1.0	[B] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[B] < 5.0	[B] < 5.0
Total Petroleum Hydrocarbons	N		mg/kg		[B] < 10	[B] < 10



Client: Geosphere Environmental Ltd		Chemtest Job No.:				18-06961
Quotation No.: Q17-10179	(est Sam		590907	590914
Order No.:		Client Sample Ref.:			BHC32	BHC32
		Cli	ent Sam	ple ID.:	J2	J8
			Sampl	e Type:	SOIL	SOIL
			Top Dep		0.6	4.5
			Date Sa	ampled:	07-Mar-2018	08-Mar-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units			
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	0.12	< 0.10
Pyrene	U	2700	mg/kg	0.10	0.15	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	Ü	2700	mg/kg	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	Ü	2700	mg/kg	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Chloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromomethane	Ü	2760	μg/kg	20	[B] < 20	[B] < 20
Chloroethane	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Trichlorofluoromethane	Ü	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloroethene	Ü	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Trans 1,2-Dichloroethene	Ü	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
cis 1,2-Dichloroethene	Ü	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromochloromethane	N	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
Trichloromethane	Ü	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1,1-Trichloroethane	Ü	2760	µg/kg	1.0	[B] < 1.0	[B] < 1.0
Tetrachloromethane	Ü	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Benzene	Ü	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Trichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Dibromomethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	[B] < 5.0	[B] < 1.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	[B] < 10	[B] < 3.0
Toluene	U	2760		1.0	[B] < 1.0	[B] < 1.0
Trans-1,3-Dichloropropene	N N	2760	μg/kg μg/kg	1.0	[B] < 1.0	[B] < 1.0



Client: Geosphere Environmental Ltd		Chemtest Job No.:			18-06961	18-06961
Quotation No.: Q17-10179	(Chemtest Sample ID.:			590907	590914
Order No.:		Client Sample Ref.:			BHC32	BHC32
		Cli	ent Sam		J2	J8
				e Type:	SOIL	SOIL
			Top Dep		0.6	4.5
			Date Sa		07-Mar-2018	08-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
1,1,2-Trichloroethane	U	2760	μg/kg	10	[B] < 10	[B] < 10
Tetrachloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Dibromochloromethane	N	2760	μg/kg	10	[B] < 10	[B] < 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
Chlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Ethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
m & p-Xylene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
o-Xylene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Styrene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tribromomethane	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	[B] < 50	[B] < 50
N-Propylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	[B] < 50	[B] < 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Phenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methylphenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50



Client: Geosphere Environmental Ltd		Chemtest Job No.:			18-06961	18-06961
Quotation No.: Q17-10179	(Chemtest Sample ID.:			590907	590914
Order No.:			nt Samp		BHC32	BHC32
		Cli	ent Sam		J2	J8
				e Type:	SOIL	SOIL
			Top Dep	. ,	0.6	4.5
			Date Sa		07-Mar-2018	08-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Hexachloroethane	N	2790	0 0	0.50	[B] < 0.50	[B] < 0.50
N-Nitrosodi-n-propylamine	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Methylphenol	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Nitrobenzene	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Isophorone	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Nitrophenol	N		mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dimethylphenol	N		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Naphthalene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4,5-Trichlorophenol	U	2790		0.50	[B] < 0.50	[B] < 0.50
2-Chloronaphthalene	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Acenaphthylene	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Acenaphthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dibenzofuran	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Fluorene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Azobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Phenanthrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Carbazole	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50



Client: Geosphere Environmental Ltd		Chemtest Job No.:				18-06961
Quotation No.: Q17-10179		Chemte	est Sam	ple ID.:	590907	590914
Order No.:			nt Samp		BHC32	BHC32
		Cli	ent Sam	ple ID.:	J2	J8
				е Туре:	SOIL	SOIL
			Top De		0.6	4.5
			Date Sa		07-Mar-2018	08-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Chrysene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
PCB 28	U	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 52	U	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 90+101	U	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 118	U	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 153	U	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 138	U	2815	mg/kg		< 0.010	< 0.010
PCB 180	U	2815	mg/kg	0.010	< 0.010	< 0.010
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10	< 0.10
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
590907	BHC32	J2	07-Mar-2018	В	Amber Glass 250ml
590907	BHC32	J2	07-Mar-2018	В	Plastic Tub 500g
590914	BHC32	J8	08-Mar-2018	В	Amber Glass 250ml
590914	BHC32	J8	08-Mar-2018	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.:	18-07089-1		
Initial Date of Issue:	21-Mar-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Joe Glenwright Stephen Gilchrist		
Project	2543,GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	14-Mar-2018
Order No.:	2543,GI	Date Instructed:	14-Mar-2018
No. of Samples:	2		
Turnaround (Wkdays):	5	Results Due:	20-Mar-2018
Date Approved:	21-Mar-2018		
Approved By:			

Glynn Harvey, Laboratory Manager



Client: Geosphere Environmental Ltd		Chei	ntest Jo	ob No.:	18-07089		
Quotation No.: Q17-10179		Chemtest Sample ID.:					
Order No.: 2543,GI			nt Samp		591585 BHC08		
, ,		Client Sample ID.:					
				e Type:	SOIL		
			Top Dei		2.6		
			Date Sa	ampled:	09-Mar-2018		
Determinand	Accred.	SOP	Units	LOD			
pH	U	1010		N/A	9.7		
Ammonia (Free) as N	U	1220	mg/l	0.050	0.85		
Sulphate	U	1220	mg/l	1.0	13		
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050		
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050		
Arsenic (Dissolved)	U	1450	μg/l	1.0	5.8		
Boron (Dissolved)	U	1450	μg/l	20	30		
Cadmium (Dissolved)	U	1450	μg/l	0.080	0.21		
Chromium (Dissolved)	U	1450	μg/l	1.0	52		
Copper (Dissolved)	U	1450	μg/l	1.0	22		
Mercury (Dissolved)	U	1450	μg/l	0.50	0.53		
Nickel (Dissolved)	U	1450	μg/l	1.0	65		
Lead (Dissolved)	U	1450	μg/l	1.0	19		
Selenium (Dissolved)	U	1450	μg/l	1.0	7.8		
Zinc (Dissolved)	U	1450	μg/l	1.0	190		
Chromium (Hexavalent)	U	1490	μg/l	20	< 20		
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10		
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0		
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0		
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10		
Naphthalene	U	1700	μg/l	0.10	< 0.10		
Acenaphthylene	U	1700	μg/l	0.10	< 0.10		
Acenaphthene	U	1700	μg/l	0.10	< 0.10		
Fluorene	U	1700	μg/l	0.10	< 0.10		
Phenanthrene	U	1700	μg/l	0.10	< 0.10		
Anthracene	U	1700	μg/l	0.10	< 0.10		
Fluoranthene	U	1700	μg/l	0.10	< 0.10		
Pyrene	U	1700	μg/l	0.10	< 0.10		



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.: 2543,GI			nt Samp		BHC08 J4		
		Client Sample ID.:					
				е Туре:	SOIL		
			Top De		2.6		
			Date Sa		09-Mar-2018		
Determinand	Accred.	SOP	Units				
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10		
Chrysene	U	1700	μg/l	0.10	< 0.10		
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10		
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10		
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10		
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0		
Benzene	U	1760	μg/l	1.0	< 1.0		
Toluene	U	1760	μg/l	1.0	< 1.0		
Ethylbenzene	U	1760	μg/l	1.0	< 1.0		
m & p-Xylene	U	1760	μg/l	1.0	< 1.0		
o-Xylene	U	1760	μg/l	1.0	< 1.0		
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0		
Phenol	N	1790	μg/l	0.50	< 0.50		
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50		
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50		
Hexachloroethane	N	1790	μg/l	0.50	< 0.50		
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50		
4-Methylphenol	N	1790	μg/l	0.50	< 0.50		
Nitrobenzene	N	1790	μg/l	0.50	< 0.50		
Isophorone	N	1790	μg/l	0.50	< 0.50		
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50		
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50		
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50		
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50		
Naphthalene	N	1790	μg/l	0.50	< 0.50		
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50		
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50		
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50		
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50		
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50		
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50		
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50		
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50		



Client: Geosphere Environmental Ltd		18-07089			
Quotation No.: Q17-10179	(ple ID.:	591585		
Order No.: 2543,GI		BHC08			
,		J4			
		SOIL			
			Top Dep	e Type: oth (m):	2.6
			Date Sa	ampled:	09-Mar-2018
Determinand	Accred.	SOP	Units	LOD	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Client: Geosphere Environmental Ltd			mtest Jo			18-07089
Quotation No.: Q17-10179	(st Sam		591585	591586
Order No.: 2543,GI		Client Sample Ref.:			BHC08 J4	BHC08
		Client Sample ID.:				J5
		Sample Type:				SOIL
			Top De	. ,	2.6	3.7
			Date Sa	ampled:	09-Mar-2018	09-Mar-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	
Moisture	N	2030	%	0.020	17	27
рН	U	2010		N/A	10.1	8.4
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	1.9
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	0.18
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	0.91	29
Sulphate (Total)	U	2430	%	0.010	0.15	1.2
Arsenic	U	2450	mg/kg	1.0	4.8	15
Cadmium	U	2450	mg/kg	0.10	< 0.10	< 0.10
Chromium	U		mg/kg	1.0	9.0	22
Copper	U	2450	mg/kg	0.50	9.5	11
Mercury	U	2450	mg/kg	0.10	0.11	< 0.10
Nickel	U		mg/kg		14	22
Lead	U	2450	mg/kg	0.50	28	41
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	34	49
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		1.6
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U		mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10



Client: Geosphere Environmental Ltd			mtest Jo		18-07089	18-07089
Quotation No.: Q17-10179	- (est Sam		591585	591586
Order No.: 2543,GI		Client Sample Ref.:			BHC08	BHC08
		Client Sample ID.:			J4	J5
		Sample Type:		SOIL	SOIL	
			Top Dep	. ,	2.6	3.7
			Date Sa		09-Mar-2018	09-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units			
Naphthalene	U		mg/kg		< 0.10	< 0.10
Acenaphthylene	U		mg/kg		< 0.10	< 0.10
Acenaphthene	U		mg/kg		< 0.10	< 0.10
Fluorene	U		mg/kg		< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Anthracene	U		mg/kg	0.10	< 0.10	< 0.10
Fluoranthene	U		mg/kg	0.10	< 0.10	1.2
Pyrene	U	2700	mg/kg	0.10	< 0.10	1.2
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	2.4
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10



Client: Geosphere Environmental Ltd			mtest Jo		18-07089	18-07089
Quotation No.: Q17-10179			st Sam		591585	591586
Order No.: 2543,GI		Client Sample Ref.:			BHC08	BHC08
		Client Sample ID.:			J4	J5
		Sample Type:		SOIL	SOIL	
			Top Dep		2.6	3.7
			Date Sa		09-Mar-2018	09-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units			
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10
Tetrachloroethene	U	2760		1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylphenol	U	2790	mg/kg		< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo		18-07089	18-07089
Quotation No.: Q17-10179	- (Chemtest Sample ID.:			591585	591586
Order No.: 2543,GI			nt Samp		BHC08	BHC08
		Client Sample ID.:		J4	J5	
				е Туре:	SOIL	SOIL
		Top Depth (m):		2.6	3.7	
			Date Sa		09-Mar-2018	09-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	_		
Hexachloroethane	N		mg/kg		< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U		mg/kg	0.50	< 0.50	< 0.50
4-Methylphenol	U		mg/kg	0.50	< 0.50	< 0.50
Nitrobenzene	U		mg/kg	0.50	< 0.50	< 0.50
Isophorone	U		mg/kg	0.50	< 0.50	< 0.50
2-Nitrophenol	N		mg/kg	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N		mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U		mg/kg	0.50	< 0.50	< 0.50
2-Chloronaphthalene	U		mg/kg	0.50	< 0.50	< 0.50
2-Nitroaniline	U		mg/kg	0.50	< 0.50	< 0.50
Acenaphthylene	U		mg/kg	0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50	1.5
Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Carbazole	U	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Chemtest Job No.:			18-07089	18-07089
Quotation No.: Q17-10179	(Chemtest Sample ID.:			591585	591586
Order No.: 2543,GI		Client Sample Ref.:			BHC08	BHC08
		Client Sample ID.:		J4	J5	
			Sampl	е Туре:	SOIL	SOIL
			Top Dep	oth (m):	2.6	3.7
			Date Sa		09-Mar-2018	09-Mar-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Chrysene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	< 0.50
PCB 81	N	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 77	N	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 105	N	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 114	N	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 118	N	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 123	N	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 126	N	2815	mg/kg		< 0.010	< 0.010
PCB 156	N	2815	mg/kg		< 0.010	< 0.010
PCB 157	N	2815	mg/kg		< 0.010	< 0.010
PCB 167	N	2815	mg/kg		< 0.010	< 0.010
PCB 169	N	2815	mg/kg		< 0.010	< 0.010
PCB 189	N	2815	mg/kg	0.010	< 0.010	< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12	< 0.12
Total Phenols	U	2920		0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.



SOP	Title	Parameters included	Method summary
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

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- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
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Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

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Report No.:	18-07130-1		
Initial Date of Issue:	22-Mar-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Joe Glenwright Stephen Gilchrist		
Project	2543,GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	14-Mar-2018
Order No.:	2543,GI	Date Instructed:	14-Mar-2018
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	22-Mar-2018
Date Approved:	22-Mar-2018		
Approved By:			



Results - 2 Stage WAC

Project: 2543,GI Lake Lothing, Lowestoft

Project: 2543,GI Lake Lothing, Lo Chemtest Job No:	18-07130						Landfill V	Vaste Acceptano	e Criteria
Chemtest Sample ID:	591820							Limits	o omona
Sample Ref:	BHC08							Stable, Non-	
Sample ID:	J4							reactive	Hazardous
Top Depth(m):	2.6						Inert Waste	hazardous	Waste
Bottom Depth(m):	2.0						Landfill	waste in non-	Landfill
Sampling Date:	09-Mar-2018						Lanum	hazardous	Lanum
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			< 0.20	3	5	6
Loss On Ignition	2610	U	%			1.5			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	Ü	mg/kg			< 10	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		
pH	2010	U	, ,			10.1		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.054		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
•			mg/l	mg/l	mg/kg	mg/kg 10:1	using B	S EN 12457 at L	S 10 l/kg
Arsenic	1450	U	0.014	0.018	< 0.050	0.17	0.5	2	25
Barium	1450	U	0.045	0.076	< 0.50	0.71	20	100	300
Cadmium	1450	U	0.00014	0.00016	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	0.050	0.082	0.098	0.77	0.5	10	70
Copper	1450	U	0.015	0.023	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0037	0.0035	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	0.024	0.036	< 0.050	0.34	0.4	10	40
Lead	1450	U	0.023	0.041	0.045	0.38	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.06	0.7	5
Selenium	1450	U	0.020	0.015	0.039	0.16	0.1	0.5	7
Zinc	1450	U	0.076	0.11	< 0.50	1.0	4	50	200
Chloride	1220	U	2.3	3.5	< 10	33	800	15000	25000
Fluoride	1220	U	0.36	0.30	< 1.0	3.1	10	150	500
Sulphate	1220	U	32	29	63	290	1000	20000	50000
Total Dissolved Solids	1020	N	230	210	450	2100	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	J	17	16	< 50	160	500	800	1000

Solid Information				
Dry mass of test portion/kg	0.175			
Moisture (%)	19			

Leachate Test Information				
Leachant volume 1st extract/l	0.310			
Leachant volume 2nd extract/l	1.400			
Eluant recovered from 1st extract/l	0.265			

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



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- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





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Final Report			
Report No.:	18-07811-1		
Initial Date of Issue:	28-Mar-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543,GI Lake Lothing, L20		
Quotation No.:	Q17-10179	Date Received:	21-Mar-2018
Order No.:	2543,GI	Date Instructed:	22-Mar-2018
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	28-Mar-2018
Date Approved:	28-Mar-2018		
Approved By:			



Client: Geosphere Environmental Ltd		Chemtest Job No.:			18-07811
Quotation No.: Q17-10179	(st Sam		595263
Order No.: 2543,GI			nt Samp		BHC05
		Cli	ent Sam		J6
				e Type:	SOIL 2.5
		Top Depth (m)			
			Date Sa		19-Mar-2018
Determinand	Accred.		Units		
Moisture	N	2030	%	0.020	30
pH	U	2010		N/A	9.0
Boron (Hot Water Soluble)	U	2120		0.40	3.1
Sulphate (2:1 Water Soluble) as SO4	U	2120	0	0.010	0.073
Cyanide (Free)	U		mg/kg	0.50	< 0.50
Cyanide (Total)	U		mg/kg	0.50	< 0.50
Ammonium (Extractable)	U	2425		0.50	150
Sulphate (Total)	U	2430		0.010	1.2
Arsenic	U		mg/kg	1.0	22
Cadmium	U	2450	0	0.10	< 0.10
Chromium	U	2450		1.0	28
Copper	U	2450		0.50	13
Mercury	U	2450	J	0.10	< 0.10
Nickel	U	2450	0	0.50	26
Lead	U	2450	0	0.50	31
Selenium	U	2450	0 0	0.20	< 0.20
Zinc	U	2450		0.50	64
Chromium (Hexavalent)	N	2490	J	0.50	< 0.50
Organic Matter	U	2625		0.40	1.9
Aliphatic TPH >C5-C6	N	2680)	1.0	< 1.0
Aliphatic TPH >C6-C8	N		mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	U		mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	U		mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	U		mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680		1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680		1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680		1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	0	5.0	< 5.0
Aromatic TPH >C5-C7	N	2680		1.0	< 1.0
Aromatic TPH >C7-C8	N	2680		1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	0 0	1.0	< 1.0
Aromatic TPH >C10-C12	U	2680		1.0	< 1.0
Aromatic TPH >C12-C16	U	2680		1.0	< 1.0
Aromatic TPH >C16-C21	U	2680		1.0	< 1.0
Aromatic TPH >C21-C35	U	2680		1.0	< 1.0
Aromatic TPH >C35-C44	N		mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N		mg/kg	5.0	< 5.0
Total Petroleum Hydrocarbons	N		mg/kg	10.0	< 10
Naphthalene	U	_	mg/kg	0.10	< 0.10
Acenaphthylene	U	2700	0 0	0.10	< 0.10
Acenaphthene	U		mg/kg	0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10



Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	18-07811
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	595263
Order No.: 2543,GI		Clie	nt Samp	le Ref.:	BHC05
,			ent Sam		J6
				e Type:	SOIL
			Top Der		2.5
			Date Sa		19-Mar-2018
Determinand	Accred.	SOP			
Phenanthrene	U	2700	mg/kg	0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10
Pyrene	U	2700		0.10	< 0.10
Benzo[a]anthracene	U	2700		0.10	< 0.10
Chrysene	U	2700		0.10	< 0.10
Benzo[b]fluoranthene	U	2700		0.10	< 0.10
Benzo[k]fluoranthene	U	2700		0.10	< 0.10
Benzo[a]pyrene	U	2700)	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700		0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700		0.10	< 0.10
Benzo[g,h,i]perylene	U	2700		0.10	< 0.10
Total Of 16 PAH's	U	2700		2.0	< 2.0
Dichlorodifluoromethane	N	2760	J	1.0	< 1.0
Chloromethane	U	2760		1.0	< 1.0
Vinyl Chloride	U	2760		1.0	< 1.0
Bromomethane	U	2760		20	< 20
Chloroethane	N	2760		2.0	< 2.0
Trichlorofluoromethane	U	2760		1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0
1,1-Dichloroethane	U	2760		1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0
1,2-Dichloropropane	U	2760		1.0	< 1.0
Dibromomethane	U	2760		1.0	< 1.0
Bromodichloromethane	U	2760		5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10
Toluene	U	2760		1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760		10	< 10
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0
1,3-Dichloropropane	N	2760		2.0	< 2.0
Dibromochloromethane	N	2760		10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0



Client: Geosphere Environmental Ltd			mtest Jo		18-07811 595263	
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2543,GI			nt Samp		BHC05	
		Cli	ent Sam		J6	
		Sample Type:			SOIL	
		Top Depth (m):				
			Date Sa		19-Mar-2018	
Determinand	Accred.	SOP		LOD		
Chlorobenzene	U	2760)	1.0	< 1.0	
1,1,1,2-Tetrachloroethane	U	2760		2.0	< 2.0	
Ethylbenzene	U	2760	י	1.0	< 1.0	
m & p-Xylene	U	2760		1.0	< 1.0	
o-Xylene	U	2760	100	1.0	< 1.0	
Styrene	U	2760		1.0	< 1.0	
Tribromomethane	N	2760		1.0	< 1.0	
Isopropylbenzene	U	2760		1.0	< 1.0	
Bromobenzene	U	2760		1.0	< 1.0	
1,2,3-Trichloropropane	N	2760		50	< 50	
N-Propylbenzene	N	2760		1.0	< 1.0	
2-Chlorotoluene	U	2760		1.0	< 1.0	
1,3,5-Trimethylbenzene	U	2760		1.0	< 1.0	
4-Chlorotoluene	N	2760)	1.0	< 1.0	
Tert-Butylbenzene	N	2760		1.0	< 1.0	
1,2,4-Trimethylbenzene	U	2760	י	1.0	< 1.0	
Sec-Butylbenzene	N	2760		1.0	< 1.0	
1,3-Dichlorobenzene	U	2760		1.0	< 1.0	
4-Isopropyltoluene	N	2760		1.0	< 1.0	
1,4-Dichlorobenzene	U	2760)	1.0	< 1.0	
N-Butylbenzene	N	2760		1.0	< 1.0	
1,2-Dichlorobenzene	U	2760)	1.0	< 1.0	
1,2-Dibromo-3-Chloropropane	N	2760		50	< 50	
1,2,4-Trichlorobenzene	U	2760		1.0	< 1.0	
Hexachlorobutadiene	N	2760	5	1.0	< 1.0	
1,2,3-Trichlorobenzene	N	2760		2.0	< 2.0	
Methyl Tert-Butyl Ether	U	2760		1.0	< 1.0	
N-Nitrosodimethylamine	U	2790)	0.50	< 0.50	
Phenol	U	2790)	0.50	< 0.50	
2-Chlorophenol	U	2790		0.50	< 0.50	
Bis-(2-Chloroethyl)Ether	U	2790	ט	0.50	< 0.50	
1,3-Dichlorobenzene	U	2790	5	0.50	< 0.50	
1,4-Dichlorobenzene	N	2790	5	0.50	< 0.50	
1,2-Dichlorobenzene	U	2790)	0.50	< 0.50	
2-Methylphenol	U	2790)	0.50	< 0.50	
Bis(2-Chloroisopropyl)Ether	U	2790		0.50	< 0.50	
Hexachloroethane	N	2790		0.50	< 0.50	
N-Nitrosodi-n-propylamine	U	2790		0.50	< 0.50	
4-Methylphenol	U	2790)	0.50	< 0.50	
Nitrobenzene	U	2790	,	0.50	< 0.50	
Isophorone	U	2790		0.50	< 0.50	
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	



Client: Geosphere Environmental Ltd	Chemtest Job No.:				18-07811
Quotation No.: Q17-10179	(st Sam		595263
Order No.: 2543,GI			nt Samp		BHC05
		Cli	ent Sam		J6
				e Type:	SOIL
			Top Dep		2.5
			Date Sa		19-Mar-2018
Determinand	Accred.	SOP		LOD	
2,4-Dimethylphenol	N	2790)	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790		0.50	< 0.50
2,4-Dichlorophenol	U	2790	0 0	0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	J	0.50	< 0.50
Naphthalene	U	2790	0	0.50	< 0.50
4-Chloroaniline	N	2790		0.50	< 0.50
Hexachlorobutadiene	U	2790	9	0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	0	0.50	< 0.50
2-Methylnaphthalene	U	2790	0	0.50	< 0.50
4-Nitrophenol	N	2790		0.50	< 0.50
Hexachlorocyclopentadiene	N	2790		0.50	< 0.50
2,4,6-Trichlorophenol	U	2790		0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	0	0.50	< 0.50
2-Chloronaphthalene	U	2790)	0.50	< 0.50
2-Nitroaniline	U	2790		0.50	< 0.50
Acenaphthylene	U	2790	0 0	0.50	< 0.50
Dimethylphthalate	U	2790		0.50	< 0.50
2,6-Dinitrotoluene	U	2790		0.50	< 0.50
Acenaphthene	U	2790	0	0.50	< 0.50
3-Nitroaniline	N	2790)	0.50	< 0.50
Dibenzofuran	U	2790		0.50	< 0.50
4-Chlorophenylphenylether	U	2790	0 0	0.50	< 0.50
2,4-Dinitrotoluene	U	2790		0.50	< 0.50
Fluorene	U	2790		0.50	< 0.50
Diethyl Phthalate	U	2790		0.50	< 0.50
4-Nitroaniline	U	2790	0 0	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	< 0.50
Azobenzene	U	2790	0	0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790)	0.50	< 0.50
Hexachlorobenzene	U	2790		0.50	< 0.50
Pentachlorophenol	N	2790		0.50	< 0.50
Phenanthrene	U	2790	3. 3	0.50	< 0.50
Anthracene	U	2790	0	0.50	< 0.50
Carbazole	U	2790	0	0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	0 0	0.50	< 0.50
Fluoranthene	U	2790		0.50	< 0.50
Pyrene	U	2790		0.50	< 0.50
Butylbenzyl Phthalate	U	2790		0.50	< 0.50
Benzo[a]anthracene	U	2790	0	0.50	< 0.50
Chrysene	U	2790		0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790		0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50





Client: Geosphere Environmental Ltd		Chemtest Job No.			18-07811
Quotation No.: Q17-10179	(Chemtest Sample ID.:			595263
Order No.: 2543,GI		Clie	nt Samp	le Ref.:	BHC05
		Cli	ent Sam	ple ID.:	J6
			Sample	е Туре:	SOIL
			Top Dep	oth (m):	2.5
		Date Sampled:			19-Mar-2018
Determinand	Accred.	SOP	Units	LOD	
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50
Total Phenols	U	2920	mg/kg	0.30	< 0.30



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

i iiiai itopoit			
Report No.:	18-09432-1		
Initial Date of Issue:	17-Apr-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543,GI Lake Loathing, L20		
Quotation No.:	Q17-10179	Date Received:	06-Apr-2018
Order No.:	2543,GI	Date Instructed:	09-Apr-2018
No. of Samples:	3		
Turnaround (Wkdays):	5	Results Due:	13-Apr-2018
Date Approved:	16-Apr-2018		
Approved By:			



Client: Geosphere Environmental Ltd				Job No.:	
Quotation No.: Q17-10179				nple ID.:	602978
Order No.: 2543,GI				ple Ref.:	BHC06B
		С		mple ID.:	J1
				ole Type:	SOIL
				epth (m):	0.45
				Sampled:	29-Mar-2018
Determinand	Accred.	SOP	Units	LOD	
рН	U	1010		N/A	8.7
Ammonia (Free) as N	U	1220	mg/l	0.050	0.16
Sulphate	U	1220	mg/l	1.0	13
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	2.0
Boron (Dissolved)	U	1450	μg/l	20	36
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Copper (Dissolved)	U	1450	μg/l	1.0	3.0
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	1.2
Lead (Dissolved)	U	1450	μg/l	1.0	1.2
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Zinc (Dissolved)	U	1450	μg/l	1.0	2.3
Chromium (Hexavalent)	U	1490	μg/l	20	[B] < 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10
Naphthalene	U	1700	μg/l	0.10	< 0.10
Acenaphthylene	U	1700	μg/l	0.10	< 0.10
Acenaphthene	U	1700	μg/l	0.10	< 0.10
Fluorene	U	1700	μg/l	0.10	< 0.10
Phenanthrene	U	1700	μg/l	0.10	< 0.10
Anthracene	U	1700	μg/l	0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10
Pyrene	U	1700	μg/l	0.10	< 0.10



Client: Geosphere Environmental Ltd				Job No.:	18-09432 602978
Quotation No.: Q17-10179		Chemtest Sample ID.:			
Order No.: 2543,GI		Client Sample Ref.:			
		С		mple ID.:	J1
				ole Type:	SOIL
			Top D	epth (m):	0.45
				Sampled:	29-Mar-2018
Determinand	Accred.	SOP	Units		
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0
Benzene	U	1760	μg/l	1.0	< 1.0
Toluene	U	1760	μg/l	1.0	< 1.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	mg/l	0.0010	< 0.0010
Phenol	N	1790	μg/l	0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50



Client: Geosphere Environmental Ltd		Che	emtest .	Job No.:	18-09432
Quotation No.: Q17-10179				nple ID.:	602978
Order No.: 2543,GI		ple Ref.:	BHC06B		
0.40. 110.1 20 10,01		nple ID.:	J1		
				le Type:	SOIL
				epth (m):	0.45
				Sampled:	29-Mar-2018
Determinand	Accred.	SOP	Units	LOD	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Client: Geosphere Environmental Ltd			mtest Jo		18-09432	18-09432	18-09432
Quotation No.: Q17-10179	(st Sam		602978	602981	602993
Order No.: 2543,GI			nt Samp		BHC06B	BHC06B	BHC10
		Cli	ent Sam		J1	J4	J1
				e Type:	SOIL	SOIL	SOIL
			Top De		0.45	2.60	0.20
			Date Sa	_	29-Mar-2018	03-Apr-2018	03-Apr-2018
				os Lab:	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	-		-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		No Asbestos Detected
Moisture	N	2030	%	0.020	10	32	9.4
Hq	U	2010		N/A	8.1	9.2	10.0
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	1.0	2.5	1.9
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.068	0.12	0.55
Cyanide (Free)	U		mg/kg	0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	U	2300		0.50	< 0.50	< 0.50	< 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	17	92	7.1
Sulphate (Total)	U	2430	%	0.010	0.089	0.80	0.36
Arsenic	U	2450	mg/kg	1.0	11	27	25
Cadmium	U	2450		0.10	< 0.10	< 0.10	2.4
Chromium	U	2450		1.0	11	34	50
Copper	U	2450		0.50	35	18	270
Mercury	U	2450		0.10	0.24	< 0.10	0.43
Nickel	U	2450		0.50	14	33	50
Lead	U	2450		0.50	67	49	280
Selenium	U	2450		0.20	< 0.20	< 0.20	< 0.20
Zinc	U		mg/kg	0.50	51	76	590
Chromium (Hexavalent)	N	2490		0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		1.7	
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680		1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680		1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680		1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	9.8
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	27
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	2.7
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	39
Total Petroleum Hydrocarbons	N	2680			< 10	< 10	39



Client: Geosphere Environmental Ltd			mtest Jo		18-09432	18-09432	18-09432
Quotation No.: Q17-10179	(est Sam		602978	602981	602993
Order No.: 2543,GI			nt Samp		BHC06B	BHC06B	BHC10
		Cli	ent Sam		J1	J4	J1
				e Type:	SOIL	SOIL	SOIL
			Top De	. ,	0.45	2.60	0.20
			Date Sa		29-Mar-2018	03-Apr-2018	03-Apr-2018
				os Lab:	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD			
Naphthalene	U	2700		0.10	< 0.10	< 0.10	0.21
Acenaphthylene	U	2700	0	0.10	< 0.10	< 0.10	0.42
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.24
Fluorene	U	2700	0	0.10	< 0.10	< 0.10	0.25
Phenanthrene	U	2700	0 0	0.10	< 0.10	< 0.10	2.3
Anthracene	U	2700	0 0	0.10	< 0.10	< 0.10	1.2
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	5.1
Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	6.1
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	2.8
Chrysene	U	2700		0.10	< 0.10	< 0.10	3.5
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	3.9
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	1.8
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	3.1
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	2.2
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	1.2
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	2.1
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0	36
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U	2760		1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U	2760		20	< 20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10



Quotation No.: Q17-10179 Order No.: 2543,GI		Clie	est Sam nt Samp		602978	602981	602993
Order No.: 2543,GI			nt Samp	lo Dof ·	DLICOOD		
		Cli			BHC06B	BHC06B	BHC10
			ent Sam		J1	J4	J1
				e Type:	SOIL	SOIL	SOIL
			Top Dep		0.45	2.60	0.20
			Date Sa		29-Mar-2018	03-Apr-2018	03-Apr-2018
				os Lab:	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD			
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	Ň	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Phenol	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	0 0	0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene 1,2-Dichlorobenzene	U	2790		0.50	< 0.50		
·	U	2790	mg/kg			< 0.50	< 0.50
2-Methylphenol Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg mg/kg	0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50



Client: Geosphere Environmental Ltd			mtest Jo		18-09432	18-09432	18-09432
Quotation No.: Q17-10179	(est Sam		602978	602981	602993
Order No.: 2543,GI			nt Samp		BHC06B	BHC06B	BHC10
		Cli	ent Sam		J1	J4	J1
				е Туре:	SOIL	SOIL	SOIL
			Top De		0.45	2.60	0.20
			Date Sa	ampled:	29-Mar-2018	03-Apr-2018	03-Apr-2018
			Asbest	os Lab:	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD			
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790		0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	0.70
Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	0.58
Carbazole	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest J			18-09432	18-09432
Quotation No.: Q17-10179	(est Sam		602978	602981	602993
Order No.: 2543,GI			nt Samp		BHC06B	BHC06B	BHC10
		Cli	ent Sam		J1	J4	J1
				e Type:	SOIL	SOIL	SOIL
			Top De		0.45	2.60	0.20
				ampled:	29-Mar-2018	03-Apr-2018	03-Apr-2018
				os Lab:	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units				
Fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	3.5
Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	3.8
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	2.2
Chrysene	U	2790	mg/kg	0.50	< 0.50	< 0.50	2.3
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	4.4
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	1.9
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	3.3
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	3.6
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	1.1
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	< 0.50	3.5
PCB 28	U	2815	mg/kg	0.010		< 0.010	
PCB 81	N	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 52	U	2815	mg/kg	0.010		< 0.010	
PCB 77	N	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 105	N	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 90+101	U	2815	mg/kg	0.010		< 0.010	
PCB 114	N	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 118	U	2815	mg/kg	0.010		< 0.010	
PCB 118	N	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 153	U	2815	mg/kg	0.010		< 0.010	
PCB 123	N	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 138	U	2815	mg/kg	0.010		< 0.010	
PCB 126	N	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 180	U	2815	mg/kg	0.010		< 0.010	
PCB 156	N	2815	mg/kg		< 0.010		< 0.010
PCB 157	N	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 167	N	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 169	N	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 189	N	2815	mg/kg	0.010	< 0.010		< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12		< 0.12
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10		< 0.10	-
Total Phenols	Ü	2920		0.30	< 0.30	< 0.30	< 0.30



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
602978	BHC06B	J1	29-Mar-2018	В	Amber Glass 250ml
602978	BHC06B	J1	29-Mar-2018	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	, , ,
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.



SOP	Title	Parameters included	Method summary
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

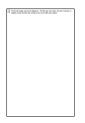
- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Report No.:	18-09752-1		
Initial Date of Issue:	17-Apr-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 GI Lake Loathing		
Quotation No.:	Q17-10179	Date Received:	10-Apr-2018
Order No.:		Date Instructed:	10-Apr-2018
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	16-Apr-2018
Date Approved:	17-Apr-2018		
Approved By:			



Client: Geosphere Environmental Ltd		18-09752				
Quotation No.: Q17-10179	(604511 BHC10				
Order No.:		Client Sample Ref.: Client Sample ID.:				
		J11				
	Sample Type:				SOIL	
			Top Dep		6.50	
			Date Sa		05-Apr-2018	
Determinand	Accred.	SOP		LOD		
Moisture	N	2030	%	0.020	24	
рН	U	2010		N/A	9.3	
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	1.6	
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.099	
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	
Ammonium (Extractable)	U	2425	mg/kg	0.50	27	
Sulphate (Total)	U	2430	%	0.010	0.31	
Arsenic	U	2450	mg/kg	1.0	5.8	
Cadmium	U	2450	mg/kg	0.10	< 0.10	
Chromium	U	2450	mg/kg	1.0	8.2	
Copper	U	2450		0.50	3.9	
Mercury	U	2450	mg/kg	0.10	< 0.10	
Nickel	U	2450	mg/kg	0.50	8.0	
Lead	U	2450	mg/kg	0.50	9.8	
Selenium	U	2450	mg/kg	0.20	< 0.20	
Zinc	U	2450	mg/kg	0.50	18	
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	
Organic Matter	U	2625	%	0.40	< 0.40	
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C12-C16	U	2680		1.0	< 1.0	
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C21-C35	U	2680		1.0	< 1.0	
Aromatic TPH >C35-C44	N	2680		1.0	< 1.0	
Total Aromatic Hydrocarbons	N	2680		5.0	< 5.0	
Total Petroleum Hydrocarbons	N	2680		10.0	< 10	
Naphthalene	U	2700		0.10	< 0.10	
Acenaphthylene	U	2700)	0.10	< 0.10	
Acenaphthene	Ü	2700		0.10	< 0.10	
Fluorene	U	2700		0.10	< 0.10	



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.:		Client Sample Ref.:				
	Client Sample ID.:				J11	
		Sample Type:			SOIL	
			Top Dep		6.50	
			Date Sa		05-Apr-2018	
Determinand	Accred.		Units	LOD		
Phenanthrene	U	_	mg/kg	0.10	< 0.10	
Anthracene	U		mg/kg	0.10	< 0.10	
Fluoranthene	U		mg/kg	0.10	< 0.10	
Pyrene	U	2700)	0.10	< 0.10	
Benzo[a]anthracene	U	2700)	0.10	< 0.10	
Chrysene	U	2700	mg/kg	0.10	< 0.10	
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	
Benzo[k]fluoranthene	U		mg/kg	0.10	< 0.10	
Benzo[a]pyrene	U		mg/kg	0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	
Chloromethane	U	2760	μg/kg	1.0	< 1.0	
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	
Bromomethane	U	2760	μg/kg	20	< 20	
Chloroethane	N	2760		2.0	< 2.0	
Trichlorofluoromethane	U	2760		1.0	< 1.0	
1,1-Dichloroethene	U	2760		1.0	< 1.0	
Trans 1,2-Dichloroethene	U	2760		1.0	< 1.0	
1,1-Dichloroethane	U	2760		1.0	< 1.0	
cis 1,2-Dichloroethene	U	2760		1.0	< 1.0	
Bromochloromethane	N	2760		5.0	< 5.0	
Trichloromethane	U	2760		1.0	< 1.0	
1,1,1-Trichloroethane	U	2760		1.0	< 1.0	
Tetrachloromethane	U	2760		1.0	< 1.0	
1,1-Dichloropropene	N	2760		1.0	< 1.0	
Benzene	U	2760		1.0	< 1.0	
1,2-Dichloroethane	U	2760)	2.0	< 2.0	
Trichloroethene	U	2760		1.0	< 1.0	
1,2-Dichloropropane	Ü	2760		1.0	< 1.0	
Dibromomethane	Ü	2760		1.0	< 1.0	
Bromodichloromethane	U	2760		5.0	< 5.0	
cis-1,3-Dichloropropene	N	2760		10	< 10	
Toluene	Ü	2760		1.0	< 1.0	
Trans-1,3-Dichloropropene	N	2760		10	< 10	
1,1,2-Trichloroethane	U	2760		10	< 10	
Tetrachloroethene	Ü	2760		1.0	< 1.0	
1,3-Dichloropropane	N	2760)	2.0	< 2.0	
7		_				
Dibromochloromethane	N	2760	μg/kg	10	< 10	



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.:		Client Sample Ref.: Client Sample ID.:				
				e Type:	SOIL	
			Top Dep		6.50	
			Date Sa		05-Apr-2018	
Determinand	Accred.	SOP				
Chlorobenzene	U	2760)	1.0	< 1.0	
1,1,1,2-Tetrachloroethane	U	2760		2.0	< 2.0	
Ethylbenzene	U	2760		1.0	< 1.0	
m & p-Xylene	U	2760)	1.0	< 1.0	
o-Xylene	U	2760		1.0	< 1.0	
Styrene	U	2760)	1.0	< 1.0	
Tribromomethane	N	2760		1.0	< 1.0	
Isopropylbenzene	U	2760		1.0	< 1.0	
Bromobenzene	U	2760		1.0	< 1.0	
1,2,3-Trichloropropane	N	2760		50	< 50	
N-Propylbenzene	N	2760		1.0	< 1.0	
2-Chlorotoluene	U	2760		1.0	< 1.0	
1,3,5-Trimethylbenzene	U	2760		1.0	< 1.0	
4-Chlorotoluene	N	2760		1.0	< 1.0	
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	
1,2,4-Trimethylbenzene	U	2760)	1.0	< 1.0	
Sec-Butylbenzene	N	2760		1.0	< 1.0	
1,3-Dichlorobenzene	U	2760		1.0	< 1.0	
4-Isopropyltoluene	N	2760		1.0	< 1.0	
1,4-Dichlorobenzene	U	2760		1.0	< 1.0	
N-Butylbenzene	N	2760		1.0	< 1.0	
1,2-Dichlorobenzene	U	2760)	1.0	< 1.0	
1,2-Dibromo-3-Chloropropane	N	2760)	50	< 50	
1,2,4-Trichlorobenzene	U	2760)	1.0	< 1.0	
Hexachlorobutadiene	N	2760		1.0	< 1.0	
1,2,3-Trichlorobenzene	N	2760		2.0	< 2.0	
Methyl Tert-Butyl Ether	U	2760		1.0	< 1.0	
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	
Phenol	U	2790		0.50	< 0.50	
2-Chlorophenol	U	2790		0.50	< 0.50	
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	
1,4-Dichlorobenzene	N	2790		0.50	< 0.50	
1,2-Dichlorobenzene	U	2790		0.50	< 0.50	
2-Methylphenol	U	2790		0.50	< 0.50	
Bis(2-Chloroisopropyl)Ether	U	2790		0.50	< 0.50	
Hexachloroethane	N	2790		0.50	< 0.50	
N-Nitrosodi-n-propylamine	U	2790		0.50	< 0.50	
4-Methylphenol	U	2790		0.50	< 0.50	
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	
Isophorone	U	2790		0.50	< 0.50	
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.:		Client Sample Ref.:				
		Client Sample ID.:				
		Sample Type:			SOIL	
			Top Dep		6.50	
			Date Sa		05-Apr-2018	
Determinand	Accred.	SOP		LOD		
2,4-Dimethylphenol	N	2790		0.50	< 0.50	
Bis(2-Chloroethoxy)Methane	U	2790		0.50	< 0.50	
2,4-Dichlorophenol	U	2790		0.50	< 0.50	
1,2,4-Trichlorobenzene	U	2790		0.50	< 0.50	
Naphthalene	U	2790)	0.50	< 0.50	
4-Chloroaniline	N	2790	9	0.50	< 0.50	
Hexachlorobutadiene	U	2790		0.50	< 0.50	
4-Chloro-3-Methylphenol	U	2790)	0.50	< 0.50	
2-Methylnaphthalene	U	2790		0.50	< 0.50	
4-Nitrophenol	N	2790	0	0.50	< 0.50	
Hexachlorocyclopentadiene	N	2790	0 0	0.50	< 0.50	
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	
2,4,5-Trichlorophenol	U	2790	0	0.50	< 0.50	
2-Chloronaphthalene	U	2790	0	0.50	< 0.50	
2-Nitroaniline	U	2790		0.50	< 0.50	
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	
Dimethylphthalate	U	2790		0.50	< 0.50	
2,6-Dinitrotoluene	U	2790		0.50	< 0.50	
Acenaphthene	U	2790	0	0.50	< 0.50	
3-Nitroaniline	N	2790)	0.50	< 0.50	
Dibenzofuran	U	2790		0.50	< 0.50	
4-Chlorophenylphenylether	U	2790		0.50	< 0.50	
2,4-Dinitrotoluene	U	2790)	0.50	< 0.50	
Fluorene	U	2790	0	0.50	< 0.50	
Diethyl Phthalate	U	2790		0.50	< 0.50	
4-Nitroaniline	U	2790		0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	< 0.50	
Azobenzene	U	2790	0	0.50	< 0.50	
4-Bromophenylphenyl Ether	U	2790		0.50	< 0.50	
Hexachlorobenzene	U	2790		0.50	< 0.50	
Pentachlorophenol	N	2790		0.50	< 0.50	
Phenanthrene	U	2790		0.50	< 0.50	
Anthracene	U	2790)	0.50	< 0.50	
Carbazole	U	2790		0.50	< 0.50	
Di-N-Butyl Phthalate	U	2790	9	0.50	< 0.50	
Fluoranthene	U	2790	0 0	0.50	< 0.50	
Pyrene	U	2790	0	0.50	< 0.50	
Butylbenzyl Phthalate	U	2790		0.50	< 0.50	
Benzo[a]anthracene	U	2790		0.50	< 0.50	
Chrysene	U	2790		0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	2790		0.50	< 0.50	
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	



1 Toject. 2545 Gi Lake Loathing							
Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.:		Client Sample Ref.:					
		Cli	ent Sam	ple ID.:	J11		
			Sampl	е Туре:	SOIL		
			Top De	oth (m):	6.50		
			Date Sa	ampled:	05-Apr-2018		
Determinand	Accred.	SOP	Units	LOD			
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50		
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50		
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50		
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50		
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50		
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50		
PCB 28	U	2815	mg/kg	0.010	< 0.010		
PCB 52	U	2815	mg/kg	0.010	< 0.010		
PCB 90+101	U	2815	mg/kg	0.010	< 0.010		
PCB 118	U	2815	mg/kg	0.010	< 0.010		
PCB 153	U	2815	mg/kg	0.010	< 0.010		
PCB 138	U	2815	mg/kg	0.010	< 0.010		
PCB 180	U	2815	mg/kg	0.010	< 0.010		
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10		
Total Phenols	U	2920	mg/kg	0.30	< 0.30		



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd. **Depot Road** Newmarket CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report			
Report No.:	18-11312-1		
Initial Date of Issue:	03-May-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Loathing		
Quotation No.:	Q17-10179	Date Received:	25-Apr-2018
Order No.:	2543, GI	Date Instructed:	26-Apr-2018
No. of Samples:	4		
Turnaround (Wkdays):	5	Results Due:	02-May-2018
Date Approved:	03-May-2018		
Approved By:			

Martin Dyer, Laboratory Manager



Results - Leachate

Client: Geosphere Environmental Ltd		Chemtest Job No.:			
Quotation No.: Q17-10179	Che	Chemtest Sample ID.:			
Order No.: 2543, GI		Client	Sampl	e Ref.:	BHC01
		Client Sample ID.:			
		Sample Type:			
		Top Depth (m):			
					19-Apr-2018
Determinand	Accred.	SOP	Units	LOD	
рН	U	1010		N/A	8.6
Ammonia (Free) as N	U	1220	mg/l	0.050	< 0.050
Sulphate	U	1220	mg/l	1.0	< 1.0
Cyanide (Total)	U	_		0.050	< 0.050
Cyanide (Free)	U	1300		0.050	< 0.050
Arsenic (Dissolved)	U	1450		1.0	< 1.0
Boron (Dissolved)	U	1450		20	< 20
Cadmium (Dissolved)	U	1450		0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Copper (Dissolved)	U	1450	μg/l	1.0	< 1.0
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0
Selenium (Dissolved)	U	1450		1.0	< 1.0
Zinc (Dissolved)	U	1450	μg/l	1.0	1.1
Chromium (Hexavalent)	U	1490	٥	20	< 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675		0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675		0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10
Naphthalene	U	1700		0.10	< 0.10
Acenaphthylene	U	1700	μg/l	0.10	< 0.10
Acenaphthene	U	1700		0.10	< 0.10
Fluorene	U	1700		0.10	< 0.10
Phenanthrene	U	1700		0.10	< 0.10
Anthracene	U	1700	μg/l	0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10
Pyrene	U	1700		0.10	< 0.10
			_	_	



Results - Leachate

Client: Geosphere Environmental Ltd		Chemt	est Jo	b No.:	
Quotation No.: Q17-10179				le ID.:	612825
Order No.: 2543, GI		Client	Sampl	e Ref.:	BHC01
				ole ID.:	J1
		ξ	Sample	Type:	SOIL
				th (m):	0.30
	Date Sampled:				19-Apr-2018
Determinand	Accred.	SOP	Units	LOD	
Benzo[a]anthracene	U	1700		0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1700	١	0.10	< 0.10
Benzo[a]pyrene	U	1700		0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1700		0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0
Benzene	U	1760	μg/l	1.0	< 1.0
Toluene	U	1760	μg/l	1.0	< 1.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0
Phenol	N	1790	μg/l	0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50



Results - Leachate

Client: Geosphere Environmental Ltd		Chemte	st Jo	b No.:	18-11312
Quotation No.: Q17-10179	Che	mtest S	Samp	le ID.:	612825
Order No.: 2543, GI		Client S	Sample	e Ref.:	BHC01
		le ID.:	J1		
		Sa	ample	Type:	SOIL
		Top	Dept	th (m):	0.30
		mpled:	19-Apr-2018		
Determinand	Accred.	SOP	Units	LOD	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N			0.50	< 0.50
2,4-Dinitrotoluene	N		μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N		μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N		μg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50
Chrysene	N		μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N		μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N		μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Client: Geosphere Environmental Ltd			itest Jo		18-11312	18-11312	18-11312	18-11312
Quotation No.: Q17-10179	Ch	emtes	t Samp	le ID.:	612825	612828	612839	612841
Order No.: 2543, GI			t Sampl		BHC01	BHC01	TPC09	TPC09
			nt Samp		J1	J4	J1	J3
			Sample		SOIL	SOIL	SOIL	SOIL
			op Dep		0.30	1.70	0.20	1.50
			Date Sa	mpled:	19-Apr-2018	19-Apr-2018	23-Apr-2018	23-Apr-201
			Asbesto	s Lab:	COVENTRY		COVENTRY	COVENTR
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	-		-	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		No Asbestos Detected	No Asbesto Detected
Moisture	N	2030	%	0.020	4.2	15	12	19
pH	U	2010		N/A	8.6	8.7	8.4	8.5
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	< 0.40	0.71	2.8
Sulphate (2:1 Water Soluble) as SO4	U	2120		0.010	< 0.010	< 0.010	0.016	0.16
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	U		mg/kg	0.50	< 0.50	< 0.50	4.9	< 0.50
Ammonium (Extractable)	U		mg/kg	0.50	1.2	< 0.50	1.6	53
Sulphate (Total)	U	2430		0.010	0.018	< 0.010	0.16	1.1
Arsenic	U		mg/kg	1.0	4.5	2.0	24	25
Cadmium	U	2450	mg/kg	0.10	< 0.10	< 0.10	0.19	< 0.10
Chromium	Ü		mg/kg	1.0	6.6	3.4	10	26
Copper	Ü		mg/kg		9.8	1.8	810	22
Mercury	U		mg/kg		< 0.10	< 0.10	1.3	< 0.10
Nickel	U		mg/kg	0.50	7.7	3.0	25	27
Lead	U	2450	mg/kg	0.50	19	4.3	340	45
Selenium	U	2450	mg/kg	0.20	0.23	0.20	1.3	0.56
Zinc	U	2450	mg/kg	0.50	23	9.4	150	68
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		< 0.40		
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U		mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U		mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	5.3	< 1.0
Aliphatic TPH >C21-C35	U		mg/kg	1.0	< 1.0	< 1.0	58	< 1.0
Aliphatic TPH >C35-C44	N		mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N		mg/kg	5.0	< 5.0	< 5.0	64	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N		mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U		mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U		mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U		mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	1.3	< 1.0
Aromatic TPH >C21-C35	U		mg/kg	1.0	< 1.0	< 1.0	190	< 1.0
Aromatic TPH >C35-C44	N		mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N		mg/kg	5.0	< 5.0	< 5.0	190	< 5.0
Total Petroleum Hydrocarbons	N		mg/kg	10.0	< 10	< 10	250	< 10



Client: Geosphere Environmental Ltd		Chem	test Jo	b No.:	18-11312	18-11312	18-11312	18-11312
Quotation No.: Q17-10179	Ch	emtes	t Samp	le ID.:	612825	612828	612839	612841
Order No.: 2543, GI		Client	t Sampl	e Ref.:	BHC01	BHC01	TPC09	TPC09
			nt Samp		J1	J4	J1	J3
			Sample	Type:	SOIL	SOIL	SOIL	SOIL
			op Dep		0.30	1.70	0.20	1.50
			Date Sai	mpled:	19-Apr-2018	19-Apr-2018		
			Asbesto		COVENTRY		COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	2.9	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.29	< 0.10
Acenaphthene	U		mg/kg		< 0.10	< 0.10	0.25	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.66	< 0.10
Phenanthrene	U		mg/kg		< 0.10	< 0.10	1.6	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.30	< 0.10
Fluoranthene	U		mg/kg		1.0	< 0.10	1.2	0.75
Pyrene	U	2700	mg/kg	0.10	0.82	< 0.10	1.4	0.51
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.60	< 0.10
Chrysene	U		mg/kg		< 0.10	< 0.10	0.94	< 0.10
Benzo[b]fluoranthene	U		mg/kg		< 0.10	< 0.10	0.64	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.43	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.56	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0	12	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20	< 20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	N		μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U		μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	U		μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10	< 10
Toluene	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N		μg/kg	10	< 10	< 10	< 10	< 10



Client: Geosphere Environmental Ltd			test Jo		18-11312	18-11312	18-11312	18-11312
Quotation No.: Q17-10179	Ch		t Samp		612825	612828	612839	612841
Order No.: 2543, GI			t Sampl		BHC01	BHC01	TPC09	TPC09
			nt Samp		J1	J4	J1	J3
			Sample		SOIL	SOIL	SOIL	SOIL
			op Dep		0.30	1.70	0.20	1.50
					19-Apr-2018	19-Apr-2018		
			Asbesto		COVENTRY		COVENTRY	COVENTRY
Determinand	Accred.			LOD				
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10	< 10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10	< 10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U		μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	N		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50
N-Propylbenzene	N		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	N		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	N		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	N		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	N		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	N		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N		μg/kg	50	< 50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N		μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	Ü		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol	Ü		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	Ü		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	Ü		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	Ü		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
., . =			mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1.2-Dichlorobenzene	1 ()	2/90			< 0.50	< U	< U.DU	
1,2-Dichlorobenzene 2-Methylphenol	U		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Chem	itest Jo	b No.:	18-11312	18-11312	18-11312	18-11312
Quotation No.: Q17-10179	Ch	emtes	t Samp	le ID.:	612825	612828	612839	612841
Order No.: 2543, GI		Client	t Sampl	e Ref.:	BHC01	BHC01	TPC09	TPC09
			nt Samp		J1	J4	J1	J3
			Sample	Type:	SOIL	SOIL	SOIL	SOIL
			op Dep		0.30	1.70	0.20	1.50
			Date Sai	mpled:	19-Apr-2018	19-Apr-2018		
			Asbesto		COVENTRY		COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	U		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	U		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	U		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	U		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	U		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	U		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	U		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	Ü		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	U		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	Ü		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	Ü		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Fluorene	Ü		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	Ü		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	Ü		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Azobenzene	Ü		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	Ü		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	Ü		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	Ü		mg/kg		1.0	< 0.50	0.87	< 0.50
Anthracene	Ü		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Carbazole	Ü		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	Ü		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Di it Datyi i ittialato		2,00	mg/ng	0.00	` 0.00	\ 0.00	` 0.00	` 0.00



Client: Geosphere Environmental Ltd		Chem	test Jo	b No.:	18-11312	18-11312	18-11312	18-11312
Quotation No.: Q17-10179	Ch		t Samp		612825	612828	612839	612841
Order No.: 2543, GI		Client	Sample	e Ref.:	BHC01	BHC01	TPC09	TPC09
		Clie	nt Samp	le ID.:	J1	J4	J1	J3
			Sample	Type:	SOIL	SOIL	SOIL	SOIL
			op Dep		0.30	1.70	0.20	1.50
			ate Sa	mpled:	19-Apr-2018	19-Apr-2018	23-Apr-2018	23-Apr-2018
		,	Asbesto	s Lab:	COVENTRY		COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Fluoranthene	U	2790	mg/kg	0.50	1.2	< 0.50	1.5	< 0.50
Pyrene	U		mg/kg		0.83	< 0.50	1.2	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	0.64	< 0.50	0.77	< 0.50
Chrysene	U	2790	mg/kg	0.50	< 0.50	< 0.50	0.98	< 0.50
Bis(2-Ethylhexyl)Phthalate	N		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	0.69	< 0.50	1.2	< 0.50
Benzo[k]fluoranthene	U		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	0.71	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	< 0.50	0.59	< 0.50
PCB 28	U		mg/kg		< 0.010		< 0.010	
PCB 81	N	2815	mg/kg	0.010		< 0.010		< 0.010
PCB 52	U		mg/kg		< 0.010		< 0.010	
PCB 77	N	2815	mg/kg	0.010		< 0.010		< 0.010
PCB 105	N	2815	mg/kg	0.010		< 0.010		< 0.010
PCB 90+101	U	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 114	N		mg/kg			< 0.010		< 0.010
PCB 118	U		mg/kg		< 0.010		< 0.010	
PCB 118	N		mg/kg			< 0.010		< 0.010
PCB 153	U		mg/kg		< 0.010		< 0.010	
PCB 123	N		mg/kg			< 0.010		< 0.010
PCB 138	U		mg/kg		< 0.010		< 0.010	
PCB 126	N		mg/kg			< 0.010		< 0.010
PCB 180	U		mg/kg		< 0.010		< 0.010	
PCB 156	N		mg/kg			< 0.010		< 0.010
PCB 157	N		mg/kg			< 0.010		< 0.010
PCB 167	N		mg/kg			< 0.010		< 0.010
PCB 169	N		mg/kg			< 0.010		< 0.010
PCB 189	N		mg/kg			< 0.010		< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12		< 0.12		< 0.12
Total PCBs (7 Congeners)	N			0.10	< 0.10		< 0.10	
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	, , , ,
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.



SOP	Title	Parameters included	Method summary
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
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- I/S Insufficient Sample
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- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.: 18-13032-1

Initial Date of Issue: 22-May-2018

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Tom Powling

Project 2543,GI Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 10-May-2018

Order No.: 2543,GI Date Instructed: 16-May-2018

No. of Samples: 1

Turnaround (Wkdays): 5 Results Due: 22-May-2018

Date Approved: 22-May-2018

Approved By:



Client: Geosphere Environmental Ltd		Chemtest Job No.					
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	620297		
Order No.: 2543,GI		Clie	nt Samp	le Ref.:	BHC07		
			ent Sam		W1		
			Sampl	е Туре:	WATER		
			Top De	oth (m):	1.70		
		Date Sampled					
Determinand	Accred.	SOP	Units	LOD	09-May-2018		
рН	U	1010		N/A	8.2		
Ammonia (Free) as N	U	1220	mg/l	0.050	0.39		
Sulphate	U	1220	mg/l	1.0	33		
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050		
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050		
Arsenic (Dissolved)	U	1450	μg/l	1.0	5.1		
Boron (Dissolved)	U	1450	μg/l	20	270		
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080		
Chromium (Dissolved)	U	1450	μg/l	1.0	9.7		
Copper (Dissolved)	U	1450	μg/l	1.0	1.5		
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50		
Nickel (Dissolved)	U	1450	μg/l	1.0	1.9		
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0		
Selenium (Dissolved)	U	1450	μg/l	1.0	7.8		
Zinc (Dissolved)	U	1450	μg/l	1.0	7.0		
Chromium (Hexavalent)	U	1490	μg/l	20	< 20		
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10		
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0		
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10		
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0		
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10		
Naphthalene	U	1700	μg/l	0.10	< 0.10		
Acenaphthylene	U	1700	μg/l	0.10	< 0.10		
Acenaphthene	U	1700	μg/l	0.10	< 0.10		
Fluorene	U	1700	μg/l	0.10	< 0.10		

Quotation No.: Q17-10179	Project: 2543,GI Lake Lotning, Loweston		01		ala Nia	40.40000
Order No.: 2543,GI	Client: Geosphere Environmental Ltd					18-13032
Client Sample ID.: W1 Sample Type: WATER Top Depth (m): 1.70 Depth (m): 1.70 Depth (m): 1.70 Determinand Determinand Accred. SOP Units LOD		(
Sample Type: WATER Top Depth (m): 1.70	Order No.: 2543,GI					
Top Depth (m):			Clie			
Date Sampled: 09-May-2018						
Determinand Accred. SOP Units LOD					, ,	
Phenanthrene				09-May-2018		
Anthracene						
Fluoranthene						
Pyrene		_				
Benzo[a]anthracene						
Chrysene U 1700 µg/l 0.10 < 0.10 Benzo[b]fluoranthene U 1700 µg/l 0.10 < 0.10	,	_		_		
Benzo[b]fluoranthene						
Benzo[k]fluoranthene						
Benzo[a]pyrene		_				
Indeno(1,2,3-c,d)Pyrene		_				
Dibenz(a,h)Anthracene U 1700 µg/l 0.10 < 0.10 Benzo[g,h,i]perylene U 1700 µg/l 0.10 < 0.10				μg/l		< 0.10
Benzolg,h,ijperylene U 1700 µg/l 0.10 < 0.10 Total Of 16 PAH's U 1700 µg/l 2.0 < 2.0	Indeno(1,2,3-c,d)Pyrene		1700	μg/l	0.10	< 0.10
Total Of 16 PAH's U 1700 μg/l 2.0 < 2.0 Dichlorodifluoromethane U 1760 μg/l 1.0 < 1.0			1700		0.10	< 0.10
Dichlorodifluoromethane U 1760 µg/l 1.0 < 1.0 Chloromethane U 1760 µg/l 1.0 < 1.0			1700	μg/l	0.10	< 0.10
Chloromethane U 1760 μg/l 1.0 < 1.0 Vinyl Chloride N 1760 μg/l 1.0 < 1.0	Total Of 16 PAH's	_	1700		2.0	< 2.0
Vinyl Chloride N 1760 µg/l 1.0 < 1.0 Bromomethane U 1760 µg/l 5.0 < 5.0	Dichlorodifluoromethane		1760	μg/l	1.0	< 1.0
Bromomethane U 1760 μg/l 5.0 < 5.0 Chloroethane U 1760 μg/l 2.0 < 2.0	Chloromethane	_	1760	μg/l		< 1.0
Chloroethane U 1760 µg/l 2.0 < 2.0 Trichlorofluoromethane U 1760 µg/l 1.0 < 1.0	Vinyl Chloride		1760	μg/l	1.0	< 1.0
Trichlorofluoromethane U 1760 μg/l 1.0 < 1.0 1,1-Dichloroethene U 1760 μg/l 1.0 < 1.0	Bromomethane	U	1760		5.0	< 5.0
1,1-Dichloroethene U 1760 µg/l 1.0 < 1.0	Chloroethane		1760	μg/l	2.0	< 2.0
Trans 1,2-Dichloroethene U 1760 µg/l 1.0 < 1.0 1,1-Dichloroethane U 1760 µg/l 1.0 < 1.0	Trichlorofluoromethane	U	1760	μg/l	1.0	< 1.0
1,1-Dichloroethane U 1760 µg/l 1.0 < 1.0	1,1-Dichloroethene		1760		1.0	< 1.0
cis 1,2-Dichloroethene U 1760 µg/l 1.0 < 1.0 Bromochloromethane U 1760 µg/l 5.0 < 5.0	Trans 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0
Bromochloromethane U 1760 μg/l 5.0 < 5.0 Trichloromethane U 1760 μg/l 1.0 < 1.0	1,1-Dichloroethane	U	1760	μg/l	1.0	< 1.0
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		U				< 1.0
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Bromochloromethane	_	1760	μg/l		< 5.0
Tetrachloromethane U 1760 µg/l 1.0 < 1.0 1,1-Dichloropropene U 1760 µg/l 1.0 < 1.0	Trichloromethane	_	1760		1.0	< 1.0
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	1,1,1-Trichloroethane	U	1760	μg/l	1.0	< 1.0
Benzene U 1760 µg/l 1.0 < 1.0 1,2-Dichloroethane U 1760 µg/l 2.0 < 2.0	Tetrachloromethane	U	1760	μg/l	1.0	< 1.0
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1,1-Dichloropropene	U	1760	μg/l	1.0	< 1.0
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Benzene	U	1760	μg/l	1.0	< 1.0
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	1,2-Dichloroethane	U	1760		2.0	< 2.0
Dibromomethane U 1760 μg/l 10 < 10 Bromodichloromethane U 1760 μg/l 5.0 < 5.0	Trichloroethene	N	1760	μg/l	1.0	< 1.0
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	1,2-Dichloropropane	U	1760	μg/l	1.0	< 1.0
Bromodichloromethane	Dibromomethane	U	1760		10	< 10
cis 1.3 Dichloropropopo	Bromodichloromethane	U	1760	μg/l	5.0	< 5.0
N 1700 µg/1 10 < 10	cis-1,3-Dichloropropene	N	1760	μg/l	10	< 10
Toluene U 1760 µg/l 1.0 < 1.0		U	1760		1.0	< 1.0
Trans-1,3-Dichloropropene N 1760 µg/l 10 < 10	Trans-1,3-Dichloropropene	N	1760		10	< 10
1,1,2-Trichloroethane U 1760 µg/l 10 < 10		U	1760		10	< 10
Tetrachloroethene U 1760 µg/l 1.0 < 1.0	Tetrachloroethene	U	1760		1.0	< 1.0

Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179			st Sam		620297		
Order No.: 2543,GI			nt Samp		BHC07		
		Clie	ent Sam		W1		
				e Type:	WATER		
			Top Dep	, ,	1.70 09-May-2018		
		Date Sampled					
Determinand	Accred.	SOP	Units	LOD			
1,3-Dichloropropane	U	1760	μg/l	2.0	< 2.0		
Dibromochloromethane	U	1760	μg/l	10	< 10		
1,2-Dibromoethane	U	1760	μg/l	5.0	< 5.0		
Chlorobenzene	N	1760	μg/l	1.0	< 1.0		
1,1,1,2-Tetrachloroethane	U	1760	μg/l	2.0	< 2.0		
Ethylbenzene	U	1760	μg/l	1.0	< 1.0		
m & p-Xylene	U	1760	μg/l	1.0	< 1.0		
o-Xylene	U	1760	μg/l	1.0	< 1.0		
Styrene	U	1760	μg/l	1.0	< 1.0		
Tribromomethane	U	1760	μg/l	1.0	< 1.0		
Isopropylbenzene	U	1760	μg/l	1.0	< 1.0		
Bromobenzene	U	1760	μg/l	1.0	< 1.0		
1,2,3-Trichloropropane	N	1760	μg/l	50	< 50		
N-Propylbenzene	U	1760	μg/l	1.0	< 1.0		
2-Chlorotoluene	U	1760	μg/l	1.0	< 1.0		
1,3,5-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0		
4-Chlorotoluene	U	1760	μg/l	1.0	< 1.0		
Tert-Butylbenzene	U	1760	μg/l	1.0	< 1.0		
1,2,4-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0		
Sec-Butylbenzene	U	1760	μg/l	1.0	< 1.0		
1,3-Dichlorobenzene	N	1760	μg/l	1.0	< 1.0		
4-Isopropyltoluene	U	1760	μg/l	1.0	< 1.0		
1,4-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0		
N-Butylbenzene	U	1760	μg/l	1.0	< 1.0		
1,2-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0		
1,2-Dibromo-3-Chloropropane	U	1760	μg/l	50	< 50		
1,2,4-Trichlorobenzene	U	1760	μg/l	1.0	< 1.0		
Hexachlorobutadiene	U	1760	μg/l	1.0	< 1.0		
1,2,3-Trichlorobenzene	U	1760	μg/l	2.0	< 2.0		
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	5.2		
N-Nitrosodimethylamine	N	1790	μg/l	0.50	< 0.50		
Phenol	N	1790	μg/l	0.50	< 0.50		
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50		
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50		



Client: Geosphere Environmental Ltd		18-13032			
Quotation No.: Q17-10179			ntest Jost Sami		620297
Order No.: 2543,GI			nt Samp		BHC07
201001 11011 20 10,01		ple ID.:	W1		
				e Type:	WATER
		-	Top Dep		1.70
			Date Sa	, ,	09-May-2018
Determinand	Accred.	SOP	Units	LOD	20 may 20 0
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50



Olivet Occasion Fredrick and all tele		18-13032						
Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179	(Chemtest Sample ID.:						
Order No.: 2543,GI			nt Samp		BHC07			
		Cli	ent Sam	ple ID.:	W1			
			Sampl	е Туре:	WATER			
			Top Dep	oth (m):	1.70			
			Date Sa	ampled:	09-May-2018			
Determinand	Accred.	SOP	Units	LOD				
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Fluoranthene	N	1790	μg/l	0.50	< 0.50			
Pyrene	N	1790	μg/l	0.50	< 0.50			
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50			
Chrysene	N	1790	μg/l	0.50	< 0.50			
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50			
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50			
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50			
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50			
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50			
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50			
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50			
4-Nitrophenol	N	1790	μg/l	0.50	< 0.50			
Total Phenols	U	1920	mg/l	0.030	< 0.030			



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.



Key

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- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Report No.: 18-13180-1

Initial Date of Issue: 22-May-2018

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Tom Powling

Project 2543 GI Lake Loathing

Quotation No.: Q17-10179 Date Received: 11-May-2018

Order No.: Date Instructed: 16-May-2018

No. of Samples: 2

Turnaround (Wkdays): 5 Results Due: 22-May-2018

Date Approved: 22-May-2018

Approved By:



Client: Geosphere Environmental Ltd			mtest J		18-13180	
Quotation No.: Q17-10179			st Sam	621138	621139	
Order No.:		Clie	nt Samp		BHC27	BHC24
				е Туре:	WATER	WATER
			Top De	pth (m):	2.00	1.43
			Date Sa	ampled:	11-May-2018	11-May-2018
Determinand	Accred.	SOP	Units	LOD		
рН	U	1010		N/A	8.6	12.4
Ammonia (Free) as N	U	1220	mg/l	0.050	0.15	1.1
Sulphate	U	1220	mg/l	1.0	120	38
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	17	2.9
Boron (Dissolved)	U	1450	μg/l	20	210	< 20
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	12	2.4
Copper (Dissolved)	U	1450	μg/l	1.0	3.1	37
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	3.3	77
Lead (Dissolved)	U	1450	μg/l	1.0	1.1	< 1.0
Selenium (Dissolved)	U	1450	μg/l	1.0	4.8	9.4
Zinc (Dissolved)	U	1450	μg/l	1.0	9.0	3.4
Chromium (Hexavalent)	U	1490	μg/l	20	< 20	< 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	62	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	62	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	30	< 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	30	< 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	92	< 10
Naphthalene	U	1700	μg/l	0.10	< 0.10	< 0.10
Acenaphthylene	U	1700	μg/l	0.10	< 0.10	< 0.10
Acenaphthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Fluorene	U	1700	μg/l	0.10	< 0.10	< 0.10
Phenanthrene	U	1700	μg/l	0.10	< 0.10	< 0.10



Client: Geosphere Environmental Ltd			mtest Jo	18-13180	18-13180	
Quotation No.: Q17-10179	(st Sam	621138	621139	
Order No.:		Clie	nt Samp	BHC27	BHC24	
				е Туре:	WATER	WATER
			Top De		2.00	1.43
			Date Sa	ampled:	11-May-2018	11-May-2018
Determinand	Accred.	SOP	Units	LOD		
Anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0	< 2.0
Dichlorodifluoromethane	U	1760	μg/l	1.0	< 1.0	< 1.0
Chloromethane	U	1760	μg/l	1.0	< 1.0	< 1.0
Vinyl Chloride	N	1760	μg/l	1.0	< 1.0	< 1.0
Bromomethane	U	1760	μg/l	5.0	< 5.0	< 5.0
Chloroethane	U	1760	μg/l	2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	1760	μg/l	1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	1760	μg/l	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0
Bromochloromethane	U	1760	µg/l	5.0	< 5.0	< 5.0
Trichloromethane	U	1760	μg/l	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	1760	μg/l	1.0	< 1.0	< 1.0
Tetrachloromethane	U	1760	μg/l	1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	1760	µg/l	1.0	< 1.0	< 1.0
Benzene	U	1760	µg/l	1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	1760	μg/l	2.0	< 2.0	< 2.0
Trichloroethene	N	1760	μg/l	1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	1760	μg/l	1.0	< 1.0	< 1.0
Dibromomethane	U	1760	μg/l	10	< 10	< 10
Bromodichloromethane	U	1760	μg/l	5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	1760	μg/l	10	< 10	< 10
Toluene	U	1760	μg/l	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	1760	μg/l	10	< 10	< 10
1,1,2-Trichloroethane	U	1760	μg/l	10	< 10	< 10
Tetrachloroethene	Ü	1760	μg/l	1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	1760	µg/l	2.0	< 2.0	< 2.0
Dibromochloromethane	U	1760	μg/l	10	< 10	< 10



Client: Geosphere Environmental Ltd			mtest Jo	18-13180	18-13180	
Quotation No.: Q17-10179			st Sam	621138	621139	
Order No.:		Client Sample Ref.:				BHC24
				e Type:	WATER	WATER
			Top Dep		2.00	1.43
			Date Sa		11-May-2018	11-May-2018
Determinand	Accred.	SOP	Units	LOD		
1,2-Dibromoethane	U	1760	μg/l	5.0	< 5.0	< 5.0
Chlorobenzene	N	1760	μg/l	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	1760	μg/l	2.0	< 2.0	< 2.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0	< 1.0
Styrene	U	1760	μg/l	1.0	< 1.0	< 1.0
Tribromomethane	U	1760	μg/l	1.0	< 1.0	< 1.0
Isopropylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
Bromobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	1760	μg/l	50	< 50	< 50
N-Propylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
2-Chlorotoluene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
4-Chlorotoluene	U	1760	μg/l	1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	N	1760	μg/l	1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
N-Butylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	1760	μg/l	50	< 50	< 50
1,2,4-Trichlorobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	1760	μg/l	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	N	1790	μg/l	0.50	< 0.50	< 0.50
Phenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	µg/l	0.50	< 0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Che	mtest Jo	18-13180	18-13180	
Quotation No.: Q17-10179			st Sam		621138	621139
Order No.:		Client Sample Ref.:				BHC24
			Sampl	е Туре:	WATER	WATER
			Top De	oth (m):	2.00	1.43
			Date Sa	ampled:	11-May-2018	11-May-2018
Determinand	Accred.	SOP	Units	LOD		
Nitrobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50



Results - Water

Froject. 2343 Of Lake Loathing						
Client: Geosphere Environmental Ltd		Che	mtest J	18-13180	18-13180	
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	621138	621139
Order No.:		Clie	nt Samp	le Ref.:	BHC27	BHC24
			Sampl	е Туре:	WATER	WATER
			Top De _l	oth (m):	2.00	1.43
			Date Sa	ampled:	11-May-2018	11-May-2018
Determinand	Accred.	SOP	Units	LOD		
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	N	N 1790 μg/l 0.50				< 0.50
4-Nitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030	< 0.030



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.: 18-13183-1

Initial Date of Issue: 22-May-2018

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Tom Powling

Project 2543 GI Lake Loathing

Quotation No.: Q17-10179 Date Received: 11-May-2018

Order No.: Date Instructed: 16-May-2018

No. of Samples: 1

Turnaround (Wkdays): 5 Results Due: 22-May-2018

Date Approved: 22-May-2018

Approved By:



Project: 2543 GI Lake Loathing								
Client: Geosphere Environmental Ltd		ob No.:	18-13183					
Quotation No.: Q17-10179	(ple ID.: le Ref.:	621158					
Order No.:		BHC09						
		е Туре:	WATER					
			Top De	, ,	4.84			
		Bot	tom Dep	, ,	10.70			
			Date Sa		10-May-2018			
Determinand	Accred.	SOP	Units					
рН	U	1010		N/A	11.7			
Ammonia (Free) as N	U	1220	mg/l	0.050	1.1			
Sulphate	U	1220	mg/l	1.0	160			
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050			
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050			
Arsenic (Dissolved)	U	1450	μg/l	1.0	3.8			
Boron (Dissolved)	U	1450	μg/l	20	34			
Cadmium (Dissolved)	U	1450	μg/l	0.080	0.082			
Chromium (Dissolved)	U	1450	μg/l	1.0	19			
Copper (Dissolved)	U	1450	μg/l	1.0	4.8			
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50			
Nickel (Dissolved)	U	1450	μg/l	1.0	11			
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Selenium (Dissolved)	U	1450	μg/l	1.0	9.8			
Zinc (Dissolved)	U	1450	μg/l	1.0	7.6			
Chromium (Hexavalent)	U	1490	μg/l	20	< 20			
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10			
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10			
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10			
Naphthalene	U	1700	μg/l	0.10	< 0.10			
Acenaphthylene	U	1700	μg/l	0.10	< 0.10			
Acenaphthene	U	1700	μg/l	0.10	< 0.10			
Fluorene	U	1700	μg/l	0.10	< 0.10			



Project: 2543 GI Lake Loathing								
Client: Geosphere Environmental Ltd		b No.:	18-13183					
Quotation No.: Q17-10179	(ole ID.:	621158					
Order No.:		le Ref.:	BHC09					
				e Type:	WATER			
			Top Dep	, ,	4.84			
		Bot	tom Dep	oth (m):	10.70			
			Date Sa	ımpled:	10-May-2018			
Determinand	Accred.	SOP	Units	LOD				
Phenanthrene	U	1700	μg/l	0.10	< 0.10			
Anthracene	U	1700	μg/l	0.10	< 0.10			
Fluoranthene	U	1700	μg/l	0.10	< 0.10			
Pyrene	U	1700	μg/l	0.10	< 0.10			
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10			
Chrysene	U	1700	μg/l	0.10	< 0.10			
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10			
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10			
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10			
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10			
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0			
Dichlorodifluoromethane	U	1760	μg/l	1.0	< 1.0			
Chloromethane	U	1760	μg/l	1.0	< 1.0			
Vinyl Chloride	N	1760	μg/l	1.0	< 1.0			
Bromomethane	U	1760	μg/l	5.0	< 5.0			
Chloroethane	U	1760	μg/l	2.0	< 2.0			
Trichlorofluoromethane	U	1760	μg/l	1.0	< 1.0			
1,1-Dichloroethene	U	1760	μg/l	1.0	< 1.0			
Trans 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0			
1,1-Dichloroethane	U	1760	μg/l	1.0	< 1.0			
cis 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0			
Bromochloromethane	U	1760	μg/l	5.0	< 5.0			
Trichloromethane	U	1760	μg/l	1.0	< 1.0			
1,1,1-Trichloroethane	U	1760	μg/l	1.0	< 1.0			
Tetrachloromethane	U	1760	μg/l	1.0	< 1.0			
1,1-Dichloropropene	U	1760	μg/l	1.0	< 1.0			
Benzene	U	1760	μg/l	1.0	< 1.0			
1,2-Dichloroethane	U	1760	μg/l	2.0	< 2.0			
Trichloroethene	N	1760	μg/l	1.0	< 1.0			
1,2-Dichloropropane	U	1760	μg/l	1.0	< 1.0			
Dibromomethane	U	1760	μg/l	10	< 10			
Bromodichloromethane	U	1760	μg/l	5.0	< 5.0			
cis-1,3-Dichloropropene	N	1760	μg/l	10	< 10			
Toluene	U	1760	μg/l	1.0	< 1.0			
Trans-1,3-Dichloropropene	N	1760	μg/l	10	< 10			
1,1,2-Trichloroethane	U	1760	μg/l	10	< 10			
Tetrachloroethene	Ü	1760	μg/l	1.0	< 1.0			



Project: 2543 GI Lake Loathing Client: Geosphere Environmental Ltd Chemtest Job No.: 18-13183								
Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179		Chemtest Sample ID.: Client Sample Ref.:						
Order No.:								
		Sample Type:						
			Top Dep	` ′	4.84			
		Bot	tom Dep		10.70			
			Date Sa		10-May-2018			
Determinand	Accred.	SOP						
1,3-Dichloropropane	U	1760	μg/l	2.0	< 2.0			
Dibromochloromethane	U	1760		10	< 10			
1,2-Dibromoethane	U	1760	μg/l	5.0	< 5.0			
Chlorobenzene	N	1760	μg/l	1.0	< 1.0			
1,1,1,2-Tetrachloroethane	U	1760	μg/l	2.0	< 2.0			
Ethylbenzene	U	1760	μg/l	1.0	< 1.0			
m & p-Xylene	U	1760	μg/l	1.0	< 1.0			
o-Xylene	U	1760	μg/l	1.0	< 1.0			
Styrene	U	1760	μg/l	1.0	< 1.0			
Tribromomethane	U	1760	μg/l	1.0	< 1.0			
Isopropylbenzene	U	1760	μg/l	1.0	< 1.0			
Bromobenzene	U	1760	μg/l	1.0	< 1.0			
1,2,3-Trichloropropane	N	1760	μg/l	50	< 50			
N-Propylbenzene	U	1760	μg/l	1.0	< 1.0			
2-Chlorotoluene	U	1760	μg/l	1.0	< 1.0			
1,3,5-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0			
4-Chlorotoluene	U	1760	μg/l	1.0	< 1.0			
Tert-Butylbenzene	U	1760	μg/l	1.0	< 1.0			
1,2,4-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0			
Sec-Butylbenzene	U	1760	μg/l	1.0	< 1.0			
1,3-Dichlorobenzene	N	1760	μg/l	1.0	< 1.0			
4-Isopropyltoluene	U	1760	μg/l	1.0	< 1.0			
1,4-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0			
N-Butylbenzene	U	1760	μg/l	1.0	< 1.0			
1,2-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0			
1,2-Dibromo-3-Chloropropane	U	1760	μg/l	50	< 50			
1,2,4-Trichlorobenzene	U	1760	μg/l	1.0	< 1.0			
Hexachlorobutadiene	U	1760	μg/l	1.0	< 1.0			
1,2,3-Trichlorobenzene	U	1760	μg/l	2.0	< 2.0			
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0			
N-Nitrosodimethylamine	N	1790	μg/l	0.50	< 0.50			
Phenol	N	1790	μg/l	0.50	< 0.50			
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50			
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50			
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50			
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50			



Project: 2543 GI Lake Loathing Client: Geosphere Environmental Ltd Chemtest Job No.: 18-13183								
Client: Geosphere Environmental Ltd		18-13183						
Quotation No.: Q17-10179	(621158						
Order No.:		le Ref.:	BHC09					
		e Type: oth (m):	WATER					
		4.84						
		10.70						
		10-May-2018						
Determinand	Accred.	SOP	Units					
Hexachloroethane	N	1790	μg/l	0.50	< 0.50			
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50			
4-Methylphenol	N	1790	μg/l	0.50	< 0.50			
Nitrobenzene	N	1790	μg/l	0.50	< 0.50			
Isophorone	N	1790	μg/l	0.50	< 0.50			
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50			
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50			
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50			
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50			
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50			
Naphthalene	N	1790	μg/l	0.50	< 0.50			
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50			
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50			
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50			
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50			
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50			
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50			
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50			
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50			
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
Acenaphthylene	N	1790	μg/l	0.50	< 0.50			
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50			
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50			
Acenaphthene	N	1790	μg/l	0.50	< 0.50			
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
Dibenzofuran	N	1790	μg/l	0.50	< 0.50			
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50			
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50			
Fluorene	N	1790	μg/l	0.50	< 0.50			
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50			
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50			
Azobenzene	N	1790	μg/l	0.50	< 0.50			
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50			
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50			
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50			
Phenanthrene	N	1790	μg/l	0.50	< 0.50			
Anthracene	N	1790	μg/l	0.50	< 0.50			
Carbazole	N	1790	μg/l	0.50	< 0.50			



Project. 2545 Gr Lake Loathing						
Client: Geosphere Environmental Ltd		18-13183				
Quotation No.: Q17-10179		621158				
Order No.: Client Sam					BHC09	
	Sample Type: Top Depth (m): Bottom Depth (m):				WATER	
					4.84	
					10.70	
	Date Sampled:			10-May-2018		
Determinand	Accred.	SOP	Units	LOD		
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Fluoranthene	N	1790	μg/l	0.50	< 0.50	
Pyrene	N	1790	μg/l	0.50	< 0.50	
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50	
Chrysene	N	1790	μg/l	0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50	
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50	
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50	
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	
4-Nitrophenol	N	1790	μg/l	0.50	< 0.50	
Total Phenols	U	1920	mg/l	0.030	< 0.030	



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.co.uk

Final Report

Report No.: 18-13535-1

Initial Date of Issue: 23-May-2018

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Tom Powling

Project 2543 GI, Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 16-May-2018

Order No.: Date Instructed: 16-May-2018

No. of Samples: 4

Turnaround (Wkdays): 5 Results Due: 22-May-2018

Date Approved: 23-May-2018

Approved By:

Results - Water

Client: Geosphere Environmental Ltd	Chemtest Job No.:			18-13535	18-13535	18-13535	18-13535	
Quotation No.: Q17-10179		Chemtest Sample ID.:		623008	623009	623010	623011	
Order No.:	Client Sample Ref.: Sample Type: Top Depth (m): Date Sampled:		BHC24(D)	BHC08	BHC01	BHC14		
			WATER	WATER	WATER	WATER		
			1.92	3.20	2.58	1.91		
			14-May-2018	14-May-2018	14-May-2018	14-May-2018		
Determinand	Accred.	SOP	Units	_				
рН	U	1010		N/A	12.3	9.9	13.2	12.8
Ammonia (Free) as N	U	1220	mg/l	0.050	0.57	0.55	0.31	0.66
Sulphate	U	1220	mg/l	1.0	28	100	350	8.7
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050	< 0.050	< 0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050	< 0.050	< 0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	6.7	4.2	2.4	2.4
Boron (Dissolved)	U	1450	μg/l	20	< 20	64	< 20	< 20
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080	< 0.080	0.088	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	16	22	160	7.4
Copper (Dissolved)	U	1450	μg/l	1.0	1.9	1.6	61	23
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	8.3	16	43	19
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0	< 1.0	5.2	1.8
Selenium (Dissolved)	U	1450	μg/l	1.0	10	4.2	9.6	7.2
Zinc (Dissolved)	U	1450	μg/l	1.0	< 1.0	2.7	17	6.4
Chromium (Hexavalent)	U	1490	μg/l	20	< 20	< 20	160	< 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	< 0.10	63	46
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	< 5.0	63	46
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10	< 10	63	46
Naphthalene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	Ü	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	Ü	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	Ü	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	1700	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10

Client: Geosphere Environmental Ltd	Chemtest Job No.:		18-13535	18-13535	18-13535	18-13535		
Quotation No.: Q17-10179			st Sam		623008	623009	623010	623011
Order No.:		Clie		le Ref.:	BHC24(D)	BHC08	BHC01	BHC14
			Sampl	e Type:	WATER	WATER	WATER	WATER
		Top Depth (m):		1.92	3.20	2.58	1.91	
			Date Sa	ampled:	14-May-2018	14-May-2018	14-May-2018	14-May-2018
Determinand	Accred.	SOP	Units	LOD				
Anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dichlorodifluoromethane	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	N	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U	1760	μg/l	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	U	1760	μg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	U	1760	μg/l	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	1760	μg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	N	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U	1760	μg/l	10	< 10	< 10	< 10	< 10
Bromodichloromethane	U	1760	μg/l	5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	1760	μg/l	10	< 10	< 10	< 10	< 10
Toluene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	1760	μg/l	10	< 10	< 10	< 10	< 10
1,1,2-Trichloroethane	U	1760	μg/l	10	< 10	< 10	< 10	< 10
Tetrachloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	1760	μg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	U	1760	μg/l	10	< 10	< 10	< 10	< 10

Client: Geosphere Environmental Ltd	Chemtest Job No.:		18-13535	18-13535	18-13535	18-13535		
Quotation No.: Q17-10179	(st Sam		623008	623009	623010	623011
Order No.:		Clie	nt Samp		BHC24(D)	BHC08	BHC01	BHC14
				e Type:	WATER	WATER	WATER	WATER
		Top Depth (m):			1.92	3.20	2.58	1.91
				ampled:	14-May-2018	14-May-2018	14-May-2018	14-May-2018
Determinand	Accred.	SOP	Units	LOD				
1,2-Dibromoethane	U	1760	μg/l	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	N	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	1760	μg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	1760	μg/l	50	< 50	< 50	< 50	< 50
N-Propylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	N	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	1760	μg/l	50	< 50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	1760	μg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50

Client: Geosphere Environmental Ltd	Chemtest Job No.:		18-13535	18-13535	18-13535	18-13535		
Quotation No.: Q17-10179	(st Sam		623008	623009	623010	623011
Order No.:		Clie	nt Samp		BHC24(D)	BHC08	BHC01	BHC14
				e Type:	WATER	WATER	WATER	WATER
			Top De	, ,	1.92	3.20	2.58	1.91
				ampled:	14-May-2018	14-May-2018	14-May-2018	14-May-201
Determinand	Accred.	SOP	Units	LOD				
Nitrobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Camazoie		1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbazole Di-N-Butyl Phthalate	N							\U.JU
Di-N-Butyl Phthalate	N N		-					
	N N N	1790 1790 1790	μg/l μg/l	0.50 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50



Froject. 2545 GI, Lake Lottling, Lowestoit								
Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	18-13535	18-13535	18-13535	18-13535
Quotation No.: Q17-10179	(Chemtest Sample ID.:		623008	623009	623010	623011	
Order No.:		Client Sample Ref.: B		BHC24(D)	BHC08	BHC01	BHC14	
			Sampl	е Туре:	WATER	WATER	WATER	WATER
		Top Depth (m): Date Sampled: 1		1.92	3.20	2.58	1.91	
				14-May-2018	14-May-2018	14-May-2018	14-May-2018	
Determinand	Accred.	SOP	Units	LOD				
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030	< 0.030	0.28	0.083



Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
- > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk



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Final Report

Report No.: 18-15148-1

Initial Date of Issue: 04-Jun-2018

Client Geosphere Environmental Ltd

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Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Lianne Fountain

Project 2543, GI Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 31-May-2018

Order No.: 2543, Gl **Date Instructed:** 31-May-2018

No. of Samples: 2

Turnaround (Wkdays): 3 Results Due: 04-Jun-2018

Date Approved: 04-Jun-2018

Approved By:

Details: Martin Dyer, Laboratory Manager

Client: Geosphere Environmental Ltd			mtest Jo		18-15148	18-15148
Quotation No.: Q17-10179	(st Sam		630538	630539
Order No.: 2543, GI			nt Samp		BHC02	BHC07
		Cli	ent Sam		W2	W2
				e Type:	WATER	WATER
			Top De		1.10	1.15
		Bot	tom Dep		1.40	1.40
			Date Sa		30-May-2018	30-May-2018
Determinand	Accred.	SOP	Units			
pH	U	1010		N/A	7.7	8.3
Ammonia (Free) as N	U	1220	mg/l	0.050	< 0.050	0.32
Sulphate	U	1220	mg/l	1.0	110	27
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	3.4	7.2
Boron (Dissolved)	U	1450	μg/l	20	140	250
Cadmium (Dissolved)	U	1450	μg/l	0.080	0.098	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	2.7	3.1
Copper (Dissolved)	U	1450	μg/l	1.0	3.1	< 1.0
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	2.4	2.7
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0	< 1.0
Selenium (Dissolved)	U	1450	μg/l	1.0	3.9	2.8
Zinc (Dissolved)	U	1450	μg/l	1.0	11	1.9
Chromium (Hexavalent)	U	1490	μg/l	20	< 20	< 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10	< 10
Naphthalene	U	1700	μg/l	0.10	< 0.10	< 0.10
Acenaphthylene	Ü	1700	μg/l	0.10	< 0.10	< 0.10
Acenaphthene	U	1700	μg/l	0.10	< 0.10	< 0.10

Client: Geosphere Environmental Ltd			mtest Jo	18-15148	18-15148	
Quotation No.: Q17-10179	(st Sam		630538	630539
Order No.: 2543, GI			nt Samp		BHC02	BHC07
		Cli	ent Sam		W2	W2
			Sampl	WATER	WATER	
			Top De	1.10	1.15	
		Bot	tom Dep		1.40	1.40
			Date Sa		30-May-2018	30-May-2018
Determinand	Accred.	SOP	Units			
Fluorene	U	1700	μg/l	0.10	< 0.10	< 0.10
Phenanthrene	U	1700	μg/l	0.10	< 0.10	< 0.10
Anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0	< 2.0
Dichlorodifluoromethane	U	1760	μg/l	1.0	< 1.0	< 1.0
Chloromethane	U	1760	μg/l	1.0	< 1.0	< 1.0
Vinyl Chloride	N	1760	μg/l	1.0	< 1.0	< 1.0
Bromomethane	U	1760	μg/l	5.0	< 5.0	< 5.0
Chloroethane	U	1760	μg/l	2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	1760	μg/l	1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	1760	μg/l	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0
Bromochloromethane	U	1760	μg/l	5.0	< 5.0	< 5.0
Trichloromethane	U	1760	μg/l	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	1760	μg/l	1.0	< 1.0	< 1.0
Tetrachloromethane	U	1760	μg/l	1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	1760	μg/l	1.0	< 1.0	< 1.0
Benzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	1760	μg/l	2.0	< 2.0	< 2.0
Trichloroethene	N	1760	μg/l	1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	1760	μg/l	1.0	< 1.0	< 1.0
Dibromomethane	U	1760	μg/l	10	< 10	< 10
Bromodichloromethane	U	1760	μg/l	5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	1760	μg/l	10	< 10	< 10
Toluene	U	1760	μg/l	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	1760	μg/l	10	< 10	< 10

Client: Geosphere Environmental Ltd			mtest Jo		18-15148	18-15148
Quotation No.: Q17-10179	(est Sam		630538	630539
Order No.: 2543, GI			nt Samp		BHC02	BHC07
		Cli	ent Sam		W2	W2
			Sampl	WATER	WATER	
			Top Dep		1.10	1.15
		Bot	ttom Dep		1.40	1.40
			Date Sa		30-May-2018	30-May-2018
Determinand	Accred.	SOP	Units	LOD		
1,1,2-Trichloroethane	U	1760	μg/l	10	< 10	< 10
Tetrachloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	1760	μg/l	2.0	< 2.0	< 2.0
Dibromochloromethane	U	1760	μg/l	10	< 10	< 10
1,2-Dibromoethane	U	1760	μg/l	5.0	< 5.0	< 5.0
Chlorobenzene	N	1760	μg/l	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	1760	μg/l	2.0	< 2.0	< 2.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0	< 1.0
Styrene	U	1760	μg/l	1.0	< 1.0	< 1.0
Tribromomethane	U	1760	μg/l	1.0	< 1.0	< 1.0
Isopropylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
Bromobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	1760	μg/l	50	< 50	< 50
N-Propylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
2-Chlorotoluene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
4-Chlorotoluene	U	1760	μg/l	1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	N	1760	μg/l	1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
N-Butylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	1760	μg/l	50	< 50	< 50
1,2,4-Trichlorobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	1760	μg/l	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	N	1790	μg/l	0.50	< 0.50	< 0.50
Phenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Che	mtest Jo	oh No ·	18-15148	18-15148
Quotation No.: Q17-10179	-		est Sam		630538	630539
Order No.: 2543, GI	 		nt Samp		BHC02	BHC07
Older No.: 2545, Ol	+		ent Sam		W2	W2
	+	Oil		e Type:	WATER	WATER
	+		Top De	1.10	1.15	
	+		ttom De	1.40	1.40	
			Date Sa		30-May-2018	30-May-2018
Determinand	Accred.	SOP	Units		30 Way 2010	30 Way 2010
1,2-Dichlorobenzene	N	1790		0.50	< 0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790		0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790		0.50	< 0.50	< 0.50
Hexachloroethane	N	1790	10	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790		0.50	< 0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Nitrobenzene	N	1790		0.50	< 0.50	< 0.50
Isophorone	N	1790		0.50	< 0.50	< 0.50
2-Nitrophenol	N	1790		0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	1790		0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790		0.50	< 0.50	< 0.50
2,4-Dichlorophenol	N	1790		0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790		0.50	< 0.50	< 0.50
Naphthalene	N	1790	-	0.50	< 0.50	< 0.50
4-Chloroaniline	N	1790		0.50	< 0.50	< 0.50
Hexachlorobutadiene	N	1790		0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790		0.50	< 0.50	< 0.50
2-Methylnaphthalene	N	1790		0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	1790		0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	N	1790		0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	N	1790		0.50	< 0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
Acenaphthylene	N	1790		0.50	< 0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	N	1790		0.50	< 0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Nitroaniline	N	1790	10	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790		0.50	< 0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Chei	mtest J	ob No.:	18-15148	18-15148
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	630538	630539
Order No.: 2543, GI				le Ref.:	BHC02	BHC07
		Clie		ple ID.:	W2	W2
				е Туре:		WATER
				oth (m):		1.15
				oth (m):		1.40
			Date Sa	ampled:	30-May-2018	30-May-2018
Determinand	Accred.	SOP	Units	LOD		
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Nitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030	< 0.030



Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
- > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk

Annex D

MARINE SAMPLING FACTUAL

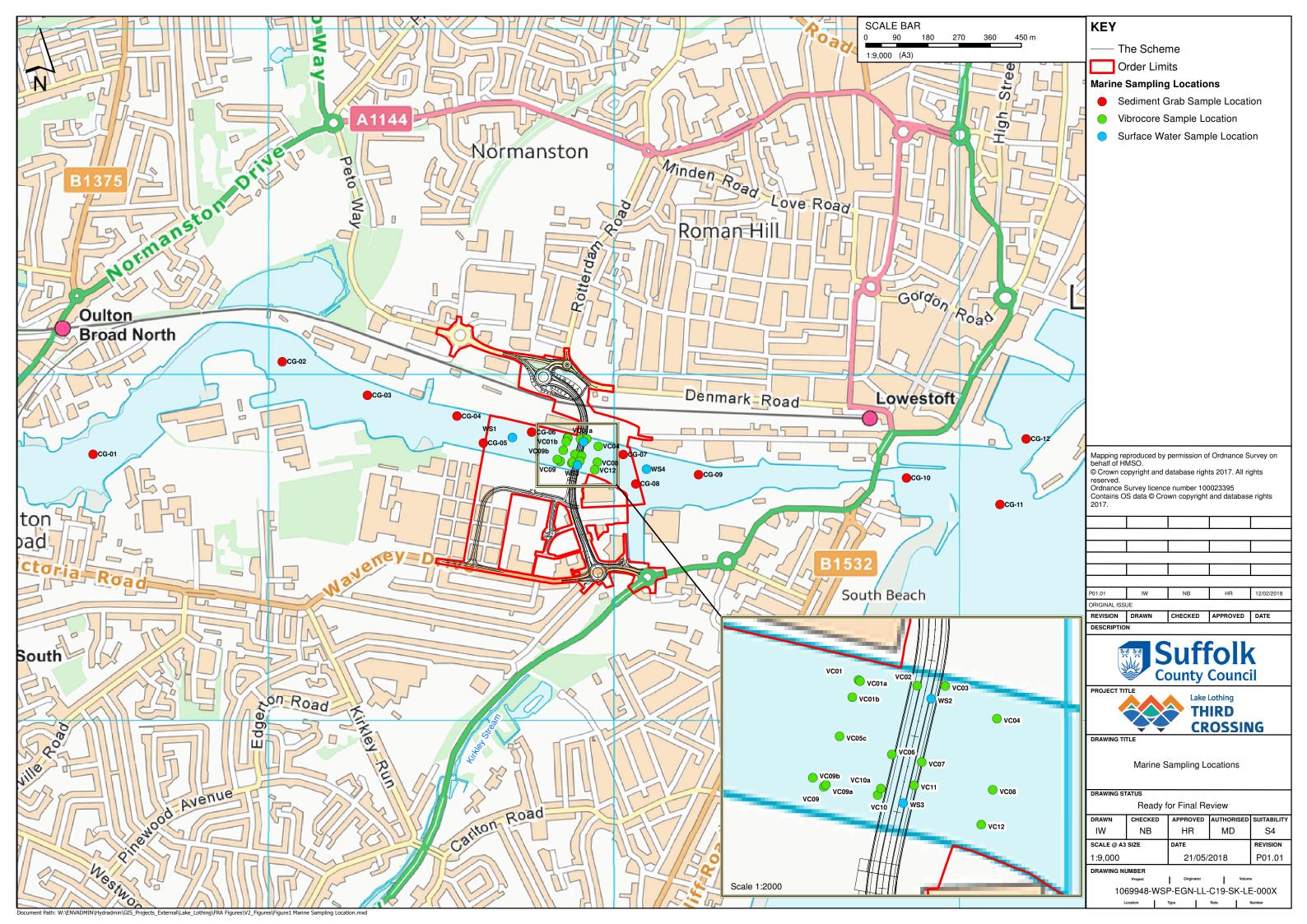


INFORMATION

Annex D.1

SAMPLING LOCATIONS





Drawn by:	DF
Date:	16/05/2018
Checked by:	DH



checked by:	ווט							
Contract No: 2016-259			Project Title:					
Vessel:	MV FlatHolm							
Client: WSP (UK) Ltd		WSP Lake Lothing Lowestoft VC & Grab Sampling						
Area: Lowestoft Harbour								
	TEST LOCATION DETAILS							
Coor	dinate Ref System:	British Grid (OSGB36)	Penetration(m):	1.65	Core Number			
Easting	(m)/Northing (m):	653861.3 E - N 292806.9	Recovery(m):	1.54				
	Water Depth(m):	3.1	KP Distance (m):		VC01B			
	Sampling Date:	20/04/18	Fix Number:	fix 21	VCUIB			
Vibratio	n Time on Seabed:	0 mins	Touchdown (local-time):	10:50:31UTC				
	Comments:	Spiking amps						
					4			

COLL DECORPTION	6011.100	SOIL DEPTH	SAMP	LES, FIELD	TESTS AN	ND COMMENTS
SOIL DESCRIPTION	SOIL LOG	(m)	Samples	test depth	Cu/Cr (kPa)	Comments
Soft dark grey SILT	$\times \times \times \times$			4		
	$\times \times \times$					
	XXXX					
Light brown fine to coarse SAND	222	0.70				
			0.80-1.20m			
			0.00-1.2011			
			1.24-1.54m			
		1.54				
	,					
Currently to max depth 5.50 m			<u> </u>	<u> </u>	<u> </u>	

Drawn by:	DF
Date:	19/05/2018
Checked by:	DH



checked by.	511						
		PROJI	ECT DETAILS				
Contract No:	2016-259		Project Title:				
Vessel:	MV FlatHolm						
Client:	WSP (UK) Ltd		WSP Lake Lothing Lo	westoft Vo	C & Grab Sampling		
Area: Lowestoft Harbour]				
	TEST LOCATION DETAILS						
Coor	rdinate Ref System:	British Grid (OSGB36)	Penetration(m):	4.20	Core Number		
Easting	(m)/Northing (m):	653903.0 E - N 292814.4	Recovery(m):	3.63			
	Water Depth(m):	3.2	KP Distance (m):		VC02		
	Sampling Date:	20/04/18	Fix Number:	fix 25	VCUZ		
Vibratio	on Time on Seabed:	2 mins	Touchdown (local-time):	14:44:47UTC			
	Comments:	Spiking amps, clay in base					

SOIL DESCRIPTION	SOIL LOG	SOIL DEPTH		LES, FIELD) TES <mark>TS</mark> AN	ID COMMENTS
	-5.2.230	(m)	Samples	test depth	Cu/Cr (kPa)	Comments
ery soft to soft SILT	$\times \times \times \times$					
	$\times \times \times$					
	$\times \times \times \times$					
	$\times \times \times$					
					•	
	XXXX		0.00.4.20			
	$\times \times \times \times$		0.80-1.20m			
	$\times \times \times \times$			· ·		
	$\times \times \times$					
	XXXX	1.50				
ight brown fine to coarse SAND						
			1.80-2.20m			
stiff to very stiff silty CLAY	10-12-14 (1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	2.70				
tall to very sain only SEXT						
			2.80-3.20m			
			3.20-3.63m			
		3.63				
		3.03				
	·					

Drawn by:	DF
Date:	19/05/2018
Checked by:	DH

Drawn by:	DF							
Date: Checked by:	19/05/2018 DH	OFFSHORE CORE LOG				CMS	3-Geotech	
спескей бу:	ы							0.00001
			PROJE	CT DETAIL	.S			
				Project Title:				
	MV FlatHolm							
	WSP (UK) Ltd			WSP Lake	Lothing Lo	westoft V	C & Grab S	Sampling
Area:	Lowestoft Harbour		TECTION	ATION DET	ALLC			
Coor	dinate Ref System:	British Grid (OSGB36)	TEST LUC		enetration(m):	4.00		Core Number
	(m)/Northing (m):	653921.0 E - N	292814 2		Recovery(m):			ore Namber
Lasting	Water Depth(m):		272011.2		Distance (m):	0.77		14000
	Sampling Date:	20/04/18			Fix Number:	fix 24		VC03
Vibratio	n Time on Seabed:			Touchdow	n (local-time):	13:28:25UTC		
	Comments:	Penetration flatline						
				COULDEDT!	SVIVD	IES EIEIF	TESTS AN	ID COMMENTS
	SOIL DESCRI	PTION	SOIL LOG	SOIL DEPTH (m)	Samples	test depth	Cu/Cr (kPa)	Comments
Soft dark grey	SILT		$\times \times \times \times$		Janipies	tost deptil	our or (N a)	Comments
			$(\times \times \times)$					
			$\times \times \times \times$					
			$(\times \times \times)$					
			$\times \times \times \times$					
			$\times \times \times$	Ī				
			$\times \times \times \times$					
			$\times \times \times$		0.80-1.20m			
			$\times \times \times \times$					
			$(\times \times \times)$					
			$\times \times \times \times$					
Link kanaan ali		CAND be a private fine to	6-12-6-14-6-1-6-6-	1.60				
medium below	2.70 m	e SAND becoming fine to						
					4 00 000			
					1.80-2.20m			
			4					
			A					
					2.80-3.20m			
					3.39-3.79m			
				3.79				

Drawn by:	DF				>		
Date:	16/05/2018	OFFCHOD	E CODE LOC		CMS-Geotech		
Checked by:	DH	OFFSHUR	OFFSHORE CORE LOG				
		PROJ	ECT DETAILS				
Contract No:	2016-259		Project Title:				
Vessel:	MV FlatHolm						
Client:	WSP (UK) Ltd		WSP Lake Lothing Lowestoft VC & Grab Sampling				
Area:	Lowestoft Harbour						
		TEST LOC	CATION DETAILS				
Coo	rdinate Ref System:	British Grid (OSGB36)	Penetration(m):	4.55	Core Number		
Fasting	(m)/Northing (m)	653954 3 F - N 292793 2	Recovery(m)	4.20			

KP Distance (m):

Fix Number: fix 15

Touchdown (local-time): 14:55:15UTC

VC04

Water Depth(m): 3.0

19/04/18

Comments: Flatline penetration

Sampling Date:

Vibration Time on Seabed: 1 mins

SOIL DESCRIPTION	SOIL LOG	SOIL DEPTH (m)	SAMP Samples	test depth	Cu/Cr (kPa)	D COMMENTS Comments
LT - sandy silt	$\times \times \times \times$		Samples	test depth	Cu/Ci (Kra)	Comments
	*					
ght grey slightly silty fine to medium SAND coursing down to edium to coarse SAND		0.90	0.80-1.20m			
	* * * * *					
	* * * * * *		, in the second			
	× × × × ×		1.80-2.20m			
	× × ×					
	*					
ght grey slightly clayey SILT	$\times \times $	3.00	2.80-3.20m			
	$\times \times $					
	$\times \times $	4.00	3.60-4.00m			

Drawn by:	DF
Date:	16/05/2018
Checked by:	DH



onconca by:							
		PROJI	ECT DETAILS				
Contract No:	2016-259		Project Title:				
Vessel:	MV FlatHolm						
Client:	t: WSP (UK) Ltd		WSP Lake Lothing Lowestoft VC & Grab Sampling				
Area:	Lowestoft Harbour		7				
TEST LOCATION DETAILS							
Coor	dinate Ref System:	British Grid (OSGB36)	Penetration(m):	3.70	Core Number		
Easting	(m)/Northing (m):	653853.1 E - N 292781.8	Recovery(m):	2.93			
	Water Depth(m):	4.4	KP Distance (m):		VC05C		
	Sampling Date: 19/04/18		Fix Number: fix 14		VCUSC		
Vibratio	on Time on Seabed:	2 mins	Touchdown (local-time):	13:50:52UTC			
	Comments:	Loss of position					

SOIL DESCRIPTION	SOIL LOG	SOIL DEPTH	SAMP			ID COMMENTS
ack soft clayey SILT	SAVANT ALVANIA	(m)	Samples	test depth	Cu/Cr (kPa)	Comments
aun sun dayey SILI						
					•	
			0.80-1.20m			
Grey very silty fine SAND. Gravelly at base		1.50				
orey very silty fine GAIND. Gravelly at base						
	×					
	\X\(\lambda\)					
	\times $^{\wedge}$ \times		1.80-2.20m			
/ery dense light grey SILT	7×101×30	2.15				
rely delise light grey SILT	$\times \times \times \times$					
	$\times \times \times$					
	$\times \times \times \times$					
	$\times \times \times$					
		2.80	2.53-2.93m			
Brownish grey silty fine to medium SAND	LXX XXX	2.93				

Drawn by:	
Date:	19/05/2018
Checked by:	DH



oneoked by.							
Contract No:	2016-259		Project Title:				
Vessel:	MV FlatHolm						
Client:	Client: WSP (UK) Ltd		WSP Lake Lothing Lowestoft VC & Grab Sampling				
Area:	Lowestoft Harbour		7				
TEST LOCATION DETAILS							
Coor	dinate Ref System:	British Grid (OSGB36)	Penetration(m):	2.76	Core Number		
Easting	(m)/Northing (m):	653886.7 E - N 292770.1	Recovery(m):	2.46			
	Water Depth(m):	3.5	KP Distance (m):		VC06		
	Sampling Date: 20/04/18		Fix Number:	fix 16	VCOB		
Vibration Time on Seabed: 2 mins		Touchdown (local-time):	07:31:03UTC				
	Comments:	Penetration flatline		-			

		SOIL DEPTH	SAMP	LES, FIELD	TESTS AN	ID COMMENTS
SOIL DESCRIPTION	SOIL LOG	(m)	Samples	test depth	Cu/Cr (kPa)	Comments
ft to very soft grey SILT	× × × × × × × × × × × × × × × × × × ×	V-0	0.80-1.20m	test deptn	CU/CI (KPa)	Comments
ht brown silty medium to coarse SAND ose very sandy fine to coarse GRAVEL		1.40				
ht brown fine to medium SAND		2.20	2.00-2.46m			

Drawn by:	DF
Date:	19/05/2018
Checked by:	DH



		PROJI	ECT DETAILS				
Contract No:	2016-259		Project Title:				
Vessel:	MV FlatHolm						
Client:	WSP (UK) Ltd		WSP Lake Lothing Lowestoft VC & Grab Sampling				
Area:	Lowestoft Harbour]				
		TEST LOC	ATION DETAILS				
Coor	dinate Ref System:	British Grid (OSGB36)	Penetration(m):	2.50	Core Number		
Easting	(m)/Northing (m):	653905.9 E - N 292765.3	Recovery(m):	2.00			
	Water Depth(m):	1.4	KP Distance (m):		VC07		
	Sampling Date: 20/04/18		Fix Number:	fix 27	VCO7		
Vibration Time on Seabed: 2 mins		Touchdown (local-time):					
	Comments:	Loss of position					

					4	
SOIL DESCRIPTION	SOIL LOG	SOIL DEPTH (m)	SAMP			ID COMMENTS
Soft dark grey sandy SILT	esteriore.	(in)	Samples	test depth	Cu/Cr (kPa)	Comments
Soft dark grey saildy SIET	$\times \times \times \times$					
	$(\times \times \times \times)$					
ight brown slightly silty fine to coarse SAND with occasional	$\times \times \times \times$	0.40				
gravel						
			0.80-1.20m			
				•		
			1.60-2.00m			
	1 - 1 - 1 - 1 - 1	2.00				
		×				
	· ·					
			,			
· ·						
	1					

Drawn by:	DF						
Date:	19/05/2018	OFFCHOR	E CORE LOG		0140		
Checked by:	DH	UFF5HUR	CMS-Geof				
		PROJ	ECT DETAILS				
Contract No:	2016-259		Project Title:				
Vessel:	MV FlatHolm						
Client:	WSP (UK) Ltd		WSP Lake Lothing Lowestoft VC & Grab Sampling				
Area:	Lowestoft Harbour						
		TEST LOC	CATION DETAILS				
Coor	dinate Ref System:	British Grid (OSGB36)	Penetration(m):	2.05	Core Number		
Easting	(m)/Northing (m):	653951.6 E - N 292747.4	Recovery(m):	1.45			
	Water Depth(m): 3.6		KP Distance (m):		VC08		
	Sampling Date: 20/04/18		Fix Number: fix 26				
Vibratio	Vibration Time on Seabed: 1 mins		Touchdown (local-time):	16:04:34UTC			
	Comments:	Loss of position					

			6117	. FO E:=: =	TEO-0 55	ID 00141111111111111111111111111111111111
SOIL DESCRIPTION	SOIL LOG	SOIL DEPTH (m)	SAMP) rests an	ID COMMENTS
Soft dark grey SILT		(III)	Samples	test depth	Cu/Cr (kPa)	Comments
Soft dark grey SIL1	$\times \times \times \times$					
	$\times \times \times$					
	$\times \times \times \times$					
	$\times \times \times$					
Light brown slightly silty fine to medium SAND	CANAL VARIA	0.60				
Light blown dignity dity fine to modium of the					•	
			0.60-1.00m			
			1.00-1.45m	·		
		1.45				
	•					
urrently₀to₃max depth 5.50 m		L	<u> </u>	l .	I	

Drawn by: DF Date: 16/05/2018	0.0	- CCLIODI	E CODE I	100		0)46	Ocatook
Checked by: DH) Or	OFFSHORE CORE LOG					S-Geotech
		PROJE	ECT DETAIL	S			
Contract No: 2016-259			Project Title:				
Vessel: MV FlatHolm							
Client: WSP (UK) Ltd			WSP Lake	Lothing Lo	owestoft V	C & Grab S	ampling
Area: Lowestoft Harbour							
0 " 1 D CO 1	In (000000)	TEST LOC	ATION DET		I		
Coordinate Ref System:	· · ·	202755		enetration(m):		C	ore Number
Easting (m)/Northing (m): Water Depth(m):	653835.9 E - N	292755.2		Recovery(m): Distance (m):	1.66	-	
Sampling Date:			KP	Fix Number:	fix 13	١ ١	/C09B
Vibration Time on Seabed:			Touchdow	n (local-time):			
	Loss of position		. Sacraswi	(1004. 11110).	.25. 10010	1	
						4	
	T		SOIL DEPTH	SAMP	LES. FIELD	TESTS AN	ID COMMENTS
SOIL DESCRI	PTION	SOIL LOG	(m)	Samples	test depth	Cu/Cr (kPa)	Comments
Light brown clayey silty SAND			1.20	0.80-1.20m			
			1.66	1.26-1.66m			

Drawn by:	DF
Date:	19/05/2018
Checked by:	DH



oncoked by.					
		PROJ	ECT DETAILS		
Contract No:	2016-259		Project Title:		
Vessel:	MV FlatHolm				
Client:	WSP (UK) Ltd		WSP Lake Lothing Lo	westoft Vo	C & Grab Sampling
Area:	Lowestoft Harbour				
		TEST LO	CATION DETAILS		
Coor	dinate Ref System:	British Grid (OSGB36)	Penetration(m):	3.10	Core Number
Easting	(m)/Northing (m):	653879.7 E - N 292748.1	Recovery(m):	2.85	
	Water Depth(m):	3.8	KP Distance (m):		VC10A
	Sampling Date:	20/04/18	Fix Number:	fix 18	VCTOA
Vibratio	n Time on Seabed:	1 mins	Touchdown (local-time):	08:24:58UTC	
	Comments:	Flatline penetration			

ight brown fine to medium SAND 1.50 2.20m 2.85 2.46-2.86m	SOIL DESCRIPTION	SOIL LOG	SOIL DEPTH			TES <mark>TS</mark> AN	ID COMMENTS
1.50 1.80-2.20m 1.80-2.20m 2.45-2.85m		33.2 233	(m)	Samples	test depth	Cu/Cr (kPa)	Comments
ight brown fine to medium SAND 1.50 1.80-2.20m 2.45-2.85m	Soft dark grey SILT	$\times \times \times \times$					
ight brown fine to medium SAND 1.50 1.80-2.20m 2.45-2.85m		$\times \times \times$					
ight brown fine to medium SAND 1.50 1.80-2.20m 2.45-2.85m		$\times \times \times \times$					
ight brown fine to medium SAND 1.50 1.80-2.20m 2.45-2.85m		$\times \times \times$					
ight brown fine to medium SAND 1.50 1.80-2.20m 2.45-2.85m		$\times \times \times \times$					
ight brown fine to medium SAND 1.50 1.80-2.20m 2.45-2.85m		$\times \times \times$					
ight brown fine to medium SAND 1.50 1.80-2.20m 2.45-2.85m		VVVV					
ight brown fine to medium SAND 1.50 1.80-2.20m 2.45-2.85m				0.80-1.20m			
1.80-2.20m							
1.80-2.20m		\times \times \times					
1.80-2.20m		$\times \times \times$					
1.80-2.20m	Light brown fine to medium SAND	× × × ×	1.50				
2.45-2.85m							
2.45-2.85m							
2.45-2.85m							
[Add: No. 2]				1.80-2.20m			
[Add: No. 2]							
[Add: No. 2]							
[Add: No. 2]							
[Add: No. 2]							
2.85				2.45-2.85m			
			2.85				

Drawn by:	DF
Date:	19/05/2018
Checked by:	DH



checked by.			Penetration(m): 3.00 Core Number							
		PROJ	ECT DETAILS							
Contract No:	2016-259		Project Title:							
Vessel:	MV FlatHolm									
Client:	WSP (UK) Ltd		WSP Lake Lothing Lo	owestoft V	C & Grab Sampling					
Area:	Lowestoft Harbour									
TEST LOCATION DETAILS										
Coor	dinate Ref System:	British Grid (OSGB36)	Penetration(m):	3.00	Core Number					
Easting	(m)/Northing (m):	653901.1 E - N 292750.3	Recovery(m):	2.50						
	Water Depth(m):		KP Distance (m):		VC11					
	Sampling Date:	20/04/18	Fix Number:	fix 22	VCTT					
Vibratio	on Time on Seabed:	2 mins	Touchdown (local-time):	11:26:43UTC						
	Comments:	Penetration flatline								

Drawn by:	DF
Date:	19/05/2018
Checked by:	DH



		PROJ	ECT DETAILS							
Contract No:	2016-259		Project Title:							
Vessel:	MV FlatHolm									
Client:	WSP (UK) Ltd		WSP Lake Lothing Lo	westoft VO	C & Grab Sampling					
Area:	Lowestoft Harbour									
TEST LOCATION DETAILS										
Coor	dinate Ref System:	British Grid (OSGB36)	Penetration(m):	3.75	Core Number					
Easting	(m)/Northing (m):	653944.2 E - N 292725.1	Recovery(m):	3.30						
	Water Depth(m):		KP Distance (m):		VC12A					
	Sampling Date:	20/04/18	Fix Number:	fix 23	VCIZA					
Vibratio	n Time on Seabed:	1 mins	Touchdown (local-time):	12:28:55UTC						
	Vibration Time on Seabed: 1 mins Comments: Loss of position		<u> </u>	_						

SOIL DESCRIPTION	SOIL LOG	SOIL DEPTH		AMPLES, FIELD TESTS AND COMMENTS						
	3312 230	(m)	Samples	test depth	Cu/Cr (kPa)	Comments				
Soft dark grey slightly sandy SILT	$\times \times \times \times$									
	$\times \times \times$									
	$\times \times \times \times$									
	\times \times \times									
	$\times \times \times \times$		0.00.4.00=							
	$(\times \times \times)$		0.80-1.20m							
	$\times \times \times \times$									
ight brown slightly silty fine to medium SAND	MAN THE STATE OF T	1.30								
			1.80-2.20m							
			1.00-2.20111							
	No. of the last of									
			2.80-3.30m							
		3.30								
		3.30								
urrently to max depth 5.50 m										

Annex D.2

CHEMICAL TEST DATA





Unit 7-8 Hawarden Business Park Manor Road (off Manor Lane) Hawarden Deeside CH5 3US

> Tel: (01244) 528700 Fax: (01244) 528701

email: hawardencustomerservices@alsglobal.com

Website: www.alsenvironmental.co.uk

WSP UK Limited 3rd Floor Station House Mercury Court Titheburn Street Liverpool L2 2QP

Attention: Neil Balderstone

CERTIFICATE OF ANALYSIS

 Date:
 02 May 2018

 Customer:
 H_MOUCH_LIV

 Sample Delivery Group (SDG):
 180412-80

 Your Reference:
 62240712

 Location:
 Lowestoft

 Report No:
 454516

This report has been revised and directly supersedes 452622 in its entirety.

We received 12 samples on Thursday April 12, 2018 and 12 of these samples were scheduled for analysis which was completed on Wednesday May 02, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan
Operations Manager











CERTIFICATE OF ANALYSIS

 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
17353781	CG 01		0.00 - 0.16	09/04/2018
17353782	CG 02		0.00 - 0.16	09/04/2018
17353791	CG 03		0.00 - 0.16	09/04/2018
17353783	CG 04		0.00 - 0.16	09/04/2018
17353790	CG 05		0.00 - 0.16	09/04/2018
17353780	CG 06		0.00 - 0.16	09/04/2018
17353788	CG 08		0.00 - 0.16	09/04/2018
17353792	CG 09		0.00 - 0.16	09/04/2018
17353786	CG 10		0.00 - 0.16	10/04/2018
17353784	CG 11		0.00 - 0.16	10/04/2018
17353785	CG 12		0.00 - 0.16	10/04/2018
17353787	CG 07B		0.00 - 0.16	09/04/2018

Maximum Sample/Coolbox Temperature (°C):

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of $(5\pm3)^{\circ}C$.

4.4

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of $(5\pm3)^{\circ}$ C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

ALS

SDG: 62240712 180412-80 Client Reference: Report Number: 454516 Location: Lowestoft Order Number: 62240712 Superseded Report: 452622 Results Legend 17353791 17353783 17353780 17353788 7353781 7353782 7353790 Lab Sample No(s) X Test No Determination Possible Customer CG 04 CG 01 CG 02 CG 03 CG 05 CG 06 CG 08 Sample Reference Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 0.00-0.00 PR - Process Water 0.00-0.00-0.00-0.00 0.00 - 0.16 SA - Saline Water Depth (m) - 0.16 - 0.16 - 0.16 - 0.16 - 0.16 TE - Trade Effluent - 0.16 TS - Treated Sewage US - Untreated Sewage RE - Recreational Water 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB 250g Amber Jar (ALE210) 1kg TUB 250g Amber Jar (ALE210) 1kg TUB 250g Amber J (ALE210) 250g Amber Jar (ALE210) 250g Amber Jar DW - Drinking Water Non-regulatory (ALE210) 1kg TUB UNL - Unspecified Liquid 1kg TUB 1kg TUB 1kg SL - Sludge Container **TUB** G - Gas OTH - Other Jar Sample Type S S S S S S S S S S S S S S S S S S S EPH CWG (Aliphatic) GC (S) All NDPs: 0 Tests: 12 X X X X Х Χ EPH CWG (Aromatic) GC (S) All NDPs: 0 Tests: 12 Χ Χ Χ Χ Χ X GRO by GC-FID (S) All NDPs: 0 Tests: 12 Х Х Х Х Х Χ All Metals in solid samples by OES NDPs: 0 Tests: 12 X Х X Х X Х OC OP Pesticides and Triazine Herb All NDPs: 0 Tests: 12 Χ Χ Χ Χ Χ Χ Organotins on soils* All NDPs: 0 Tests: 12 Х Х Х X Χ Χ PAH by GCMS All NDPs: 0 Tests: 12 Χ Χ Χ Х Χ Χ Passing Through >63µm sieve All NDPs: 0 Tests: 12 Χ Х Х Х Χ Х Х PCBs by GCMS All NDPs: 0 Tests: 12 X X X Χ X Χ Sample description All NDPs: 0 Tests: 11 Х X Х Х X X TPH CWG GC (S) All NDPs: 0 Tests: 12 X Χ X X X X

	17353788			17353792			17353786			17353784			17353785			17353787
	CG 08			CG 09			CG 10			CG 11			CG 12			CG 07B
	0.00 - 0.16			0.00 - 0.16			0.00 - 0.16			0.00 - 0.16			0.00 - 0.16			0.00 - 0.16
250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
ဟ	ဟ	တ	S	S	S	S	S	S	S	S	S	တ	တ	S	S	S
X	X		X	X		X	X		X	X		X	X		X	X
X			X			X			X			X			X	
X			x			X			X			X			X	
X			X			X			X			X			X	
Х		X	X		X	Х		X	X		X	Х		X	Х	
X			X			X			X			X			X	



 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mn	m	edium	0.1mn	n - 2mm	coars	se 2m	m - 10mm	very coar	se	>10mm
Lab Sample	No(s) Custo	omer Sample R	lef. Depth (1	n)	Co	lour	Descript	tion	Inclusion	ıs In	clusions 2		
17353781	I	CG 01	0.00 - 0.	6	Dark	Brown	Silt Loa	ım	None		None		
17353782	2	CG 02	0.00 - 0.	6	В	lack	Silt Loa	ım	None		None		
17353791	ı	CG 03	0.00 - 0.	6	(Grey	N/A		None		None		
17353783	3	CG 04	0.00 - 0.	6	Dark	Brown	Sandy Silt	Loam	Stones		Vegetation		
17353790)	CG 05	0.00 - 0.	6	Dark	Brown	Sandy Silt	Loam	Stones		Vegetation		
17353780)	CG 06	0.00 - 0.	6	Dark	Brown	Silt Loa	ım	Stones		None		
17353788	3	CG 08	0.00 - 0.4	6	Dark	Brown	Silt Loa	ım	None		None		
17353792	2	CG 09	0.00 - 0.	6	Dark	Brown	Sand		None		None		
17353786	6	CG 10	0.00 - 0.	6	Dark	Brown	N/A		Vegetation	1	None		
17353784	1	CG 11	0.00 - 0.	6	Dark	Brown	Sandy Silt	Loam	Vegetation	1	Stones		
17353785	5	CG 12	0.00 - 0.4	6	Dark	Brown	Silty Clay I	Loam	Stones		Vegetation		
17353787	7	CG 07B	0.00 - 0.	6	Dark	Brown	Silt Loa	ım	Stones		None		

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

Results Legend # ISO17025 accredited. M mCERTS accredited		Customer Sample Ref.	CG 01		CG 02		CG 03	CG 04		CG 05	CG 06	
M mCERTs accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. * Subcontracted test. * % recovery of the surrogate stand check the efficiency of the method results of individual compounds w samples aren't corrected for the ref. (F) Tigger breach confirmed 1-5&+\$@ Sample deviation (see appendix)	f. The vithin ecovery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.16 Soil/Solid (S) 09/04/2018 13:00:00 12/04/2018 180412-80 17353781		0.00 - 0.16 Soil/Solid (S) 09/04/2018 15:18:00 12/04/2018 180412-80 17353782		0.00 - 0.16 Soil/Solid (S) 09/04/2018 15:30:00 12/04/2018 180412-80 17353791	0.00 - 0.16 Soil/Solid (S) 09/04/2018 15:43:00 12/04/2018 180412-80 17353783		0.00 - 0.16 Soil/Solid (S) 09/04/2018 15:55:00 12/04/2018 180412-80 17353790	0.00 - 0.16 Soil/Solid (S) 09/04/2018 16:08:00 12/04/2018 180412-80 17353780	
Component Moisture Content Ratio (% of as	LOD/Units %	Method PM024	63		47		58	47		57	61	
received sample) PCB congener 28	<3 µg/kg	TM168	<3	+	<3		<3	<3		<3	<3	
PCB congener 52	<3 µg/kg	TM168	<3	M	<3	M	<3	<3	M	<3	<3	M
PCB congener 101	<3 µg/kg	TM168	<3	M	<3	M	<3	<3	M	<3	<3	M
PCB congener 118	<3 µg/kg	TM168	3.16	M	<3	M	<3	<3	M	<3	<3	M
PCB congener 138	<3 µg/kg	TM168	3.32	M	<3	M	<3	<3	M	<3	<3	M
PCB congener 153	<3 µg/kg	TM168	<3	М	<3	M	<3	<3	M	<3	<3	M
PCB congener 180	<3 μg/kg	TM168	<3	М	<3	M	<3	<3	M	<3 M	<3	M
Sum of detected PCB 7	<21 µg/kg	TM168	<21	М	<21	M	<21	<21	M	<21	<21	M
PCB congener 81	<3 µg/kg	TM168	<3		<3		<3	<3	.,	<3	<3	
PCB congener 77	<3 µg/kg	TM168	<3	М	<3	M	<3	<3	M	<3	<3	M
PCB congener 123	<3 µg/kg	TM168	<3	М	<3	M	<3	<3	M	<3	<3	M
PCB congener 114	<3 µg/kg	TM168	<3	М	<3	M	<3	<3	M	<3	<3	M
PCB congener 105	<3 µg/kg	TM168	<3	М	<3	M	<3	<3	M	<3	<3	M
PCB congener 126	<3 µg/kg	TM168	<3	М	<3	M	<3	<3	M	<3	<3	M
PCB congener 167	<3 µg/kg	TM168	<3	М	<3	M	<3	<3	M	<3 M	<3	M
PCB congener 156	<3 µg/kg	TM168	<3	M	<3	M M	<3	<3	M M	<3 M	<3	M M
PCB congener 157	<3 µg/kg	TM168	<3	М	<3	M	<3	<3	M	<3 M	<3	M
PCB congener 169	<3 µg/kg	TM168	<3	М	<3	M	<3	<3	M	<3 M	<3	M
PCB congener 189	<3 µg/kg	TM168	<3	М	<3	M	<3	<3	М	<3 M	<3	М
Sum of detected WHO 12 PCBs	<36 µg/kg	TM168	<36	IVI	<36	IVI	<36	<36	IVI	<36	<36	IVI
Arsenic	<0.6 mg/kg	TM181	19.1	М	18.4	М	19.8	19.8	М	21.2 M	24.2	М
Boron	<0.7 mg/kg	TM181	40.3	#	34.6	#	41.8	38.4	#	41.8	44.8	#
Cadmium	<0.02 mg/kg	g TM181	0.392	M	<0.02	M	0.297	0.313	M	<0.02	0.255	M
Chromium	<0.9 mg/kg	TM181	26.2	М	25.8	M	27.2	24.3	М	23.4 M	27.3	М
Copper	<1.4 mg/kg	TM181	131	М	63.4	М	35	23.6	М	21.3 M	21.3	М
Lead	<0.7 mg/kg	TM181	65.8	М	47.8	M	37.4	33.2	М	32.6 M	36.5	М
Mercury	<0.14 mg/kg	TM181	<0.14	М	<0.14	М	<0.14	<0.14	M	<0.14 M	<0.14	М
Nickel	<0.2 mg/kg	TM181	24.7	М	23.6	M	25.8	24.1	M	24 M	27.8	М
Selenium	<1 mg/kg	TM181	<1	#	<1	#	<1	<1	#	<1 #	<1	#
Zinc	<1.9 mg/kg	TM181	212	M M	161	M	124	100	m M	101 M	108	
				141		ı¥I			IVI	IVI		IVI



 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

Results Legend	C	Customer Sample Ref.	CG 08		CG 09		CG 10	CG 11	CG 12	T	CG 07B	
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate stand- check the efficiency of the methor results of individual compounds v samples aren't corrected for the re (F) Trigger breach confirmed	d. The within	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s)	0.00 - 0.16 Soil/Solid (S) 09/04/2018 16:21:00 12/04/2018 180412-80 17353788		0.00 - 0.16 Soil/Solid (S) 09/04/2018 16:50:00 12/04/2018 180412-80 17353792		0.00 - 0.16 Soil/Solid (S) 10/04/2018 14:10:00 12/04/2018 180412-80 17353786	0.00 - 0.16 Soil/Solid (S) 10/04/2018 14:20:00 12/04/2018 180412-80 17353784	0.00 - 0.16 Soil/Solid (S) 10/04/2018 14-33:00 12/04/2018 180412-80 17353785		0.00 - 0.16 Soii/Solid (S) 09/04/2018 16:39:00 12/04/2018 180412-80 17353787	
1-5&+§@ Sample deviation (see appendix) Component	LOD/Units	AGS Reference Method										
Moisture Content Ratio (% of as received sample)	%	PM024	52		55		53	36	48	Ť	47	
PCB congener 28	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M	<3	м	<3	М
PCB congener 52	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M	<3	М	<3	М
PCB congener 101	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M	<3	М	<3	М
PCB congener 118	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M	<3	М	<3	М
PCB congener 138	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M		М	<3	М
PCB congener 153	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M		М	<3	M
PCB congener 180	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M		М	<3	М
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168	<21		<21		<21	<21	<21	1	<21	
PCB congener 81	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M		М	<3	M
PCB congener 77	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M		М	<3	М
PCB congener 123	<3 µg/kg	TM168	<3	М	<3 <3	М	<3 <3	<3 M	<3 <3	М	<3 <	М
PCB congener 114	<3 µg/kg		<3	М	<3	М	<3	<3 M	-	М	<3	M
PCB congener 105 PCB congener 126	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M		М	<3	M
PCB congener 167	<3 μg/kg <3 μg/kg	TM168	<3	M	<3	М	<3	<3 M		М	<3	M
PCB congener 156	<3 μg/kg	TM168	<3	М	<3	М	<3	<3 M		М	<3	М
PCB congener 157	<3 μg/kg	TM168	<3	М	<3	М	<3	- M		М	<3	M
PCB congener 169	<3 μg/kg	TM168	<3	М	<3	М	<3	- M	-	М	<3	М
PCB congener 189	<3 μg/kg	TM168	<3	М	<3	М	<3	- M	-	М	<3	М
Sum of detected WHO 12 PCBs	<36 µg/kg	TM168	<36	M	<36	М	<36	M <36		М	<36	M
Arsenic	<0.6 mg/kg	TM181	18.6		20.6		18.7	17.5	19.5	+	19.6	
Boron	<0.7 mg/kg		27.2	М	45	М	44.5	M 32		М	38.8	M
Cadmium	<0.02 mg/kg		0.311	#	0.258	#	0.236	0.294		#	0.286	#
Chromium	<0.9 mg/kg	TM181	24.7	M	25.4	М	20.3	14.8		М	22.5	M
Copper	<1.4 mg/kg	TM181	21.7	M	18.6	М	13.9	12.7		М	20.7	M
Lead	<0.7 mg/kg	TM181	37.2	М	31.4	M	25.1	21.4		М	32.3	M
Mercury	<0.14 mg/kg	TM181	<0.14	M	<0.14	М	<0.14	<0.14	<0.14	М	<0.14	M
Nickel	<0.2 mg/kg	TM181	25.3	M	25.4	M	20.7	16.5	22.3	M	23.7	M
Selenium	<1 mg/kg	TM181	<1	M	<1	M	<1	<1 M	<1	M	<1	M
Zinc	<1.9 mg/kg	TM181	108	#	94	#	72.5	60.4	85.1	#	93.9	#
				M		М		M		М		M

62240712 62240712 454516 452622 SDG: Report Number: Superseded Report: 180412-80 Client Reference: Location: Lowestoft Order Number:

OC, OP Pesticides and Results Legend # ISO17025 accredited.		ustomer Sample Ref.	CG 01	CG 02	CG 03	CG 04	CG 05	CG 06
M mcERTS accredited. aq Aqueous / settled sample. diss.filt blosvled / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * Yercovery of the surrogate stands check the efficiency of the method results of individual compounds w	. The	Depth (m) Sample Type Date Sampled Sample Time Date Received	0.00 - 0.16 Soil/Solid (S) 09/04/2018 13:00:00 12/04/2018	0.00 - 0.16 Soil/Solid (S) 09/04/2018 15:18:00 12/04/2018	0.00 - 0.16 Soil/Solid (S) 09/04/2018 15:30:00 12/04/2018	0.00 - 0.16 Soil/Solid (S) 09/04/2018 15:43:00 12/04/2018	0.00 - 0.16 Soil/Solid (S) 09/04/2018 15:55:00 12/04/2018	0.00 - 0.16 Soil/Solid (S) 09/04/2018 16:08:00 12/04/2018
samples aren't corrected for the re (F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix) Component		SDG Ref Lab Sample No.(s) AGS Reference Method	180412-80 17353781	180412-80 17353782	180412-80 17353791	180412-80 17353783	180412-80 17353790	180412-80 17353780
Tecnazene	<50 μg/kg	TM073	<500	<500	<500	<500	<500	<500
Hexachlorobenzene	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Trifluralin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Phorate	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Quintozene (PCNB)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Triallate	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Disulfoton	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Heptachlor	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Aldrin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Chlorothalonil	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
⁻ elodrin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
eta-Hexachlorocyclohexane HCH)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
sodrin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Heptachlor epoxide	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Triadimefon	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Pendimethalin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
p,p-DDE	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Endosulphan I	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Trans-chlordane	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
cis-Chlordane	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
p,p-DDE	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Dieldrin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
o,p'-DDD (TDE)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Endrin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
p-DDT	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
p,p-TDE (DDD)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Endosulphan II	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
o,p-DDT	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
p,p-Methoxychlor	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
p,p-Methoxychlor	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Endosulphan sulphate	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500

CERTIFICATE OF ANALYSIS



 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

OC, OP Pesticides and Triazine Herb

OC, OP Pesticides and	Triazine	OC, OP Pesticides and Triazine Herb								
Results Legend		Customer Sample Ref.	CG 01	CG 02	CG 03	CG 04	CG 05	CG 06		
# ISO17025 accredited. M mCERTS accredited.										
aq Aqueous / settled sample.		Depth (m)	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16		
diss.filt Dissolved / filtered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	0.00 - 0.16 Soil/Solid (S)		
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Date Sampled	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018		
** % recovery of the surrogate standa	ard to	Sample Time	13:00:00	15:18:00	15:30:00	15:43:00	15:55:00	16:08:00		
check the efficiency of the method	. The	Date Received	12/04/2018	12/04/2018	12/04/2018	12/04/2018	12/04/2018	12/04/2018		
results of individual compounds w		SDG Ref	180412-80	180412-80	180412-80	180412-80	180412-80	180412-80		
samples aren't corrected for the re (F) Trigger breach confirmed	covery	Lab Sample No.(s)	17353781	17353782	17353791	17353783	17353790	17353780		
1-5&+§@ Sample deviation (see appendix)		AGS Reference								
Component	LOD/Unit	ts Method								
Permethrin I	<50 µg/k		<500	<500	<500	<500	<500	<500		
	""	J								
Permethrin II	<50 μg/k	(g TM073	<500	<500	<500	<500	<500	<500		

ALS

 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

OC, OP Pesticides and								
Results Legend # ISO17025 accredited.	С	ustomer Sample Ref.	CG 08	CG 09	CG 10	CG 11	CG 12	CG 07B
M mCERTS accredited. aq Aqueous / settled sample.								
diss.filt Dissolved / filtered sample.		Depth (m)	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16
		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
tot.unfilt Total / unfiltered sample.								
 * Subcontracted test. 		Date Sampled	09/04/2018	09/04/2018	10/04/2018	10/04/2018	10/04/2018	09/04/2018
** % recovery of the surrogate stand		Sample Time	16:21:00	16:50:00	14:10:00	14:20:00	14:33:00	16:39:00
check the efficiency of the metho	d. The	Date Received	12/04/2018	12/04/2018	12/04/2018	12/04/2018	12/04/2018	12/04/2018
results of individual compounds	within							
samples aren't corrected for the r		SDG Ref	180412-80	180412-80	180412-80	180412-80	180412-80	180412-80
(F) Trigger breach confirmed	,	Lab Sample No.(s)	17353788	17353792	17353786	17353784	17353785	17353787
1-5&+§@ Sample deviation (see appendix)		AGS Reference						
Component	LOD/Units	Method						
	1	1	.500	-500	-500	.500	.500	.500
Tecnazene	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Hexachlorobenzene	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Trifluralin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Phorate	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Quintozene (PCNB)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Triallate	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Disulfoton	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Heptachlor	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Aldrin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Chlorothalonil	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Telodrin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
beta-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Isodrin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Heptachlor epoxide	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Triadimefon	<50 μg/kg	TM073	<500	<500	<500	<500	<500	<500
Pendimethalin	<50 μg/kg	TM073	<500	<500	<500	<500	<500	<500
o,p-DDE Endosulphan I	<50 μg/kg	TM073	<500 <500	<500 <500	<500 <500	<500 <500	<500 <500	<500 <500
Trans-chlordane	<50 μg/kg	TM073	<500	<500	<500 <500	<500	<500	<500 <500
cis-Chlordane	<50 μg/kg	TM073	<500	<500 <500	<500 <500	<500	<500	<500 <500
p,p-DDE	<50 μg/kg	TM073	<500	<500	<500	<500	<500	<500
Dieldrin	<50 μg/kg	TM073	<500	<500	<500	<500	<500	<500
o,p'-DDD (TDE)	<50 μg/kg	TM073	<500	<500 <500	<500 <500	<500 <500	<500 <500	<500 <500
Endrin	<50 μg/kg	TM073	<500	<500	<500 <500	<500	<500	<500 <500
o,p-DDT	<50 μg/kg	TM073	<500	<500	<500	<500	<500	<500
p,p-TDE (DDD)	<50 μg/kg	TM073	<500	<500	<500	<500	<500	<500
Endosulphan II	<50 μg/kg	TM073	<500	<500	<500	<500	<500	<500
p,p-DDT	<50 μg/kg	TM073	<500	<500	<500	<500	<500	<500
o,p-Methoxychlor	<50 μg/kg	TM073	<500	<500	<500	<500	<500	<500
p,p-Methoxychlor	<50 μg/kg	TM073	<500	<500	<500	<500	<500	<500
Endosulphan sulphate	<50 μg/kg	TM073	<500	<500	<500	<500	<500	<500
E-12-24 02/05/2019								

CERTIFICATE OF ANALYSIS



 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

OC, OP Pesticides and Triazine Herb

OC, OP Pesticides and	Triazine	Herb						
Results Legend		Customer Sample Ref.	CG 08	CG 09	CG 10	CG 11	CG 12	CG 07B
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Sample Type Date Sampled	Soil/Solid (S) 09/04/2018	Soil/Solid (S) 09/04/2018	Soil/Solid (S) 10/04/2018	Soil/Solid (S) 10/04/2018	Soil/Solid (S) 10/04/2018	Soil/Solid (S) 09/04/2018
** % recovery of the surrogate stand	ard to	Sample Time	16:21:00	16:50:00	14:10:00	14:20:00	14:33:00	16:39:00
check the efficiency of the method	. The	Date Received	12/04/2018	12/04/2018	12/04/2018	12/04/2018	12/04/2018	12/04/2018
results of individual compounds w samples aren't corrected for the re		SDG Ref	180412-80	180412-80	180412-80	180412-80	180412-80	180412-80
(F) Trigger breach confirmed		Lab Sample No.(s)	17353788	17353792	17353786	17353784	17353785	17353787
1-5&+§@ Sample deviation (see appendix)	LOD/Uni	AGS Reference its Method						
Component Permethrin I	<50 μg/		<500	<500	<500	<500	<500	<500
Permethrin II					<500	<500	<500	
Permeunin II	<50 µg/	kg TWO75	<500	<500	<500	<500	<500	<500

CERTIFICATE OF ANALYSIS

ALS

 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

ALS) Economic								
Organotins on soils*								
Results Legend # ISO17025 accredited.	Cı	ustomer Sample Ref.	CG 01	CG 02	CG 03	CG 04	CG 05	CG 06
M mCERTS accredited.								
aq Aqueous / settled sample.		Depth (m)	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test.		Date Sampled	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018
** % recovery of the surrogate stand		Sample Time	13:00:00	15:18:00	15:30:00	15:43:00	15:55:00	16:08:00
check the efficiency of the method	. The	Date Received	12/04/2018	12/04/2018	12/04/2018	12/04/2018	12/04/2018	12/04/2018
results of individual compounds w samples aren't corrected for the re		SDG Ref	180412-80	180412-80	180412-80	180412-80	180412-80	180412-80
(F) Trigger breach confirmed	,	Lab Sample No.(s)	17353781	17353782	17353791	17353783	17353790	17353780
1-5&+§@ Sample deviation (see appendix)		AGS Reference						
Component	LOD/Units	Method						
Dibutyl Tin*	mg/kg	SUB	< 0.05	<0.04	<0.05	<0.04	<0.04	<0.05
Tributyl Tin*	mg/kg	SUB	0.07	0.07	<0.05	<0.04	<0.04	< 0.05
,	3 3							
T. 1 1T. 4		OUD	2.11	0.4	2.42	0.44	0.44	0.40
Triphenyl Tin*	mg/kg	SUB	<0.14	<0.1	<0.12	<0.11	<0.11	<0.12
Tetrabutyl Tin*	mg/kg	SUB	<0.05	<0.04	<0.05	<0.04	<0.04	<0.05
Monobutyl Tin*	mg/kg	SUB	<0.27	<0.21	<0.23	<0.22	<0.22	<0.23
				·	1			*
Mananhanyi Tin*	ma m //	CLID	>0 0E	20 DA	>0.0E	>0 04	>0 0.4	20 DE
Monophenyl Tin*	mg/kg	SUB	<0.05	<0.04	<0.05	<0.04	<0.04	<0.05
Diphenyl Tin*	mg/kg	SUB	<0.05	<0.04	<0.05	<0.04	<0.04	<0.05
	-							
	 							
	-							
	<u></u>			<u> </u>				
		\vdash						

CERTIFICATE OF ANALYSIS

454516 452622 Report Number: Superseded Report: SDG: 180412-80 Client Reference: 62240712 Lowestoft Order Number: 62240712 Location:

Organotins on soils*								
# ISO17025 accredited.	С	ustomer Sample Ref.	CG 08	CG 09	CG 10	CG 11	CG 12	CG 07B
M mCERTS accredited. aq Aqueous / settled sample. diss.filit Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate standa check the efficiency of the method. results of individual compounds wi samples aren't corrected for the rec (F) Tigger breach confirmed 1-58+§@ Sample deviation (see appendix)	. The ithin covery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.16 Soil/Solid (S) 09/04/2018 16:21:00 12/04/2018 180412-80 17353788	0.00 - 0.16 Soil/Soiid (S) 09/04/2018 16:50:00 12/04/2018 180412-80 17353792	0.00 - 0.16 Soil/Solid (S) 10/04/2018 14:10:00 12/04/2018 180412-80 17353786	0.00 - 0.16 Soil/Solid (S) 1004/2018 14:20:00 12/04/2018 180412-80 17353784	0.00 - 0.16 Soli/Solid (S) 10/04/2018 14:33:00 12/04/2018 180412-80 17353785	0.00 - 0.16 Soil/Solid (S) 09/04/2018 16:39:00 12/04/2018 180412-80 17353787
Component Dibutyl Tin*	LOD/Units mg/kg	Method SUB	<0.04	<0.05	<0.04	<0.02	<0.04	<0.04
Dibutyi Tili	ilig/kg	300	\0.0 4	10.00	V0.04	~0.02	\0.04	₹0.04
Tributyl Tin*	mg/kg	SUB	<0.04	<0.05	<0.04	<0.02	<0.04	<0.04
Triphenyl Tin*	mg/kg	SUB	<0.1	<0.11	<0.1	<0.05	<0.11	<0.1
Tetrabutyl Tin*	mg/kg	SUB	<0.04	<0.05	<0.04	<0.02	<0.04	<0.04
Monobutyl Tin*	mg/kg	SUB	<0.2	<0.23	<0.21	<0.15	<0.22	<0.2
Monophenyl Tin*	mg/kg	SUB	<0.04	<0.05	<0.04	<0.02	<0.04	<0.04
Diphenyl Tin*	mg/kg	SUB	<0.04	<0.05	<0.04	<0.02	<0.04	<0.04

454516 452622 SDG: Report Number: Superseded Report: 180412-80 Client Reference: 62240712 Lowestoft Order Number: 62240712 Location:

PAH by GCMS								
Results Legend		Customer Sample Ref.	CG 01	CG 02	CG 03	CG 04	CG 05	CG 06
# ISO17025 accredited. M mCERTS accredited.								
aq Aqueous / settled sample.		Depth (m)	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)					
* Subcontracted test.		Date Sampled	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018
** % recovery of the surrogate stands check the efficiency of the method		Sample Time	13:00:00	15:18:00	15:30:00	15:43:00	15:55:00	16:08:00
results of individual compounds w	rithin	Date Received SDG Ref	12/04/2018 180412-80	12/04/2018 180412-80	12/04/2018 180412-80	12/04/2018 180412-80	12/04/2018 180412-80	12/04/2018 180412-80
samples aren't corrected for the re (F) Trigger breach confirmed	covery	Lab Sample No.(s)	17353781	17353782	17353791	17353783	17353790	17353780
1-5&+§@ Sample deviation (see appendix)		AGS Reference						
Component	LOD/Units	Method						
Naphthalene-d8 % recovery**	%	TM218	100	104	73.8	91.7	99	104
Acenaphthene-d10 % recovery**	%	TM218	90.7	96.2	70.5	91.5	98.5	95.3
Phenanthrene-d10 % recovery**	%	TM218	92.4	96	70.3	90.9	98	93.3
Chrysene-d12 % recovery**	%	TM218	108	101	126	78.4	83.4	87.6
Perylene-d12 % recovery**	%	TM218	87.6	86.2	89.6	76.4	84	75.3
Naphthalene	<9 µg/kg	TM218	188 M	398 M	291 #	37.3 M	24.7 M	46.9 M
Acenaphthylene	<12 µg/kg	TM218	<60 M	71.2	<60 #	<12 M	<12 M	<12 M
Acenaphthene	<8 µg/kg	TM218	<40 M	319	430 #	45.7 M	<8 M	<8 M
Fluorene	<10 µg/kg	TM218	<50 M	237	170 #	23 M	<10 M	<10 M
Phenanthrene	<15 µg/kg	TM218	256 M	447	355 #	82.4 M	51.7	90.5
Anthracene	<16 µg/kg	TM218	<80	342	<80	32.7	<16	<16
Fluoranthene	<17 µg/kg	TM218	541	1230	1040	203	107	131
Pyrene	<15 µg/kg	TM218	680 M	5590	# 1510 #	208 M	92.4 M	110 M
Benz(a)anthracene	<14 µg/kg	TM218	232 M	348	303 #	70.7 M	34.1 M	47 M
Chrysene	<10 µg/kg	TM218	193 M	260	261 #	61.9 M	34.7 M	52.9 M
Benzo(b)fluoranthene	<15 µg/kg	TM218	430 M	1120	335 #	95.8 M	52.7 M	92.5 M
Benzo(k)fluoranthene	<14 µg/kg	TM218	222 M	408	213 #	35.5 M	<14 M	<14 M
Benzo(a)pyrene	<15 µg/kg	TM218	229 M	643	244 #	60.2 M	<15 M	38.8 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<90 M	224	<90 #	34.8 M	<18 M	<18 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<115 M	<46	<115 #	<23 M	<23 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<120 M	268	<120 #	48.8 M	<24 M	<24 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	2970	11900	5150	1040	397	609

CERTIFICATE OF ANALYSIS



SDG: Report Number: Superseded Report: 454516 452622 180412-80 Client Reference: 62240712 Lowestoft Order Number: 62240712 Location:

PAH by GCMS										
Results Legend	Cı	ustomer Sample Ref.	CG 08		CG 09		CG 10	CG 11	CG 12	CG 07B
# ISO17025 accredited. M mCERTS accredited.										
aq Aqueous / settled sample.		Depth (m)	0.00 - 0.16		0.00 - 0.16		0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test.		Date Sampled	09/04/2018		09/04/2018		10/04/2018	10/04/2018	10/04/2018	09/04/2018
** % recovery of the surrogate stands check the efficiency of the method		Sample Time Date Received	16:21:00 12/04/2018		16:50:00 12/04/2018		14:10:00 12/04/2018	14:20:00 12/04/2018	14:33:00 12/04/2018	16:39:00 12/04/2018
results of individual compounds w	vithin	SDG Ref	180412-80		180412-80		180412-80	180412-80	180412-80	180412-80
samples aren't corrected for the re (F) Trigger breach confirmed	covery	Lab Sample No.(s)	17353788		17353792		17353786	17353784	17353785	17353787
1-5&+§@ Sample deviation (see appendix)	1 1 2 2 11 11	AGS Reference								
Nonhthologo do 0/ recever **	LOD/Units	Method	03.5		04.2	\dashv	100	101	00.6	90.1
Naphthalene-d8 % recovery**	%	TM218	93.5		94.2		100	101	88.6	89.1
Acenaphthene-d10 %	%	TM218	85.8		94.1		93.8	94.1	87.3	89.5
recovery**				_		_				
Phenanthrene-d10 % recovery**	%	TM218	84.2		92.9		92	91.8	85.3	86.8
Chrysene-d12 % recovery**	%	TM218	80.7		74		87.8	88.8	81	80
Perylene-d12 % recovery**	%	TM218	70.6		76.2		77.3	80.7	87.9	86.4
Naphthalene	<9 µg/kg	TM218	55.6	-	31.7	\dashv	27.6	17.2	24.3	<9
·				М		М	#	М	M	M
Acenaphthylene	<12 µg/kg	TM218	<12	М	<12	М	<12 #	<12 M	<12 M	<12 M
Acenaphthene	<8 µg/kg	TM218	27.1	М	<8	М	<8 #	<8 M	<8 M	<8 M
Fluorene	<10 µg/kg	TM218	33.1	IVI	<10	IVI	<10	<10	<10	<10
				М		М	#	М	M	M
Phenanthrene	<15 µg/kg	TM218	124	М	64.7	М	85.4 #	67.9 M	63.5 M	34.9 M
Anthracene	<16 µg/kg	TM218	34.5	М	<16	М	<16 #	<16 M	<16 M	<16 M
Fluoranthene	<17 µg/kg	TM218	205	IVI	79.9	IVI	129	151	99.3	51.7
Pyrene	<15 µg/kg	TM218	172	М	67.7	М	107	M 120	82.6	M 44
•				М		М	#	М	M	M
Benz(a)anthracene	<14 µg/kg	TM218	71.4	М	<14	М	60 #	79.1 M	45.1 M	<14 M
Chrysene	<10 µg/kg	TM218	74.2		30.4		61.6	80.8	42.5	20.5
Benzo(b)fluoranthene	<15 µg/kg	TM218	131	M	47.4	M	93.2	93.7	95	30.6
Benzo(k)fluoranthene	<14 µg/kg	TM218	50.2	М	<14	М	30.8	51.5	M 29.3	<14
. ,				М		М	#	M	M	M
Benzo(a)pyrene	<15 µg/kg	TM218	65.1	М	<15	М	50.7 #	64.8 M	49.9 M	<15 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	46		<18		38.4	42.7	36.9	<18
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	M	<23	M	<23	<23	<23	<23
Benzo(g,h,i)perylene	<24 µg/kg	TM218	69.6	М	<24	М	56.3	58.7	53.3	<24
				М		М	#	М	M	M
PAH, Total Detected USEPA 16	<118 μg/kg	TM218	1160		322		741	827	622	182
				\dashv		\dashv				
				-		\dashv				
						_				

ALS

 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

TPH CWG (S)								
Results Legend # ISO17025 accredited.	C	ustomer Sample Ref.	CG 01	CG 02	CG 03	CG 04	CG 05	CG 06
M mCERTS accredited.								
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)					
* Subcontracted test.		Date Sampled	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018
** % recovery of the surrogate stand check the efficiency of the method		Sample Time	13:00:00	15:18:00	15:30:00	15:43:00	15:55:00	16:08:00
results of individual compounds v		Date Received SDG Ref	12/04/2018 180412-80	12/04/2018 180412-80	12/04/2018 180412-80	12/04/2018 180412-80	12/04/2018 180412-80	12/04/2018 180412-80
samples aren't corrected for the re	ecovery	Lab Sample No.(s)	17353781	17353782	17353791	17353783	17353790	17353780
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		AGS Reference						
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	70	75	82	82	80	72
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44 M	569 M	<44	<44 M	<44 M	<44 M
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	< 5	<5 #	<5	<5 #	<5 #	<5 #
Benzene	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Toluene	<2 µg/kg	TM089	<2	<2	<2	<2	<2	<2
Ethylbenzene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
m,p-Xylene	<6 µg/kg	TM089	M <6	M <6	<6	M <6	M <6	M <6
			M	M		М	М	М
o-Xylene	<3 µg/kg	TM089	<3 M	<3 M	<3	<3 M	<3 M	<3 M
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9	<9	<9	<9
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24	<24	<24	<24
Aliphatics >C5-C6	<10 µg/kg	TM089	13.5	15.1	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	28.4	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	54.8	<10	<10	<10	<10
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	259	<10	<10	<10	<10
Aliphatics >C12-C16	<100 µg/kg	TM173	<100	1070	<100	<100	2340	<100
Aliphatics >C16-C21	<100 µg/kg	TM173	5270	3180	<100	3960	4990	1660
Aliphatics >C21-C35	<100 µg/kg	TM173	22200	6180	2850	15300	20700	11100
Aliphatics >C35-C44	<100 µg/kg	TM173	3190	<100	<100	4200	2560	<100
Total Aliphatics >C12-C44	<100 µg/kg	TM173	30700	10400	2850	23500	30600	12700
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	37.8	<10	<10	<10	<10
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	172	<10	<10	<10	<10
Aromatics >EC12-EC16	<100 µg/kg	TM173	764	1130	612	<100	<100	<100
Aromatics >EC16-EC21	<100 µg/kg	TM173	4340	7930	2270	4130	4480	<100
Aromatics >EC21-EC35	<100 µg/kg	TM173	23000	12400	4860	14100	18500	4600
Aromatics >EC35-EC44	<100 µg/kg	TM173	4040	<100	1850	10900	13600	1000
Aromatics >EC40-EC44	<100 µg/kg	TM173	<100	<100	<100	3990	4800	<100
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	32100	21500	9580	29200	36500	5600
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	62800	32500	12400	52700	67100	18300

ALS

 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

TPH CWG (S)								
Results Legend # ISO17025 accredited.	С	ustomer Sample Ref.	CG 08	CG 09	CG 10	CG 11	CG 12	CG 07B
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)					
* Subcontracted test. ** % recovery of the surrogate stand		Date Sampled Sample Time	09/04/2018 16:21:00	09/04/2018 16:50:00	10/04/2018 14:10:00	10/04/2018 14:20:00	10/04/2018 14:33:00	09/04/2018 16:39:00
check the efficiency of the method results of individual compounds v		Date Received	12/04/2018	12/04/2018	12/04/2018	12/04/2018	12/04/2018	12/04/2018
samples aren't corrected for the re		SDG Ref Lab Sample No.(s)	180412-80 17353788	180412-80 17353792	180412-80 17353786	180412-80 17353784	180412-80 17353785	180412-80 17353787
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		AGS Reference						
GRO Surrogate % recovery**	LOD/Units %	Method TM089	105	71	99	71	72	74
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44	<44	1510	<44	<44	<44
Methyl tertiary butyl ether (MTBE)	<5 μg/kg	TM089	<5 #	<5 #	<5	<5 #	M <5 #	M <5 #
Benzene	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Toluene	<2 µg/kg	TM089	<2 M	<2 M	<2	<2 M	<2 M	<2 M
Ethylbenzene	<3 µg/kg	TM089	<3	<3	<3	<3	M <3	<3
m,p-Xylene	<6 µg/kg	TM089	M <6	M <6	<6	M <6	M <6	M <6
			М	M	<3	M <3	M	M <3
o-Xylene	<3 µg/kg	TM089	<3 M	<3 M		M	<3 M	М
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9	<9	<9	<9
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24	<24	<24	<24
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	27.3	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	<10	118	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	<10	139	<10	<10	<10
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	<10	680	<10	<10	<10
Aliphatics >C12-C16	<100 µg/kg	TM173	594	<100	<100	<100	994	<100
Aliphatics >C16-C21	<100 µg/kg	TM173	2640	1260	<100	1280	3640	<100
Aliphatics >C21-C35	<100 µg/kg	TM173	7060	5680	1090	5570	16000	3000
Aliphatics >C35-C44	<100 µg/kg	TM173	<100	<100	<100	<100	3210	<100
Total Aliphatics >C12-C44	<100 µg/kg	TM173	10300	6940	1090	6860	23800	3000
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	<10	92.4	<10	<10	<10
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10	454	<10	<10	<10
Aromatics >EC12-EC16	<100 µg/kg	TM173	340	301	<100	<100	758	<100
Aromatics >EC16-EC21	<100 µg/kg	TM173	1340	1570	<100	1710	3310	<100
Aromatics >EC21-EC35	<100 µg/kg	TM173	4070	6240	<100	7970	13900	3090
Aromatics >EC35-EC44	<100 µg/kg	TM173	<100	3850	<100	3880	8900	<100
Aromatics >EC40-EC44	<100 µg/kg	TM173	<100	1260	<100	649	3110	<100
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	5750	12000	<100	13600	26900	3090
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	16000	18900	2600	20400	50700	6080





 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

Table of Results - Appendix

Method No	Reference	Description
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
SUB		Subcontracted Test
TM008	BS 1377:Part 1977	Particle size distribution of solid samples
TM073	MEWAM BOOK 60 1980,95 1985, HMSO / Modified: US EPA Method 8081A & 8141A	Determination of organochlorine and organophosphorous pesticides by GCMS
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS



 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

Test Completion Dates

	rest Completion Dates									
Lab Sample No(s)	17353781	17353782	17353791	17353783	17353790	17353780	17353788	17353792	17353786	17353784
Customer Sample Ref.	CG 01	CG 02	CG 03	CG 04	CG 05	CG 06	CG 08	CG 09	CG 10	CG 11
AGS Ref.										
Depth	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16
Туре	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
EPH CWG (Aliphatic) GC (S)	19-Apr-2018	19-Apr-2018	19-Apr-2018	17-Apr-2018	17-Apr-2018	19-Apr-2018	19-Apr-2018	17-Apr-2018	19-Apr-2018	17-Apr-2018
EPH CWG (Aromatic) GC (S)	19-Apr-2018	19-Apr-2018	19-Apr-2018	17-Apr-2018	17-Apr-2018	19-Apr-2018	19-Apr-2018	17-Apr-2018	19-Apr-2018	17-Apr-2018
GRO by GC-FID (S)	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018
Metals in solid samples by OES	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018
OC, OP Pesticides and Triazine Herb	20-Apr-2018	20-Apr-2018	20-Apr-2018	20-Apr-2018	20-Apr-2018	20-Apr-2018	20-Apr-2018	20-Apr-2018	20-Apr-2018	20-Apr-2018
Organotins on soils*	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
PAH by GCMS	19-Apr-2018	19-Apr-2018	18-Apr-2018	17-Apr-2018	17-Apr-2018	19-Apr-2018	19-Apr-2018	17-Apr-2018	19-Apr-2018	19-Apr-2018
Passing Through >63µm sieve	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018
PCBs by GCMS	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	18-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018
Sample description	13-Apr-2018	13-Apr-2018	13-Apr-2018	16-Apr-2018	16-Apr-2018	13-Apr-2018	13-Apr-2018	13-Apr-2018	13-Apr-2018	16-Apr-2018
TPH CWG GC (S)	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018

(-)		
Lab Sample No(s)	17353785	17353787
Customer Sample Ref.	CG 12	CG 07B
AGS Ref.		
Depth	0.00 - 0.16	0.00 - 0.16
Туре	Soil/Solid (S)	Soil/Solid (S)
EPH CWG (Aliphatic) GC (S)	17-Apr-2018	19-Apr-2018
EPH CWG (Aromatic) GC (S)	17-Apr-2018	19-Apr-2018
GRO by GC-FID (S)	19-Apr-2018	19-Apr-2018
Metals in solid samples by OES	18-Apr-2018	18-Apr-2018
OC, OP Pesticides and Triazine Herb	20-Apr-2018	20-Apr-2018
Organotins on soils*	02-May-2018	02-May-2018
PAH by GCMS	18-Apr-2018	17-Apr-2018
Passing Through >63µm sieve	18-Apr-2018	18-Apr-2018
PCBs by GCMS	19-Apr-2018	18-Apr-2018
Sample description	16-Apr-2018	13-Apr-2018
TPH CWG GC (S)	19-Apr-2018	19-Apr-2018

Particle Size Distribution

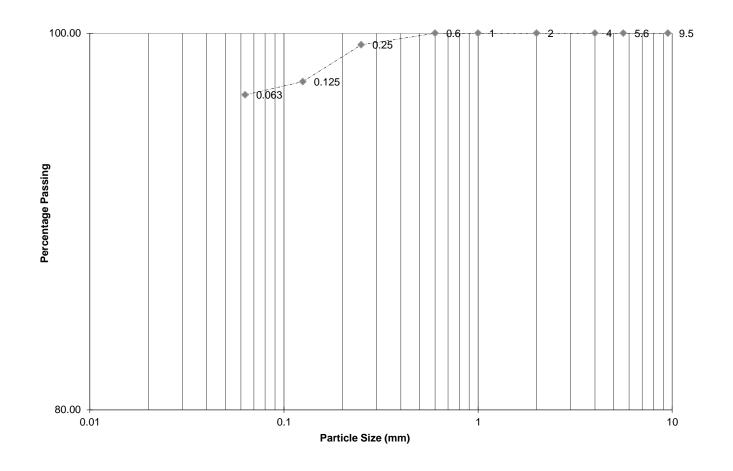
Particle Size (mm)	% Passing
9.5	100.00
5.6	100.00
4	100.00
2	100.00
1	100.00
600um	100.00
250um	99.38
125um	97.43
63um	96.73

Sample Number 17360574

Client H_MOUCH_LIV

Sample ID CG 06

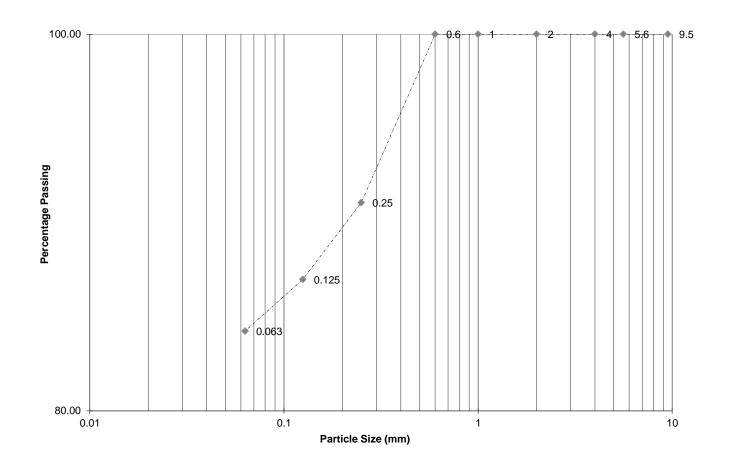
depth 0.00-0.16



Particle Size Distribution

Particle Size	% Passing
(mm)	
9.5	100.00
5.6	100.00
4	100.00
2	100.00
1	100.00
600um	100.00
250um	91.05
125um	86.97
63um	84.23

Sample Number 17360609
Client H_MOUCH_LIV
Sample ID CG07B
depth 0.00-0.16



Particle Size Distribution

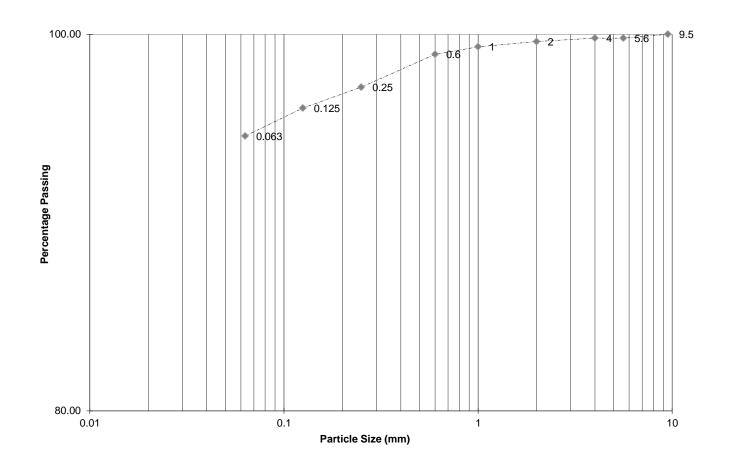
Particle Size	% Passing
(mm)	
9.5	100.00
5.6	99.79
4	99.79
2	99.61
1	99.33
600um	98.93
250um	97.19
125um	96.08
63um	94.59

Sample Number 17360622

Client H_MOUCH_LIV

Sample ID CG 01

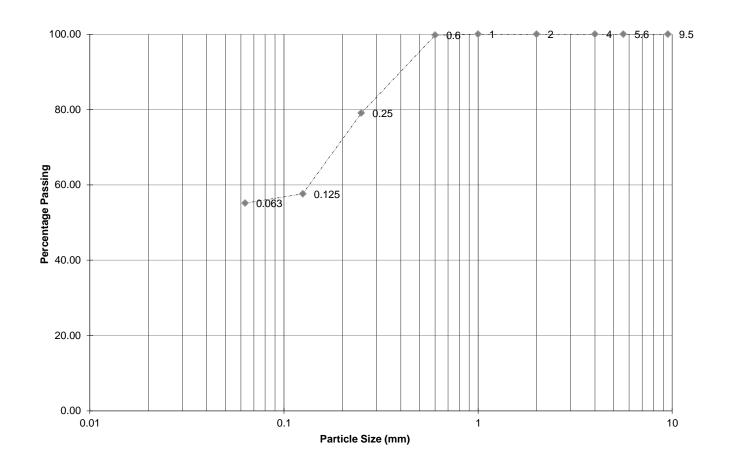
depth 0.00-0.16



Particle Size Distribution

Particle Size (mm)	% Passing
	100.00
9.5	100.00
5.6	100.00
4	100.00
2	100.00
1	100.00
600um	99.74
250um	79.04
125um	57.61
63um	55.16

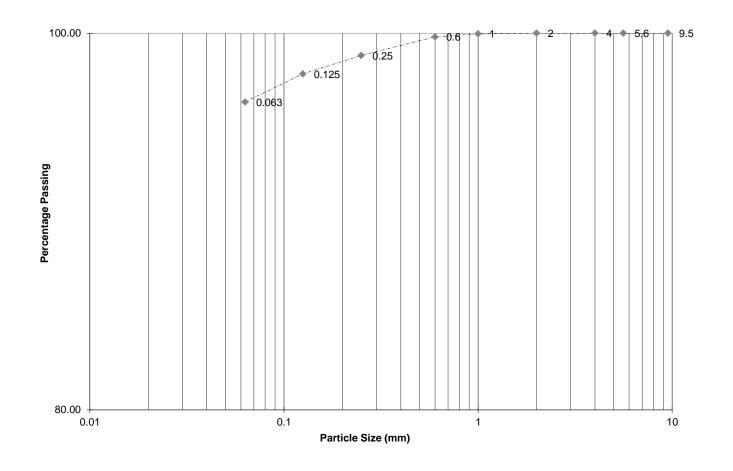
Sample Number 17360635
Client H_MOUCH_LIV
Sample ID CG 08
depth 0.00-0.16



Particle Size Distribution

Particle Size	% Passing
(mm)	
9.5	100.00
5.6	100.00
4	100.00
2	100.00
1	99.97
600um	99.81
250um	98.82
125um	97.84
63um	96.35

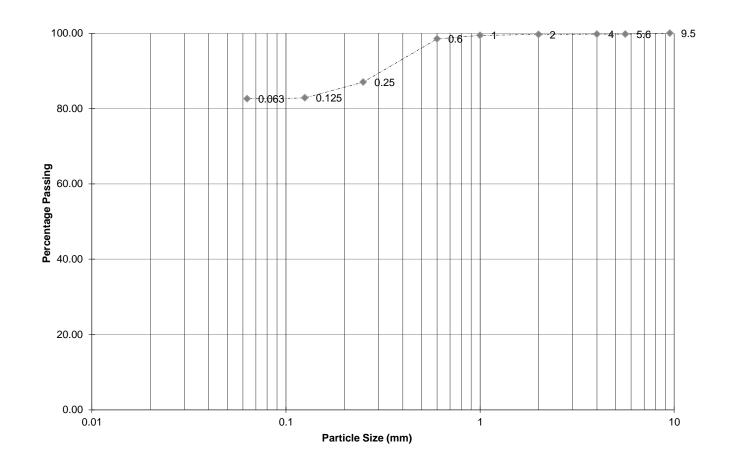
Sample Number 17361933
Client H_MOUCH_LIV
Sample ID CG 09
depth 0.00-0.16



Particle Size Distribution

Particle Size (mm)	% Passing
9.5	100.00
5.6	99.77
4	99.77
2	99.66
1	99.43
600um	98.51
250um	87.02
125um	82.83
63um	82.61

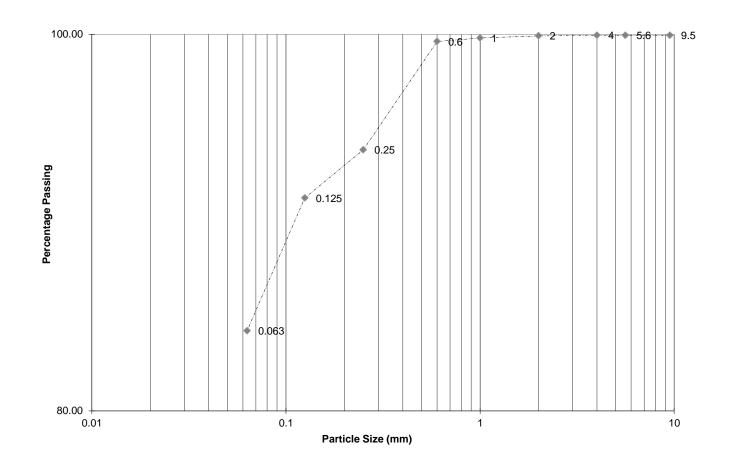
Sample Number 17361956
Client __MOUCH_LIV
Sample ID CG 03
depth 0.00-0.16



Particle Size Distribution

Particle Size	% Passing
(mm)	
9.5	99.94
5.6	99.94
4	99.94
2	99.91
1	99.80
600um	99.62
250um	93.86
125um	91.30
63um	84.25

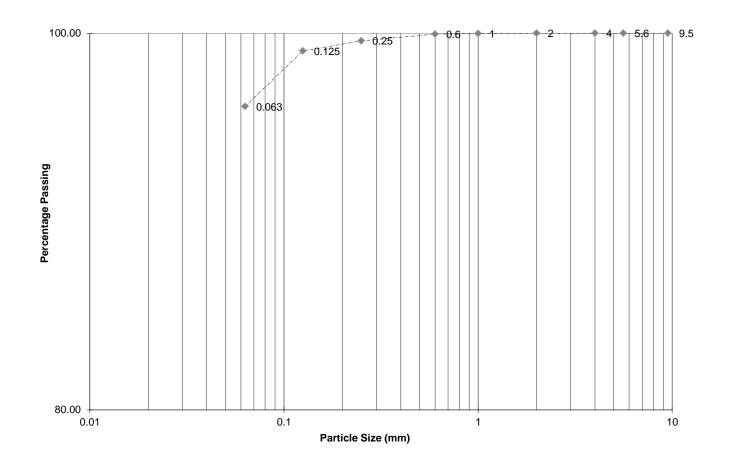
Sample Number 17361979
Client H_MOUCH_LIV
Sample ID CG10
depth 0.00-0.16



Particle Size Distribution

Particle Size	% Passing
(mm)	
9.5	100.00
5.6	100.00
4	100.00
2	100.00
1	99.98
600um	99.95
250um	99.60
125um	99.06
63um	96.11

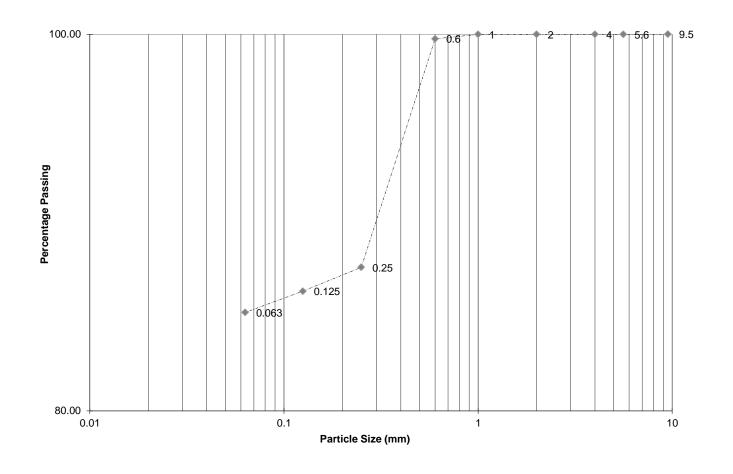
Sample Number 17362001
Client H_MOUCH_LIV
Sample ID CG 12
depth 0.00-0.16



Particle Size Distribution

Particle Size	% Passing
(mm)	
9.5	100.00
5.6	99.99
4	99.99
2	99.99
1	99.99
600um	99.75
250um	87.62
125um	86.35
63um	85.22

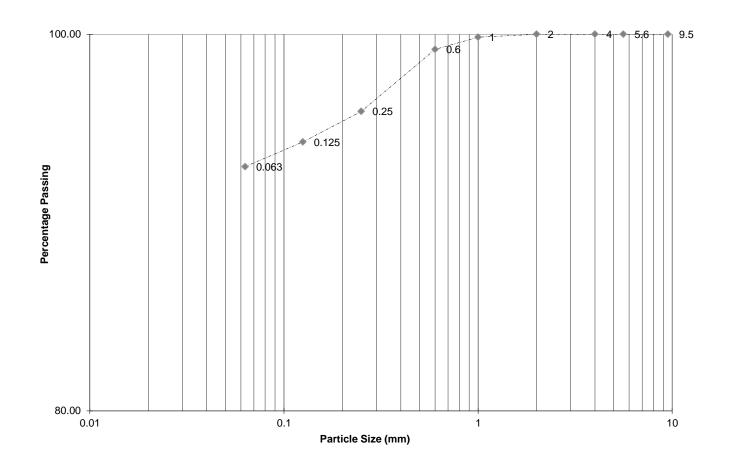
Sample Number 17362227
Client H_MOUCH_LIV
Sample ID CG 05
depth 0.00-0.16



Particle Size Distribution

Particle Size	% Passing
(mm)	
9.5	100.00
5.6	100.00
4	100.00
2	100.00
1	99.84
600um	99.19
250um	95.90
125um	94.27
63um	92.97

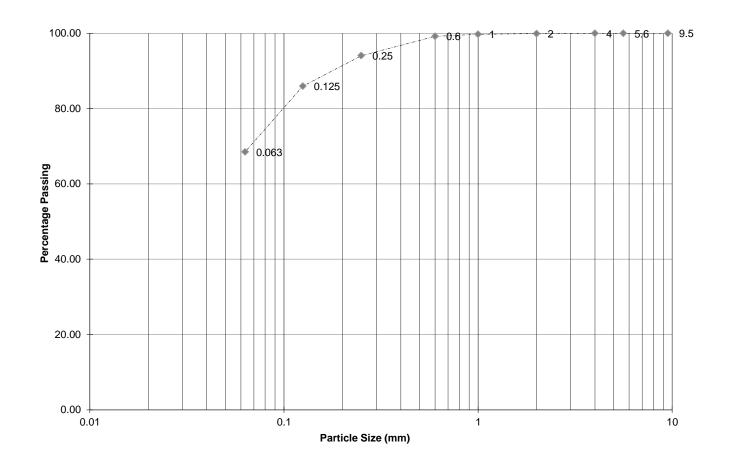
Sample Number 17362288
Client H_MOUCH_LIV
Sample ID CG 04
depth 0.00-0.16



Particle Size Distribution

Particle Size	% Passing
(mm)	
9.5	99.97
5.6	99.96
4	99.96
2	99.88
1	99.71
600um	99.17
250um	94.05
125um	85.92
63um	68.47

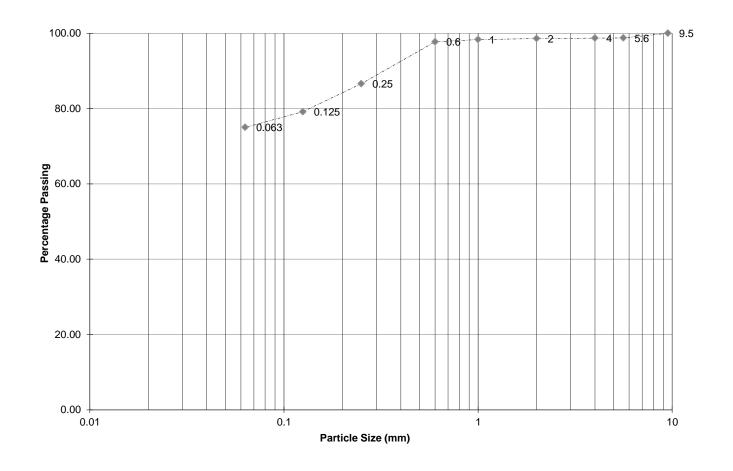
Sample Number 17362333
Client H_MOUCH_LIV
Sample ID CG 11
depth 0.00-0.16



Particle Size Distribution

Particle Size	% Passing
(mm)	
9.5	100.00
5.6	98.76
4	98.71
2	98.58
1	98.32
600um	97.71
250um	86.61
125um	79.14
63um	75.01

Sample Number 17362343
Client H_MOUCH_LIV
Sample ID CG 02
depth 0.00-0.16





Certificate of Analysis

Report No.: 18-71044-1

Issue No.: 1

Date of Issue 30/04/2018

Customer Details: ALS Life Sciences Limited, Unit7-8, Hawarden Business Park, Manor Road,

Hawarden, Deeside, Flintshire, CH5 3US

Customer Contact: Carrie Foster (2)

Customer Order No.: P60605

Customer Reference: 180412-80

Quotation Reference: 180222/01

Description: 12 soil samples

Date Received: 17/04/2018

Date Started: 18/04/2018

Date Completed: 27/04/2018

Test Methods: Details available on request (refer to SOP code against relevant result/s)

Notes: None

Approved By: Matthew Hickson, Laboratory Manager

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service.

Observations and interpretations are outside of the scope of UKAS accreditation.

Results reported herein relate only to the items supplied to the laboratory for testing.

RPS Mountainheath Limited, Registered in England No. 2772276, a wholly-owned subsidiary of RPS Consulting Services Ltd.

A member of the RPS Group plc. Terms and conditions apply - copy on request



Results Summary

Report No.: 18-71044-1 Customer Reference: 180412-80 Customer Order No: P60605

							1						H	1	1	-
Customer Sample No :					17365761	17364778	17363809	17373080	17373020	17365780	17365739	17365757	17362186	17363180	17373246	
				Custome	r Sample ID	CG01	CG02	CG03	CG04	CG05	CG06	CG07B	CG08	CG09	CG10	CG11
				RPS	Sample No	360940	360941	360942	360943	360944	360945	360946	360947	360948	360949	360950
				Sa	mple Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sample Depth (m)					0.00-0.16	0.00-0.16	0.00-0.16	0.00-0.16	0.00-0.16	0.00-0.16	0.00-0.16	0.00-0.16	0.00-0.16	0.00-0.16	0.00-0.16	
Sampling Date				09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018	10/04/2018	10/04/2018		
Sampling Time										:1						
Determinand	CAS No	Codes	SOP	Units	RL											
dry solids (at 105øC)		N	397	% w/w		36.7	48.5	42.7	45.7	46.0	43.1	49.3	49.0	43.9	48.1	59.4
dibutyltin (DBT)	1002-53-5	N	in house	mg/kg as cation DW	0.02	< 0.05	< 0.04	< 0.05	< 0.04	< 0.04	< 0.05	< 0.04	< 0.04	< 0.05	< 0.04	< 0.02
diphenyltin (DPT)		N.	in house	mg/kg as cation DW	0.02	< 0.05	< 0.04	< 0.05	< 0.04	< 0.04	< 0.05	< 0.04	< 0.04	< 0.05	< 0.04	< 0.02
monobutyltin (MBT)	78763-54-9	N	in house	mg/kg as cation DW	0.1	< 0.27	< 0.21	< 0.23	< 0.22	< 0.22	< 0.23	< 0.20	< 0.20	< 0.23	< 0.21	< 0.15
monophenyltin (MPT)		N	in house	mg/kg as cation DW	0.02	< 0.05	< 0.04	< 0.05	< 0.04	< 0.04	< 0.05	< 0.04	< 0.04	< 0.05	< 0.04	< 0.02
tributyltin (TBT)	56573-85-4	N	in house	mg/kg as cation DW	0.02	0.07	0.07	< 0.05	< 0.04	< 0.04	< 0.05	< 0.04	< 0.04	< 0.05	< 0.04	< 0.02
triphenyltin (TPT)	668-34-8	N	in house	mg/kg as cation DW	0.05	< 0.14	< 0.10	< 0.12	< 0.11	< 0.11	< 0.12	< 0.10	< 0.10	< 0.11	< 0.10	< 0.05
tetrabutyltin	1461-25-2	N	in house	mg/kg as cation DW	0.02	< 0.05	< 0.04	< 0.05	< 0.04	< 0.04	< 0.05	< 0.04	< 0.04	< 0.05	< 0.04	< 0.02



Results Summary

Report No.: 18-71044-1 Customer Reference: 180412-80 Customer Order No: P60605

<u></u>	
Customer Sample No	17373252
Customer Sample ID	CG12
RPS Sample No	360951
Sample Type	SOIL
Sample Depth (m)	0.00-0.16
Sampling Date	10/04/2018
Sampling Time	

Determinand	CAS No	Codes	SOP	Units	RL	
dry solids (at 105øC)		N	397	% w/w		46.5
dibutyltin (DBT)	1002-53-5	N	in house	mg/kg as cation DW	0.02	< 0.04
diphenyltin (DPT)		N	in house	mg/kg as cation DW	0.02	< 0.04
monobutyltin (MBT)	78763-54-9	N	in house	mg/kg as cation DW	0.1	< 0.22
monophenyltin (MPT)		N	in house	mg/kg as cation DW	0.02	< 0.04
tributyltin (TBT)	56573-85-4	N	in house	mg/kg as cation DW	0.02	< 0.04
triphenyltin (TPT)	668-34-8	N	in house	mg/kg as cation DW	0.05	< 0.11
tetrabutyltin	1461-25-2	N	in house	mg/kg as cation DW	0.02	< 0.04



Deviating Samples

Report No.: 18-71044-1 Customer Reference: 180412-80 Customer Order No: P60605

Our policy on Deviating Samples and reference list of Holding Times applied can be supplied on request. These have been implemented in accordance with UKAS Policy on Deviating Samples (TPS63).

RPS is not responsible for the integrity of samples as received, unless RPS personnel performed the sampling, and it is possible that samples submitted may be declared to be deviating.

Where applicable the analysis method remains UKAS accredited, however results reported for a deviating sample may be invalid. The reason for a sample being declared to be deviating is indicated below.

Where no sampling date was supplied, samples have been declared to be deviating. However, if a date of sampling can be supplied, the results may be reissued with the deviating sample status removed.

Where the sample container used was unsuitable, the appropriate Holding Time was exceeded, or the sample is flagged as deviating for some other reason, re-sampling/re-submisson may be required.

RPS No.	Customer No.	Customer ID	Date Sampled	Containers Received	Deviating Sample	Reason for Sample Deviation
360940	17365761		09/04/2018	60 ml Amber Jar	No	697
360941	17364778		09/04/2018	60 ml Amber Jar	No	
360942	17363809		09/04/2018	60 ml Amber Jar	No	
360943	17373080		09/04/2018	60 ml Amber Jar	No	
360944	17373020		09/04/2018	60 ml Amber Jar	No	
360945	17365780		09/04/2018	60 ml Amber Jar	No	
360946	17365739		09/04/2018	60 ml Amber Jar	No	
360947	17365757		09/04/2018	60 ml Amber Jar	No	
360948	17362186		09/04/2018	60 ml Amber Jar	No	
360949	17363180		10/04/2018	60 ml Amber Jar	No	
360950	17373246		10/04/2018	60 ml Amber Jar	No	
360951	17373252		10/04/2018	60 ml Amber Jar	No	



Report Information

Key to Report Codes

U	UKAS Accredited
F	UKAS Flexible Scope
M	MCERTS Accredited
N	Not accredited
S	Subcontracted to approved laboratory
US	Subcontracted to approved laboratory UKAS Accredited for the test
MS	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
SI	Subcontracted to internal RPS Group laboratory
USI	Subcontracted to internal RPS Group laboratory UKAS Accredited for the test
MSI	Subcontracted to internal RPS Group laboratory MCERTS/UKAS Accredited for the test
I/S (in results)	Insufficient Sample
U/S (in results)	Unsuitable Sample
S/C (in results)	See Comments
time the same to t	

ND (in results)

Not Detected

DW (in units)

Not Detected

Results are expressed on a dry weight basis

Where the dry solids value of a sample is low (<50%), reporting limits are automatically raised for all determinants analysed on an asreceived basis.

Soil Typing

Type I	Clay - Drown			
Type 2	Clay - Grey/Black			
Type 3	Sand			
Type 4	Top Soil (Standard)			
Type 5	Top Soil (High Peat)			
Type 6	Made Ground (>50% Clay)			
Type 7	Made Ground (>50% Sand)			
Type 8	Made Ground (>50% Top Soil)			
Type X	Other			

Clay - Brown

Sample Retention and Disposal

Type 1

Samples will generally $\!\!\!\!\!\!\!^*$ be retained for the following times prior to disposal:

Perishables, e.g. foodstuffs 1 month (if frozen) from the issue date of this report

Waters 2 weeks from the issue date of this report
Other Liquids 1 month from the issue date of this report
Solids (including Soils) 1 month from the issue date of this report

^{*}Sample retention may be subject to agreement with the customer for particular projects



62240712 SDG: 180412-80 454516 Client Reference: Report Number: Superseded Report: 62240712 452622 Location: Lowestoft Order Number:

Appendix

General

- for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.
- 2. Samples will be run in duplicate upon request, but an additional charge may be incurred.
- 3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.
- 4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
- 5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised
- 6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.
- 7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.
- 8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.
- 9. NDP No determination possible due to insufficient/unsuitable sample.
- 10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately
- 11. Results relate only to the items tested.
- 12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected
- 13. Surrogate recoveries Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.
- 14. Product analyses Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
- 15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).
- 16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).
- Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
- 18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
- 19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

- 1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except 21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
 - 22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.
 - 23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised
 - 24. Tentatively Identified Compounds (TICs) are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
•	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbe stos Type	Common Name
Chrysof le	White Asbests
Amosite	Brown Asbestos
Cro di dolite	Blue Asbe stos
Fibrous Act nolite	-
Fib to us Anthop hyll ite	-
Fibrous Tremolite	- -

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Unit 7-8 Hawarden Business Park Manor Road (off Manor Lane) Hawarden Deeside CH5 3US

> Tel: (01244) 528700 Fax: (01244) 528701

email: hawardencustomerservices@alsglobal.com Website: www.alsenvironmental.co.uk

WSP UK Limited 3rd Floor Station House Mercury Court Titheburn Street Liverpool L2 2QP

Attention: Neil Balderstone

CERTIFICATE OF ANALYSIS

 Date:
 30 April 2018

 Customer:
 H_MOUCH_LIV

 Sample Delivery Group (SDG):
 180423-34

 Your Reference:
 62240712

 Location:
 Lowestoft

 Report No:
 454099

We received 4 samples on Saturday April 21, 2018 and 4 of these samples were scheduled for analysis which was completed on Monday April 30, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan
Operations Manager









 SDG:
 180423-34
 Client Reference:
 62240712
 Report Number:
 454099

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
17424916	WS01		0.00 - 0.20	19/04/2018
17424917	WS02		0.00 - 0.20	19/04/2018
17424918	WS03		0.00 - 0.20	19/04/2018
17424919	WS04		0.00 - 0.20	19/04/2018

Maximum Sample/Coolbox Temperature (°C):

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

15.0

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

ALS

SDG: 62240712 180423-34 Client Reference: Report Number: 454099 Location: Lowestoft Order Number: 62240712 Superseded Report: Results Legend 17424919 17424916 17424917 17424918 Lab Sample No(s) X Test No Determination Possible Customer WS03 WS01 WS02 WS04 Sample Reference Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water 0.00 0.00 - 0.20 0.00 - 0.20 0.00 - 0.20 SA - Saline Water Depth (m) TE - Trade Effluent - 0.20 TS - Treated Sewage US - Untreated Sewage (ALE208)
250ml Amber Gl.
PTFE/PE (ALE219) 500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) RE - Recreational Water 250ml Amber GI. PTFE/PE (ALE219) HNO3 Unfiltered (ALE204) HNO3 Unfiltered (ALE204) HNO3 Unfiltered (ALE204) 250ml Amber Gl. PTFE/PE (ALE219) HNO3 Unfiltered (ALE204) H2SO4 (ALE244) H2SO4 (ALE244) H2SO4 (ALE244) H2SO4 (ALE244) 500ml Plastic (ALE208) 500ml Plastic (ALE208) DW - Drinking Water Non-regulatory 500ml Plastic Vial (ALE297) Vial (ALE297) Vial (ALE297) UNL - Unspecified Liquid SL - Sludge Container G - Gas OTH - Other WS WS WS Sample Type WS WS WS WS WS WS WS WS WS WS WS WS WS WS WS WS Alkalinity as CaCO3 All NDPs: 0 Tests: 4 X X X Ammoniacal Nitrogen All NDPs: 0 Tests: 4 Χ X Χ Χ Anions by Kone (w) All NDPs: 0 Tests: 4 Х Х Х Х Colour Test ΔII NDPs: 0 Tests: 4 Х Х Х Х Conductivity (at 20 deg.C) All NDPs: 0 Tests: 4 Х Χ X X Dissolved Metals by ICP-MS All NDPs: 0 Tests: 4 Χ Х Χ Χ EPH (DRO) (C10-C40) Aqueous (W) All NDPs: 0 Tests: 4 Χ X Х Χ GRO by GC-FID (W) All NDPs: 0 Tests: 4 X Х Χ Mercury Dissolved All NDPs: 0 Tests: 4 X X X Χ pH Value All NDPs: 0 Tests: 4 Х Х Х X Phosphate by Kone (w) All NDPs: 0 Tests: 4 Х Х Х Х Suspended Solids All NDPs: 0 Tests: 4 Х X X X Total EPH (aq) All NDPs: 0 Tests: 4 Χ X X Χ Total Metals by ICP-MS All NDPs: 0 Tests: 4 Χ Х Χ Х Total Organic and Inorganic Carbon All NDPs: 0 Tests: 4 X X X



SDG: 180423-34 Location: Lowestoft

3-34 Client Reference: toft Order Number:

62240712 62240712 Report Number: Superseded Report: 454099

Results Legend # ISO17025 accredited.	0	Customer Sample Ref.	WS01	П	WS02		WS03	WS04		
M mCERTS accredited.										
aq Aqueous / settled sample.		Depth (m)	0.00 - 0.20		0.00 - 0.20		0.00 - 0.20	0.00 - 0.20		
diss.filt Dissolved / filtered sample.		Sample Type	Surface Water (SW)		Surface Water (SW)		Surface Water (SW)	Surface Water (SW)		
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Date Sampled	19/04/2018		19/04/2018		19/04/2018	19/04/2018		
** % recovery of the surrogate standa	ard to	Sample Time	10:15:00		10:30:00		10:50:00	11:00:00		
check the efficiency of the method	. The	Date Received	21/04/2018		21/04/2018		21/04/2018	21/04/2018		
results of individual compounds w		SDG Ref	180423-34		180423-34		180423-34	180423-34		
samples aren't corrected for the re	covery		17424916		17424917		17424918	17424919		
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference					11 12 10 10	11 121010		
Component	LOD/Units	Method								
		1	40.0	-	20.0	-	40.0	24.2		
Suspended solids, Total	<2 mg/l	TM022	42.3		36.8		40.8	34.2		
				#		#	#	#		
Alkalinity, Total as CaCO3	<2 mg/l	TM043	135		124		122	122		
· ·	ľ			#		#	#	#		
				"		π				
Organic Carbon, Total	<3 mg/l	TM090	<3		<3		<3	<3		
				#		#	#	#		
Ammoniacal Nitrogen as N	<0.2 mg/l	TM099	<0.2	П	<0.2	П	<0.2	<0.2		
/ unincinada i i ili ogon ao i i	0.2g/.	1		#		#		#		
0 1 11 11 2 22 1 2				#		#	#			+
Conductivity @ 20 deg.C	<0.005	TM120	45.8		46.7	- 1	46.3	45.1		
	mS/cm			#		#	#	#	<u> </u>	
Aluminium (diss.filt)	<10 µg/l	TM152	<60		<60	\neg	<60	<60		
(2.00)		'52		2#		#	2#	2#		
A 1 () 500				- #		#				+
Arsenic (diss.filt)	<0.5 µg/l	TM152	<3		<3		<3	<3		
		1	2	2 #	2	#	2#	2#		
Cadmium (diss.filt)	<0.08 µg/l	TM152	<0.48		<0.48	╛	<0.48	<0.48		
(υ.ου μα/	152		2#		#	2#	2#		
21 1 1 2 2 2				- #		#				
Chromium (diss.filt)	<1 µg/l	TM152	<6		<6		<6	<6		
	<u></u>		2	2 #	2	#	2#	2#		
Copper (diss.filt)	<0.3 µg/l	TM152	3.32	\top	1.84	\neg	<1.8	<1.8		
, ,	175			2 #		#	2#	2#		
1 4 (4: £11)	40.0 //	TNAAFO		-"						
Lead (diss.filt)	<0.2 µg/l	TM152	<1.2		<1.2		<1.2	<1.2		
			2	2 #	2	#	2#	2#		
Manganese (diss.filt)	<3 µg/l	TM152	<18		18.5		22.3	18.9		
			2	2#	2	#	2#	2#		
Nickel (diss.filt)	<0.4 µg/l	TM152	3.13		<2.4	_	<2.4	3.32		
Nickei (diss.iiit)	<0.4 μg/i	1101102		. ,,		,,				
				2 #		#	2#	2#		
Zinc (diss.filt)	<1 µg/l	TM152	26.8		19.9		21.2	8.88		
			2	2#	2	#	2#	2#		
Iron (Dis.Filt)	<0.019 mg/l	TM152	<0.114	\neg	<0.114	\neg	<0.114	<0.114		
(2.5)	0.0.0 mg/.			2 #		#	2#	2#		
O 1: (T 11 511)	.0.047 #	T14450		- π		π				
Sodium (Tot. Unfilt.)	<0.047 mg/l	TM152	8440		8940		9050	8890		
				#		#	#	#		
Magnesium (Tot. Unfilt.)	<0.05 mg/l	TM152	1130		1160		1150	1130		
	_			#		#	#	#		
Detection (Tet Unfilt)	<0.0 mm/l	TM450		"		-				
Potassium (Tot. Unfilt.)	<0.2 mg/l	TM152	361	۱ "	356	ا پ	355	349		
				#		#	#	#		
Calcium (Tot. Unfilt.)	<0.057 mg/l	TM152	440		450	- 1	415	461		
I	I	1		#		#	#	#		
EPH Range >C10 - C40 (aq)	<100 µg/l	TM172	<100		<100	╛	<100	<100		
(aq)	100 μg/1	/WII/2	-100		-100		100	1100		
	<u> </u>	+		-		4				
Total EPH (C6-C40) (aq)	<100 µg/l	TM172	<100		<100		<100	<100		
Mercury (diss.filt)	<0.01 µg/l	TM183	<0.01		<0.01	\neg	<0.01	<0.01		
	1	1		2		2	2	2		
Dheenhete (O-th DO-th	رم مر »	T84404		-		-				
Phosphate (Ortho as PO4)	<0.05 mg/l	TM184	<0.05	_ [<0.05	[إ	<0.05	<0.05		
				#		#	#	#		
Sulphate	<2 mg/l	TM184	2640		2620	T	2610	2600		Ι Π
I	I	1		#		#	#	#		
Chloride	<2 mg/l	TM184	18400		18500		18000	18300		$\overline{}$
Gilloride	\2 IIIg/I	1101104		" l		" l				
Nii i NGS				#		#	#	#		
Nitrate as NO3	<0.3 mg/l	TM184	<0.3		<0.3		<0.3	<0.3		
		<u></u>								
рН	<1 pH Units	TM256	7.9		7.92	\Box	7.93	7.9		
Γ.				#		#	#	#		
Apparent Colour	اا م 1 در	TMOC4		"		"				
Apparent Colour	<1 mg/l	TM261	27.3		13.7		9.61	11.3		
	Pt/Co			4		Ц				
True Colour	<1 mg/l	TM261	1.38		1.95		1.49	1.51		
	Pt/Co	1				- [
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ALS

 SDG:
 180423-34
 Client Reference:
 62240712
 Report Number:
 454099

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:

Location.		Loweston	<u> </u>	uo	i Number.	0	240712		Ouperseded Ne	
GRO by GC-FID (W)										
Results Legend	(Customer Sample Ref.	WS01		WS02		WS03		WS04	
# ISO17025 accredited. M mCERTS accredited.										
aq Aqueous / settled sample.		Depth (m)	0.00 - 0.20		0.00 - 0.20		0.00 - 0.20		0.00 - 0.20	
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Surface Water (SW)		Surface Water (S	SW)	Surface Water (SW)		Surface Water (SW)	
* Subcontracted test.		Date Sampled	19/04/2018	19/04/2018	,	19/04/2018		19/04/2018		
** % recovery of the surrogate stands check the efficiency of the method		Sample Time	10:15:00	10:30:00		10:50:00		11:00:00		
results of individual compounds w	ithin	Date Received	21/04/2018 180423-34	21/04/2018 180423-34		21/04/2018 180423-34		21/04/2018 180423-34		
samples aren't corrected for the re (F) Trigger breach confirmed	covery	SDG Ref Lab Sample No.(s)	17424916		17424917		17424918		17424919	
1-5&+§@ Sample deviation (see appendix)		AGS Reference								
Component	LOD/Units	Method								
Methyl tertiary butyl ether	<3 µg/l	TM245	<3		<3		<3		<3	
(MTBE)			1	1#		1#		#	#	
Benzene	<7 µg/l	TM245	<7		<7		<7		<7	
		1 1	1	1#		1#		#	#	
Toluene	<4 µg/l	TM245	<4		<4		<4		<4	
		1 1	1	1#		1#		#	#	
Ethylbenzene	<5 µg/l	TM245	<5		<5		<5		<5	
'	, ,	1 1		1#		1#		#	#	
m,p-Xylene	<8 µg/l	TM245	<8		<8		<8		<8	
,,	5 123.			1#	•	1#	-	#	#	
o-Xylene	<3 µg/l	TM245	<3	.,	<3		<3		<3	
2.5,5,5,5	· υ μg/i	11112 70		1#]	1#	.5	#	#	
Sum of detected BTEX	<28 µg/l	TM245	<28	. π	<28	1#	<28	π	<28	
Guill of detected DTEA	~∠o µg/l	I IVIZ40		1	\ \^20	4	\ 20		\ 20	
CDO > CE C40	-40 P	T14045		1	.40	1	-40	-	-40	
GRO >C5-C10	<10 µg/l	TM245	<10	4	<10		<10		<10	
EDIT (00 012)				1		1	45-	\blacksquare		
EPH (C6-C10)	<100 µg/l	TM245	<100		<100		<100		<100	
				1		1		_		
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 SDG:
 180423-34
 Client Reference:
 62240712
 Report Number:
 454099

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:

Table of Results - Appendix

	Table of Results - Appendix													
Method No	Reference	Description												
TM022	Method 2540D, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part120 1981;BS EN 872	Determination of total suspended solids in waters												
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples												
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)												
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water												
TM099	BS 2690: Part 7:1968 / BS 6068: Part2.11:1984	Determination of Ammonium in Water Samples using the Kone Analyser												
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter												
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS												
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH in Waters												
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry												
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers												
TM245	By GC-FID	Determination of GRO by Headspace in waters												
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter												
TM261	Colour and Turbidity of Waters, Methods for the Examination of Waters and Associated Materials, HMSO, 1981, ISBN 0 11 7519553.	Determination of True and Apparent Colour by Spectrophotometry												

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Validated

CERTIFICATE OF ANALYSIS



 SDG:
 180423-34
 Client Reference:
 62240712
 Report Number:
 454099

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:

Test Completion Dates

				Piotioi
Lab Sample No(s)	17424916	17424917	17424918	17424919
Customer Sample Ref.	WS01	WS02	WS03	WS04
·				
AGS Ref.				
Depth	0.00 - 0.20	0.00 - 0.20	0.00 - 0.20	0.00 - 0.20
Туре	Surface Water	Surface Water	Surface Water	Surface Water
Alkalinity as CaCO3	25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018
Ammoniacal Nitrogen	26-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018
Anions by Kone (w)	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
Colour Test	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018
Conductivity (at 20 deg.C)	25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018
Dissolved Metals by ICP-MS	29-Apr-2018	29-Apr-2018	29-Apr-2018	29-Apr-2018
EPH (DRO) (C10-C40) Aqueous (W)	25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018
GRO by GC-FID (W)	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018
Mercury Dissolved	28-Apr-2018	28-Apr-2018	28-Apr-2018	28-Apr-2018
Nitrite by Kone (w)	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018
pH Value	25-Apr-2018	26-Apr-2018	25-Apr-2018	26-Apr-2018
Phosphate by Kone (w)	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018
Suspended Solids	24-Apr-2018	24-Apr-2018	24-Apr-2018	24-Apr-2018
Total EPH (aq)	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018
Total Metals by ICP-MS	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018
Total Organic and Inorganic Carbon	27-Apr-2018	27-Apr-2018	24-Apr-2018	27-Apr-2018



180423-34 62240712 454099 SDG: Client Reference: Report Number: Superseded Report: 62240712 Location: Lowestoft Order Number:

Appendix

General

- for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.
- 2. Samples will be run in duplicate upon request, but an additional charge may be incurred.
- 3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.
- 4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
- 5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised
- 6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.
- 7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.
- 8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.
- 9. NDP No determination possible due to insufficient/unsuitable sample.
- 10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately
- 11. Results relate only to the items tested.
- 12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected
- 13. Surrogate recoveries Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.
- 14. Product analyses Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
- 15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).
- 16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).
- Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
- 18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
- 19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

- 1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except 21. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
 - 22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.
 - 23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised
 - 24. Tentatively Identified Compounds (TICs) are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
•	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbe stos Type	Common Name
Chrysof le	White Asbesbs
Amosite	Brown Asbestos
Cro di dolite	Blue Asbe stos
Fibrous Act nolite	-
Fib to us Anthop hyll ite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



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WSP UK Limited 3rd Floor Station House Mercury Court Titheburn Street Liverpool L2 2QP

Attention: Neil Balderstone

CERTIFICATE OF ANALYSIS

Date:22 May 2018Customer:H_MOUCH_LIVSample Delivery Group (SDG):180424-31Your Reference:62240712Location:LowestoftReport No:457244

We received 34 samples on Tuesday April 24, 2018 and 34 of these samples were scheduled for analysis which was completed on Tuesday May 22, 2018. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan
Operations Manager







ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft

Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Received Sample Overview

17431917 VC02 0.80-1.20 2004/2018 17431916 VC02 1.80-2.20 2004/2018 17431915 VC02 2.80-3.20 2004/2018 17431914 VC02 3.20-3.63 2004/2018 17431903 VC03 0.80-1.20 2004/2018 17431906 VC03 1.80-2.20 2004/2018 17431905 VC03 3.89-3.20 2004/2018 17431904 VC03 3.39-3.79 2004/2018 17431908 VC04 0.80-1.20 1904/2018 17431909 VC04 0.80-1.20 1904/2018 17431909 VC04 2.80-3.20 1904/2018 17431907 VC04 2.80-3.20 1904/2018 17431907 VC04 3.60-4.00 1904/2018 17431895 VC05 0.80-1.20 1904/2018 17431896 VC05 0.80-1.20 1904/2018 17431898 VC05 0.80-1.20 1904/2018 17431898 VC06 0.80-1.20 2004/2018 <th>Lab Sample No(s)</th> <th>Customer Sample Ref.</th> <th>AGS Ref.</th> <th>Depth (m)</th> <th>Sampled Date</th>	Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
17431916 VC02 2.80 - 3.20 20/04/2018 17431915 VC02 2.80 - 3.20 20/04/2018 17431914 VC02 3.20 - 3.63 20/04/2018 17431903 VC03 0.80 - 1.20 20/04/2018 17431906 VC03 1.80 - 2.20 20/04/2018 17431905 VC03 2.80 - 3.20 20/04/2018 17431904 VC03 3.39 - 3.79 20/04/2018 17431908 VC04 0.80 - 1.20 19/04/2018 17431909 VC04 1.80 - 2.20 19/04/2018 17431901 VC04 2.80 - 3.20 19/04/2018 17431907 VC04 3.60 - 4.00 19/04/2018 17431907 VC04 3.60 - 4.00 19/04/2018 17431885 VC05 0.80 - 1.20 19/04/2018 17431886 VC05 1.80 - 2.20 19/04/2018 17431888 VC05 2.53 - 2.93 19/04/2018 17431899 VC06 0.80 - 1.20 20/04/2018 17431900 VC06	. ,		AGO NOI.		
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17431889 VC06 0.80 - 1.20 20/04/2018 17431890 VC06 2.00 - 2.46 20/04/2018 17431883 VC07 0.80 - 1.20 20/04/2018 17431882 VC07 1.60 - 2.00 20/04/2018 17431902 VC08 0.60 - 1.00 20/04/2018 17431901 VC08 1.00 - 1.45 20/04/2018 17431887 VC11 0.80 - 1.20 20/04/2018 17431886 VC11 1.80 - 2.20 20/04/2018 17431889 VC11 2.20 - 2.50 20/04/2018 17431891 VC10A 0.80 - 1.20 20/04/2018 17431892 VC10A 1.80 - 2.20 20/04/2018 17431913 VC12A 2.45 - 2.85 20/04/2018 17431913 VC12A 0.80 - 1.20 20/04/2018 17431914 VC12A 1.80 - 2.20 20/04/2018 17431913 VC12A 2.80 - 3.30 20/04/2018 17431844 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B	17431896	VC05		1.80 - 2.20	19/04/2018
17431900 VC06 2.00 - 2.46 20/04/2018 17431883 VC07 0.80 - 1.20 20/04/2018 17431882 VC07 1.60 - 2.00 20/04/2018 17431902 VC08 0.60 - 1.00 20/04/2018 17431901 VC08 1.00 - 1.45 20/04/2018 17431887 VC11 0.80 - 1.20 20/04/2018 17431886 VC11 1.80 - 2.20 20/04/2018 17431889 VC11 2.20 - 2.50 20/04/2018 17431891 VC10A 0.80 - 1.20 20/04/2018 17431892 VC10A 1.80 - 2.20 20/04/2018 17431913 VC12A 0.80 - 1.20 20/04/2018 17431911 VC12A 0.80 - 1.20 20/04/2018 17431912 VC12A 1.80 - 2.20 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 0.80 - 1.20 19/04/2018	17431898	VC05		2.53 - 2.93	19/04/2018
17431883 VC07 0.80 - 1.20 20/04/2018 17431882 VC07 1.60 - 2.00 20/04/2018 17431902 VC08 0.60 - 1.00 20/04/2018 17431901 VC08 1.00 - 1.45 20/04/2018 17431887 VC11 0.80 - 1.20 20/04/2018 17431886 VC11 1.80 - 2.20 20/04/2018 17431891 VC10A 2.20 - 2.50 20/04/2018 17431890 VC10A 0.80 - 1.20 20/04/2018 17431892 VC10A 1.80 - 2.20 20/04/2018 17431913 VC12A 0.80 - 1.20 20/04/2018 17431911 VC12A 0.80 - 1.20 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 0.80 - 1.20 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431899	VC06		0.80 - 1.20	20/04/2018
17431883 VC07 0.80 - 1.20 20/04/2018 17431882 VC07 1.60 - 2.00 20/04/2018 17431902 VC08 0.60 - 1.00 20/04/2018 17431901 VC08 1.00 - 1.45 20/04/2018 17431887 VC11 0.80 - 1.20 20/04/2018 17431886 VC11 1.80 - 2.20 20/04/2018 17431889 VC11 2.20 - 2.50 20/04/2018 17431891 VC10A 0.80 - 1.20 20/04/2018 17431892 VC10A 1.80 - 2.20 20/04/2018 17431913 VC12A 2.45 - 2.85 20/04/2018 17431911 VC12A 0.80 - 1.20 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 0.80 - 1.20 19/04/2018 17431893 VC01B 0.80 - 1.20 19/04/2018	17431900	VC06		2.00 - 2.46	20/04/2018
17431902 VC08 0.60 - 1.00 20/04/2018 17431901 VC08 1.00 - 1.45 20/04/2018 17431887 VC11 0.80 - 1.20 20/04/2018 17431886 VC11 1.80 - 2.20 20/04/2018 17431889 VC11 2.20 - 2.50 20/04/2018 17431891 VC10A 0.80 - 1.20 20/04/2018 17431892 VC10A 1.80 - 2.20 20/04/2018 17431913 VC12A 0.80 - 1.20 20/04/2018 17431911 VC12A 0.80 - 1.20 20/04/2018 17431912 VC12A 2.80 - 3.30 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431883	VC07		0.80 - 1.20	
17431901 VC08 1.00 - 1.45 20/04/2018 17431887 VC11 0.80 - 1.20 20/04/2018 17431886 VC11 1.80 - 2.20 20/04/2018 17431889 VC11 2.20 - 2.50 20/04/2018 17431891 VC10A 0.80 - 1.20 20/04/2018 17431892 VC10A 1.80 - 2.20 20/04/2018 17431913 VC12A 0.80 - 1.20 20/04/2018 17431911 VC12A 0.80 - 1.20 20/04/2018 17431912 VC12A 1.80 - 2.20 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 0.80 - 1.20 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431882	VC07		1.60 - 2.00	20/04/2018
17431887 VC11 0.80 - 1.20 20/04/2018 17431886 VC11 1.80 - 2.20 20/04/2018 17431889 VC11 2.20 - 2.50 20/04/2018 17431891 VC10A 0.80 - 1.20 20/04/2018 17431892 VC10A 1.80 - 2.20 20/04/2018 17431913 VC12A 0.80 - 1.20 20/04/2018 17431911 VC12A 0.80 - 1.20 20/04/2018 17431912 VC12A 2.80 - 3.30 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431902	VC08		0.60 - 1.00	20/04/2018
17431886 VC11 1.80 - 2.20 20/04/2018 17431889 VC11 2.20 - 2.50 20/04/2018 17431891 VC10A 0.80 - 1.20 20/04/2018 17431890 VC10A 1.80 - 2.20 20/04/2018 17431892 VC10A 2.45 - 2.85 20/04/2018 17431913 VC12A 0.80 - 1.20 20/04/2018 17431911 VC12A 1.80 - 2.20 20/04/2018 17431912 VC12A 2.80 - 3.30 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431901	VC08		1.00 - 1.45	20/04/2018
17431889 VC11 2.20 - 2.50 20/04/2018 17431891 VC10A 0.80 - 1.20 20/04/2018 17431890 VC10A 1.80 - 2.20 20/04/2018 17431892 VC10A 2.45 - 2.85 20/04/2018 17431913 VC12A 0.80 - 1.20 20/04/2018 17431911 VC12A 1.80 - 2.20 20/04/2018 17431912 VC12A 2.80 - 3.30 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431887	VC11		0.80 - 1.20	20/04/2018
17431891 VC10A 0.80 - 1.20 20/04/2018 17431890 VC10A 1.80 - 2.20 20/04/2018 17431892 VC10A 2.45 - 2.85 20/04/2018 17431913 VC12A 0.80 - 1.20 20/04/2018 17431911 VC12A 1.80 - 2.20 20/04/2018 17431912 VC12A 2.80 - 3.30 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431886	VC11		1.80 - 2.20	20/04/2018
17431890 VC10A 1.80 - 2.20 20/04/2018 17431892 VC10A 2.45 - 2.85 20/04/2018 17431913 VC12A 0.80 - 1.20 20/04/2018 17431911 VC12A 1.80 - 2.20 20/04/2018 17431912 VC12A 2.80 - 3.30 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431889	VC11		2.20 - 2.50	20/04/2018
17431892 VC10A 2.45 - 2.85 20/04/2018 17431913 VC12A 0.80 - 1.20 20/04/2018 17431911 VC12A 1.80 - 2.20 20/04/2018 17431912 VC12A 2.80 - 3.30 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431891	VC10A		0.80 - 1.20	20/04/2018
17431913 VC12A 0.80 - 1.20 20/04/2018 17431911 VC12A 1.80 - 2.20 20/04/2018 17431912 VC12A 2.80 - 3.30 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431890	VC10A		1.80 - 2.20	20/04/2018
17431911 VC12A 1.80 - 2.20 20/04/2018 17431912 VC12A 2.80 - 3.30 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431892	VC10A		2.45 - 2.85	20/04/2018
17431912 VC12A 2.80 - 3.30 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431913	VC12A		0.80 - 1.20	20/04/2018
17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431911	VC12A		1.80 - 2.20	20/04/2018
17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431912	VC12A		2.80 - 3.30	20/04/2018
17431893 VC09B 0.80 - 1.20 19/04/2018	17431884	VC01B		0.80 - 1.20	20/04/2018
100000	17431885	VC01B		1.24 - 1.54	20/04/2018
17431894 VC09B 1.26 - 1.66 19/04/2018	17431893	VC09B		0.80 - 1.20	19/04/2018
	17431894	VC09B		1.26 - 1.66	19/04/2018

Maximum Sample/Coolbox Temperature (°C):

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C

10.3
ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated **CERTIFICATE OF ANALYSIS** Client Reference: 62240712 SDG: 457244 180424-31 Report Number: Location: Lowestoft Order Number: 62240712 Superseded Report: **Results Legend** 174319 17431906 17431905 7431917 74319 7431903 74319 Lab Sample No(s) X Test 4 No Determination **Possible** Customer VC02 VC03 VC02 **VC03** VC03 VC02 Sample Reference Sample Types -S - Soil/Solid **UNS** - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 2.80 0.80 -3.20 -0.80 -PR - Process Water .80 .80 .80 - 2.20 SA - Saline Water Depth (m) TE - Trade Effluent . 3.20 3.20 3.63 1.20 TS - Treated Sewage .20 US - Untreated Sewage 250g Amber Jar (ALE210) 1kg TUB 250g Amber Jar (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber Jar (ALE210) 250g Amber Jar (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 250g Amber J (ALE210) RE - Recreational Water DW - Drinking Water 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) 1kg TUB 1kg TUB Non-regulatory Ξ UNL - Unspecified Liquid Container TUB SL - Sludge G - Gas Jar Jar OTH - Other Sample Type S S S S S S S S S S S S v ANC at pH4 and ANC at pH 6 All NDPs: 0 Tests: 34 X X X X X X All Anions by ion Chromatography NDPs: 0 Tests: 34 Χ X X X X X Anions by Kone (w) ΑII NDPs: 0 Tests: 34 X X X Х X X Asbestos ID in Solid Samples ΔII NDPs: 0 Tests: 34 X X X X X X X CEN Readings All NDPs: 0 Tests: 34 X X X X X X X Cyanide Comp/Free/Total/Thiocyanate All NDPs: 0 Tests: 34 X X X X X Dissolved Metals by ICP-MS All NDPs: 0 Tests: 34 X X X X X X X Dissolved Organic/Inorganic Carbon ΑII NDPs: 0 Tests: 34 X X X X X X X EPH CWG (Aliphatic) GC (S) ΑII NDPs: 0 Tests: 34 X X X X X X EPH CWG (Aromatic) GC (S) All NDPs: 0 Tests: 34 X X Х Х X X Fluoride All NDPs: 0 Tests: 34 X X X X X X X

GRO by GC-FID (S)

Hexavalent Chromium (s)

Loss on Ignition in soils

Mercury Dissolved

All

ΑII

All

All

NDPs: 0 Tests: 34

NDPs: 0 Tests: 34

NDPs: 1 Tests: 33

NDPs: 0 Tests: 34

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

	17431905			17431904		17431908				17431909			17431910			17431907			17431895	17431896
	VC03			VC03		VC04			VC04			VC04				VC04	VC05			VC05
	2.80 - 3.20			3.39 - 3.79		0.80 - 1.20			1.80 - 2.20				2.80 - 3.20			3.60 - 4.00			0.80 - 1.20	1.80 - 2.20
250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
x		x x x	x x x		x x x	X X X		x x x	x		x x x	X X X		x x x	X X X		x x x	x		x x x
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X		X	X		X	X		X	X		X	X		X	X		X	X		X

ALS

Client Reference: 62240712 SDG: 457244 180424-31 Report Number: Location: Lowestoft Order Number: 62240712 Superseded Report: **Results Legend** 17431906 743191 7431915 7431903 7431905 7431917 Lab Sample No(s) X Test 19 No Determination **Possible** Customer VC02 VC02 VC03 **VC03** VC03 Sample Reference Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 2.80 0.80 0.80 -PR - Process Water .20 .80 .80 SA - Saline Water Depth (m) - 2.20 - 3.63 - 2.20 TE - Trade Effluent - 3.20 - 3.20 .20 .20 TS - Treated Sewage US - Untreated Sewage 60g VOC (ALE215) 250g Amber Jar (ALE210) 60g VOC (ALE215) 250g Amber Jar (ALE210) 250g Amber J (ALE210) 1kg TUB 250g Amber Ja (ALE210) 250g Amber Jar (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB RE - Recreational Water DW - Drinking Water 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) Non-regulatory 1kg TUB 1kg TUB 1kg TUB Ιćg UNL - Unspecified Liquid Container TIB SL - Sludge G - Gas Jar Jar Jar OTH - Other Sample Type S S S v S S S S S S S S S S S S S v Metals in solid samples by OES All NDPs: 0 Tests: 34 X X X X X X All Mineral Oil NDPs: 0 Tests: 34 X X X X X X OC, OP Pesticides and Triazine Herb All NDPs: 0 Tests: 34 X X X X X X Organotins on soils* All NDPs: 0 Tests: 34 X X PAH by GCMS All NDPs: 0 Tests: 34 X X X X X X Passing Through >63µm sieve All NDPs: 1 Tests: 33 X X X X X X X PCBs by GCMS All NDPs: 0 Tests: 34 X X X X X X All рΗ NDPs: 0 Tests: 34 X X Х Х X X Phenols by HPLC (S) All NDPs: 0 Tests: 34 X X X X X X Phenols by HPLC (W) All NDPs: 0 Tests: 34 X X X X X X All Polybrominated Diphenyl Ethers* NDPs: 1 Tests: 33 X X X X X X All Sample description NDPs: 0 Tests: 34 X X X X X X Semi Volatile Organic Compounds ΑII NDPs: 0 Tests: 34 X X X X X X Solid Content All NDPs: 0 Tests: 34 X X X X X X Total Dissolved Solids All NDPs: 0 Tests: 34 X X X X X X X

	17431905			17431904			17431908			17431909			17431910			17431907			17431895	17431896
	VC03			VC03			VC04	VC04			VC04					VC04		VC05	VC05	
	2.80 - 3.20			3.39 - 3.79			0.80 - 1.20			1.80 - 2.20			2.80 - 3.20			3.60 - 4.00			0.80 - 1.20	1.80 - 2.20
250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
X			X			Х			X			X			X			X		
			^			^			^			^			^			^		
X			X			X			X			X			Х			X		
X			X			X			X			X			Х			X		
Х			X			Х			Х			X			Х			Х		
^			^			^			^			^			^			^		
X			X			X			X			X			X			X		
		X			X			X			X			X			X			X
X			Х			Х			X			Х			Х			Х		
^			^			^			^			^			^			^		
X			X			X			X			X			X			X		
X			X			X			X			X			Х			X		
		X			X			X			X			X			X			X
X			X			X			X			X			X			X		
X			X			X			X			Х			Х			X		
X			X			X			X			X			Х			X		
X			X			X			X			Х			Х			X		
		Х			v			v			V			X			v			V
		X			X			X			X			X			X			X

Validated

CERTIFICATE OF ANALYSIS

(ALS)

Client Reference: 62240712 SDG: 180424-31 Report Number: 457244 Order Number: 62240712 Superseded Report: Location: Lowestoft **Results Legend** 17431906 7431916 7431915 7431917 7431914 7431903 7431905 Lab Sample No(s) X Test No Determination Possible Customer VC02 VC02 VC02 VC03 VC02 VC03 VC03 **Sample Reference** Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 2.80 0.80 -3.20 0.80 2.80 PR - Process Water .80 - 2.20 SA - Saline Water Depth (m) - 3.20 - 3.63 TE - Trade Effluent - 3.20 1.20 1.20 TS - Treated Sewage US - Untreated Sewage 60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber Jar (ALE210) 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB RE - Recreational Water DW - Drinking Water 1kg TUB Non-regulatory Жg UNL - Unspecified Liquid Container TUB SL - Sludge G - Gas OTH - Other Jar Jar Sample Type v S S S S S S S S S S S S S S S S Total Organic Carbon All NDPs: 0 Tests: 34 X X X X X X All Total Sulphate NDPs: 0 Tests: 34 X X X X X X TPH CWG GC (S) All NDPs: 0 Tests: 34 X X X X X X VOC MS (S) All NDPs: 0 Tests: 34 X X X X X

17431905			17431904		17431908				17431909			17431910			17431907			17431895	17431896		
VC03			VC03		VC04					VC04				VC04			VC04			VC05	VC05
2.80 - 3.20			3.39 - 3.79		0.80 - 1.20				1.80 - 2.20			2.80 - 3.20			3.60 - 4.00			0.80 - 1.20	1.80 - 2.20		
60g VOC (ALE215) 250g Amber Jar (ALE210)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB		
v v	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	v	S	S		
X		X			X			X			X			X			X				
X		X			Х			X			X			Х			Х				
X		X			X			X			X			X			X				
X			X			X			X			X			X			X			

ALS	

Client Reference: 62240712 SDG: Report Number: 457244 180424-31 Location: Lowestoft Order Number: 62240712 Superseded Report: **Results Legend** 7431899 7431896 7431900 7431883 Lab Sample No(s) X Test 1902 No Determination **Possible** Customer VC05 VC06 **VC06 VC07** VC07 802 Sample Reference Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 0.60 0.80 -0.80 - 1.202.00 PR - Process Water .80 - 2.20 SA - Saline Water Depth (m) - 2.46 - 1.00 TE - Trade Effluent - 2.00 .20 TS - Treated Sewage US - Untreated Sewage 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 250g Amber J (ALE210) 250g Amber Jar (ALE210) 250g Amber J (ALE210) 1kg TUB 250g Amber Jar (ALE210) 250g Amber Jar (ALE210) RE - Recreational Water DW - Drinking Water 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) 1kg TUB Non-regulatory 1kg TUB 1kg TUB UNL - Unspecified Liquid Container SL - Sludge G - Gas Jar Jar Jar Jar OTH - Other Sample Type S S S v v S S S S S S S S S S S S S ANC at pH4 and ANC at pH 6 All NDPs: 0 Tests: 34 X X X X X X X All Anions by ion Chromatography NDPs: 0 Tests: 34 X X Х X Х X X All Anions by Kone (w) NDPs: 0 Tests: 34 X X X X Χ X Asbestos ID in Solid Samples All NDPs: 0 Tests: 34 X X X CEN Readings All NDPs: 0 Tests: 34 X X X X X X Cyanide Comp/Free/Total/Thiocyanate All NDPs: 0 Tests: 34 X X X X X X X Dissolved Metals by ICP-MS All NDPs: 0 Tests: 34 X X X X X X All Dissolved Organic/Inorganic Carbon NDPs: 0 Tests: 34 X X Х X X X EPH CWG (Aliphatic) GC (S) All NDPs: 0 Tests: 34 X X X X X X X EPH CWG (Aromatic) GC (S) All NDPs: 0 Tests: 34 X X X X X X X All Fluoride NDPs: 0 Tests: 34 X X X X X X GRO by GC-FID (S) All NDPs: 0 Tests: 34 X X X X X X Hexavalent Chromium (s) ΑII NDPs: 0 Tests: 34 X X X X X X X Loss on Ignition in soils All NDPs: 1 Tests: 33 X X X X X X X Mercury Dissolved All NDPs: 0 Tests: 34 X X X Χ X X

17431902			17431901			17431887			17431886			17431889			17431891			17431890		17431892
VC08			VC08			VC11			VCII			VC11			VC10A			VC10A		VC10A
0.60 - 1.00			1.00 - 1.45			0.80 - 1.20			1.80 - 2.20			2.20 - 2.50			0.80 - 1.20			1.80 - 2.20		2.45 - 2.85
60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
S	S	v	S	v	v	S	S	v	S	S	S	S	v	v	S	S	v	S	v	S
		X			X			X			X			X			X			Х
		Х			X			X			Х			X			Х			Х
		^			^			^			^			^			^			^
	X			X			X			X			X			X			X	
	X			X			X			X			X				X		X	
	X			X			X			X			X			X			X	
		Х			X			X			X			X			X			X
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	X			X			X			X			X			X			X	
	X			X			X			X			X			X			X	
		X			X			X			X			X			X			Х
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	X			X			X			X			X			X			X	
X			X			X			X			X			X			X		
		X			X			X			X			X			X			X
		Х			X			Х			X			N			Х			X
		^			^			^			^						^			^
	X			X			X			X			X			X			X	

ALS	

Client Reference: 62240712 SDG: Report Number: 457244 180424-31 Location: Lowestoft Order Number: 62240712 Superseded Report: **Results Legend** 7431899 7431896 7431898 7431900 7431883 Lab Sample No(s) X Test 1902 No Determination **Possible** Customer VC05 VC06 **VC06 VC07** VC07 802 Sample Reference Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 0.80 0.60 0.80 -2.00 PR - Process Water .80 - 2.20 SA - Saline Water Depth (m) - 1.20 - 2.46 - 1.00 TE - Trade Effluent - 2.00 .20 TS - Treated Sewage US - Untreated Sewage 60g VOC (ALE215) 250g Amber Jar (ALE210) 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 250g Amber J (ALE210) 250g Amber Jar (ALE210) 250g Amber J (ALE210) 1kg TUB 250g Amber Jar (ALE210) RE - Recreational Water DW - Drinking Water 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) 1kg TUB Non-regulatory 1kg TUB 1kg TUB UNL - Unspecified Liquid Container SL - Sludge G - Gas Jar Jar Jar Jar OTH - Other Sample Type S S S S S S S S S S S S S S S S S S Metals in solid samples by OES All NDPs: 0 Tests: 34 X X X X X X X All Mineral Oil NDPs: 0 Tests: 34 X X X Х X X X OC, OP Pesticides and Triazine Herb All NDPs: 0 Tests: 34 X X X X X X Χ All Organotins on soils* NDPs: 0 Tests: 34 X X X PAH by GCMS All NDPs: 0 Tests: 34 X X X X X X X Passing Through >63µm sieve All NDPs: 1 Tests: 33 X X X X X X PCBs by GCMS All NDPs: 0 Tests: 34 X X X X X X X All рΗ NDPs: 0 Tests: 34 X X X X X X X Phenols by HPLC (S) All NDPs: 0 Tests: 34 Χ Χ X X X X X Phenols by HPLC (W) All NDPs: 0 Tests: 34 Χ X X X X X All Polybrominated Diphenyl Ethers* NDPs: 1 Tests: 33 X X X X X X X All Sample description NDPs: 0 Tests: 34 Χ X X X X X X Semi Volatile Organic Compounds ΑII NDPs: 0 Tests: 34 X X X X X X X Solid Content All NDPs: 0 Tests: 34 X X X X X X X Total Dissolved Solids All NDPs: 0 Tests: 34 X X X X Χ X

17431902			17431901			17431887			17431886			17431889			17431891			17431890		17431892
VC08			VC08			VC11			VC11			VC11			VC10A			VC10A		VC10A
0.60 - 1.00			1.00 - 1.45			0.80 - 1.20			1.80 - 2.20			2.20 - 2.50			0.80 - 1.20			1.80 - 2.20		2.45 - 2.85
60g VOC (ALE215)	IKG I UB	(ALE210)	(ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
S	U	n 0	n v	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
		X			X			X			X			X			X			Х
					^			^			^						^			^
		X			X			Х			X			X			X			X
		X			X			X			X			X			X			X
		X			Х			X			X			X			X			X
		X			Х			Х			Х		N	X			Х			Х
	X			X			X			X							X		X	
		X			Х			X			X			X			Χ			Х
		X			X			X			X			X			X			Х
		X			X			X			X			X			X			X
	X			X			X			X			X			X			X	
		X			Х			X			Х			N			X			Х
		X			X			X			X						X			X
		X			X			X			X			X			X			X
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		X			X			X			X			X			X			X
	X			X			X			X			X			X			X	

Validated

CERTIFICATE OF ANALYSIS

(ALS)	

Client Reference: 62240712 SDG: 180424-31 Report Number: 457244 Order Number: 62240712 Superseded Report: Location: Lowestoft **Results Legend** 17431899 7431902 7431896 7431900 7431883 Lab Sample No(s) X Test No Determination Possible Customer VC07 VC08 VC05 **VC06** VC06 VC07 **Sample Reference** Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 0.80 - 1.20 2.00 0.80 -0.60 - 1.00PR - Process Water .80 - 2.20 SA - Saline Water Depth (m) - 2.46 - 2.00 TE - Trade Effluent 1.20 TS - Treated Sewage US - Untreated Sewage 60g VOC (ALE215) 250g Amber Ja (ALE210) 1kg TUB 250g Amber Jar (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber Jar (ALE210) 60g VOC (ALE215) 250g Amber Jar (ALE210) 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB RE - Recreational Water DW - Drinking Water Non-regulatory 1kg TUB UNL - Unspecified Liquid Container SL - Sludge G - Gas OTH - Other Jar Jar Jar Jar Sample Type v S S S S S S S S S S S S S S Total Organic Carbon All NDPs: 0 Tests: 34 X X X X X X X All Total Sulphate NDPs: 0 Tests: 34 X X X Χ Χ Χ X TPH CWG GC (S) All NDPs: 0 Tests: 34 X X X X X X X VOC MS (S) All NDPs: 0 Tests: 34 X X X X X

17431902 V			17431901 V			17431887 V			17431886 V			17431889 V			17431891 V			17431890 Vo		
VC08			VC08			VC11			VC11			VC11			VC10A			VC10A		
0.60 - 1.00			1.00 - 1.45			0.80 - 1.20			1.80 - 2.20			2.20 - 2.50			0.80 - 1.20			1.80 - 2.20		
60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	(ALE210)
S	S	S	S	S	S	S	S	v	v	S	ν	v	ν	S	S	S	S	S	S	
		X			X			Х			X			X			X			×
		Х			X			Х			Х			Х			X)
		^			^			^			^			^			^			^
		X			X			X			X			X			X			X
Χ			X			X			X			X			X			X		

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Client Reference: 62240712 SDG: 457244 180424-31 Report Number: Location: Lowestoft Order Number: 62240712 Superseded Report: **Results Legend** 7431911 7431913 7431912 7431884 Lab Sample No(s) X Test 1893 No Determination **Possible** Customer 5 VC12A VC12A VC01B VC12A VC09B Sample Reference 10A Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 0.80 0.80 2.45 2.80 0.80 - 1 PR - Process Water .80 SA - Saline Water Depth (m) - 3.30 - 1.20 - 2.20 TE - Trade Effluent - 2.85 1.20 1.20 TS - Treated Sewage US - Untreated Sewage 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 250g Amber J (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 250g Amber Jar (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 60g VOC (ALE215) 250g Amber J (ALE210) RE - Recreational Water DW - Drinking Water 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) 1kg TUB Non-regulatory 1kg TUB UNL - Unspecified Liquid Container SL - Sludge G - Gas Jar Jar Jar Jar Jar OTH - Other Sample Type S S v S S S S S S S S S S S S S S v ANC at pH4 and ANC at pH 6 All NDPs: 0 Tests: 34 X X Х X X X All Anions by ion Chromatography NDPs: 0 Tests: 34 X X X X X X Anions by Kone (w) All NDPs: 0 Tests: 34 X X X X X X Asbestos ID in Solid Samples All NDPs: 0 Tests: 34 X X X X CEN Readings All NDPs: 0 Tests: 34 X X X X X X Cyanide Comp/Free/Total/Thiocyanate All NDPs: 0 Tests: 34 X X X X X X Dissolved Metals by ICP-MS All NDPs: 0 Tests: 34 X X X X X X All Dissolved Organic/Inorganic Carbon NDPs: 0 Tests: 34 X X Х Х X X EPH CWG (Aliphatic) GC (S) All NDPs: 0 Tests: 34 X X X X X X EPH CWG (Aromatic) GC (S) All NDPs: 0 Tests: 34 X X X X X X All Fluoride NDPs: 0 Tests: 34 X X X X X GRO by GC-FID (S) All NDPs: 0 Tests: 34 X X X X Χ X X Hexavalent Chromium (s) ΑII NDPs: 0 Tests: 34 X X X X X X Loss on Ignition in soils All NDPs: 1 Tests: 33 X X X X X X All Mercury Dissolved NDPs: 0 Tests: 34 X X X X X X

		17431894	
		VC09B	
		1.26 - 1.66	
1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	
S	S	S	
	v		
	X		
	X		
X			
^			
X			
X			
	X		
X			
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	X		
	X		
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	X		
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Client Reference: 62240712 SDG: 457244 180424-31 Report Number: Location: Lowestoft Order Number: 62240712 Superseded Report: **Results Legend** 7431911 7431913 7431912 7431884 Lab Sample No(s) X Test 1893 No Determination **Possible** Customer 5 VC12A VC12A VC12A VC01B VC09B Sample Reference 10A Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 0.80 0.80 2.45 2.80 0.80 - 1 PR - Process Water .80 - 2.20 SA - Saline Water Depth (m) - 3.30 - 1.20 - 2.85 TE - Trade Effluent 1.20 1.20 TS - Treated Sewage US - Untreated Sewage 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 250g Amber J (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 250g Amber Jar (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 60g VOC (ALE215) 250g Amber J (ALE210) RE - Recreational Water DW - Drinking Water 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) Non-regulatory 1kg TUB 1kg TUB UNL - Unspecified Liquid Container SL - Sludge G - Gas Jar Jar Jar Jar Jar OTH - Other Sample Type S S S S S S S S S S S S S S S S S v Metals in solid samples by OES All NDPs: 0 Tests: 34 X X Х X X X All Mineral Oil NDPs: 0 Tests: 34 X X X X X X OC, OP Pesticides and Triazine Herb All NDPs: 0 Tests: 34 X X X X X X Organotins on soils* All NDPs: 0 Tests: 34 X X X PAH by GCMS All NDPs: 0 Tests: 34 X X X X X X Passing Through >63µm sieve All NDPs: 1 Tests: 33 X X X X X X PCBs by GCMS All NDPs: 0 Tests: 34 X X X X X X All рΗ NDPs: 0 Tests: 34 Х X Х X X X Phenols by HPLC (S) All NDPs: 0 Tests: 34 X X X X X X Phenols by HPLC (W) All NDPs: 0 Tests: 34 X X X X X X All Polybrominated Diphenyl Ethers* NDPs: 1 Tests: 33 X X X X X X All Sample description NDPs: 0 Tests: 34 X X X X Χ X Semi Volatile Organic Compounds ΑII NDPs: 0 Tests: 34 X X X X X X Solid Content All NDPs: 0 Tests: 34 X X X X X X Total Dissolved Solids All NDPs: 0 Tests: 34 X X X X X X

		17431894	
		VC09B	
		1.26 - 1.66	
1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	
S	S	S	
	3.6		
	X		
	X		
	X		
	^		
	X		
	X		
X			
	X		
	X		
	X		
Х			
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	X		
	X		
	X		
	X		
Χ			1

Validated

CERTIFICATE OF ANALYSIS

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Client Reference: 62240712 SDG: 180424-31 Report Number: 457244 Order Number: 62240712 Superseded Report: Location: Lowestoft **Results Legend** 17431911 7431893 7431913 7431912 7431884 Lab Sample No(s) X Test No Determination Possible Customer VC10A VC12A VC12A VC12A VC01B VC09B **Sample Reference** Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 2.45 0.80 2.80 0.80 - 1.20 0.80 - 1 PR - Process Water .80 - 2.20 SA - Saline Water Depth (m) - 2.85 - 3.30 TE - Trade Effluent 1.20 1.20 TS - Treated Sewage US - Untreated Sewage 60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB RE - Recreational Water DW - Drinking Water 60g VOC (ALE215) Non-regulatory 1kg TUB UNL - Unspecified Liquid Container SL - Sludge G - Gas OTH - Other Jar Jar Jar Jar Jar Sample Type S S S S S S S S S S S S S S S S Total Organic Carbon All NDPs: 0 Tests: 34 X X X X X X All Total Sulphate NDPs: 0 Tests: 34 X X Χ X X X TPH CWG GC (S) All NDPs: 0 Tests: 34 X X X X X X VOC MS (S) All NDPs: 0 Tests: 34 X X X X X X

		17431894 VC09B 1
		1.26 - 1.66
1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
S	S	S
	X	
	X	
	Х	
	^	

>10mm

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report: 457244

Sample Descriptions

Grain Sizes

very fine <0.0	0.063 fine 0.063	mm - 0.1mm m	edium 0.111111	n - 2mm coar	se 2mm - 1	l0mm very
.ab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions
17431914	VC02	3.20 - 3.63	Dark Brown	Silty Clay Loam	None	None
17431915	VC02	2.80 - 3.20	Dark Brown	Sandy Clay Loam	None	None
17431916	VC02	1.80 - 2.20	Dark Brown	Silty Sand	Stones	None
17431917	VC02	0.80 - 1.20	Dark Brown	Sandy Silt Loam	Stones	None
17431903	VC03	0.80 - 1.20	Grey	N/A	None	None
17431904	VC03	3.39 - 3.79	Dark Brown	Silty Sand	Stones	None
17431905	VC03	2.80 - 3.20	Dark Brown	Silty Clay Loam	None	None
17431906	VC03	1.80 - 2.20	Dark Brown	Sand	None	None
17431907	VC04	3.60 - 4.00	Light Brown	Sand	None	None
17431908	VC04	0.80 - 1.20	Light Brown	Sand	None	None
17431909	VC04	1.80 - 2.20	Light Brown	Sand	Stones	None
17431910	VC04	2.80 - 3.20	Dark Brown	Silty Sand	Stones	None
17431895	VC05	0.80 - 1.20	Dark Brown	Loamy Sand	None	None
17431896	VC05	1.80 - 2.20	Dark Brown	Sand	None	None
17431898	VC05	2.53 - 2.93	Dark Brown	Loamy Sand	Stones	None
17431899	VC06	0.80 - 1.20	Light Brown	Silty Clay Loam	Stones	Vegetation
17431900	VC06	2.00 - 2.46	Light Brown	Silty Sand	Stones	Stones
17431882	VC07	1.60 - 2.00	Cream	Sand	None	None
17431883	VC07	0.80 - 1.20	Light Brown	Sand	None	None
17431901	VC08	1.00 - 1.45	Light Brown	Silty Sand	Stones	None
17431902	VC08	0.60 - 1.00	Grey	Sand	Stones	None
17431886	VC11	1.80 - 2.20	Cream	Sand	None	None
17431887	VC11	0.80 - 1.20	Dark Brown	Loamy Sand	None	None
17431889	VC11	2.20 - 2.50	Light Brown	Sand	Stones	None
17431890	VC10A	1.80 - 2.20	Light Brown	Loamy Sand	Stones	None
17431891	VC10A	0.80 - 1.20	Dark Brown	Loamy Sand	None	None
17431892	VC10A	2.45 - 2.85	Light Brown	Sand	None	None
17431911	VC12A	1.80 - 2.20	Grey	Sand	Stones	None
17431912	VC12A	2.80 - 3.30	Grey	Sandy Loam	Stones	None
17431913	VC12A	0.80 - 1.20	Dark Brown	Silty Clay Loam	None	Oil/Petroleum
17431884	VC01B	0.80 - 1.20	Dark Brown	Sand	None	None
17431885	VC01B	1.24 - 1.54	Dark Brown	Sand	None	None
17431893	VC09B	0.80 - 1.20	Dark Brown	Sandy Loam	Stones	None
17431894	VC09B	1.26 - 1.66	Light Brown	Silty Sand	Stones	None



Validated

SDG: 180424-31 Client Reference: 62240712 Report Number: 457244 Location: Lowestoft Order Number: 62240712 Superseded Report:

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Results Legend # ISO17025 accredited. M mCERTS accredited.	Custo	mer Sample Ref.	VC02		VC02	VC02		VC02	VC03	VC03
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted test. " " recovery of the surrogate st. check the efficiency of the met results of individual compount samples aren't corrected for th Trigger breach confirmed 1-58+§@ Sample deviation (see appendi	hod. The Is within e recovery La x)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference	0.80 - 1.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431917		1.80 - 2.20 Soil/Solid (S) 20/04/2018 15.43:00 24/04/2018 1804/24-31 17431916	2.80 - 3.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431915		3.20 - 3.63 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431914	0.80 - 1.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431903	1.80 - 2.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431906
Component Moisture Content Ratio (% of as	LOD/Units %	Method PM024	11		14	27		22	46	20
received sample) 2,2',4,4',6-pentabromodiphenyl	mg/kg	SUB	<0.1	\dashv	<0.1	<0.1		<0.1	<0.1	<0.1
ether (BDE-100)* 2,2',3,4,4',5'-hexabromodipheny	mg/kg	SUB	<0.1	M	<0.1	<0.1	M	<0.1	<0.1	<0.1
1 ether (BDE-138)* 2,2',4,4',5,5'-hexabromodipheny	mg/kg	SUB	<0.1		<0.1	<0.1		<0.1	<0.1	<0.1
1 ether (BDE-153)* 2,2',4,4',5,6'-hexabromodipheny	mg/kg	SUB	<0.1	\dashv	<0.1	<0.1		<0.1	<0.1	<0.1
1 ether (BDE-154)* 2,4,4'-tribromodiphenyl ether	mg/kg	SUB	<0.1		<0.1	<0.1		<0.1	<0.1	<0.1
(BDE-28)* 2,2',4,4'-tetrabromodiphenyl ether (BDE-47)*	mg/kg	SUB	<0.1	\dashv	<0.1	<0.1		<0.1	<0.1	<0.1
2,3',4,4'-tetrabromodiphenyl ether (BDE-66)*	mg/kg	SUB	<0.1		<0.1	<0.1		<0.1	<0.1	<0.1
2,2',3,4,4'-pentabromodiphenyl	mg/kg	SUB	<0.1	\dashv	<0.1	<0.1		<0.1	<0.1	<0.1
ether (BDE-85)* 2,2',4,4',5-pentabromodiphenyl	mg/kg	SUB	<0.1	\dashv	<0.1	<0.1		<0.1	<0.1	<0.1
ether (BDE-99)* Solids, Total	<0.1 %	TBC	89	\dashv	86	73		78	54	80
Loss on ignition	<0.7 %	TM018	6.24	М	<0.7	5.27	M	11.5 M	6.91	1.04 M
Sulphate, 2:1 water soluble	<0.002 g/l	TM019	0.0365	М	0.0109 M	0.182	M	0.117 M	0.0754	0.0147 M
Mineral oil >C10-C40	<1 mg/kg	TM061	13.2	IVI	<1	19.2	IVI	7.47	56.1	3.87
Mineral Oil Surrogate % recovery**	%	TM061	83.5		86.7	88.1		88.3	85.6	85.2
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	М	<0.01	<0.01	М	<0.01	<0.01	<0.01
Organic Carbon, Total	<0.2 %	TM132	0.235	М	<0.2	0.78	М	0.552 M	1.37	<0.2
Soil Organic Matter (SOM)	<0.35 %	TM132	0.405	#	<0.35 #	1.34	#	0.952 #	2.36	<0.35 #
рН	1 pH Units	TM133	8.5	М	7.32 M	5.77	М	6.73 M	8.62	8.08 M
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	#	<0.6 #	<0.6	#	<0.6 #	<0.6	<0.6
Cyanide, Total	<1 mg/kg	TM153	<1	М	<1 M	<1	М	<1 M	<1	<1 M
Cyanide, Free	<1 mg/kg	TM153		М	<1 M	<1	М	<1 M		<1 M
PCB congener 28	<3 µg/kg	TM168		М	<3 M	<3	М	<3 M		<3 M
PCB congener 52	<3 µg/kg	TM168		М	<3 M	<3	М	<3 M		<3 M
PCB congener 101	<3 µg/kg	TM168		М	<3 M	<3	М	<3 M		<3 M
PCB congener 118	<3 µg/kg	TM168		М	<3 M	<3	М	<3 M		<3 M
PCB congener 138	<3 µg/kg	TM168		М	<3 M	<3	М	<3 M		<3 M
PCB congener 153	<3 µg/kg	TM168		М	<3 M	<3	М	<3 M		<3 M
PCB congener 180	<3 µg/kg	TM168		М	<3 M	<3	М	<3 M		<3 M
Sum of detected PCB 7 Congeners	<21 μg/kg	TM168	<21		<21	<21		<21	<21	<21
PCB congener 81	<3 µg/kg	TM168		М	<3 M	<3	M	<3 M		<3 M
PCB congener 77	<3 μg/kg	TM168		М	<3 M	<3	M	<3 M		<3 M
PCB congener 123	<3 µg/kg	TM168	<3	M	<3 M	<3	М	<3 M	<3	<3 M



CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Customer Sample Ref. VC03 VC02 VC02 VC02 VC02 VC03 ISO17025 accredited mCERTS accredited. Aqueous / settled sample Depth (m) 0.80 - 1.20 1.80 - 2.20 2.80 - 3.20 3.20 - 3.63 0.80 - 1.20 1.80 - 2.20 Dissolved / filtered sa Sample Type Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Total / unfiltered sa Subcontracted test.
% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within Date Sampled 20/04/2018 20/04/2018 20/04/2018 20/04/2018 20/04/2018 20/04/2018 Sample Time 15:43:00 15:43:00 15:43:00 15:43:00 14.28.00 14.28.00 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 24/04/2018 180424-31 180424-31 SDG Ref samples aren't corrected for the recover 17431917 17431916 17431915 17431914 17431903 17431906 Trigger breach confirmed Lab Sample No.(s) 1-5&+§@ Sample deviation (see appe AGS Reference Component LOD/Units Method PCB congener 114 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M M M M PCB congener 105 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg М M M М M PCB congener 126 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M Μ M M M PCB congener 167 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg M Μ Μ M М TM168 PCB congener 156 <3 <3 <3 <3 <3 <3 <3 µg/kg M М M Μ M TM168 PCB congener 157 <3 µg/kg <3 <3 <3 <3 <3 <3 Μ Μ Μ Μ PCB congener 169 TM168 <3 <3 <3 µg/kg <3 <3 <3 <3 M M Μ M М PCB congener 189 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 М M M M M Sum of detected WHO 12 PCBs <36 µg/kg TM168 <36 <36 <36 <36 <36 <36 Arsenic TM181 4.22 3.84 37.9 15.3 19.7 3.42 <0.6 mg/kg M M M M M TM181 4.93 <0.7 11.3 10.1 32.9 2.25 Boron <0.7 mg/kg # TM181 0.098 0.0626 0.241 0.086 Cadmium <0.02 ma/ka 0.553 1.18 М M M M M <0.9 mg/kg TM181 3.31 2.58 24.9 <0.9 22 5.45 Chromium Μ Μ Μ Μ Μ 4.19 3.22 29.3 25.6 2.9 Copper <1.4 mg/kg TM181 12 1 Μ M M Μ M Lead <0.7 mg/kg TM181 7.83 2 65 31.1 13.5 317 4 27 М M M Μ M TM181 < 0.14 Mercury <0.14 mg/kg < 0.14 < 0.14 < 0.14 < 0.14 < 0.14 M Μ Μ M M Nickel <0.2 mg/kg TM181 4.38 3.47 35.9 21.5 23.4 3.3 Μ М Μ M М Selenium TM181 <1 <1 <1 <1 <1 <1 <1 mg/kg # # # # Zinc <1.9 mg/kg TM181 16 11.6 104 61.7 95.8 18.7 Μ M M Μ M TM182 0.157 0.0613 0.101 0.0986 2.02 0.0787 ANC @ pH 4 < 0.03 mol/kg ANC @ pH 6 0.227 < 0.03 TM182 0.0689 < 0.03 < 0.03 < 0.03 < 0.03 mol/kg TM221 <48 356 <48 <48 mg/kg 68.8 613 656 Sulphate, Total M M Μ M M

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Customer Sample Ref. VC03 VC03 VC04 VC04 VC04 VC04 Results Leger ISO17025 accredited. mCERTS accredited.
Aqueous / settled sample
Dissolved / filtered sample
Total / unfiltered sample. Depth (m) 2.80 - 3.20 3.39 - 3.79 0.80 - 1.20 1.80 - 2.20 2.80 - 3.20 3.60 - 4.00 Soil/Solid (S) 20/04/2018 Soil/Solid (S) Soil/Solid (S) 19/04/2018 Sample Type Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) tot.unfilt 20/04/2018 19/04/2018 19/04/2018 19/04/2018 Date Sample Subcontracted test. 8 recovery of the surrogate standard to Sample Time 14.28.00 14.28.00 15:50:00 15.50.00 15:50:00 15:50:00 check the efficiency of the method. The results of individual compounds within 24/04/2018 24/04/2018 24/04/2018 24/04/2018 24/04/2018 24/04/2018 Date Received 180424-31 180424-31 180/12/-31 180424-31 180424-31 180424-31 SDG Ref mples aren't corrected for the recove 17431905 17431904 17431910 17431908 17431909 17431907 (F) Trigger breach confirmed 1-5&+§@ Sample deviation (see apper b Sample No.(s) AGS Reference LOD/Units Component Method Moisture Content Ratio (% of as 23 13 19 15 13 13 PM024 % received sample) 2.2'.4.4',6-pentabromodiphenyl SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg ether (BDE-100)* M M Μ M Μ M 2.2'.3.4,4',5'-hexabromodipheny SUB <0.1 <0.1 <0.1 mg/kg < 0.1 < 0.1 < 0.1 I ether (BDE-138)* SUB 2,2',4,4',5,5'-hexabromodipheny mg/kg < 0.1 < 0.1 < 0.1 < 0.1 < 0.1 < 0.1 I ether (BDE-153)* 2,2',4,4',5,6'-hexabromodipheny SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg I ether (BDE-154)* 2,4,4'-tribromodiphenyl ether SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg (BDE-28)* 2,2',4,4'-tetrabromodiphenyl SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg ether (BDE-47)* 2,3',4,4'-tetrabromodiphenyl SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg ether (BDE-66)* 2.2'.3.4.4'-pentabromodipheny SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg ether (BDE-85)* SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 2,2',4,4',5-pentabromodiphenyl mg/kg ether (BDE-99)* TBC 77 Solids, Total <0.1% 87 81 85 87 87 <0.7 % TM018 0.854 Loss on ignition 9.71 <0.7 1.96 <0.7 < 0.7 Μ Μ Μ M М Μ Sulphate, 2:1 water soluble <0.002 g/l TM019 0.158 0.00798 0.0369 0.016 0.0454 0.0153 M M Μ M Μ М Mineral oil >C10-C40 <1 mg/kg TM061 7.57 <1 5.09 <1 <1 <1 Mineral Oil Surrogate % TM061 89.4 87.2 88.4 85.6 83 86.1 recovery*3 <0.01 mg/kg TM062 (S) <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 Phenol M M М M M M Organic Carbon, Total <0.2 % TM132 0.414 <0.2 <0.2 <0.2 <0.2 < 0.2 Μ Μ M Μ Μ M Soil Organic Matter (SOM) <0.35 % TM132 0.714 <0.35 <0.35 <0.35 < 0.35 <0.35 # # # рΗ 1 pH Units TM133 6 26 5.78 8 69 8 42 7 49 6 18 M Μ Μ M Μ <0.6 <0.6 Chromium, Hexavalent < 0.6 mg/kg TM151 <0.6 <0.6 <0.6 <0.6 # # TM153 Cvanide. Total <1 mg/kg <1 <1 <1 <1 <1 <1 M Μ М M M M TM153 Cyanide, Free <1 mg/kg <1 <1 <1 <1 <1 <1 M M Μ M Μ Μ PCB congener 28 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M M M M M PCB congener 52 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg M М М M M M TM168 <3 <3 <3 <3 <3 <3 PCB congener 101 <3 µg/kg M Μ М M M M PCB congener 118 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M M M Μ М PCB congener 138 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg M M M M M Μ TM168 PCB congener 153 <3 <3 <3 µg/kg <3 <3 <3 <3 M Μ Μ М M M TM168 <3 PCB congener 180 <3 µg/kg <3 <3 <3 <3 <3 М M M Μ M Μ Sum of detected PCB 7 TM168 <21 µg/kg <21 <21 <21 <21 <21 <21 Congeners TM168 PCB congener 81 <3 µg/kg <3 <3 <3 <3 <3 <3 M M Μ M M М PCB congener 77 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg М M M M M M PCB congener 123 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M Μ M M M



CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Customer Sample Ref. VC03 VC03 VC04 VC04 VC04 VC04 ISO17025 accredited mCERTS accredited Aqueous / settled sample Depth (m) 2.80 - 3.20 3.39 - 3.79 0.80 - 1.20 1.80 - 2.20 2.80 - 3.20 3 60 - 4 00 Dissolved / filtered sa Sample Type Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Total / unfiltered sa Soil/Solid (S) Soil/Solid (S) Subcontracted test.
% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within Date Sampled 20/04/2018 20/04/2018 19/04/2018 19/04/2018 19/04/2018 19/04/2018 Sample Time 14.28.00 14.28.00 15:50:00 15:50:00 15:50:00 15:50:00 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 24/04/2018 180424-31 180424-31 SDG Ref samples aren't corrected for the recover 17431905 17431904 17431908 17431909 17431910 17431907 Trigger breach confirmed Lab Sample No.(s) 1-5&+§@ Sample deviation (see appe AGS Reference Component LOD/Units Method PCB congener 114 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M M M M M PCB congener 105 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg М M М M M M PCB congener 126 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M M M M M PCB congener 167 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg M M М M Μ М PCB congener 156 TM168 <3 <3 <3 <3 <3 <3 µg/kg <3 M М M Μ M М TM168 PCB congener 157 <3 µg/kg <3 <3 <3 <3 <3 <3 Μ Μ Μ Μ М Μ PCB congener 169 TM168 <3 µg/kg <3 <3 <3 <3 <3 <3 M M Μ M M М PCB congener 189 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 М M M M M M Sum of detected WHO 12 PCBs <36 µg/kg TM168 <36 <36 <36 <36 <36 <36 Arsenic TM181 22.4 1.75 3.4 1.35 2.74 0.936 <0.6 mg/kg M M M M M M TM181 7.28 0.832 5.62 1.71 1.45 Boron <0.7 mg/kg <0.7 # TM181 1.01 0.0378 0.139 0.0362 0.0528 <0.02 Cadmium <0.02 ma/ka М M M M M Μ <0.9 mg/kg TM181 <0.9 2.91 12 2 89 4.51 Chromium 1.1 Μ Μ Μ Μ Μ Μ Copper <1.4 mg/kg TM181 8.11 2.9 10.8 2 29 5.46 <14 Μ M M Μ M M 3.31 Lead <0.7 mg/kg TM181 10.9 4.52 10.2 3 54 9.64 М M Μ M M M TM181 Mercury <0.14 mg/kg < 0.14 < 0.14 < 0.14 < 0.14 < 0.14 < 0.14 M Μ Μ Μ M M Nickel <0.2 mg/kg TM181 18.3 2.78 12.9 3 6.32 1.1 Μ М Μ M M М Selenium TM181 1.87 <1 <1 <1 <1 <1 <1 mg/kg # # # # # Zinc <1.9 mg/kg TM181 47.5 9.05 31.6 8.28 15 4.24 Μ M M M M M 0.0825 0.0866 0.0799 0.0369 0.0605 0.0635 ANC @ pH 4 < 0.03 TM182 mol/kg ANC @ pH 6 < 0.03 TM182 < 0.03 < 0.03 0.0537 < 0.03 0.0388 < 0.03 mol/kg TM221 425 <48 <48 <48 <48 mg/kg 98.9 54.9 Sulphate, Total M M Μ M M M



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Results Legend # ISO17025 accredited.	Custo	mer Sample Ref.	VC05		VC05		VC05		VC06	VC06		VC07	
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.80 - 1.20		1.80 - 2.20		2.53 - 2.93		0.80 - 1.20	2.00 - 2.46		0.80 - 1.20	
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Sample Type Date Sampled	Soil/Solid (S) 19/04/2018		Soil/Solid (S) 19/04/2018		Soil/Solid (S) 19/04/2018		Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018		Soil/Solid (S) 20/04/2018	
** % recovery of the surrogate sta check the efficiency of the met		Sample Time	14:45:00		14:45:00		14:45:00		08:29:00	08:29:00		17:40:00	
results of individual compound samples aren't corrected for th	s within	Date Received SDG Ref	24/04/2018 180424-31		24/04/2018 180424-31		24/04/2018 180424-31		24/04/2018 180424-31	24/04/2018 180424-31		24/04/2018 180424-31	
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendi	· Li	ab Sample No.(s)	17431895		17431896		17431898		17431899	17431900		17431883	
Component	LOD/Units	AGS Reference Method											
Moisture Content Ratio (% of as received sample)	%	PM024	44		16		16		38	1.8		16	
2,2',4,4',6-pentabromodiphenyl ether (BDE-100)*	mg/kg	SUB	<0.1	М	<0.1	1	<0.1	М	<0.1 M	<0.1	М	<0.1	М
2,2',3,4,4',5'-hexabromodipheny I ether (BDE-138)*	mg/kg	SUB	<0.1		<0.1		<0.1		<0.1	<0.1		<0.1	
2,2',4,4',5,5'-hexabromodipheny I ether (BDE-153)*	mg/kg	SUB	<0.1		<0.1		<0.1		<0.1	<0.1		<0.1	
2,2',4,4',5,6'-hexabromodipheny I ether (BDE-154)*	mg/kg	SUB	<0.1		<0.1		<0.1		<0.1	<0.1		<0.1	
2,4,4'-tribromodiphenyl ether (BDE-28)*	mg/kg	SUB	<0.1	7	<0.1		<0.1		<0.1	<0.1		<0.1	
2,2',4,4'-tetrabromodiphenyl ether (BDE-47)*	mg/kg	SUB	<0.1	1	<0.1		<0.1		<0.1	<0.1		<0.1	
2,3',4,4'-tetrabromodiphenyl ether (BDE-66)*	mg/kg	SUB	<0.1	\forall	<0.1		<0.1		<0.1	<0.1		<0.1	
2,2',3,4,4'-pentabromodiphenyl ether (BDE-85)*	mg/kg	SUB	<0.1	\forall	<0.1		<0.1		<0.1	<0.1		<0.1	
2,2',4,4',5-pentabromodiphenyl ether (BDE-99)*	mg/kg	SUB	<0.1	\forall	<0.1		<0.1		<0.1	<0.1		<0.1	
Solids, Total	<0.1 %	TBC	56	\forall	84		84		62	98.2		84	
Loss on ignition	<0.7 %	TM018	<0.7	М	<0.7	1	2.24	М	<0.7	<0.7	М	<0.7	М
Sulphate, 2:1 water soluble	<0.002 g/l	TM019	0.0616	M	0.0221 M	\top	0.0603	М	0.041 M	0.0174	М	0.0117	М
Mineral oil >C10-C40	<1 mg/kg	TM061	59.7		1.5		20.7		62.4	<1		<1	
Mineral Oil Surrogate % recovery**	%	TM061	84.2	1	87		88.1		86	85.5		86.5	
Phenol	<0.01 mg/kg	TM062 (S)	0.0179	М	<0.01	1	<0.01	М	<0.01	<0.01	М	<0.01	М
Organic Carbon, Total	<0.2 %	TM132	1.56	М	<0.2 M		<0.2	М	1.68 M	<0.2	М	<0.2	М
Soil Organic Matter (SOM)	<0.35 %	TM132	2.69	#	<0.35 #	ŧ	<0.35	#	2.9	<0.35	#	<0.35	#
pH	1 pH Units	TM133	8.54	М	7.91 M		6.27	М	8.48 M	9.01	М	7.08	М
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	#	<0.6		<0.6	#	<0.6	<0.6	#	<0.6	#
Cyanide, Total	<1 mg/kg	TM153	<1	М	<1 M		<1	М	<1 M	<1	М	<1	М
Cyanide, Free	<1 mg/kg	TM153	<1	М	<1 M		<1	М	<1 M	<1	М	<1	М
PCB congener 28	<3 µg/kg	TM168	<3	М	<3 M	1	<3	М	<3 M	<3	М	<3	М
PCB congener 52	<3 µg/kg	TM168	<3	М	<3 M		<3	М	<3 M	<3	М	<3	М
PCB congener 101	<3 µg/kg	TM168	<3	M	<3 M		<3	M	<3 M	<3	М	<3	М
PCB congener 118	<3 µg/kg	TM168	<3	M	<3 M	\top	<3	M	<3 M	<3	M	<3	М
PCB congener 138	<3 µg/kg	TM168	<3	M	<3 M	\top	<3	M	<3 M	<3	M	<3	М
PCB congener 153	<3 µg/kg	TM168	<3	M	<3 M		<3	M	<3 M	<3	M	<3	М
PCB congener 180	<3 µg/kg	TM168	<3	M	<3 M		<3	M	<3 M	<3	M	<3	М
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168	<21	-	<21		<21	. 41	<21	<21	141	<21	141
PCB congener 81	<3 µg/kg	TM168	<3	М	<3 M	1	<3	М	<3 M	<3	М	<3	М
PCB congener 77	<3 µg/kg	TM168	<3	M	<3 M	\top	<3	M	<3 M	<3	M	<3	М
PCB congener 123	<3 µg/kg	TM168	<3	\rightarrow	<3	+	<3		<3	<3		<3	



CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Customer Sample Ref. VC05 VC05 VC05 VC06 VC06 VC07 ISO17025 accredited mCERTS accredited Aqueous / settled sample Depth (m) 0.80 - 1.20 1.80 - 2.20 2.53 - 2.93 0.80 - 1.20 2.00 - 2.46 0.80 - 1.20 Dissolved / filtered sa Sample Type Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Total / unfiltered sa Subcontracted test.
% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within Date Sampled 19/04/2018 19/04/2018 19/04/2018 20/04/2018 20/04/2018 20/04/2018 Sample Time 14:45:00 14.45.00 14.45.00 08:29:00 08:29:00 17:40:00 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 24/04/2018 180424-31 180424-31 SDG Ref samples aren't corrected for the recover 17431895 17431896 17431898 17431899 17431900 17431883 Trigger breach confirmed Lab Sample No.(s) 1-5&+§@ Sample deviation (see appe AGS Reference Component LOD/Units Method PCB congener 114 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M M M M M PCB congener 105 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg М M М M M M PCB congener 126 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M M M M M PCB congener 167 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg M Μ Μ M Μ М PCB congener 156 TM168 <3 <3 <3 <3 <3 <3 µg/kg <3 M М M Μ M М TM168 PCB congener 157 <3 µg/kg <3 <3 <3 <3 <3 <3 Μ Μ Μ Μ М Μ PCB congener 169 TM168 <3 µg/kg <3 <3 <3 <3 <3 <3 M M Μ M M М PCB congener 189 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 М M M M M M Sum of detected WHO 12 PCBs <36 µg/kg TM168 <36 <36 <36 <36 <36 <36 Arsenic TM181 21 3.65 11.4 18.5 2.21 <0.6 <0.6 mg/kg M M M M M M TM181 40.1 1.64 2.95 34.8 <0.7 <0.7 Boron <0.7 mg/kg # TM181 0.241 0.0879 0.342 0.282 0.0301 Cadmium <0.02 ma/ka 0.13 М M M M M Μ <0.9 mg/kg TM181 24 7 1.73 < 0.9 23 1.65 1.11 Chromium Μ Μ Μ Μ Μ Μ 20.1 Copper <1.4 mg/kg TM181 23.3 5.48 7.98 2 14 3 43 Μ M M Μ M M 6.85 Lead <0.7 mg/kg TM181 36.3 8.54 38.3 2 49 2 72 М M Μ M M M TM181 Mercury <0.14 mg/kg < 0.14 < 0.14 < 0.14 < 0.14 < 0.14 < 0.14 M М Μ Μ M M Nickel <0.2 mg/kg TM181 25.8 2.83 6.13 24.5 3.04 0.596 Μ Μ Μ M M М Selenium TM181 <1 <1 2.68 <1 <1 <1 <1 mg/kg # # # # # Zinc <1.9 mg/kg TM181 105 15.6 48.1 98.6 8.13 4.07 М M M M M M 2.46 0.0767 0.0849 0.0908 0.0389 ANC @ pH 4 < 0.03 TM182 2.13 mol/kg ANC @ pH 6 0.247 < 0.03 TM182 < 0.03 < 0.03 0.223 < 0.03 < 0.03 mol/kg TM221 <48 <48 <48 <48 mg/kg 661 587 <48 Sulphate, Total M M Μ M M M



180424-31 Lowestoft SDG: Location:

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

457244

Results Legend # ISO17025 accredited. M mCERTS accredited.	Custo	mer Sample Ref.	VC07		VC08	VC08		VC11	VC11	VC11
my McCerts accredited sample. aq diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. ** Subcontracted test. ** recovery of the surrogate st check the efficiency of the me results of individual compounsamples aren't corrected for trigger breach confirmed 1-5&+§@ Sample deviation (see append	thod. The ds within he recovery La	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference Method	1.60 - 2.00 Soil/Solid (S) 20/04/2018 17:40:00 24/04/2018 180424-31 17431882		0.60 - 1.00 Soii/Solid (S) 20/04/2018 17:06:00 24/04/2018 180424-31 17431902	1.00 - 1.45 Soii/Solid (S) 20/04/2018 17:06:00 24/04/2018 180424-31 17431901		0.80 - 1.20 Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 1804/24-31 17431887	1.80 - 2.20 Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 180424-31 17431886	2.20 - 2.50 Soii/Solid (S) 20/04/2018 12:24:00 24/04/2018 180424-31 17431889
Moisture Content Ratio (% of as received sample)		PM024	13		17	14		44	15	16
2,2',4,4',6-pentabromodiphenyl ether (BDE-100)*	mg/kg	SUB	<0.1	М	<0.1	<0.1	М	<0.1	<0.1	<0.1
2,2',3,4,4',5'-hexabromodipheny l ether (BDE-138)*	mg/kg	SUB	<0.1	IVI	<0.1	<0.1	IVI	<0.1	<0.1	<0.1
2,2',4,4',5,5'-hexabromodipheny l ether (BDE-153)*	mg/kg	SUB	<0.1		<0.1	<0.1		<0.1	<0.1	<0.1
2,2',4,4',5,6'-hexabromodipheny l ether (BDE-154)*	mg/kg	SUB	<0.1		<0.1	<0.1		<0.1	<0.1	<0.1
2,4,4'-tribromodiphenyl ether (BDE-28)*	mg/kg	SUB	<0.1		<0.1	<0.1		<0.1	<0.1	<0.1
2,2',4,4'-tetrabromodiphenyl ether (BDE-47)*	mg/kg	SUB	<0.1		<0.1	<0.1		<0.1	<0.1	<0.1
2,3',4,4'-tetrabromodiphenyl ether (BDE-66)*	mg/kg	SUB	<0.1		<0.1	<0.1	7	<0.1	<0.1	<0.1
2,2',3,4,4'-pentabromodiphenyl ether (BDE-85)*	mg/kg	SUB	<0.1		<0.1	<0.1		<0.1	<0.1	<0.1
2,2',4,4',5-pentabromodiphenyl ether (BDE-99)*	mg/kg	SUB	<0.1		<0.1	<0.1		<0.1	<0.1	<0.1
Solids, Total	<0.1 %	TBC	87		83	86		56	85	84
Loss on ignition	<0.7 %	TM018	<0.7	М	<0.7	<0.7	M	2.71 M	<0.7	<0.7
Sulphate, 2:1 water soluble	<0.002 g/l	TM019	0.0117	М	0.0155 M	0.1	M	0.0755 M	0.0135 M	0.0412 M
Mineral oil >C10-C40	<1 mg/kg	TM061	<1		1.16	<1		94	<1	<1
Mineral Oil Surrogate % recovery**	%	TM061	82.8		78.4	85.7		84.4	82.1	86
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	М	<0.01 M	<0.01	M	<0.01	<0.01 M	<0.01 M
Organic Carbon, Total	<0.2 %	TM132	<0.2	М	<0.2	<0.2	М	1.54 M	<0.2	<0.2
Soil Organic Matter (SOM)	<0.35 %	TM132	<0.35	#	<0.35	<0.35	#	2.65	<0.35	<0.35
рН	1 pH Units	TM133	7.11	М	8.97 M	8.56	M	8.65 M	7.4 M	7.76 M
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	#	<0.6 #	<0.6	#	<0.6	<0.6 #	<0.6
Cyanide, Total	<1 mg/kg	TM153	<1	М	<1 M	<1	M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153	<1	М	<1 M	<1	M	<1 M	<1 M	<1 M
PCB congener 28	<3 µg/kg	TM168	<3	М	<3 M	<3	М	<3 M	<3 M	<3 M
PCB congener 52	<3 µg/kg	TM168	<3		<3	<3		<3	<3	<3
	∼o μg/kg	1101100		M	M		M	M	M	M
PCB congener 101	<3 μg/kg	TM168	<3	M	<3 M	<3	M M	<3 M	<3 M	<3 M
PCB congener 101 PCB congener 118				M	<3 M	<3 <3	M	<3 M	<3 M	<3 M <3
•	<3 µg/kg	TM168	<3	M M	<3 M <3 M	<3 <3 <3	M M	<3 M <3 M	<3 M	<3 M <3 M
PCB congener 118	<3 µg/kg	TM168	<3	M M	<3 M <3 M <3 M <3	<3 <3 <3 <3	M M	<3 M <3 M	<3 M <3 M <3 M <3 M <3	<3 M <3 M <3 M <3
PCB congener 118 PCB congener 138	<3 µg/kg <3 µg/kg	TM168 TM168 TM168	<3 <3 <3	M M	<3 M S M S M S M S M S M S M S M S M S M	<3 <3 <3 <3 <3 <3 <3	M M	<3 M <3 M <3 M <3	<3 M <3 M <3 M	<3 M <3 M <3 M <3 M <3 M <3 M <3
PCB congener 118 PCB congener 138 PCB congener 153	<3 µg/kg <3 µg/kg <3 µg/kg <3 µg/kg	TM168 TM168 TM168 TM168	<3 <3 <3 <3	M M M	<3 M S M S M S M S M M S M M M M M M M M	<3 <3 <3 <3 <3 <3 <3	M M M	<3 M <3 M <3 M <3 M <3 M <3 M	<3 M <3 M <3 M <3 M <3 M <3 M	<3 M <3 M <3 M <3 M <3 M <3 M <3
PCB congener 118 PCB congener 138 PCB congener 153 PCB congener 180 Sum of detected PCB 7	<3 µg/kg <3 µg/kg <3 µg/kg <3 µg/kg	TM168 TM168 TM168 TM168 TM168	<3 <3 <3 <3 <3 <3	M M M		<3 <3 <3 <3 <3 <3 <21 <3	M M M	<3 M S M S M S M S M S M M S M M M M M M	<3 M <3 M <3 M <3 M <3 M <3 M <3 M <43 M	<3 M <3 M <3 M <3 M <3 M <3 M <3 M <43 M <43 M <43 M <43 M <43 M <43 M <43 M <43 M <43 M M <43 M M <43 M M <43 M M <43 M M <43 M M <43 M M M M M M M M M M M M M M M M M M M
PCB congener 118 PCB congener 138 PCB congener 153 PCB congener 180 Sum of detected PCB 7 Congeners	<3 µg/kg <3 µg/kg <3 µg/kg <3 µg/kg <3 µg/kg <3 µg/kg	TM168 TM168 TM168 TM168 TM168 TM168	<3 <3 <3 <3 <3 <3 <21	M M M	<3 M <3 M <3 M <3 M <21	<3 <3 <3 <3 <3 <21 <3 <3	M M M	<pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> <pre> </pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> </pre> <pre> <pre> </pre> <pre> <pre> <pre> <pre> <pre> </pre> <pre> <pre> <pre> <pre> <pre> <p< td=""><td><3 M <3 M <3 M <3 M <3 M <3 M <21 <3 <3 M</td><td><3 M <3 M</td></p<></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre>	<3 M <3 M <3 M <3 M <3 M <3 M <21 <3 <3 M	<3 M <3 M <3 M <3 M <3 M <3 M <3 M <3 M

Validated

457244

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Results Legend	Cus	tomer Sample Ref.	VC07		VC08		VC08		VC11	VC11	VC11
# ISO17025 accredited. M mCERTS accredited.											
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	1.60 - 2.00		0.60 - 1.00		1.00 - 1.45		0.80 - 1.20	1.80 - 2.20	2.20 - 2.50
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Sample Type Date Sampled	Soil/Solid (S) 20/04/2018		Soil/Solid (S) 20/04/2018		Soil/Solid (S) 20/04/2018		Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018
** % recovery of the surrogate sta check the efficiency of the met	andard to	Sample Time	17:40:00		17:06:00		17:06:00		12:24:00	12:24:00	12:24:00
results of individual compound samples aren't corrected for the	ds within	Date Received SDG Ref	24/04/2018 180424-31		24/04/2018 180424-31		24/04/2018 180424-31		24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31
(F) Trigger breach confirmed	1	Lab Sample No.(s)	17431882		17431902		17431901		17431887	17431886	17431889
1-5&+§@ Sample deviation (see appendi	LOD/Units	AGS Reference Method									
PCB congener 114	<3 µg/kg	TM168	<3		<3		<3		<3	<3	<3
_				М		М		М	М	N	
PCB congener 105	<3 µg/kg	TM168	<3	М	<3	М	<3	М	<3 M	<3 N	<3 M M
PCB congener 126	<3 µg/kg	TM168	<3	IVI	<3	IVI	<3	IVI	<3	<3	<3
				М		М		М	М	N	И
PCB congener 167	<3 µg/kg	TM168	<3	М	<3	М	<3	М	<3 M	<3 N	<3 M M
PCB congener 156	<3 µg/kg	TM168	<3	IVI	<3	IVI	<3	IVI	<3	<3	<3
DOD	.0 .// .	T14400	.0	М	.0	M	-10	M	M	12 N	
PCB congener 157	<3 µg/kg	TM168	<3	М	<3	М	<3	М	<3 M	<3 N	<3 M M
PCB congener 169	<3 µg/kg	TM168	<3		<3		<3		<3	<3	<3
PCB congener 189	<3 µg/kg	TM168	<3	М	<3	М	<3	M	<3	<3	M
1 OD CONGONION 103				М	`	М		М	M		
Sum of detected WHO 12 PCBs	<36 µg/kg	TM168	<36		<36		<36		<36	<36	<36
Arsenic	<0.6 mg/kg	7 TM181	0.832		1.19		<0.6		19.9	1.21	1.54
_				М		М		M	М	N	
Boron	<0.7 mg/kg	g TM181	1.2	#	<0.7	#	0.886	#	32.5 #	<0.7	0.906
Cadmium	<0.02 mg/k	g TM181	0.0674	M	<0.02		0.0247	M	0.277 M	0.0253	0.0308
Chromium	<0.9 mg/kg	TM181	1.69	IVI	2.11	М	1.23	IVI	25.2	1.6	1.76 M
			.4.4	М	4.00	М	.4.4	M	M	N	
Copper	<1.4 mg/kg	g TM181	<1.4	М	1.69	М	<1.4	М	27 M	<1.4 N	2.69 M M
Lead	<0.7 mg/kg	TM181	5.36	М	3.3	М	1.95	М	38.8 M	2.48 N	4.25 M M
Mercury	<0.14 mg/k	g TM181	<0.14		<0.14		<0.14		<0.14	<0.14	<0.14
Nickel	<0.2 mg/kg	TM181	1.1	М	1.45	M	1.35	M	25.7	1.36	M M
INICAGI			1.1	М	1.45	М	1.55	М	М	N	
Selenium	<1 mg/kg	TM181	<1	#	<1	#	<1	#	<1 #	<1	<1 # #
Zinc	<1.9 mg/kg	TM181	4.78		6.29	"	3.87		117	5.66	7.5
ANC @ -U 4	40.02	TM400	0.0507	М	0.050	М	0.0000	M	M	0.0715	
ANC @ pH 4	<0.03 mol/kg	TM182	0.0567		0.059		0.0826		2.19	0.0715	0.0734
ANC @ pH 6	< 0.03	TM182	0.0353		0.0375		<0.03		0.185	0.0522	<0.03
Culabata Tatal	mol/kg	TMOOA	<48		<48		118		685	<48	<48
Sulphate, Total	<48 mg/kg	TM221	<48	М	<48	М	110	М	000 M	<48 N	

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Results Legend	Custo	mer Sample Ref.	VC10A		VC10A	VC10A	VC12A	VC12A	VC12A
# ISO17025 accredited. M mCERTS accredited.		·	70.07		10.01	70.07	70.27	10.21	10.21
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m) Sample Type	0.80 - 1.20 Soil/Solid (S)		1.80 - 2.20 Soil/Solid (S)	2.45 - 2.85 Soil/Solid (S)	0.80 - 1.20 Soil/Solid (S)	1.80 - 2.20 Soil/Solid (S)	2.80 - 3.30 Soil/Solid (S)
tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate etc.		Date Sampled	20/04/2018		20/04/2018	20/04/2018	20/04/2018	20/04/2018	20/04/2018
check the efficiency of the met	hod. The	Sample Time Date Received	09:24:00 24/04/2018		09:24:00 24/04/2018	09:24:00 24/04/2018	13:27:00 24/04/2018	13:27:00 24/04/2018	13:27:00 24/04/2018
results of individual compound samples aren't corrected for the (F) Trigger breach confirmed	e recovery	SDG Ref ab Sample No.(s)	180424-31 17431891		180424-31 17431890	180424-31 17431892	180424-31 17431913	180424-31 17431911	180424-31 17431912
1-5&+§@ Sample deviation (see appendi	x)	AGS Reference							
Component Moisture Content Ratio (% of as	LOD/Units %	Method PM024	42		13	16	42	12	18
received sample)	,,		;-		-				
2,2',4,4',6-pentabromodiphenyl ether (BDE-100)*	mg/kg	SUB			<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
2,2',3,4,4',5'-hexabromodipheny I ether (BDE-138)*	mg/kg	SUB			<0.1	<0.1	<0.1	<0.1	<0.1
2,2',4,4',5,5'-hexabromodipheny I ether (BDE-153)*	mg/kg	SUB			<0.1	<0.1	<0.1	<0.1	<0.1
2,2',4,4',5,6'-hexabromodipheny I ether (BDE-154)*	mg/kg	SUB			<0.1	<0.1	<0.1	<0.1	<0.1
2,4,4'-tribromodiphenyl ether (BDE-28)*	mg/kg	SUB			<0.1	<0.1	<0.1	<0.1	<0.1
2,2',4,4'-tetrabromodiphenyl ether (BDE-47)*	mg/kg	SUB			<0.1	<0.1	<0.1	<0.1	<0.1
2,3',4,4'-tetrabromodiphenyl ether (BDE-66)*	mg/kg	SUB			<0.1	<0.1	<0.1	<0.1	<0.1
2,2',3,4,4'-pentabromodiphenyl ether (BDE-85)*	mg/kg	SUB			<0.1	<0.1	<0.1	<0.1	<0.1
2,2',4,4',5-pentabromodiphenyl ether (BDE-99)*	mg/kg	SUB			<0.1	<0.1	<0.1	<0.1	<0.1
Solids, Total	<0.1 %	TBC	58		87	84	58	88	82
Loss on ignition	<0.7 %	TM018			0.728 M	<0.7 M	<0.7	<0.7	1.54 M
Sulphate, 2:1 water soluble	<0.002 g/l	TM019	0.0603	М	0.0156 M	0.0885 M	0.171 M	0.0107 M	0.0328 M
Mineral oil >C10-C40	<1 mg/kg	TM061	79.9		<1	12.3	184	6.49	6.2
Mineral Oil Surrogate % recovery**	%	TM061	85.7		85.5	87	84	82.2	89.9
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	М	<0.01 M	<0.01 M	<0.01	<0.01	<0.01 M
Organic Carbon, Total	<0.2 %	TM132	1.26	М	<0.2 M	<0.2 M	1.55 M	<0.2	<0.2 M
Soil Organic Matter (SOM)	<0.35 %	TM132	2.17	#	<0.35 #	<0.35 #	2.67	<0.35 #	<0.35 #
рН	1 pH Units	TM133	8.75	М	8.22 M	8.1 M	8.55 M	8.77 M	8.68 M
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	#	<0.6 #	<0.6 #	<0.6	<0.6	<0.6
Cyanide, Total	<1 mg/kg	TM153	<1	М	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153	<1	М	<1 M	<1 M	<1 M	<1 M	<1 M
PCB congener 28	<3 µg/kg	TM168	<3	М	<3 M	<3 M			<3 M
PCB congener 52	<3 µg/kg	TM168	<3	М	<3 M	<3 M	<3 M		<3 M
PCB congener 101	<3 µg/kg	TM168	<3	М	<3 M	<3 M			<3 M
PCB congener 118	<3 µg/kg	TM168	<3	М	<3 M	<3 M	<3 M	<3 M	<3 M
PCB congener 138	<3 µg/kg	TM168	<3	М	<3 M	<3 M	<3 M	<3 M	<3 M
PCB congener 153	<3 µg/kg	TM168	<3	M	<3 M	<3 M	<3 M		<3 M
PCB congener 180	<3 µg/kg	TM168	<3	М	<3 M	<3 M	<3 M	<3 M	<3 M
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168	<21		<21	<21	<21	<21	<21
PCB congener 81	<3 µg/kg	TM168	<3	М	<3 M	<3 M	<3 M	<3 M	<3 M
PCB congener 77	<3 µg/kg	TM168	<3	М	<3 M	<3 M	<3	<3	<3 M
PCB congener 123	<3 µg/kg	TM168	<3	М	<3 M	<3 M	<3	<3	<3



CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Customer Sample Ref. VC10A VC10A VC10A VC12A VC12A VC12A ISO17025 accredited mCERTS accredited Aqueous / settled sample Depth (m) 0.80 - 1.20 1.80 - 2.20 2.45 - 2.85 0.80 - 1.20 1.80 - 2.20 2.80 - 3.30 Dissolved / filtered sa Sample Type Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Total / unfiltered sa Soil/Solid (S) Soil/Solid (S) Subcontracted test.
% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within Date Sampled 20/04/2018 20/04/2018 20/04/2018 20/04/2018 20/04/2018 20/04/2018 Sample Time 09:24:00 09:24:00 09:24:00 13:27:00 13:27:00 13:27:00 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 24/04/2018 24/04/2018 180424-31 180424-31 180424-31 SDG Ref samples aren't corrected for the recover 17431891 17431890 17431892 17431913 17431911 17431912 Trigger breach confirmed Lab Sample No.(s) 1-5&+§@ Sample deviation (see appe AGS Reference Component LOD/Units Method PCB congener 114 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M M M M M PCB congener 105 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg М M М M M M PCB congener 126 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M Μ M M M M PCB congener 167 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg M Μ М M Μ М PCB congener 156 TM168 <3 <3 <3 <3 <3 <3 µg/kg <3 M М M Μ M М TM168 PCB congener 157 <3 µg/kg <3 <3 <3 <3 <3 <3 Μ Μ Μ Μ М Μ PCB congener 169 TM168 <3 µg/kg <3 <3 <3 <3 <3 <3 M M Μ M M М PCB congener 189 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 М M M M M M Sum of detected WHO 12 PCBs <36 µg/kg TM168 <36 <36 <36 <36 <36 <36 Arsenic TM181 19 1.67 1.09 18.3 1.08 4.54 <0.6 mg/kg M M M M M M TM181 37.2 0.794 0.932 28.6 1.06 4.91 Boron <0.7 mg/kg # TM181 0.243 0.0515 0.0453 0.373 0.0509 Cadmium <0.02 ma/ka 0.116 М M M M M Μ <0.9 mg/kg TM181 24.4 1 68 1.11 24.1 1.62 14 Chromium Μ Μ Μ Μ Μ Μ 26.2 1.99 Copper <1.4 mg/kg TM181 23 1.45 1.92 10 4 М M M Μ M M Lead <0.7 mg/kg TM181 34 1 2 97 4.31 43.7 25 11.9 М M Μ M M M TM181 Mercury <0.14 mg/kg < 0.14 < 0.14 < 0.14 < 0.14 < 0.14 < 0.14 M Μ Μ М M M Nickel <0.2 mg/kg TM181 24.8 2.37 1.38 23 1.88 15.3 Μ М Μ M M М Selenium TM181 <1 <1 <1 <1 <1 <1 <1 mg/kg # # # # # Zinc <1.9 mg/kg TM181 101 8.26 10.1 125 5.35 48.6 М M M M M M 0.0449 0.0553 0.0497 0.0616 ANC @ pH 4 < 0.03 TM182 2.12 1.74 mol/kg ANC @ pH 6 < 0.03 TM182 0.198 < 0.03 < 0.03 0.177 0.0344 0.0407 mol/kg TM221 <48 <48 <48 <48 mg/kg 529 55.8 631 Sulphate, Total M M Μ M M M

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Results Legend # ISO17025 accredited.	Cust	tomer Sample Ref.	VC01B		VC01B		VC09B	VC09B		
M mCERTS accredited. aq Aqueous / settled sample.										
diss.filt Dissolved / filtered sample.		Depth (m) Sample Type	0.80 - 1.20 Soil/Solid (S)		1.24 - 1.54 Soil/Solid (S)		0.80 - 1.20 Soil/Solid (S)	1.26 - 1.66 Soil/Solid (S)		
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Date Sampled	20/04/2018		20/04/2018		19/04/2018	19/04/2018		
** % recovery of the surrogate sta check the efficiency of the met	andard to	Sample Time	11:50:00 24/04/2018		11:50:00		13:44:00 24/04/2018	13:44:00 24/04/2018		
results of individual compound samples aren't corrected for the	ds within	Date Received SDG Ref	180424-31		24/04/2018 180424-31		180424-31	180424-31		
(F) Trigger breach confirmed	1	Lab Sample No.(s)	17431884		17431885		17431893	17431894		
1-5&+§@ Sample deviation (see appendi	LOD/Units	AGS Reference Method								
Moisture Content Ratio (% of as	%	PM024	16		14		27	14		
received sample)			-							
2,2',4,4',6-pentabromodiphenyl	mg/kg	SUB	<0.1		<0.1		<0.1	<0.1		
ether (BDE-100)*				М		М	M	1	М	
2,2',3,4,4',5'-hexabromodipheny I ether (BDE-138)*	mg/kg	SUB	<0.1		<0.1		<0.1	<0.1		
2,2',4,4',5,5'-hexabromodipheny I ether (BDE-153)*	mg/kg	SUB	<0.1		<0.1		<0.1	<0.1		
2,2',4,4',5,6'-hexabromodipheny I ether (BDE-154)*	mg/kg	SUB	<0.1		<0.1		<0.1	<0.1		
2,4,4'-tribromodiphenyl ether	mg/kg	SUB	<0.1		<0.1		<0.1	<0.1		
(BDE-28)* 2,2',4,4'-tetrabromodiphenyl	mg/kg	SUB	<0.1		<0.1		<0.1	<0.1		
ether (BDE-47)* 2,3',4,4'-tetrabromodiphenyl	mg/kg	SUB	<0.1		<0.1		<0.1	<0.1		
ether (BDE-66)* 2,2',3,4,4'-pentabromodiphenyl	mg/kg	SUB	<0.1		<0.1		<0.1	<0.1		
ether (BDE-85)* 2,2',4,4',5-pentabromodiphenyl		SUB	<0.1		<0.1		<0.1	<0.1		
ether (BDE-99)*	mg/kg				-		-			
Solids, Total	<0.1 %	TBC	84		86		73	86		
Loss on ignition	<0.7 %	TM018	<0.7	М	<0.7	М	13.5 N		М	
Sulphate, 2:1 water soluble	<0.002 g/l	TM019	0.0154	М	0.0133	М	0.0655 N	0.011	М	
Mineral oil >C10-C40	<1 mg/kg	TM061	<1		<1		8.36	<1		
Mineral Oil Surrogate % recovery**	%	TM061	82.8		85.9		86.1	85.1		
Phenol	<0.01 mg/kg	g TM062 (S)	<0.01	М	<0.01	М	<0.01	<0.01	М	
Organic Carbon, Total	<0.2 %	TM132	<0.2	М	<0.2	М	0.327	<0.2	М	
Soil Organic Matter (SOM)	<0.35 %	TM132	<0.35	#	<0.35	#	0.564	<0.35	#	
pH	1 pH Units	TM133	8.28	М	7.93	М	6.15	6.64	М	
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	#	<0.6	#	<0.6	<0.6	#	
Cyanide, Total	<1 mg/kg	TM153	<1	M	<1	M	<1 N	<1	М	
Cyanide, Free	<1 mg/kg	TM153	<1	М	<1	М	<1 N	<1	М	
PCB congener 28	<3 µg/kg	TM168	<3	M	<3	M	<3 N	<3	М	
PCB congener 52	<3 µg/kg	TM168	<3	M	<3	M	<3 N	<3	M	
PCB congener 101	<3 µg/kg	TM168	<3		<3		<3	<3		
PCB congener 118	<3 µg/kg	TM168	<3	M	<3	M	<3 N	<3	M	
PCB congener 138	<3 µg/kg	TM168	<3	M	<3	M	<3 N	<3	M	
PCB congener 153	<3 µg/kg	TM168	<3	M	<3	M	<3	<3	M	
PCB congener 180	<3 µg/kg	TM168	<3	M	<3	M	N	<3	M	
Sum of detected PCB 7	<21 µg/kg	TM168	<21	M	<21	M	<21	<21	M	
Congeners PCB congener 81	<3 µg/kg	TM168	<3		<3		<3	<3		
PCB congener 77	<3 µg/kg	TM168	<3	M	<3	M	<3	<3	М	
PCB congener 123	<3 μg/kg		<3	M	<3	M	<3	<3	M	
17:17:48 22/05/2018	1.5-9		-	M	-	M	N		M	



CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Customer Sample Ref. VC01B VC09B VC01B VC09B Results Lege ISO17025 accredited mCERTS accredited. Aqueous / settled sample 0.80 - 1.20 Soil/Solid (S) Depth (m) 0.80 - 1.20 1.24 - 1.54 1.26 - 1.66 Dissolved / filtered sa Sample Type Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Total / unfiltered sa Total / unfiltered sample.
Subcontracted test.
% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recover-Date Sampled 20/04/2018 20/04/2018 19/04/2018 19/04/2018 11:50:00 Sample Time 11:50:00 13.44.00 13:44:00 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 180424-31 SDG Ref 17431884 17431885 17431893 17431894 Trigger breach confirmed Lab Sample No.(s) 1-5&+§@ Sample deviation (see appe AGS Reference Component LOD/Units Method PCB congener 114 <3 µg/kg TM168 <3 <3 <3 <3 M M M M PCB congener 105 TM168 <3 <3 <3 <3 <3 µg/kg M M M M <3 PCB congener 126 <3 µg/kg TM168 <3 <3 <3 M Μ M M PCB congener 167 TM168 <3 <3 <3 <3 <3 µg/kg M Μ Μ M TM168 <3 <3 PCB congener 156 <3 <3 <3 µg/kg М M Μ M PCB congener 157 TM168 <3 µg/kg <3 <3 <3 <3 Μ Μ Μ PCB congener 169 TM168 <3 <3 <3 µg/kg <3 <3 M M Μ M PCB congener 189 <3 µg/kg TM168 <3 <3 <3 <3 M M M M Sum of detected WHO 12 PCBs <36 µg/kg TM168 <36 <36 <36 <36 Arsenic TM181 2.24 1.32 36.1 0.703 <0.6 mg/kg M M M M Boron TM181 0.867 0.755 7.58 <0.7 <0.7 mg/kg TM181 0.0375 0.0435 1.98 0.0321 Cadmium <0.02 mg/kg M M M M <0.9 mg/kg TM181 2.16 1.69 < 0.9 1.65 Chromium Μ Μ Μ Μ Copper <1.4 mg/kg TM181 5.08 26.9 3.79 <1.4 M M Μ M 9.04 Lead <0.7 mg/kg TM181 4.42 11.3 2.34 M M Μ M TM181 < 0.14 <0.14 < 0.14 Mercury <0.14 mg/kg < 0.14 M M Μ M Nickel <0.2 mg/kg TM181 2.44 2.24 14.7 1.16 Μ М Μ M Selenium TM181 <1 <1 3.05 <1 <1 mg/kg # # # Zinc <1.9 mg/kg TM181 9.08 15.3 47.2 6.75 M M Μ M TM182 0.08 0.0475 0.104 0.0853 ANC @ pH 4 < 0.03 mol/kg 0.0318 0.0324 ANC @ pH 6 < 0.03 TM182 < 0.03 <0.03 mol/kg TM221 <48 <48 172 <48 Sulphate, Total <48 mg/kg M M Μ M



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

OC, OP Pesticides ar		omer Sample Ref.	VC02	VC02	VC02	VC02	VC03	VC03
# ISO17025 accredited. M mCERTS accredited.								
aq Aqueous / settled sample.		Danish (m)	0.00 4.00	400 000	0.00 0.00	0.00 0.00	0.00 4.00	400.000
diss.filt Dissolved / filtered sample.		Depth (m)	0.80 - 1.20	1.80 - 2.20	2.80 - 3.20	3.20 - 3.63	0.80 - 1.20	1.80 - 2.20
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test. ** % recovery of the surrogate st	andard to	Date Sampled	20/04/2018	20/04/2018	20/04/2018	20/04/2018	20/04/2018	20/04/2018
check the efficiency of the met	thod The	Sample Time	15:43:00	15:43:00	15:43:00	15:43:00	14:28:00	14:28:00
results of individual compound	ds within	Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
samples aren't corrected for th	ne recovery	SDG Ref	180424-31	180424-31	180424-31	180424-31	180424-31	180424-31
(F) Trigger breach confirmed	- L	ab Sample No.(s)	17431917	17431916	17431915	17431914	17431903	17431906
1-5&+§@ Sample deviation (see append		AGS Reference						
Component	LOD/Units	Method						
Tecnazene	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Hexachlorobenzene	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Trifluralin	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Phorate	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
alpha-Hexachlorocyclohexane	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
(HCH) Quintozene (PCNB)	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Triallate	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
gamma-Hexachlorocyclohexane	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
(HCH / Lindane) Disulfoton	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Heptachlor	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Aldrin	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Chlorothalonil	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Telodrin	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
beta-Hexachlorocyclohexane	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
(HCH) Isodrin	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Heptachlor epoxide	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Triadimefon	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Pendimethalin	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
o,p-DDE	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Endosulphan I	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Trans-chlordane	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
cis-Chlordane	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
p,p-DDE	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Dieldrin	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
o,p'-DDD (TDE)	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Endrin	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
o,p-DDT	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
p,p-TDE (DDD)	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Endosulphan II	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
p,p-DDT	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
o,p-Methoxychlor	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
p,p-Methoxychlor	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Endosulphan sulphate	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50

Validated

457244

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

OC, OP Pesticides a	nd Tria	ZINE HERD Customer Sample Ref.						
Results Legend # ISO17025 accredited.	Results Legend # ISO17025 accredited		VC02	VC02	VC02	VC02	VC03	VC03
M mCERTs accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate scheck the efficiency of the mesults of individual compour samples aren't corrected for Trigger breach confirmed 1-5&*§@ Sample deviation (see appen	ethod. The nds within the recovery	Depth (m) Sample Type Date Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.80 - 1.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431917	1.80 - 2.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431916	2.80 - 3.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431915	3.20 - 3.63 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431914	0.80 - 1.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431903	1.80 - 2.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431906
Component Permethrin I	<50 μg	/kg TM073	<50	<50	<50	<50	<250	<50
	νου μα	/kg 1W070	100	100	130	100	1200	100
Permethrin II	<50 μg	/kg TM073	<50	<50	<50	<50	<250	<50



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

OC, OP Pesticides ar	nd Triazin	e Herb						
Results Legend # ISO17025 accredited. M mCERTS accredited.		mer Sample Ref.	VC03	VC03	VC04	VC04	VC04	VC04
aq Aqueous / settled sample.		Depth (m)	2.80 - 3.20	3.39 - 3.79	0.80 - 1.20	1.80 - 2.20	2.80 - 3.20	3.60 - 4.00
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test.		Date Sampled	20/04/2018	20/04/2018	19/04/2018	19/04/2018	19/04/2018	19/04/2018
** % recovery of the surrogate st	andard to	Sample Time	14:28:00	14:28:00	15:50:00	15:50:00	15:50:00	15:50:00
check the efficiency of the met	thod. The	Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
results of individual compound	ds within	SDG Ref	180424-31	180424-31	180424-31	180424-31	180424-31	180424-31
samples aren't corrected for the	e recovery		17431905	17431904	17431908	17431909	17431910	17431907
(F) Trigger breach confirmed	Li	ab Sample No.(s)	17431303	17431304	17431300	17431303	17451510	17451907
1-5&+§@ Sample deviation (see appendi		AGS Reference						
Component	LOD/Units	Method						
Tecnazene	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
	"							
Hexachlorobenzene	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Trifluralin	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
IIIIuIaiiii	<50 μg/kg	1101073	\30	\30	\30	\50	\30	\30
Phorate	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Thoraco	oo pg/ng	1111070	.00				- 00	
alpha-Hexachlorocyclohexane	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
(HCH)								
	"	714070	=-					
Quintozene (PCNB)	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Triallate	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Hallate	<50 μg/kg	1101073	\30	\30	\30	\50	\30	\30
	<u></u>	l		<u> </u>		<u> </u>		
gamma-Hexachlorocyclohexane	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
	-ou µg/kg	1 18107 0	100	""	100	100	1	٠٠٠
(HCH / Lindane)								
Disulfoton	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
	פיייש	'		1]	""	"
<u></u>								
Heptachlor	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
· ·								
	"	714070	=-					
Aldrin	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Chlorotholonil	∠EOa/l/a	TM073	∠E0	∠E0	∠E0	∠ E0	∠E0	∠ E0
Chlorothalonil	<50 µg/kg	1101073	<50	<50	<50	<50	<50	<50
Telodrin	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
reloutiti	<50 μg/kg	1101073	\30	\30	\30	\50	\30	\30
beta-Hexachlorocyclohexane	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
	ioo µg/kg	1111070	-00	100	100	100	100	,00
(HCH)								
Isodrin	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
	11 15 5							
	"							
Heptachlor epoxide	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Triadimatan	حداده ۱۰۰۰	TM073	∠E0	∠E0	∠E0	∠E0	∠E0	~ E0
Triadimefon	<50 µg/kg	1101073	<50	<50	<50	<50	<50	<50
Pendimethalin	∠50 ua/ka	TM073	<50	<50	<50	<50	<50	<50
rendinedialin	<50 µg/kg	1101073	\30	\30	\30	\50	\30	\30
o,p-DDE	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
0,P BBL	ioo µg/kg	1111070	-00	100	100	100	100	100
Endosulphan I	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
	11 11 31 3							
-	.50 "	T1 10==						
Trans-chlordane	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
				I		1		
oic Chlordons	∠E∩ //	TM073	<50	<50	<50	<50	<50	<50
cis-Chlordane	<50 µg/kg	1101073	\ 50	\500	\5U	\0U	\0U	\OU
				I		1		
p,p-DDE	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
P,P 00L	-ou µg/kg	1 18107 0	100	""	100	100	1	٠٠٠
Dieldrin	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
I	פיייפייו די	"""		1	1	1]	"
						-		
o,p'-DDD (TDE)	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
I '				I		1		
Endrin	∠E∩ # ·	TN4070	2F0	2F0	2F0	2F0	2F0	2FA
Endrin	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
I				I		1		
o,p-DDT	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
ו טט-א,ט	~50 µg/kg	I IVIU/ S	\50	\00	\500	\JU	\:\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	\ 00
p,p-TDE (DDD)	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
P,P-10C (DDD)	-50 µg/kg	1 10107 3	~ 00		\00	`00	100	`~
Endosulphan II	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
	- Paring			1				~~
p,p-DDT	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
[17]	1			1				
a a Mathau state	۳ ۲۰۰	T14070	-50	-50	-50	-50	-50	.50
o,p-Methoxychlor	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
				I		1		
p,p-Methoxychlor	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
P,P-IVIGUIOXYCHIOI	-50 μg/kg	I IVIUI 3	\ 30	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\J U	\ JU	\ JU	\ JU
Endosulphan sulphate	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
	פיישיים	'		""	""	l	""	"
	<u> </u>			L		<u> </u>		

Validated

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712

Report Number: 457244 Superseded Report:

OC, OP Pesticides a								
Results Legend # ISO17025 accredited.		ıstomer Sample Ref.	VC03	VC03	VC04	VC04	VC04	VC04
M mCERTs accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate s check the efficiency of the me results of individual compour samples aren't corrected for (F) Trigger breach confirmed 1-5&*§@ Sample deviation (see appen	ethod. The nds within the recovery dix)	Depth (m) Sample Type Date Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	2.80 - 3.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431905	3.39 - 3.79 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431904	0.80 - 1.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431908	1.80 - 2.20 Soil/Solid (S) 19/04/2018 15.50:00 24/04/2018 180424-31 17431909	2.80 - 3.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431910	3.60 - 4.00 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431907
Component Permethrin I	LOD/Unit <50 μg/k	g TM073	<50	<50	<50	<50	<50	<50
r enneumm	-30 μg/k	g HWI075	\ 30	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\	\ 30	\ 50	\ 50
Permethrin II	<50 µg/k	g TM073	<50	<50	<50	<50	<50	<50



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Results Legend # ISO17025 accredited.	Custo	omer Sample Ref.	VC05	VC05	VC05	VC06	VC06	VC07
# ISOT/uzs accreated. M mCERTS accredited. aq Aqueous / settled sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate st check the efficiency of the met results of individual compount samples aren't corrected for the (F) Trigger breach confirmed	thod. The ds within ne recovery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s)	0.80 - 1.20 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431895	1.80 - 2.20 Soii/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431896	2.53 - 2.93 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431898	0.80 - 1.20 Soil/Solid (S) 20/04/2018 08:29:00 24/04/2018 180424-31 17431899	2.00 - 2.46 Soil/Solid (S) 20/04/2018 08:29:00 24/04/2018 180424-31 17431900	0.80 - 1.20 Soil/Solid (S) 20/04/2018 17:40:00 24/04/2018 180424-31 17431883
1-5&+§@ Sample deviation (see append	ix)	AGS Reference						
Component Tecnazene	LOD/Units <50 μg/kg	Method TM073	<250	<50	<50	<250	<50	<50
Hexachlorobenzene	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Trifluralin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Phorate	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Quintozene (PCNB)	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Triallate	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Disulfoton	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Heptachlor	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Aldrin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Chlorothalonil	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Telodrin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
beta-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Isodrin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Heptachlor epoxide	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Triadimefon	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Pendimethalin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
o,p-DDE	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Endosulphan I	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Trans-chlordane	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
cis-Chlordane	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
p,p-DDE	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Dieldrin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
o,p'-DDD (TDE)	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Endrin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
o,p-DDT	<50 μg/kg	TM073	<250	<50	<50	<250	<50	<50
p,p-TDE (DDD)	<50 μg/kg	TM073	<250	<50	<50	<250	<50	<50
Endosulphan II	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
p,p-DDT	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
o,p-Methoxychlor	<50 μg/kg	TM073	<250	<50	<50	<250	<50	<50
p,p-Methoxychlor	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Endosulphan sulphate	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50

Validated

CERTIFICATE OF ANALYSIS

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712

Report Number: 457244 Superseded Report:

OC, OP Pesticides a								
Results Legend # ISO17025 accredited.		ustomer Sample Ref.	VC05	VC05	VC05	VC06	VC06	VC07
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate scheck the efficiency of the mesults of individual compour samples aren't corrected for (F) Trigger breach confirmed 1-5&*§@ Sample deviation (see appen	ethod. The nds within the recovery dix)	Depth (m) Sample Type Date Sampled Time Date Received SDG Ref Lab Sample No.(s) AGS Reference ts Method	0.80 - 1.20 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431895	1.80 - 2.20 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431896	2.53 - 2.93 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431898	0.80 - 1.20 Soil/Solid (S) 20/04/2018 08:29:00 24/04/2018 180424-31 17431899	2.00 - 2.46 Soil/Solid (S) 20/04/2018 08:29:00 24/04/2018 180424-31 17431900	0.80 - 1.20 Soil/Solid (S) 20/04/2018 17:40:00 24/04/2018 180424-31 17431883
Component Permethrin I	LOD/Uni <50 µg/k	g TM073	<250	<50	<50	<250	<50	<50
remedini i	<50 μg/r	y HVIO75	\230	\	\ 50	\250	\ 50	\ 50
Permethrin II	<50 µg/k	g TM073	<250	<50	<50	<250	<50	<50



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

OC, OP Pesticides ar	Custo	omer Sample Ref.	VC07	VC08	VC08	VC11	VC11	VC11
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m) Sample Type	1.60 - 2.00	0.60 - 1.00	1.00 - 1.45	0.80 - 1.20	1.80 - 2.20	2.20 - 2.50
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Date Sampled	Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018
** % recovery of the surrogate st check the efficiency of the met	andard to	Sample Time	17:40:00	17:06:00	17:06:00	12:24:00	12:24:00	12:24:00
results of individual compound	ds within	Date Received SDG Ref	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31
samples aren't corrected for the (F) Trigger breach confirmed	ie recovery	ab Sample No.(s)	17431882	17431902	17431901	17431887	17431886	17431889
1-5&+§@ Sample deviation (see appendi	ix)	AGS Reference						
Component Tecnazene	LOD/Units <50 μg/kg	Method TM073	<50	<50	<50	<250	<50	<50
Techazene	130 µg/kg	1101073	\ 30	\30	\30	\250	\ 50	\
Hexachlorobenzene	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Trifluralin	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Phorate	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Quintozene (PCNB)	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Triallate	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Disulfoton	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Heptachlor	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Aldrin	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Chlorothalonil	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Telodrin	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
beta-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Isodrin	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Heptachlor epoxide	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Triadimefon	<50 μg/kg	TM073	<50	<50	<50	<250	<50	<50
Pendimethalin	<50 μg/kg	TM073	<50	<50	<50	<250	<50	<50
o,p-DDE	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Endosulphan I	<50 μg/kg	TM073	<50	<50	<50	<250	<50	<50
Trans-chlordane	<50 μg/kg	TM073	<50	<50	<50	<250	<50	<50
cis-Chlordane	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
p,p-DDE	<50 μg/kg	TM073	<50	<50	<50	<250	<50	<50
Dieldrin (TDE)	<50 μg/kg	TM073	<50	<50	<50	<250	<50	<50
o,p'-DDD (TDE)	<50 μg/kg	TM073	<50	<50	<50	<250	<50	<50
Endrin	<50 μg/kg	TM073	<50	<50	<50	<250	<50	<50
o,p-DDT	<50 μg/kg	TM073	<50	<50	<50	<250	<50	<50
p,p-TDE (DDD)	<50 μg/kg	TM073	<50	<50	<50	<250	<50	<50
Endosulphan II	<50 μg/kg	TM073	<50	<50	<50	<250	<50	<50
p,p-DDT	<50 μg/kg	TM073	<50	<50	<50	<250	<50	<50
o,p-Methoxychlor	<50 μg/kg	TM073	<50	<50	<50	<250	<50	<50
p,p-Methoxychlor	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Endosulphan sulphate	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50

Validated

CERTIFICATE OF ANALYSIS

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712

Report Number: 457244 Superseded Report:

Company Comp	OC, C	OP Pesticides an								
M mCERTS accredited. Aqueous / settled sample. Dissolved / filtered sample. Dissolved / filtered sample. Sample Type Soil/Solid (S) Soil/Soild (S) Soil/Soild (S) Soil/Soild (S) Soil/Soild (S) Soil/Soild (S) Soil/Soild (S) Soil/Soild (S) Soil/Soild (S) Soil/Soild (S) Soil/Soild (S) Soil/Soild (S) Soil/Soild (S) Soil/Soild (S) Soil/Soild (S) Soil/Soild (S) Soil/Soild (S) Soil/Soild (S) Soil/Soild (S) Soil/Soild (S) Soil/Soild		Results Legend		ustomer Sample Ref.	VC07	VC08	VC08	VC11	VC11	VC11
Permethrin I <50 μg/kg TM073 <50 <50 <50 <50 <50 <50	M aq diss.filt tot.unfilt * ** (F) 1-5&+§@	mCERTS accredited. Aqueous / settled sample. Dissolved / filtered sample. Total / unfiltered sample. Subcontracted test. % recovery of the surrogate st- check the efficiency of the met results of individual compounc samples aren't corrected for th Trigger breach confirmed Sample deviation (see appendi	thod. The ds within de recovery	Sample Type Date Sampled Sample Time Date Received SDG Ref	Soil/Solid (S) 20/04/2018 17:40:00 24/04/2018 180424-31	Soil/Solid (S) 20/04/2018 17:06:00 24/04/2018 180424-31	Soil/Solid (S) 20/04/2018 17:06:00 24/04/2018 180424-31	Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 180424-31	Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 180424-31	Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 180424-31
	Permet	hrin I	<50 ug/l	ka TM073	<50	<50	<50	<250	<50	<50
Permethrn II	rennet	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	<50 μg/i	kg Tivio73	\ 50	\	\ 50	\250	\ 50	\ 50
	Permet	hrin II	<50 µg/l	kg TM073	<50	<50	<50	<250	<50	<50



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

OC, OP Pesticides ar	nd Triazin	ie Herb						
Results Legend # ISO17025 accredited. M mCERTS accredited.		omer Sample Ref.	VC10A	VC10A	VC10A	VC12A	VC12A	VC12A
aq Aqueous / settled sample.		Depth (m)	0.80 - 1.20	1.80 - 2.20	2.45 - 2.85	0.80 - 1.20	1.80 - 2.20	2.80 - 3.30
diss.filt Dissolved / filtered sample.								
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test.		Date Sampled	20/04/2018	20/04/2018	20/04/2018	20/04/2018	20/04/2018	20/04/2018
** % recovery of the surrogate st check the efficiency of the met	thod Tho	Sample Time	09:24:00	09:24:00	09:24:00	13:27:00	13:27:00	13:27:00
results of individual compound	ds within	Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
samples aren't corrected for th	ne recovery	SDG Ref	180424-31	180424-31	180424-31	180424-31	180424-31	180424-31
(F) Trigger breach confirmed	L	ab Sample No.(s)	17431891	17431890	17431892	17431913	17431911	17431912
1-5&+§@ Sample deviation (see appendi	ix)	AGS Reference						
Component	LOD/Units	Method						
Tecnazene	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Techazene	∼30 μg/kg	1101073	\230	\30	\ 30	\230	\ 30	\ 30
Hexachlorobenzene	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
1 loxadilloroporizorio	oo pg/ng	1111070	200	1		200		
Trifluralin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Phorate	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
	"							
alpha-Hexachlorocyclohexane	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
(HCH)								
	50 "	T1 10 T0	0.50			0.50		
Quintozene (PCNB)	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Triallata	4F0	TM072	4050	450	4F0	-050	4F0	450
Triallate	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
	I			I		1	1	
gamma Havachlaraayalahayana	<50a/k~	TM073	<250	<50	<50	<250	<50	<50
gamma-Hexachlorocyclohexane	<50 µg/kg	11010/3	\ 200	\500	\5U	\ 200	\ ₀ 0	\ 50
(HCH / Lindane)	<u> </u>		<u></u>	<u> </u>		<u> </u>	<u> </u>	
Disulfoton	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Distribution	~J∪ µg/kg	I IVIU/ 3	~250	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\J U	~250	\JU	\ JU
							<u></u> _	
Heptachlor	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
rioptacriici	100 µg/kg	110075	1200	1 30	100	~2.00	100	100
Aldrin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
,	00 µg/g	1	200		""		""	"
Chlorothalonil	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
	11 1 3 3							
Telodrin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
	1 1 1 3 3							
beta-Hexachlorocyclohexane	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
(HCH)	''							
	"							
Isodrin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Hartestaler et al.	.FO .//.	TN4070	-050	450	-50	-050	-50	-50
Heptachlor epoxide	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Tain diameters	4F0	TM073	4050	450	450	-050	4F0	450
Triadimefon	<50 µg/kg	1101073	<250	<50	<50	<250	<50	<50
Pendimethalin	حدال معالم	TM073	<250	<50	<50	<250	<50	<50
Pendimethalin	<50 µg/kg	1101073	<200	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	<50	<250	<50	\ 50
o,p-DDE	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
0,p-DDL	-30 μg/kg	1101073	\230	\00	\ 30	~250	\30	\ 30
Endosulphan I	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
	JO PRING	107.0	-200		,,,,	-200		,00
Trans-chlordane	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	פיייפייו - י	"""		1	1	l	1	"
cis-Chlordane	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
	1			I		1	1	
								
p,p-DDE	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
	1			I		1	1	
D: U.	.50 "	T1 10=2	0-0			0-0		
Dieldrin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
I				I		1	1	
o n' DDD (TDC)	∠E0 # ·	T14070	40F0	2F0	2F0	-050	2F0	2FA
o,p'-DDD (TDE)	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
I	l i			I		1	1	
Endrin	250 malles	TM073	<250	<50	<50	<250	<50	<50
Endrin	<50 µg/kg	11010/3	\ 200	\500	\5U	\ 200	\ ₀ 0	\OU
I	I			I		1	1	
o,p-DDT	250 malles	TM073	<250	<50	<50	<250	<50	<50
ו טט-א,ט	<50 µg/kg	11010/3	\ 200	\500	\5U	\ 200	\ ₀ 0	\OU
	I			I		1	1	
p,p-TDE (DDD)	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
h'h-1∩⊏ (∩∩∩)	~o∪ µg/kg	11010/3	\ 200	\500	\5U	\ 200	\ ₀ 0	\OU
	I			I		1	1	
Endosulphan II	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
LINOSUIPIIdII II	~J∪ µg/kg	I IVIU/3	\ 200	\00	\:\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	\Z0U	\500	\ 00
	I			I		1	1	
p,p-DDT	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
ו סס-ליל	~J∪ µg/kg	I IVIU/ 3	~250	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\J U	~250	\JU	\J U
o,p-Methoxychlor	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
o,p moutoxyothor	JO PRING	107.0	-200		,,,,	-200		,00
p,p-Methoxychlor	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	פיייש ביי			1			"	"
Endosulphan sulphate	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
I ' ' '		'		I		1	1	
				1	<u> </u>	<u> </u>	L	

Validated

CERTIFICATE OF ANALYSIS

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712

Report Number: 457244 Superseded Report:

OC, OP Pesticides a					VC10A			
Results Legend # ISO17025 accredited.	Cı	Customer Sample Ref.	VC10A	VC10A VC10A		VC12A	VC12A	VC12A
M mCERTS accredited. aq Aqueous / settled sample. diss.fillt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted test. " % recovery of the surrogate scheck the efficiency of the meresults of individual compour samples aren't corrected for Trigger breach confirmed 1-5&+§@ Sample deviation (see appen	ethod. The nds within the recovery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference SMethod	0.80 - 1.20 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431891	1.80 - 2.20 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431890	2.45 - 2.85 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431892	0.80 - 1.20 Soil/Solid (S) 2004/2018 13:27:00 24/04/2018 180424-31 17431913	1.80 - 2.20 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431911	2.80 - 3.30 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431912
Permethrin I	<50 μg/k	g TM073	<250	<50	<50	<250	<50	<50
Permethrin II	<50 μg/k		<250	<50	<50	<250	<50	<50



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

# ISO17025 accredited. # M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.	Gusto	Depth (m) Sample Type	VC01B 0.80 - 1.20 Soil/Solid (S)	VC01B 1.24 - 1.54 Spil/Solid (S)	VC09B 0.80 - 1.20 Sail/Solid (S)	VC09B 1.26 - 1.66 Spil(Splid (S)	
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Date Sampled	Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018	Soil/Solid (S) 19/04/2018	Soil/Solid (S) 19/04/2018	
** % recovery of the surrogate sta check the efficiency of the met	andard to	Sample Time	11:50:00	11:50:00	13:44:00	13:44:00	
results of individual compound	ls within	Date Received SDG Ref	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31	
samples aren't corrected for th (F) Trigger breach confirmed	Li	ab Sample No.(s)	17431884	17431885	17431893	17431894	
1-5&+§@ Sample deviation (see appendi	x) LOD/Units	AGS Reference Method					
Tecnazene	<50 µg/kg	TM073	<50	<50	<50	<50	
H hl h	.50 .//	TM070	-50	.50	-50	-50	
Hexachlorobenzene	<50 µg/kg	TM073	<50	<50	<50	<50	
Trifluralin	<50 µg/kg	TM073	<50	<50	<50	<50	
Phorate	<50 µg/kg	TM073	<50	<50	<50	<50	
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50	<50	<50	<50	
Quintozene (PCNB)	<50 µg/kg	TM073	<50	<50	<50	<50	
Triallate	<50 µg/kg	TM073	<50	<50	<50	<50	
gamma-Hexachlorocyclohexane	<50 µg/kg	TM073	<50	<50	<50	<50	
(HCH / Lindane) Disulfoton	<50 µg/kg	TM073	<50	<50	<50	<50	
Heptachlor	<50 µg/kg	TM073	<50	<50	<50	<50	
Aldrin	<50 µg/kg	TM073	<50	<50	<50	<50	
Chlorothalonil	<50 μg/kg	TM073	<50	<50	<50	<50	
Telodrin	<50 μg/kg	TM073	<50	<50	<50	<50	
beta-Hexachlorocyclohexane	<50 μg/kg	TM073	<50	<50	<50	<50	
(HCH)		TM073	<50	<50	<50	<50	
Isodrin	<50 μg/kg						
Heptachlor epoxide	<50 µg/kg	TM073	<50	<50	<50	<50	
Triadimefon	<50 µg/kg	TM073	<50	<50	<50	<50	
Pendimethalin	<50 µg/kg	TM073	<50	<50	<50	<50	
o,p-DDE	<50 µg/kg	TM073	<50	<50	<50	<50	
Endosulphan I	<50 µg/kg	TM073	<50	<50	<50	<50	
Trans-chlordane	<50 µg/kg	TM073	<50	<50	<50	<50	
cis-Chlordane	<50 µg/kg	TM073	<50	<50	<50	<50	
p,p-DDE	<50 µg/kg	TM073	<50	<50	<50	<50	
Dieldrin	<50 µg/kg	TM073	<50	<50	<50	<50	
o,p'-DDD (TDE)	<50 µg/kg	TM073	<50	<50	<50	<50	
Endrin	<50 µg/kg	TM073	<50	<50	<50	<50	
o,p-DDT	<50 µg/kg	TM073	<50	<50	<50	<50	
p,p-TDE (DDD)	<50 µg/kg	TM073	<50	<50	<50	<50	
Endosulphan II	<50 µg/kg	TM073	<50	<50	<50	<50	
p,p-DDT	<50 µg/kg	TM073	<50	<50	<50	<50	
o,p-Methoxychlor	<50 µg/kg	TM073	<50	<50	<50	<50	
p,p-Methoxychlor	<50 µg/kg	TM073	<50	<50	<50	<50	
Endosulphan sulphate	<50 μg/kg	TM073	<50	<50	<50	<50	

Validated

CERTIFICATE OF ANALYSIS

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712

Report Number: 457244 Superseded Report:

OC, OP Pesticides ar	iu iiiazii	пе пего					
Results Legend # ISO17025 accredited.	Cus	tomer Sample Ref.	VC01B	VC01B	VC09B	VC09B	
M mCERTS accredited. aq Aqueous / settled sample. diss.fill: Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted test. ** % recovery of the surrogate st check the efficiency of the me results of individual compoun samples aren't corrected for t! (F) Trigger breach confirmed 1-5&4§@ Sample deviation (see append	thod. The ds within	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference Method	0.80 - 1.20 Soil/Solid (S) 20/04/2018 11:50:00 24/04/2018 180424-31 17431884	1.24 - 1.54 Soil/Solid (S) 20/04/2018 11:50:00 24/04/2018 180424-31 17431885	0.80 - 1.20 Soil/Solid (S) 19/04/2018 13:44:00 24/04/2018 180424-31 17431893	1.26 - 1.66 Soil/Solid (S) 19/04/2018 13:44:00 24/04/2018 180424-31 17431894	
Component	LOD/Units	Method					
Permethrin I	<50 µg/kg	TM073	<50	<50	<50	<50	
Permethrin II	<50 μg/kg	TM073	<50	<50	<50	<50	



CERTIFICATE OF ANALYSIS

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Organotins on soils*								
# ISO17025 accredited. M mCERTS accredited.	Cus	stomer Sample Ref.	VC02	VC02	VC02	VC02	VC03	VC03
m mCERTS accreated. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate st check the efficiency of the mel results of individual compount samples aren't corrected for th (F) Trigger breach confirmed 1-5&4§@ Sample deviation (see append	thod. The ds within ne recovery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.80 - 1.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431917	1.80 - 2.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431916	2.80 - 3.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431915	3.20 - 3.63 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431914	0.80 - 1.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431903	1.80 - 2.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431906
Component Dibutyl Tin*	LOD/Units	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Dibutyi Tiri	mg/kg	308	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Tributyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Triphenyl Tin*	mg/kg	SUB	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05
Tetrabutyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Monobutyl Tin*	mg/kg	SUB	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01
Monophenyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Diphenyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
				l				



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Organotins on soils*	01							
# ISO17025 accredited. M mCERTS accredited.	Custo	omer Sample Ref.	VC03	VC03	VC04	VC04	VC04	VC04
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted test. Krecovery of the surrogate st check the efficiency of the met results of individual compouns samples aren't corrected for trigger breach confirmed 1-5&+§@ Sample deviation (see append	thod. The ds within	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference	2.80 - 3.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431905	3.39 - 3.79 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431904	0.80 - 1.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431908	1.80 - 2.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431909	2.80 - 3.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431910	3.60 - 4.00 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431907
Component	LOD/Units	Method						
Dibutyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Tributyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Triphenyl Tin*	mg/kg	SUB	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tetrabutyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Monobutyl Tin*	mg/kg	SUB	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Monophenyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Diphenyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02



CERTIFICATE OF ANALYSIS

180424-31 Lowestoft SDG: Location:

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

Organotins on soils*								
# ISO17025 accredited.	Custo	mer Sample Ref.	VC05	VC05	VC05	VC06	VC06	VC07
M mCERTS accredited. aq Aqueous / settled sample. diss.filit Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate st check the efficiency of the met results of individual compount samples aren't corrected for the firinger breach confirmed 1-5&*§@ Sample deviation (see append		Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference Method	0.80 - 1.20 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431895	1.80 - 2.20 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431896	2.53 - 2.93 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431898	0.80 - 1.20 Soil/Solid (S) 20/04/2018 08:29:00 24/04/2018 180424-31 17431899	2.00 - 2.46 Soil/Solid (S) 20/04/2018 08:29:00 24/04/2018 180424-31 17431900	0.80 - 1.20 Soil/Solid (S) 20/04/2018 17:40:00 24/04/2018 180424-31 17431883
Component Dibutyl Tin*	LOD/Units mg/kg	Method SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Tributyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Triphenyl Tin*	mg/kg	SUB	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tetrabutyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Monobutyl Tin*	mg/kg	SUB	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Monophenyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Diphenyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Organotins on soils*								
# ISO17025 accredited.	Cus	tomer Sample Ref.	VC07	VC08	VC08	VC11	VC11	VC11
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted test. ** % recovery of the surrogate st check the efficiency of the me results of individual compoun samples aren't corrected for tt Trigger breach confirmed 1-5&4§@ Sample deviation (see append	thod. The ds within ne recovery ix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	1.60 - 2.00 Soil/Solid (S) 20/04/2018 17:40:00 24/04/2018 180424-31 17431882	0.60 - 1.00 Soil/Solid (S) 20/04/2018 17:06:00 24/04/2018 180424-31 17431902	1.00 - 1.45 Soil/Solid (S) 20/04/2018 17:06:00 24/04/2018 180424-31 17431901	0.80 - 1.20 Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 180424-31 17431887	1.80 - 2.20 Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 180424-31 17431886	2.20 - 2.50 Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 180424-31 17431889
Component Dibutyl Tin*	LOD/Units mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Tributyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	0.06	<0.02	<0.02
Triphenyl Tin*	mg/kg	SUB	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tetrabutyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Monobutyl Tin*	mg/kg	SUB	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Monophenyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Diphenyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Diplony III	ilighig	000	10.02	0.02	0.02	0.02	0.02	0.02



CERTIFICATE OF ANALYSIS

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Organotins on soils*	01							
# ISO17025 accredited. M mCERTS accredited.	Custo	mer Sample Ref.	VC10A	VC10A	VC10A	VC12A	VC12A	VC12A
aq Aqueous / settled sample. diss.filt / Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted test. ** % recovery of the surrogate stroheck the efficiency of the met results of individual compound samples aren't corrected for the total filter of the total fi	thod. The ds within he recovery Li ix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference	0.80 - 1.20 SoiiJSolid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431891	1.80 - 2.20 Soii/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431890	2.45 - 2.85 Soii/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431892	0.80 - 1.20 Soii/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431913	1.80 - 2.20 Soii/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431911	2.80 - 3.30 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431912
Component Dibutyl Tin*	LOD/Units mg/kg	Method SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
	mg/kg							
Tributyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Triphenyl Tin*	mg/kg	SUB	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05
Tetrabutyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Monobutyl Tin*	mg/kg	SUB	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Monophenyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Diphenyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Results Legend	
aq Aqueous / settled sample. diss.filt Depth (m) 0.80 - 1.20 1.24 - 1.54 0.80 - 1.20 1.26 - 1.66 bissolved / filtered sample. Sample Type Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) ** Subcontracted test. Date Sampled 20/04/2018 20/04/2018 19/04/2018 19/04/2018 ** recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within Date Received 24/04/2018 24/04/2018 24/04/2018 24/04/2018 24/04/2018 24/04/2018 24/04/2018 18/0424-31 18/0424-31 18/0424-31 18/0424-31	
(F) Trigger breach confirmed Lab Sample No.(s) 17431884 17431885 17431893 17431894 1-5&+§@ Sample deviation (see appendix) AGS Reference 17431884 17431893 17431894	
Component LOD/Units Method	
Dibutyl Tin* mg/kg SUB <0.02 <0.02 <0.02 <0.02	
Tributyl Tin* mg/kg SUB <0.02 <0.02 <0.02	
Triphenyl Tin* mg/kg SUB <0.05 <0.05 <0.05	
Tetrabutyl Tin* mg/kg SUB <0.02 <0.02 <0.02 <0.02	
Monobutyl Tin* mg/kg SUB <0.1 <0.1 <0.1 <0.1	
Monophenyl Tin* mg/kg SUB <0.02 <0.02 <0.02 <0.02	
Diphenyl Tin* mg/kg SUB <0.02 <0.02 <0.02 <0.02	



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

PAH by GCMS											
Results Legend # ISO17025 accredited.	Cus	stomer Sample Ref.	VC02		VC02		VC02		VC02	VC03	VC03
M mCERTS accredited. aq Aqueous / settled sample.		Double (m)									
diss.filt Dissolved / filtered sample.		Depth (m)	0.80 - 1.20		1.80 - 2.20		2.80 - 3.20		3.20 - 3.63	0.80 - 1.20	1.80 - 2.20
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Sample Type	Soil/Solid (S) 20/04/2018		Soil/Solid (S) 20/04/2018		Soil/Solid (S) 20/04/2018		Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018
** % recovery of the surrogate st	andard to	Date Sampled Sample Time	15:43:00		15:43:00		15:43:00		15:43:00	14:28:00	14:28:00
check the efficiency of the met	thod. The	Date Received	24/04/2018		24/04/2018		24/04/2018		24/04/2018	24/04/2018	24/04/2018
results of individual compound	ds within	SDG Ref	180424-31		180424-31		180424-31		180424-31	180424-31	180424-31
samples aren't corrected for th	ne recovery	Lab Sample No.(s)	17431917		17431916		17431915		17431914	17431903	17431906
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see append	ix)	AGS Reference								11 10 1000	
Component	LOD/Units										
Naphthalene-d8 % recovery**	%	TM218	109		109		100		108	110	106
Acenaphthene-d10 % recovery**	%	TM218	103		102		97		108	111	107
Phenanthrene-d10 % recovery**	%	TM218	104		102		99		106	108	105
Chrysene-d12 % recovery**	%	TM218	90.9		87.4		97.9		93	96.2	98.5
Perylene-d12 % recovery**	%	TM218	82.4		82.9		93.8		99.2	102	109
Naphthalene	<9 µg/kg	TM218	<9	М	<9	М	<9	М	<9 M	49.1	<9 M
Acenaphthylene	<12 µg/kg	TM218	<12	М	<12	М	<12	М	<12 M	<12	<12 M
Acenaphthene	<8 µg/kg		<8	М	<8	М	<8	М	<8 M	46	<8 M
Fluorene	<10 µg/kg		<10	М	<10	М	<10	М	<10 M	36.1	<10 M
Phenanthrene	<15 µg/kg		<15	М	<15	М	<15	М	<15 M	140	<15 M
Anthracene	<16 µg/kg		<16	М	<16	М	<16	М	<16 M	72.3	<16 M
Fluoranthene	<17 µg/kg		27.8	М	<17	М	<17	М	<17 M	270	<17 M
Pyrene	<15 µg/kg		22.8	М	<15	М	<15	М	<15 M	218	<15 M
Benz(a)anthracene	<14 µg/kg		<14	М	<14	М	<14	М	<14 M	79.9	<14 M
Chrysene	<10 µg/kg		<10	М	<10	M	<10	М	<10 M	63	<10 M
Benzo(b)fluoranthene Benzo(k)fluoranthene	<15 µg/kg <14 µg/kg		<15 <14	M	<15 <14	M	<15 <14	М	<15 M <14	109 38.2	<15 M <14
Benzo(a)pyrene	<14 μg/kg		<15	M	<15	M	<15	М	<14 M	57.8	<14 M
Indeno(1,2,3-cd)pyrene	<18 μg/kg		<18	M		M	<18	М	<18 M		<18 M
Dibenzo(a,h)anthracene	<23 μg/kg		<23	М	<23	M	<23	M	<23	<23	<23 M
(' '				М		M		М	М		M
Benzo(g,h,i)perylene	<24 µg/kg		<24	М	<24	М	<24	М	<24 M	55	<24 M
PAH, Total Detected USEPA 16	<118 µg/k		<118		<118		<118		<118	1270	<118
PAH total 17 (inclusive of Coronene)	<10 mg/kg	g TM218	<10		<10		<10		<10	<10	<10



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

PAH by GCMS								
Results Legend # ISO17025 accredited. M mCERTS accredited.	Cust	tomer Sample Ref.	VC03	VC03	VC04	VC04	VC04	VC04
aq Aqueous / settled sample.		Depth (m)	2.80 - 3.20	3.39 - 3.79	0.80 - 1.20	1.80 - 2.20	2.80 - 3.20	3.60 - 4.00
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	2.80 - 3.20 Soil/Solid (S)	3.39 - 3.79 Soil/Solid (S)	0.80 - 1.20 Soil/Solid (S)	1.80 - 2.20 Soil/Solid (S)	2.80 - 3.20 Soil/Solid (S)	3.60 - 4.00 Soil/Solid (S)
* Subcontracted test.		Date Sampled	20/04/2018	20/04/2018	19/04/2018	19/04/2018	19/04/2018	19/04/2018
** % recovery of the surrogate st	andard to	Sample Time	14:28:00	14:28:00	15:50:00	15:50:00	15:50:00	15:50:00
check the efficiency of the met results of individual compound		Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
samples aren't corrected for th	e recovery	SDG Ref	180424-31	180424-31	180424-31	180424-31	180424-31	180424-31
(F) Trigger breach confirmed		Lab Sample No.(s)	17431905	17431904	17431908	17431909	17431910	17431907
1-5&+§@ Sample deviation (see appendice Component	LOD/Units	AGS Reference Method						
Naphthalene-d8 % recovery**	%	TM218	105	97.7	92.1	108	95	109
·	70	TIVIZIO	100	51.1	32.1	100	33	100
Acenaphthene-d10 % recovery**	%	TM218	104	101	95.8	101	98.4	102
Phenanthrene-d10 % recovery**	%	TM218	103	102	95.9	102	98	103
Chrysene-d12 % recovery**	%	TM218	92.1	87.9	82.9	88.1	82.9	89.8
Perylene-d12 % recovery**	%	TM218	99.4	86.6	80	77.4	76.5	81.2
Naphthalene	<9 µg/kg	TM218	<9 N	<9 M M	<9 M	<9 M	<9 M	<9 M
Acenaphthylene	<12 µg/kg	TM218	<12	<12	<12	<12 M	<12 M	<12 M
Acenaphthene	<8 µg/kg	TM218	<8 N	<8	<8	<8 M	<8 M	<8 M
Fluorene	<10 µg/kg	TM218	<10	<10	<10	<10 M	<10 M	<10 M
Phenanthrene	<15 µg/kg	TM218	<15	<15	<15	<15 M	<15 M	<15 M
Anthracene	<16 µg/kg	TM218	<16	<16	<16	<16 M	<16 M	<16 M
Fluoranthene	<17 µg/kg	TM218	<17 N	<17 M M	<17 M	<17 M	<17 M	<17 M
Pyrene	<15 µg/kg	TM218	<15 N	<15 M M	<15 M	<15 M	<15 M	<15 M
Benz(a)anthracene	<14 µg/kg	TM218	<14 N	<14 M M	<14 M	<14 M	<14 M	<14 M
Chrysene	<10 µg/kg	TM218	<10	<10 M M	<10 M	<10 M	<10 M	<10 M
Benzo(b)fluoranthene	<15 µg/kg		<15 N			<15 M	<15 M	<15 M
Benzo(k)fluoranthene	<14 µg/kg		<14 N	<14 И М		<14 M	<14 M	<14 M
Benzo(a)pyrene	<15 µg/kg			<15 И М		<15 M		<15 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg			<18 M M		<18 M	<18 M	<18 M
Dibenzo(a,h)anthracene	<23 µg/kg			<23 M M		<23 M	<23 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg		<24 N			<24 M	<24 M	<24 M
PAH, Total Detected USEPA 16	<118 µg/kg		<118	<118	<118	<118	<118	<118
PAH total 17 (inclusive of Coronene)	<10 mg/kg	TM218	<10	<10	<10	<10	<10	<10
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ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

PAH by GCMS								
Results Legend # ISO17025 accredited.	Cust	tomer Sample Ref.	VC05	VC05	VC05	VC06	VC06	VC07
M mCERTS accredited. aq Aqueous / settled sample.								
diss.filt Dissolved / filtered sample.		Depth (m)	0.80 - 1.20	1.80 - 2.20	2.53 - 2.93	0.80 - 1.20	2.00 - 2.46	0.80 - 1.20
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Sample Type Date Sampled	Soil/Solid (S) 19/04/2018	Soil/Solid (S) 19/04/2018	Soil/Solid (S) 19/04/2018	Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018
** % recovery of the surrogate st	andard to	Sample Time	14:45:00	14:45:00	14:45:00	08:29:00	08:29:00	17:40:00
check the efficiency of the met results of individual compound		Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
samples aren't corrected for th	e recovery	SDG Ref	180424-31	180424-31	180424-31	180424-31	180424-31	180424-31
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendi	iv)	Lab Sample No.(s) AGS Reference	17431895	17431896	17431898	17431899	17431900	17431883
Component	LOD/Units	Method						
Naphthalene-d8 % recovery**	%	TM218	103	105	106	104	103	92.9
Acenaphthene-d10 %	%	TM218	98.5	99.5	99.7	99.5	100	97.8
recovery** Phenanthrene-d10 % recovery**	%	TM218	103	101	99.9	104	97.5	102
•		TM218			87			
Chrysene-d12 % recovery**	%		97.1	97.1		92.8	91.1	92.6
Perylene-d12 % recovery**	%	TM218	106	104	76.5	91.9	89.8	100
Naphthalene	<9 µg/kg	TM218	36.8	<9 M M	<9 M	37.1 M	<9 M	<9 M
Acenaphthylene	<12 µg/kg	TM218	<12 N	<12 M M	<12	<12 M	<12 M	<12 M
Acenaphthene	<8 µg/kg	TM218	<8	<8 M M	<8	13.9 M	<8 M	<8 M
Fluorene	<10 µg/kg	TM218	<10	<10 M M	<10	17.4 M	<10 M	<10 M
Phenanthrene	<15 µg/kg	TM218	73	<15	<15	70.6	<15	<15
Anthracene	<16 µg/kg	TM218	<16	M	<16	<16	<16	<16
Fluoranthene	<17 µg/kg	TM218	144	M M	<17	105	<17	<17
Pyrene	<15 µg/kg	TM218	119	M	<15	83.9	<15	<15
Benz(a)anthracene	<14 µg/kg	TM218	55.5	M	<14	33.2	<14	<14
Chrysene	<10 µg/kg	TM218	46.1	M	<10 M	35.3	<10 M	<10 M
Benzo(b)fluoranthene	<15 µg/kg	TM218	81.6	M	<15	56.1	<15	M <15
Benzo(k)fluoranthene	<14 µg/kg	TM218	35.5	M M	<14	<14	<14	<14
Benzo(a)pyrene	<15 µg/kg		49.6	M M	<15	29.9	M <15	M <15
Indeno(1,2,3-cd)pyrene	<18 µg/kg			M <18	1	M <18		<18
Dibenzo(a,h)anthracene	<23 μg/kg			M M		M <23	M <23	M <23
				M M		<24 M	<24 M	<24 M
Benzo(g,h,i)perylene	<24 µg/kg		N	М	M	М	M	М
PAH, Total Detected USEPA 16	<118 µg/kg		690	<118	<118	483	<118	<118
PAH total 17 (inclusive of Coronene)	<10 mg/kg	TM218	<10	<10	<10	<10	<10	<10



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

PAH by GCMS													
Results Legend # ISO17025 accredited. M mCERTS accredited.	Cust	omer Sample Ref.	VC07	VC08		VC08		VC11		VC11		VC11	
aq Aqueous / settled sample.		Depth (m)	1.60 - 2.00	0.60 - 1.00		1.00 - 1.45		0.80 - 1.20		1.80 - 2.20		2.20 - 2.50	
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)	
* Subcontracted test.		Date Sampled	20/04/2018	20/04/2018		20/04/2018		20/04/2018		20/04/2018		20/04/2018	
** % recovery of the surrogate sta check the efficiency of the met	andard to	Sample Time	17:40:00	17:06:00		17:06:00		12:24:00		12:24:00		12:24:00	
results of individual compound		Date Received	24/04/2018	24/04/2018		24/04/2018		24/04/2018		24/04/2018		24/04/2018	
samples aren't corrected for th	e recovery	SDG Ref	180424-31 17431882	180424-31 17431902		180424-31 17431901		180424-31 17431887		180424-31 17431886		180424-31 17431889	
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendi	iv)	Lab Sample No.(s) AGS Reference	17431002	17451902		17431901		17431007		17431000		17431009	
Component	LOD/Units	Method											
Naphthalene-d8 % recovery**	%	TM218	112	107	\neg	95.3		108		112		103	
Acenaphthene-d10 % recovery**	%	TM218	104	107		99.3		103	+	105	\dashv	107	
Phenanthrene-d10 % recovery**	%	TM218	105	105	\dashv	100		107		106	\dashv	109	\dashv
Chrysene-d12 % recovery**	%	TM218	95.4	94.7	\dashv	85.6		103		95		112	
Perylene-d12 % recovery**	%	TM218	99.6	101	\dashv	73.7		114		85.6		127	
Naphthalene	<9 µg/kg	TM218	<9	<9 M	М	<9	М	85.7	М	<9	М	<9	M
Acenaphthylene	<12 µg/kg	TM218	<12	<12 M	М	<12	М	<12	M	<12	M	<12	М
Acenaphthene	<8 µg/kg	TM218	<8	<8 M	M	<8	М	49.9	M	<8	M	<8	М
Fluorene	<10 µg/kg	TM218	<10	<10 M	M	<10	M	39.6	М	<10	M	<10	M
Phenanthrene	<15 µg/kg	TM218	<15	<15 M	M	<15	M	97.6	M	<15	M	<15	M
Anthracene	<16 µg/kg	TM218	<16	<16 M	M	<16	M	57.7	M	<16	M	<16	M
Fluoranthene	<17 µg/kg	TM218	<17	<17 M	М	<17	М	500	М	<17	М	<17	М
Pyrene	<15 µg/kg	TM218	<15	<15 M	М	<15	М	368	M	<15	М	<15	М
Benz(a)anthracene	<14 µg/kg	TM218	<14	<14 M	М	<14	М	97.7	М	<14	М	<14	М
Chrysene	<10 µg/kg	TM218	<10	<10 M	М	<10	М	64.4	М	<10	М	<10	М
Benzo(b)fluoranthene	<15 µg/kg	TM218	<15	<15 M	М	<15	М	97.2	М	<15	М	<15	М
Benzo(k)fluoranthene	<14 µg/kg	TM218	<14	<14 M	М	<14	М	40.8	М	<14	М	<14	М
Benzo(a)pyrene	<15 µg/kg	TM218		<15 M	М	<15	М		М	<15	М	<15	М
Indeno(1,2,3-cd)pyrene	<18 µg/kg			<18 M	М	<18	М		М	<18	М	<18	М
Dibenzo(a,h)anthracene	<23 µg/kg	TM218		<23 M	М	<23	М		М	<23	М	<23	М
Benzo(g,h,i)perylene	<24 µg/kg	TM218		<24 M	М	<24	М		М	<24	М	<24	М
PAH, Total Detected USEPA 16	<118 µg/kg		<118	<118		<118		1640		<118		<118	
PAH total 17 (inclusive of Coronene)	<10 mg/kg	TM218	<10	<10	_	<10		<10		<10		<10	
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					\dashv				+		\dashv		\dashv
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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

and Accompanies accompliance ac	PAH DY GCMS								
*** Benderment back** 1	M mCERTS accredited.	Cust							Soil/Solid (S)
Component Comp	* Subcontracted test.	andard to	Date Sampled	20/04/2018	20/04/2018	20/04/2018	20/04/2018	20/04/2018	20/04/2018
Component Comp	check the efficiency of the met	thod. The	Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
Adding Empirical Component	samples aren't corrected for the	e recovery							
Naphthalene-d8 % recovery** % TM218 103 102 105 95.6 112 110 103 103 102 105 95.6 112 110 103 103 102 105 104 105 103 103 102 105 104 105 103 104 105 105 104 105 105 104 105 105 104 105 105 104 105 105 104 105 105 104 105 105 104 105 105 104 105 105 104 105 105 104 105 105 104 105 10	1-5&+§@ Sample deviation (see append	ix)	AGS Reference						
Phenanthrene d10 % recovery**	Naphthalene-d8 % recovery**			103	102	105	95.6	112	110
Chrysene-d12 % recovery**	Acenaphthene-d10 % recovery**								
Perylene-d12 % recovery**	·		TM218						
Naphthalene									
Acenaphthylene	Perylene-d12 % recovery**	%	TM218	115	79.4	101	117	81.1	87.1
Acenaphthene	Naphthalene	<9 µg/kg	TM218						
Acenaphthene Se μg/kg TM218 31.7	Acenaphthylene	<12 µg/kg	TM218						
Fluorene	Acenaphthene	<8 µg/kg	TM218	31.7	<8	<8	82.9	<8	<8
Phenanthrene	Fluorene	<10 µg/kg	TM218	33.8	<10	<10	62.4	<10	<10
Anthracene	Phenanthrene	<15 µg/kg	TM218	97.2	<15	<15	209	<15	<15
Fluoranthene	Anthracene	<16 µg/kg	TM218	73.3	<16	<16	104	<16	<16
Pyrene <15 μg/kg TM218 321 M <15 M M<	Fluoranthene	<17 µg/kg	TM218	418	<17	<17	610	<17	<17
Benz(a)anthracene	Pyrene	<15 µg/kg	TM218	321	<15	<15	481	<15	<15
Chrysene <10 μg/kg TM218 78.4 <10 M M <10 M M 148 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <10 M M <th< td=""><td>Benz(a)anthracene</td><td><14 µg/kg</td><td>TM218</td><td>107</td><td><14</td><td><14</td><td>151</td><td><14</td><td><14</td></th<>	Benz(a)anthracene	<14 µg/kg	TM218	107	<14	<14	151	<14	<14
Benzo(b)fluoranthene <15 μg/kg TM218 92.7	Chrysene	<10 µg/kg	TM218	78.4	<10	<10	148	<10	<10
Benzo(k)fluoranthene C14 μg/kg TM218 S9.2 C14 M M M M M M M M M	Benzo(b)fluoranthene	<15 µg/kg	TM218	92.7	<15	<15	206	<15	<15
Benzo(a)pyrene Continue Co	Benzo(k)fluoranthene	<14 µg/kg	TM218	39.2	<14	<14	82.6	<14	<14
Indeno(1,2,3-cd)pyrene	Benzo(a)pyrene	<15 µg/kg	TM218	68	<15	<15	120	<15	<15
Dibenzo(a,h)anthracene	Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	34.4	<18	<18	77.2	<18	<18
Benzo(g,h,i)perylene <24 μg/kg	Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23	<23	<23	<23	<23
PAH, Total Detected USEPA 16 <118 μg/kg TM218 1500 <118 <118 2560 <118 <118 PAH total 17 (inclusive of <10 mg/kg TM218 <10 <10 <10 <10 <10	Benzo(g,h,i)perylene	<24 µg/kg	TM218	47.5	<24	<24	108	<24	<24
	PAH, Total Detected USEPA 16	<118 µg/kg	TM218						
	PAH total 17 (inclusive of Coronene)	<10 mg/kg	TM218	<10	<10	<10	<10	<10	<10



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

PAH by GCMS							
Results Legend # ISO17025 accredited.	Cu	ıstomer Sample Ref.	VC01B	VC01B	VC09B	VC09B	
M mCERTS accredited. aq Aqueous / settled sample.		Depth (m)	0.80 - 1.20	1.24 - 1.54	0.80 - 1.20	1.26 - 1.66	
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)	0.60 - 1.20 Soil/Solid (S)	1.26 - 1.00 Soil/Solid (S)	
* Subcontracted test.		Date Sampled	20/04/2018	20/04/2018	19/04/2018	19/04/2018	
check the efficiency of the met	hod. The	Sample Time Date Received	11:50:00 24/04/2018	11:50:00 24/04/2018	13:44:00 24/04/2018	13:44:00 24/04/2018	
results of individual compound samples aren't corrected for the	ds within	SDG Ref	180424-31	180424-31	180424-31	180424-31	
(F) Trigger breach confirmed	1	Lab Sample No.(s)	17431884	17431885	17431893	17431894	
1-5&+§@ Sample deviation (see appending Component	LOD/Unit	AGS Reference					
Naphthalene-d8 % recovery**	%	TM218	107	105	101	105	
Acenaphthene-d10 %	%	TM218	100	98.2	100	101	
recovery** Phenanthrene-d10 % recovery**	%	TM218	102	99.5	99.7	99.4	
Chrysene-d12 % recovery**	%	TM218	96.3	92.5	89.9	91.3	
Perylene-d12 % recovery**	%	TM218	100	98.1	93.4	92.3	
Naphthalene	<9 µg/kg	g TM218	<9 M	<9 I M	<9 M	<9 M	
Acenaphthylene	<12 µg/k	g TM218	<12 M	<12	<12 M	<12 M	
Acenaphthene	<8 μg/kg	g TM218	<8 M	<8		<8 M	
Fluorene	<10 µg/k	g TM218	<10 M	<10	<10 M	<10 M	
Phenanthrene	<15 µg/k		<15 M	<15 M	<15 M	<15 M	
Anthracene	<16 µg/k		<16 M		<16 M	<16 M	
Fluoranthene	<17 µg/k		<17 M		<17 M	<17 M	
Pyrene	<15 µg/k		<15 M		<15 M	<15 M	
Benz(a)anthracene	<14 µg/k		<14 M		<14 M	<14 M	
Chrysene	<10 µg/k		<10 M		<10 M	<10 M	
Benzo(b)fluoranthene	<15 µg/k		<15 M	<15 M	<15 M <14	<15 M <14	
Benzo(k)fluoranthene	<14 µg/k	Ĭ	<14 M	I M	M	М	
Benzo(a)pyrene Indeno(1,2,3-cd)pyrene	<15 µg/k		<15 M <18	<15 I <18	<15 M <18	<15 M <18	
Dibenzo(a,h)anthracene	<18 µg/k <23 µg/k	`	<16 M		<10 M	<10 M	
		`	M	I M	M	М	
Benzo(g,h,i)perylene PAH, Total Detected USEPA 16	<24 µg/k		<24 M		<24 M	<24 M	
·	<118 µg/l	Ĭ	<118 <10	<118 <10	<118 <10	<118 <10	
PAH total 17 (inclusive of Coronene)	<10 mg/k	g TM218	<10	<10	<10	<10	

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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi Volatile Organi	c Compo	unds						
# ISO17025 accredited. # M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate s check the efficiency of the m results of individual compour samples aren't corrected for (F) Trigger breach confirmed 1-5&4§@ Sample deviation (see append	standard to ethod. The ids within the recovery	Depth (m) Sample Type Date Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	VC02 0.80 - 1.20 Soil/Soid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431917	VC02 1.80 - 2.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431916	VC02 2.80 - 3.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431915	VC02 3.20 - 3.63 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431914	VC03 0.80 - 1.20 Soil/Soid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431903	VC03 1.80 - 2.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431906
Phenol	<100 µg/kg		<100	<100	<100	<100	<100	<100
Pentachlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Nitrobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Isophorone	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachloroethane	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorobutadiene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Dioctyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Dimethyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Diethyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Dibutyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Dibenzofuran	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Carbazole	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Butylbenzyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Azobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chloroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Bromophenylphenylether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
3-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Chlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi voiatile Organi								
Results Legend # ISO17025 accredited. M mCERTS accredited.	Custo	mer Sample Ref.	VC02	VC02	VC02	VC02	VC03	VC03
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.80 - 1.20	1.80 - 2.20	2.80 - 3.20	3.20 - 3.63	0.80 - 1.20	1.80 - 2.20
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test.		Date Sampled	20/04/2018	20/04/2018	20/04/2018	20/04/2018	20/04/2018	20/04/2018
** % recovery of the surrogate s	tandard to	Sample Time	15:43:00	15:43:00	15:43:00	15:43:00	14:28:00	14:28:00
check the efficiency of the me results of individual compoun		Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
samples aren't corrected for t	he recovery	SDG Ref	180424-31	180424-31	180424-31	180424-31	180424-31	180424-31
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see append	dix)	ab Sample No.(s) AGS Reference	17431917	17431916	17431915	17431914	17431903	17431906
Component	LOD/Units	Method	:100	.400	.400	.400	.400	.400
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dimethylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Chloronaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Methylnaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Benzo(a)anthracene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Chrysene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Naphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100

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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi volatile Organic								
# ISO17025 accredited. # ISO17025 accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate st check the efficiency of the mel results of individual compoun samples aren't corrected for the	andard to thod. The ds within	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref	VC03 2.80 - 3.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31	VC03 3.39 - 3.79 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31	VC04 0.80 - 1.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31	VC04 1.80 - 2.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31	VC04 2.80 - 3.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31	VC04 3.60 - 4.00 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31
(F) Trigger breach confirmed	ie recovery	Lab Sample No.(s) AGS Reference	17431905	17431904	17431908	17431909	17431910	17431907
1-5&+§@ Sample deviation (see append Component	LOD/Units	AGS Reference Method						
Phenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Pentachlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Nitroso-n-dipropylamine	<100 µg/kg		<100	<100	<100	<100	<100	<100
Nitrobenzene	<100 µg/kg		<100	<100	<100	<100	<100	<100
Isophorone	<100 µg/kg		<100	<100	<100	<100	<100	<100
Hexachloroethane	<100 µg/kg		<100	<100	<100	<100	<100	<100
Hexachlorocyclopentadiene	<100 µg/kg		<100	<100	<100	<100	<100	<100
Hexachlorobutadiene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorobenzene	<100 µg/kg		<100	<100	<100	<100	<100	<100
n-Dioctyl phthalate	<100 µg/kg		<100	<100	<100	<100	<100	<100
Dimethyl phthalate	<100 µg/kg		<100	<100	<100	<100	<100	<100
Diethyl phthalate	<100 µg/kg		<100	<100	<100	<100	<100	<100
n-Dibutyl phthalate	<100 µg/kg		<100	<100	<100	<100	<100	<100
Dibenzofuran	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Carbazole	<100 µg/kg		<100	<100	<100	<100	<100	<100
Butylbenzyl phthalate	<100 µg/kg		<100	<100	<100	<100	<100	<100
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Chloroethyl)ether	<100 µg/kg		<100	<100	<100	<100	<100	<100
Azobenzene	<100 µg/kg		<100	<100	<100	<100	<100	<100
4-Nitrophenol	<100 µg/kg		<100	<100	<100	<100	<100	<100
4-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chloroaniline	<100 µg/kg		<100	<100	<100	<100	<100	<100
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Bromophenylphenylether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
3-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Chlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100

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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi Volatile Organi								
Results Legend # ISO17025 accredited. M mCERTS accredited.	Custo	mer Sample Ref.	VC03	VC03	VC04	VC04	VC04	VC04
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	2.80 - 3.20	3.39 - 3.79	0.80 - 1.20	1.80 - 2.20	2.80 - 3.20	3.60 - 4.00
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test.		Date Sampled	20/04/2018	20/04/2018	19/04/2018	19/04/2018	19/04/2018	19/04/2018 [°]
** % recovery of the surrogate s	tandard to	Sample Time	14:28:00	14:28:00	15:50:00	15:50:00	15:50:00	15:50:00
check the efficiency of the me	thod. The	Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
results of individual compoun samples aren't corrected for t		SDG Ref	180424-31	180424-31	180424-31	180424-31	180424-31	180424-31
(F) Trigger breach confirmed	Li	ab Sample No.(s)	17431905	17431904	17431908	17431909	17431910	17431907
1-5&+§@ Sample deviation (see append	dix)	AGS Reference						
Component	LOD/Units	Method						
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dimethylphenol		TM157			<100	<100	<100	<100
	<100 µg/kg		<100	<100				
2,4-Dichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Chloronaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Methylnaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Benzo(a)anthracene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Chrysene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Naphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100

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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi Volatile Organi	c Compo	unds						
# ISO17025 accredited. # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate s check the efficiency of the me results of individual compoun samples aren't corrected for t (F) Trigger breach confirmed 1-5&4\$@ Sample deviation (see append	tandard to thod. The ids within he recovery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference	VC05 0.80 - 1.20 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431895	VC05 1.80 - 2.20 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431896	VC05 2.53 - 2.93 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431898	VC06 0.80 - 1.20 Soil/Solid (S) 20/04/2018 08:29:00 24/04/2018 180424-31 17431899	VC06 2.00 - 2.46 Soil/Solid (S) 20/04/2018 08:29:00 24/04/2018 180424-31 17431900	VC07 0.80 - 1.20 Soil/Solid (S) 20/04/2018 17:40:00 24/04/2018 180424-31 17431883
Component	LOD/Units							
Phenol	<100 µg/kg		<100	<100	<100	<100	<100	<100
Pentachlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Nitrobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Isophorone	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachloroethane	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorobutadiene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Dioctyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Dimethyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Diethyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Dibutyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Dibenzofuran	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Carbazole	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Butylbenzyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Azobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chloroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Bromophenylphenylether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
3-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Chlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi volatile Organi								
Results Legend # ISO17025 accredited. M mCERTS accredited.	Custo	omer Sample Ref.	VC05	VC05	VC05	VC06	VC06	VC07
aq Aqueous / settled sample.		Depth (m)	0.80 - 1.20	1.80 - 2.20	2.53 - 2.93	0.80 - 1.20	2.00 - 2.46	0.80 - 1.20
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test.		Date Sampled	19/04/2018	19/04/2018	19/04/2018	20/04/2018	20/04/2018	20/04/2018
** % recovery of the surrogate s	tandard to	Sample Time	14:45:00	14:45:00	14:45:00	08:29:00	08:29:00	17:40:00
check the efficiency of the me		Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
results of individual compour samples aren't corrected for t	nds within	SDG Ref	180424-31	180424-31	180424-31	180424-31	180424-31	180424-31
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see append	dix)	ab Sample No.(s) AGS Reference	17431895	17431896	17431898	17431899	17431900	17431883
Component 2,6-Dinitrotoluene	LOD/Units <100 μg/kg	Method	<100	<100	<100	<100	<100	<100
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dimethylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Chloronaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Methylnaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Benzo(a)anthracene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Chrysene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Naphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100

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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi Volatile Organi	c Compo	unds						
# ISO17025 accredited. # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.fillt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate s check the efficiency of the me results of individual compour samples aren't corrected for trigger breach confirmed 1-5&4\$@ Sample deviation (see append	standard to bthod. The ds within the recovery dix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	VC07 1.60 - 2.00 Soil/Solid (S) 20/04/2018 17-40:00 24/04/2018 180424-31 17431882	VC08 0.60 - 1.00 Soil/Solid (S) 20/04/2018 17:06:00 24/04/2018 180424-31 17431902	VC08 1.00 - 1.45 Soil/Solid (S) 20/04/2018 17:06:00 24/04/2018 180424-31 17431901	VC11 0.80 - 1.20 Soil/Soid (S) 20/04/2018 12:24:00 24/04/2018 180424-31 17431887	VC11 1.80 - 2.20 Soil/Soid (S) 20/04/2018 12:24:00 24/04/2018 180424-31 17431886	VC11 2.20 - 2.50 Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 180424-31 17431889
Phenol	LOD/Units <100 μg/kg		<100	<100	<100	<100	<100	<100
Pentachlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Nitrobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Isophorone	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachloroethane	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorobutadiene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Dioctyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Dimethyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Diethyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Dibutyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Dibenzofuran	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Carbazole	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Butylbenzyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Azobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chloroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Bromophenylphenylether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
3-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Chlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi Volatile Organic								
Results Legend # ISO17025 accredited. M mCERTS accredited.	Cus	tomer Sample Ref.	VC07	VC08	VC08	VC11	VC11	VC11
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	1.60 - 2.00	0.60 - 1.00	1.00 - 1.45	0.80 - 1.20	1.80 - 2.20	2.20 - 2.50
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)					
* Subcontracted test.		Date Sampled	20/04/2018	20/04/2018	20/04/2018	20/04/2018	20/04/2018	20/04/2018
** % recovery of the surrogate st check the efficiency of the me	andard to	Sample Time	17:40:00	17:06:00	17:06:00	12:24:00	12:24:00	12:24:00
results of individual compound	ds within	Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
samples aren't corrected for the	ne recovery	SDG Ref	180424-31 17431882	180424-31 17431902	180424-31 17431901	180424-31 17431887	180424-31 17431886	180424-31 17431889
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see append	ix)	Lab Sample No.(s) AGS Reference		17431302	17431301	17431007	17431000	17431009
Component	LOD/Units	Method						
2,6-Dinitrotoluene			<100	<100	<100	<100	<100	<100
·	<100 µg/kç							
2,4-Dinitrotoluene	<100 µg/kç		<100	<100	<100	<100	<100	<100
2,4-Dimethylphenol	<100 µg/kç		<100	<100	<100	<100	<100	<100
2,4-Dichlorophenol	<100 µg/kç	TM157	<100	<100	<100	<100	<100	<100
2,4,6-Trichlorophenol	<100 µg/kç	TM157	<100	<100	<100	<100	<100	<100
2,4,5-Trichlorophenol	<100 µg/kç	TM157	<100	<100	<100	<100	<100	<100
1,4-Dichlorobenzene	<100 µg/kç	TM157	<100	<100	<100	<100	<100	<100
1,3-Dichlorobenzene	<100 µg/kç	TM157	<100	<100	<100	<100	<100	<100
1,2-Dichlorobenzene	<100 µg/kç	TM157	<100	<100	<100	<100	<100	<100
2-Chloronaphthalene	<100 µg/kç	TM157	<100	<100	<100	<100	<100	<100
2-Methylnaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Benzo(a)anthracene	<100 µg/kç	TM157	<100	<100	<100	<100	<100	<100
Chrysene	<100 µg/kç	TM157	<100	<100	<100	<100	<100	<100
Naphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Bis(2-chloroisopropyl) ether	<100 µg/kç	TM157	<100	<100	<100	<100	<100	<100

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi Volatile Organi	c Compo	unas						
# ISO17025 accredited. # M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate st check the efficiency of the me results of individual compoun samples aren't corrected for trigger breach confirmed 1-5&+§@ Sample deviation (see append	tandard to thod. The ds within he recovery L lix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference	VC10A 0.80 - 1.20 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431891	VC10A 1.80 - 2.20 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431890	VC10A 2.45 - 2.85 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431892	VC12A 0.80 - 1.20 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431913	VC12A 1.80 - 2.20 Soil/Soid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431911	VC12A 2.80 - 3.30 Soii/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431912
Component Phenol	LOD/Units <100 μg/kg	Method TM157	<100	<100	<100	<100	<100	<100
Pentachlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Nitrobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Isophorone	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachloroethane	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorobutadiene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Dioctyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Dimethyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Diethyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Dibutyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Dibenzofuran	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Carbazole	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Butylbenzyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Azobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chlorophenylphenylether	<100 µg/kg		<100	<100	<100	<100	<100	<100
4-Chloroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Bromophenylphenylether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
3-Nitroaniline	<100 µg/kg		<100	<100	<100	<100	<100	<100
2-Nitrophenol	<100 µg/kg		<100	<100	<100	<100	<100	<100
2-Nitroaniline	<100 µg/kg		<100	<100	<100	<100	<100	<100
2-Methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,2,4-Trichlorobenzene	<100 µg/kg		<100	<100	<100	<100	<100	<100
2-Chlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100



457244

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Semi Volatile Organic								
Results Legend # ISO17025 accredited. M mCERTS accredited.	Custo	mer Sample Ref.	VC10A	VC10A	VC10A	VC12A	VC12A	VC12A
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.80 - 1.20	1.80 - 2.20	2.45 - 2.85	0.80 - 1.20	1.80 - 2.20	2.80 - 3.30
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test.		Date Sampled	20/04/2018	20/04/2018	20/04/2018	20/04/2018	20/04/2018	20/04/2018
** % recovery of the surrogate st	andard to	Sample Time	09:24:00	09:24:00	09:24:00	13:27:00	13:27:00	13:27:00
check the efficiency of the me	thod. The	Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
results of individual compoun samples aren't corrected for the		SDG Ref	180424-31	180424-31	180424-31	180424-31	180424-31	180424-31
(F) Trigger breach confirmed	La	ab Sample No.(s)	17431891	17431890	17431892	17431913	17431911	17431912
1-5&+§@ Sample deviation (see append	ix)	AGS Reference						
Component	LOD/Units	Method						
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dimethylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Chloronaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Methylnaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Benzo(a)anthracene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Chrysene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Naphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi volatile Organic								
Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate st	andard to	Depth (m) Sample Type Date Sampled Sample Time	VC01B 0.80 - 1.20 Soil/Solid (S) 20/04/2018 11:50:00	VC01B 1.24 - 1.54 Soil/Solid (S) 20/04/2018 11:50:00	VC09B 0.80 - 1.20 Soil/Solid (S) 19/04/2018 13:44:00	VC09B 1.26 - 1.66 Soil/Solid (S) 19/04/2018 13:44:00		
check the efficiency of the met results of individual compound		Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018		
samples aren't corrected for th	ne recovery	SDG Ref	180424-31 17431884	180424-31 17431885	180424-31 17431893	180424-31 17431894		
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendi	ix)	Lab Sample No.(s) AGS Reference	17431004	17431003	17451055	17451054		
Component	LOD/Units	Method						
Phenol	<100 µg/kg		<100	<100	<100	<100		
	100 "	T14455	400	400	400	400		
Pentachlorophenol	<100 µg/k@	g TM157	<100	<100	<100	<100		
n-Nitroso-n-dipropylamine	<100 µg/kç	g TM157	<100	<100	<100	<100		
Nitrobenzene	<100 µg/kg	g TM157	<100	<100	<100	<100		
Milliobelizerie	-100 μg/κί	g TWH57	100	100	100	100		
Isophorone	<100 µg/kg	g TM157	<100	<100	<100	<100		
Hexachloroethane	<100 µg/kg	g TM157	<100	<100	<100	<100		
Hexacilloroethane			~100	~100	~100	\100		
Hexachlorocyclopentadiene	<100 µg/kç	g TM157	<100	<100	<100	<100		
Hexachlorobutadiene	<100 µg/kg	g TM157	<100	<100	<100	<100		
Hexacillolobuladielle	<100 μg/κί	g HWH57	~100	~100	~100	\100		
Hexachlorobenzene	<100 µg/kç	g TM157	<100	<100	<100	<100		
n-Dioctyl phthalate	<100 µg/kg	g TM157	<100	<100	<100	<100		
II Blooty phalalate			1100	1100				
Dimethyl phthalate	<100 µg/k(g TM157	<100	<100	<100	<100		
Diethyl phthalate	<100 µg/kg	g TM157	<100	<100	<100	<100		
n-Dibutyl phthalate	<100 µg/kç	g TM157	<100	<100	<100	<100		
Dibenzofuran	<100 µg/kg	g TM157	<100	<100	<100	<100		
Carbazole	<100 µg/kǫ	g TM157	<100	<100	<100	<100		
Butylbenzyl phthalate	<100 µg/kg	g TM157	<100	<100	<100	<100		
his/O Ethadhaand) ahthalata	4100	g TM157	-100	-100	-100	-100		
bis(2-Ethylhexyl) phthalate	<100 µg/kç	g IMI5/	<100	<100	<100	<100		
bis(2-Chloroethoxy)methane	<100 µg/kç	g TM157	<100	<100	<100	<100		
bis(2-Chloroethyl)ether	<100 µg/kg	g TM157	<100	<100	<100	<100		
bio(2 officiocaty)/bation								
Azobenzene	<100 µg/kç	g TM157	<100	<100	<100	<100		
4-Nitrophenol	<100 µg/kg	g TM157	<100	<100	<100	<100		
·		1						
4-Nitroaniline	<100 µg/kç	g TM157	<100	<100	<100	<100		
4-Methylphenol	<100 µg/kç	g TM157	<100	<100	<100	<100		
4-Chlorophenylphenylether	<100 µg/kg	g TM157	<100	<100	<100	<100		
4-Chlorophenyiphenyiether	<100 µg/k(g HWH57	<100	<100	<100	<100		
4-Chloroaniline	<100 µg/kç	g TM157	<100	<100	<100	<100		
4-Chloro-3-methylphenol	<100 µg/kg	g TM157	<100	<100	<100	<100		
4-Bromophenylphenylether	<100 µg/k(g TM157	<100	<100	<100	<100		
3-Nitroaniline	<100 µg/kg	g TM157	<100	<100	<100	<100		
2-Nitrophenol	<100 µg/k@	g TM157	<100	<100	<100	<100		
2-Nitroaniline	<100 µg/kç	g TM157	<100	<100	<100	<100		
2-Methylphenol	<100 µg/kg	g TM157	<100	<100	<100	<100		
2-ivietriyiprierioi			~100	\100	~100	\100		
1,2,4-Trichlorobenzene	<100 µg/kç	g TM157	<100	<100	<100	<100		
2-Chlorophenol	<100 µg/kç	g TM157	<100	<100	<100	<100		
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457244

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Semi Volatile Organic							
Results Legend # ISO17025 accredited. M mCERTS accredited.	Custo	omer Sample Ref.	VC01B	VC01B	VC09B	VC09B	
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.80 - 1.20	1.24 - 1.54	0.80 - 1.20	1.26 - 1.66	
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	
* Subcontracted test. ** % recovery of the surrogate st		Date Sampled	20/04/2018	20/04/2018	19/04/2018	19/04/2018	
** % recovery of the surrogate st check the efficiency of the me	tandard to	Sample Time	11:50:00	11:50:00	13:44:00	13:44:00	
results of individual compoun	ds within	Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018 180424-31	
samples aren't corrected for the	he recovery	SDG Ref	180424-31 17431884	180424-31 17431885	180424-31 17431893	17431894	
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see append	lix)	ab Sample No.(s) AGS Reference	17401004	17401000	17401000	17431034	
Component	LOD/Units	Method					
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100	<100	
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100	<100	
2,4-Dimethylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	
2,4-Dichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	
2-Chloronaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	
2-Methylnaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	
Benzo(a)anthracene	<100 µg/kg	TM157	<100	<100	<100	<100	
Chrysene	<100 µg/kg	TM157	<100	<100	<100	<100	
Naphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100	<100	<100	<100	

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

IPH CWG (S)	2 1	0 1 5 (1						
Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted test. " % recovery of the surrogate st check the efficiency of the met results of individual compoun samples aren't corrected for th Trigger breach confirmed 1-5&4§@ Sample deviation (see append	andard to thod. The ds within he recovery ix) LOD/Units	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference	VC02 0.80 - 1.20 Soil/Soid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431917	VC02 1.80 - 2.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431916	VC02 2.80 - 3.20 Soil/Soid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431915	VC02 3.20 - 3.63 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431914	VC03 0.80 - 1.20 Soil/Soid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431903	VC03 1.80 - 2.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431906
GRO Surrogate % recovery**	%	TM089	140	126	78	75	65	128
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44	<44	<44	<44	130	<44
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5	<5	<5	<5
Benzene	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Toluene	<2 µg/kg	TM089	<2	<2	<2	<2	<2	<2
Ethylbenzene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
m,p-Xylene	<6 µg/kg	TM089	<6	<6	<6	<6	<6	<6
o-Xylene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9	<9	<9	<9
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24	<24	<24	<24
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	<10	<10	11.2	<10
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	<10	<10	<10	31.6	<10
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	<10	<10	<10	20.5	<10
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	<10	<10	<10	27.9	<10
Aliphatics >C12-C16	<100 µg/kg	TM173	<100	<100	<100	590	3300	<100
Aliphatics >C16-C21	<100 µg/kg	TM173	<100	<100	<100	1450	11000	<100
Aliphatics >C21-C35	<100 µg/kg	TM173	<100	<100	3300	5280	41800	<100
Aliphatics >C35-C44	<100 µg/kg	TM173	<100	<100	<100	<100	8940	<100
Total Aliphatics >C12-C44	<100 µg/kg	TM173	<100	<100	3300	7320	65000	<100
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	<10	<10	<10	18.6	<10
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10	<10	<10	18.6	<10
Aromatics >EC12-EC16	<100 µg/kg	TM173	<100	<100	<100	<100	1710	<100
Aromatics >EC16-EC21	<100 µg/kg	TM173	<100	<100	663	1230	8690	<100
Aromatics >EC21-EC35	<100 µg/kg	TM173	<100	<100	2940	4160	31400	<100
Aromatics >EC35-EC44	<100 µg/kg	TM173	<100	<100	690	3330	13100	<100
Aromatics >EC40-EC44	<100 µg/kg	TM173	<100	<100	226	1380	4540	<100
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	<100	<100	4290	8720	54900	<100
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	<100	<100	7590	16000	120000	<100

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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

TPH CWG (S)								
Results Legend # ISO17025 accredited. M mCERTS accredited.	Custo	omer Sample Ref.	VC03	VC03	VC04	VC04	VC04	VC04
aq Aqueous / settled sample. itos.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate st check the efficiency of the meresults of individual compoun samples aren't corrected for the Trigger breach confirmed 1-5&\$\pm\$\@ Sample deviation (see append	thod. The ds within ne recovery L	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference	2.80 - 3.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431905	3.39 - 3.79 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431904	0.80 - 1.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431908	1.80 - 2.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431909	2.80 - 3.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431910	3.60 - 4.00 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431907
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	73	111	159	22	122	118
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44	<44	<44	<44	<44	<44
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5	<5	<5	<5
Benzene	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Toluene	<2 µg/kg	TM089	<2	<2	<2	<2	<2	<2
Ethylbenzene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
m,p-Xylene	<6 µg/kg	TM089	<6	<6	<6	<6	<6	<6
o-Xylene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9	<9	<9	<9
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24	<24	<24	<24
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aliphatics >C12-C16	<100 µg/kg	TM173	<100	<100	<100	<100	<100	<100
Aliphatics >C16-C21	<100 µg/kg	TM173	<100	<100	1080	<100	<100	<100
Aliphatics >C21-C35	<100 µg/kg	TM173	2790	<100	2860	<100	<100	<100
Aliphatics >C35-C44	<100 µg/kg	TM173	<100	<100	<100	<100	<100	<100
Total Aliphatics >C12-C44	<100 µg/kg	TM173	2790	<100	3940	<100	<100	<100
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC12-EC16	<100 µg/kg	TM173	<100	<100	<100	<100	<100	<100
Aromatics >EC16-EC21	<100 µg/kg	TM173	<100	<100	<100	<100	<100	<100
Aromatics >EC21-EC35	<100 µg/kg	TM173	2230	<100	<100	<100	<100	<100
Aromatics >EC35-EC44	<100 µg/kg	TM173	1320	<100	<100	<100	<100	<100
Aromatics >EC40-EC44	<100 µg/kg	TM173	<100	<100	<100	<100	<100	<100
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	3550	<100	<100	<100	<100	<100
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	6340	<100	3940	<100	<100	<100

457244

CERTIFICATE OF ANALYSIS

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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

TPH CWG (S)								
Results Legend # ISO17025 accredited. M mCERTS accredited.	Cus	stomer Sample Ref.	VC05	VC05	VC05	VC06	VC06	VC07
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.80 - 1.20	1.80 - 2.20	2.53 - 2.93	0.80 - 1.20	2.00 - 2.46	0.80 - 1.20
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)					
* Subcontracted test. ** % recovery of the surrogate st	andard to	Date Sampled	19/04/2018	19/04/2018	19/04/2018	20/04/2018	20/04/2018	20/04/2018
check the efficiency of the me	thod. The	Sample Time Date Received	14:45:00 24/04/2018	14:45:00 24/04/2018	14:45:00 24/04/2018	08:29:00 24/04/2018	08:29:00 24/04/2018	17:40:00 24/04/2018
results of individual compound samples aren't corrected for the		SDG Ref	180424-31	180424-31	180424-31	180424-31	180424-31	180424-31
(F) Trigger breach confirmed	ie recovery	Lab Sample No.(s)	17431895	17431896	17431898	17431899	17431900	17431883
1-5&+§@ Sample deviation (see append		AGS Reference						
Component	LOD/Units	s Method						
GRO Surrogate % recovery**	%	TM089	63	104	112	55	115	17
GRO TOT (Moisture Corrected)	<44 µg/kç	g TM089	<44	<44	<44	246	<44	<44
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5	<5	<5	<5
Benzene	<10 µg/kç	g TM089	<10	<10	<10	<10	<10	<10
Toluene	<2 µg/kg	TM089	<2	<2	<2	<2	<2	<2
Ethylbenzene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
m,p-Xylene	<6 µg/kg	TM089	<6	<6	<6	<6	<6	<6
o-Xylene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9	<9	<9	<9
sum of detected BTEX by GC	<24 µg/kç	g TM089	<24	<24	<24	<24	<24	<24
Aliphatics >C5-C6	<10 µg/kç	g TM089	<10	<10	<10	16.1	<10	<10
Aliphatics >C6-C8	<10 µg/kç	g TM089	21.5	<10	<10	59.6	<10	<10
Aliphatics >C8-C10	<10 µg/kç	g TM089	10.7	<10	<10	43.5	<10	<10
Aliphatics >C10-C12	<10 µg/kç		<10	<10	<10	54.7	<10	<10
Aliphatics >C12-C16	<100 µg/k	g TM173	4120	<100	<100	1190	<100	<100
Aliphatics >C16-C21	<100 µg/k		12800	<100	<100	4470	<100	<100
Aliphatics >C21-C35	<100 µg/k		47100	<100	<100	22000	<100	<100
Aliphatics >C35-C44	<100 µg/k		8200	<100	<100	3420	<100	<100
Total Aliphatics >C12-C44	<100 µg/k		72200	<100	<100	31100	<100	<100
Aromatics >EC5-EC7	<10 µg/kç		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kç		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kç		10.7	<10	<10	35.4	<10	<10
Aromatics >EC10-EC12	<10 µg/kç		<10	<10	<10	37	<10	<10
Aromatics >EC12-EC16	<100 µg/k		2910	<100	<100	1690	<100	<100
Aromatics >EC16-EC21	<100 µg/k		10100	1860	<100	5640	<100	<100
Aromatics >EC21-EC35	<100 µg/k		35500	16000	<100	24700	<100	<100
Aromatics >EC35-EC44	<100 µg/k		13300	7980	<100	11400	1120	<100
Aromatics >EC40-EC44	<100 µg/k		4460	2660	<100	3700	<100	<100
Total Aromatics >EC12-EC44	<100 µg/k		61700	25800	<100	43400	1120	<100
Total Aliphatics & Aromatics >C5-C44	<100 µg/k	g TM173	134000	25800	<100	74700	1120	<100
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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

TPH CWG (S)								
Results Legend # ISO17025 accredited. M mCERTS accredited.	Cus	stomer Sample Ref.	VC07	VC08	VC08	VC11	VC11	VC11
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. "Subcontracted test. " frecovery of the surrogate st check the efficiency of the meresults of individual compoun samples aren't corrected for the Trigger breach confirmed 1-5&\$\pm\$\@ Sample deviation (see append	thod. The ds within ne recovery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	1.60 - 2.00 Soil/Solid (S) 20/04/2018 17:40:00 24/04/2018 180424-31 17431882	0.60 - 1.00 Soil/Solid (S) 20/04/2018 17:06:00 24/04/2018 180424-31 17431902	1.00 - 1.45 Soil/Solid (S) 20/04/2018 17:06:00 24/04/2018 180424-31 17431901	0.80 - 1.20 Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 180424-31 17431887	1.80 - 2.20 Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 180424-31 17431886	2.20 - 2.50 Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 180424-31 17431889
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	115	115	116	66	113	122
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44	<44	<44	211	<44	<44
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5	<5	<5	<5
Benzene	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Toluene	<2 µg/kg	TM089	<2	<2	<2	<2	<2	<2
Ethylbenzene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
m,p-Xylene	<6 µg/kg	TM089	<6	<6	<6	<6	<6	<6
o-Xylene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9	<9	<9	<9
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24	<24	<24	<24
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	<10	10.7	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	<10	<10	30.4	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	<10	<10	26.9	<10	<10
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	<10	<10	71.6	<10	<10
Aliphatics >C12-C16	<100 µg/kg	g TM173	<100	139	<100	5600	<100	<100
Aliphatics >C16-C21	<100 µg/kg	g TM173	<100	<100	<100	14600	<100	<100
Aliphatics >C21-C35	<100 µg/k	g TM173	<100	<100	<100	38000	<100	<100
Aliphatics >C35-C44	<100 µg/k	g TM173	<100	<100	<100	3710	<100	<100
Total Aliphatics >C12-C44	<100 µg/k	g TM173	<100	139	<100	61800	<100	<100
Aromatics >EC5-EC7	<10 µg/kg	j TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	j TM089	<10	<10	<10	21.5	<10	<10
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10	<10	48.3	<10	<10
Aromatics >EC12-EC16	<100 µg/kg	g TM173	<100	<100	<100	3740	<100	<100
Aromatics >EC16-EC21	<100 µg/kg		<100	<100	<100	19000	<100	<100
Aromatics >EC21-EC35	<100 µg/kg		<100	149	<100	43800	<100	<100
Aromatics >EC35-EC44	<100 µg/kg		<100	4380	<100	13200	<100	<100
Aromatics >EC40-EC44	<100 µg/kg		<100	2850	<100	4880	<100	<100
Total Aromatics >EC12-EC44	<100 μg/kg		<100	4530	<100	79800	<100	<100
Total Aliphatics & Aromatics	<100 μg/kg		<100	4670	<100	142000	<100	<100
>C5-C44	- του μυ/κί	y IIVII13	\100	4070	~100	142000	~100	100

457244

CERTIFICATE OF ANALYSIS

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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

TPH CWG (S)								
Results Legend # ISO17025 accredited. M mCERTS accredited.	Cust	omer Sample Ref.	VC10A	VC10A	VC10A	VC12A	VC12A	VC12A
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate st check the efficiency of the meresults of individual compounsamples aren't corrected for the firinger breach confirmed	thod. The ds within ne recovery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s)	0.80 - 1.20 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431891	1.80 - 2.20 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431890	2.45 - 2.85 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431892	0.80 - 1.20 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431913	1.80 - 2.20 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431911	2.80 - 3.30 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431912
1-5&+§@ Sample deviation (see append	ix)	AGS Reference						
GRO Surrogate % recovery**	LOD/Units %	Method TM089	67	75	114	68	131	85
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	298	<44	82.1	824	<44	<44
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5	<5	<5	<5
Benzene	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Toluene	<2 µg/kg	TM089	<2	<2	<2	<2	<2	<2
Ethylbenzene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
m,p-Xylene	<6 µg/kg	TM089	<6	<6	<6	<6	<6	<6
o-Xylene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9	<9	<9	<9
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24	<24	<24	<24
Aliphatics >C5-C6	<10 µg/kg	TM089	15.4	<10	<10	18.9	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089	49.6	<10	<10	75.7	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089	42.8	10.4	27.4	151	<10	<10
Aliphatics >C10-C12	<10 µg/kg	TM089	94.1	<10	14.3	282	<10	<10
Aliphatics >C12-C16	<100 µg/kg	TM173	1140	<100	<100	4690	<100	<100
Aliphatics >C16-C21	<100 µg/kg	TM173	4200	<100	<100	10100	<100	<100
Aliphatics >C21-C35	<100 µg/kg	TM173	14800	<100	<100	22600	<100	<100
Aliphatics >C35-C44	<100 µg/kg	TM173	<100	<100	<100	<100	<100	<100
Total Aliphatics >C12-C44	<100 µg/kg	TM173	20100	<100	<100	37400	<100	<100
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089	34.2	<10	19	108	<10	<10
Aromatics >EC10-EC12	<10 µg/kg	TM089	63.3	<10	<10	187	<10	<10
Aromatics >EC12-EC16	<100 µg/kg	TM173	1160	<100	<100	3860	<100	<100
Aromatics >EC16-EC21	<100 µg/kg	TM173	7400	<100	<100	14400	<100	<100
Aromatics >EC21-EC35	<100 µg/kg	TM173	17400	<100	<100	23600	<100	<100
Aromatics >EC35-EC44	<100 µg/kg	TM173	5280	<100	<100	3100	<100	<100
Aromatics >EC40-EC44	<100 µg/kg	TM173	2070	<100	<100	<100	<100	<100
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	31300	<100	<100	45000	<100	<100
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	51700	<100	<100	83200	<100	<100



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

TPH CWG (S)							
Results Legend # ISO17025 accredited. M mCERTS accredited.	Cust	omer Sample Ref.	VC01B	VC01B	VC09B	VC09B	
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate st check the efficiency of the me results of individual compoun samples aren't corrected for the surrogate of the surrogate st check the efficiency of the me results of individual compoun	thod. The ds within ne recovery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref	0.80 - 1.20 Soil/Solid (S) 20/04/2018 11:50:00 24/04/2018 180424-31	1.24 - 1.54 Soil/Solid (S) 20/04/2018 11:50:00 24/04/2018 180424-31	0.80 - 1.20 Soil/Solid (S) 19/04/2018 13:44:00 24/04/2018 180424-31	1.26 - 1.66 Soil/Solid (S) 19/04/2018 13:44:00 24/04/2018 180424-31	
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see append	L	ab Sample No.(s) AGS Reference	17431884	17431885	17431893	17431894	
Component GRO Surrogate % recovery**	LOD/Units	Method TM089	109	118	113	111	
·							
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44	<44	<44	<44	
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5	<5	
Benzene	<10 µg/kg	TM089	<10	<10	<10	<10	
Toluene	<2 µg/kg	TM089	<2	<2	<2	<2	
Ethylbenzene	<3 µg/kg	TM089	<3	<3	<3	<3	
m,p-Xylene	<6 µg/kg	TM089	<6	<6	<6	<6	
o-Xylene	<3 µg/kg	TM089	<3	<3	<3	<3	
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9	<9	
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24	<24	
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	<10	<10	
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	<10	<10	<10	
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	<10	<10	<10	
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	<10	<10	<10	
Aliphatics >C12-C16	<100 µg/kg	TM173	<100	<100	<100	271	
Aliphatics >C16-C21	<100 µg/kg	TM173	<100	<100	352	847	
Aliphatics >C21-C35	<100 µg/kg	TM173	<100	<100	2510	1850	
Aliphatics >C35-C44	<100 µg/kg	TM173	<100	<100	2740	<100	
Total Aliphatics >C12-C44	<100 µg/kg	TM173	<100	<100	5600	2970	
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10	<10	
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	<10	
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	<10	<10	<10	
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10	<10	<10	
Aromatics >EC12-EC16	<100 µg/kg	TM173	<100	<100	<100	282	
Aromatics >EC16-EC21	<100 µg/kg	TM173	<100	<100	<100	377	
Aromatics >EC21-EC35	<100 µg/kg	TM173	<100	<100	622	466	
Aromatics >EC35-EC44	<100 µg/kg	TM173	1380	<100	<100	<100	
Aromatics >EC40-EC44	<100 µg/kg	TM173	1100	<100	<100	<100	
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	1380	<100	622	1120	
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	1380	<100	6220	4100	

180424-31 Lowestoft SDG: Location:

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report: 457244

VOC MS (S)											
Results Legend # ISO17025 accredited.	Cust	omer Sample Ref.	VC02		VC02		VC02		VC02	VC03	VC03
M mCERTS accredited. aq Aqueous / settled sample. tot.unfilt Total / unfiltered sample. Subcontracted test. * Wecovery of the surrogate si check the efficiency of the me results of individual compoun samples aren't corrected for the 1-5&4§@ Sample deviation (see append	thod. The ds within he recovery l lix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference	0.80 - 1.20 Soil/Soild (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431917		1.80 - 2.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431916		2.80 - 3.20 Soil/Soild (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431915		3.20 - 3.63 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431914	0.80 - 1.20 Soil/Solid (5) 20/04/2018 14:28:00 24/04/2018 180424-31 17431903	1.80 - 2.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431906
Component Dibromofluoromethane**	LOD/Units %	Method TM116	107		108		103		105	109	130
Toluene-d8**	%	TM116	101		101		97.5		96.7	98.7	99
4-Bromofluorobenzene**	%	TM116	97		96.2		83.4		83.8	91.7	101
Dichlorodifluoromethane	<6 µg/kg	TM116	<6	М	<6	М	<6	М	<6 N	<60 1 #	<6 M
Chloromethane	<7 µg/kg	TM116	<7	#	<7	#	<7	#	<7	<70	<7 #
Vinyl Chloride	<6 µg/kg	TM116	<6	М	<6	М	<6	М	<6 N	<60 #	<6 M
Bromomethane	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 N	<100	<10 M
Chloroethane	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 N	<100	<10 M
Trichlorofluorormethane	<6 µg/kg	TM116	<6	М	<6	М	<6	М	<6 N	<60 #	<6 M
1,1-Dichloroethene	<10 µg/kg	TM116	<10	#	<10	#	<10	#	<10	<100 #	<10 #
Carbon Disulphide	<7 µg/kg	TM116	<7	М	<7	М	24.3	М	<7 N	<70 1 #	<7 M
Dichloromethane	<10 µg/kg	TM116	<10	#	<10	#	<10	#	<10	<100 #	<10 #
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 N	<100 1 #	<10 M
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 N	<100 #	<10 M
1,1-Dichloroethane	<8 µg/kg	TM116	<8	М	<8	М	<8	М	<8 N	<80 1 #	<8 M
cis-1,2-Dichloroethene	<6 µg/kg	TM116	<6	М	<6	М	<6	М	<6 N	<60 1 #	<6 M
2,2-Dichloropropane	<10 µg/kg	TM116	<10		<10		<10		<10	<100	<10
Bromochloromethane	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 N	<100 1 #	<10 M
Chloroform	<8 µg/kg	TM116	<8	М	<8	М	<8	М	<8 N	<80 1 #	<8 M
1,1,1-Trichloroethane	<7 μg/kg	TM116	<7	М	<7	М	<7	М	<7 N	<70 1 #	<7 M
1,1-Dichloropropene	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 N	<100 1 #	<10 M
Carbontetrachloride	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 N	<100 1 #	<10 M
1,2-Dichloroethane	<5 µg/kg	TM116	<5	М	<5	М	<5	М	<5 N	<50 1 #	<5 M
Benzene	<9 µg/kg	TM116	<9	М	<9	М	<9	М	<9 N	<90 1 #	<9 M
Trichloroethene	<9 µg/kg	TM116	<9	#	<9	#	<9	#	<9 #	<90 #	<9 #
1,2-Dichloropropane	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 N	<100 1 #	<10 M
Dibromomethane	<9 µg/kg	TM116	<9	М	<9	М	<9	М	<9 N	<90 1 #	<9 M
Bromodichloromethane	<7 µg/kg	TM116	<7	М	<7	М	<7	М	<7 N	<70 1 #	<7 M
cis-1,3-Dichloropropene	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 N	<100 1 #	<10 M
Toluene	<7 µg/kg	TM116	<7	М	<7	М	<7	М	<7 N	<70 1 #	<7 M
trans-1,3-Dichloropropene	<10 µg/kg	TM116	<10		<10		<10		<10	<100	<10
1,1,2-Trichloroethane	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 N		<10 M
1,3-Dichloropropane	<7 µg/kg	TM116	<7	М	<7	М	<7	М	<7 N	<70 1 #	<7 M

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

VUC IVIS (S)									
Results Legend # ISO17025 accredited. M mCERTS accredited.	Cus	tomer Sample Ref.	VC02	VC02		VC02	VC02	VC03	VC03
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.80 - 1.20	1.80 - 2.20		2.80 - 3.20	3.20 - 3.63	0.80 - 1.20	1.80 - 2.20
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S))	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test.		Date Sampled	20/04/2018	20/04/2018		20/04/2018	20/04/2018	20/04/2018	20/04/2018
** % recovery of the surrogate s check the efficiency of the me	tandard to	Sample Time	15:43:00	15:43:00		15:43:00	15:43:00	14:28:00	14:28:00
results of individual compoun	ds within	Date Received SDG Ref	24/04/2018 180424-31	24/04/2018 180424-31		24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31
samples aren't corrected for to (F) Trigger breach confirmed	he recovery	Lab Sample No.(s)	17431917	17431916		17431915	17431914	17431903	17431906
1-5&+§@ Sample deviation (see append		AGS Reference							
Component	LOD/Units	Method							
Tetrachloroethene	<5 µg/kg	TM116	<5	<5		<5	<5	<50	<5
		1 1	N	1	M	ı	И	#	M
Dibromochloromethane	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
		1 1	N	Λ	М	ı	И	#	М
1.2-Dibromoethane	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
1,2-Dibioinoethane	10 µg/kg	1101110	~10 N		М		и М	#	10 M
Obligation	4F . II .	TM116	<5	<5	IVI	<5	<5	<50	<5
Chlorobenzene	<5 µg/kg	TIVITIO		1			-		l * I
			N		М		M M	#	M
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
			N	<i>1</i>	М	l	И	#	M
Ethylbenzene	<4 µg/kg	TM116	<4	<4		<4	<4	<40	<4
-		1 1	N	1	M	1	И	#	М
p/m-Xylene	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
py.cc	15 [25/15			#	#		# #	#	#
o-Xylene	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
0-Aylerie	~10 μg/kg	1101110			1.4				
0.	40 "	771110		1	M		И <u>М</u>	#	M
Styrene	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
				#	#		# #	#	#
Bromoform	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
			N	1	M	ľ	И	#	M
Isopropylbenzene	<5 µg/kg	TM116	<5	<5		<5	<5	<50	<5
' ',	100	1 1	;	#	#		# #	#	#
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
1, 1,2,2-10114011101001114110	·10 μg/kg	1101110		#	#		# #	#	#
1.0.2 Triablessesses	410	TM44C			#				
1,2,3-Trichloropropane	<16 µg/kg	TM116	<16	<16		<16	<16	<160	<16
				1	M		И M	#	М
Bromobenzene	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
			N	<i>1</i>	М	ľ	И	#	M
Propylbenzene	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
		1 1	N	Λ	М	ı	И	#	М
2-Chlorotoluene	<9 µg/kg	TM116	<9	<9		<9	<9	<90	<9
	5 [25.13			л I	М		и М	#	M
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<8	<8		<8	<8	<80	<8
1,5,5-11iiiletiiyiberizerie	~ο μg/kg	1101110	~0 N		М		и ~ м	4	M
4.00-1	140 . // .	TMAAC			IVI				
4-Chlorotoluene	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
				1	M		И M		M
tert-Butylbenzene	<14 µg/kg	TM116	<14	<14		<14	<14	<140	<14
			N	<i>1</i>	М		И	#	M
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<9	<9		<9	<9	<90	<9
		1 1	;	#	#		# #	#	#
sec-Butylbenzene	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
555 Baty 15511.25115						.*			
4-Isopropyltoluene	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
4-isopropyitoluerie	~10 μg/kg	1101110		1	М		и М	4	\ \ M
40 D: 11	.0 "	T1440			IVI				
1,3-Dichlorobenzene	<8 µg/kg	TM116	<8	<8		<8	<8	<80	<8
				1	M		И M	#	M
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5	<5		<5	<5	<50	<5
		1 1	N	1	M	ı	И	#	M
n-Butylbenzene	<11 µg/kg	TM116	<11	<11		<11	<11	<110	<11
•	13.3								
1,2-Dichlorobenzene	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
1,2-Dicilioroperizerie	·10 μg/kg	1101110	110		М		и М	#	M
4.0 D'h 2 - h l	444 . // .	TMAAC			IVI				
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14	<14		<14	<14	<140	<14
				1	M		И M	#	M
Tert-amyl methyl ether	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
				#	#		# #	#	#
1,2,4-Trichlorobenzene	<20 µg/kg	TM116	<20	<20		<20	<20	<200	<20
	1			1					
Hexachlorobutadiene	<20 µg/kg	TM116	<20	<20		<20	<20	<200	<20
	_o μg/ng		-20	1				1	-
Nanhthalano	<13 µg/kg	TM116	<13	<13		<13	<13	<130	<13
Naphthalene	∼13 μg/kg	1101110	<13 N		B 4				I I
400 Title 1	100 "	T14440			М		M M	#	M
1,2,3-Trichlorobenzene	<20 µg/kg	TM116	<20	<20		<20	<20	<200	<20
				#	#		# #	#	#

180424-31 Lowestoft SDG:

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report: 457244

Location:

# ISO17025 accredited.	3.20 id (S) 2018 ::00 2018 4-31 9905 5 4 8 8 6 M	VC03 3.39 - 3.79 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431904 106 98.5 96.1 <6		VC04 0.80 - 1.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431908 105 100	VC04 1.80 - 2.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431909 102 100	VC04 2.80 - 3.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431910 103 99.1	VC04 3.60 - 4.00 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431907
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Depth (m) Sample Type Soil/Soil Soil Soil Soil Soil Soil Soil Soil	id (S) 2018 2018 2018 4-31 9905 5 4 4 8 8 6 M 7 #	Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431904 106 98.5 96.1		Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431908	Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431909	Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431910 103	Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431907
Subcontracted test. Water over your part of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery [15] Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix) SDG Ref Lab Sample No.(s) AGS Reference Component LOD/Units Method	2018 :000 2018 4-31 905 5 4 8 M	20/04/2018 14:28:00 24/04/2018 180424-31 17431904 106 98.5 96.1		19/04/2018 15:50:00 24/04/2018 180424-31 17431908 105 105	19/04/2018 15:50:00 24/04/2018 180424-31 17431909 102	19/04/2018 15:50:00 24/04/2018 180424-31 17431910 103 99.1	19/04/2018 15:50:00 24/04/2018 180424-31 17431907
Accepted Accepted	2018 4-31 905 5 4 8 M	24/04/2018 180424-31 17431904 106 98.5 96.1		24/04/2018 180424-31 17431908 105	24/04/2018 180424-31 17431909 102	24/04/2018 180424-31 17431910 103 99.1	24/04/2018 180424-31 17431907
results of individual compounds within samples aren't corrected for the recovery [F] Trigger breach confirmed AGS Reference AGS Reference AGS Reference Component LOD/Units Method SDG Ref Lab Sample No.(s) AGS Reference AGS Refere	5 4 8 M 7 #	180424-31 17431904 106 98.5 96.1		180424-31 17431908 105 100	180424-31 17431909 102 100	180424-31 17431910 103 99.1	180424-31 17431907 101
174315	905 5 4 8 8 M	17431904 106 98.5 96.1		17431908 105 100	17431909 102 100	17431910 103 99.1	17431907 101
1-5&+§© Sample deviation (see appendix) AGS Reference Component LOD/Units Method Dibromofluoromethane** % TM116 125 Toluene-d8** % TM116 99.4 4-Bromofluorobenzene** % TM116 92.6 Dichlorodifluoromethane <6 μg/kg	4 8 M	98.5 96.1 <6		100	100	99.1	
Dibromofluoromethane** % TM116 125 Toluene-d8** % TM116 99.4 4-Bromofluorobenzene** % TM116 92.4 Dichlorodifluoromethane <6 μg/kg TM116 <6 Chloromethane <7 μg/kg TM116 <7	4 8 M	98.5 96.1 <6		100	100	99.1	
Toluene-d8** % TM116 99.4 4-Bromofluorobenzene** % TM116 92.4 Dichlorodifluoromethane <6 μg/kg TM116 <6 Chloromethane <7 μg/kg TM116 <7	4 8 M	98.5 96.1 <6		100	100	99.1	
4-Bromofluorobenzene** % TM116 92.4 Dichlorodifluoromethane <6 μg/kg	8 M	96.1 <6					99.4
Dichlorodifluoromethane <6 μg/kg TM116 <6 Chloromethane <7 μg/kg TM116 <7	6 M	<6		94.9	97 6	000	
Chloromethane <7 µg/kg TM116 <7	M 7 #				07.0	96.9	98.7
100	#	<7	М	<6 M	<6 M	<6 M	<6 M
\" \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	3		#	<7 #	<7 #	<7 #	<7 #
Vinyl Chloride <6 μg/kg TM116 <6	М	<6	М	<6 M	<6 M	<6 M	<6 M
Bromomethane <10 μg/kg TM116 <10		<10	М	<10 M	<10 M	<10	<10
Chloroethane <10 μg/kg TM116 <10		<10	М	<10 M	<10 M	<10	<10
Trichlorofluorormethane <6 μg/kg TM116 <6		<6	М	<6 M	<6 M	<6	<6
1,1-Dichloroethene <10 μg/kg TM116 <10		<10	#	<10 #	<10 #	<10	<10
Carbon Disulphide <7 μg/kg TM116 17.		<7	# M	<7 M	<7 M	<7	<7
Dichloromethane <10 μg/kg TM116 14.		<10	#	<10 #	<10	<10	<10
Methyl Tertiary Butyl Ether <10 μg/kg TM116 <10		<10	# M	<10 M	<10 M	<10	<10
trans-1,2-Dichloroethene <10 µg/kg TM116 <10		<10	M	<10 M	<10 M	<10	<10
1,1-Dichloroethane <8 µg/kg TM116 <8		<8	M	<8 M	<8 M	<8	<8
cis-1,2-Dichloroethene <6 µg/kg TM116 <6		<6	M	<6 M	<6 M	<6	<6
2,2-Dichloropropane <10 µg/kg TM116 <10		<10	IVI	<10	<10	<10	<10
Bromochloromethane <10 μg/kg TM116 <10	0 M	<10	М	<10 M	<10 M	<10 M	<10 M
Chloroform <8 μg/kg TM116 <8		<8	М	<8 M	<8 M	<8	<8
1,1,1-Trichloroethane <7 μg/kg TM116 <7		<7	М	<7 M	<7 M	<7	<7
1,1-Dichloropropene <10 μg/kg TM116 <10		<10	М	<10 M	<10 M	<10	<10
Carbontetrachloride <10 μg/kg TM116 <10		<10	М	<10 M	<10 M	<10	<10
1,2-Dichloroethane <5 µg/kg TM116 <5		<5	М	<5 M	<5 M	<5	<5
Benzene <9 μg/kg TM116 <9		<9	М	<9 M	<9 M	<9	<9
Trichloroethene <9 µg/kg TM116 <9		<9	#	<9 #	<9 #	<9	<9
1,2-Dichloropropane <10 μg/kg TM116 <10		<10	М	<10 M	<10 M	<10	<10
Dibromomethane <9 µg/kg TM116 <9		<9	М	<9 M	<9 M	<9	<9
Bromodichloromethane <7 μg/kg TM116 <7		<7	М	<7 M	<7 M	<7	<7
cis-1,3-Dichloropropene <10 μg/kg TM116 <10		<10	М	<10 M	<10 M	<10	<10
Toluene <7 μg/kg TM116 <7		<7	М	<7 M	<7 M	<7	<7
trans-1,3-Dichloropropene <10 µg/kg TM116 <10		<10		<10	<10	<10	<10
1,1,2-Trichloroethane <10 μg/kg TM116 <10	0 M	<10	М	<10 M	<10 M	<10 M	<10 M
1,3-Dichloropropane <7 µg/kg TM116 <7		<7	М	<7 M	<7 M	<7	<7



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

VUC IVIS (S)													
Results Legend # ISO17025 accredited. M mCERTS accredited.	Cus	tomer Sample Ref.	VC03		VC03		VC04		VC04	VC04	T	VC04	
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	2.80 - 3.20		3.39 - 3.79		0.80 - 1.20		1.80 - 2.20	2.80 - 3.20		3.60 - 4.00	
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)		Soil/Solid (S))	Soil/Solid (S)		Soil/Solid (S)	Soil/Solid (S)		Soil/Solid (S)	
* Subcontracted test.		Date Sampled	20/04/2018		20/04/2018		19/04/2018		19/04/2018	19/04/2018		19/04/2018	
** % recovery of the surrogate s check the efficiency of the me	tandard to	Sample Time	14:28:00		14:28:00		15:50:00		15:50:00	15:50:00		15:50:00	
results of individual compoun	ds within	Date Received SDG Ref	24/04/2018 180424-31		24/04/2018 180424-31		24/04/2018 180424-31		24/04/2018 180424-31	24/04/2018 180424-31		24/04/2018 180424-31	
samples aren't corrected for to (F) Trigger breach confirmed	he recovery	Lab Sample No.(s)	17431905		17431904		17431908		17431909	17431910		17431907	
1-5&+§@ Sample deviation (see append		AGS Reference											
Component	LOD/Units	Method									\Box		
Tetrachloroethene	<5 µg/kg	TM116	<5		<5		<5		<5	<5		<5	
		1 1	1	M		M		M	M		М		М
Dibromochloromethane	<10 µg/kg	TM116	<10		<10		<10		<10	<10	\top	<10	П
	100	1 1	1	М		М		М	М		м		М
1.2-Dibromoethane	<10 µg/kg	TM116	<10		<10		<10		<10	<10	\dashv	<10	\neg
1,2-Dibromoctilanc	10 µg/kg	1101110		М	110	М	110	М	M		м		М
Obligation	4E . // .	TM116	i <5	IVI	<5	IVI	<5	IVI	<5	<5	IVI	<5	IVI
Chlorobenzene	<5 µg/kg	1101110			< 5		<0						
				М		M		M	М		М		М
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10		<10		<10		<10	<10		<10	
			ı	М		М		M	M		М		М
Ethylbenzene	<4 µg/kg	TM116	<4		<4		<4		<4	<4	П	<4	
-		1 1	1	М		M		M	M	1	М		М
p/m-Xylene	<10 µg/kg	TM116	<10		<10		<10		<10	<10	ヿ	<10	
p 1,12.12	15 [25/15			#		#		#	#		#		#
o-Xylene	<10 µg/kg	TM116	<10	"	<10	"	<10		<10	<10	" +	<10	
0-Aylerie	<10 μg/kg	TIVITIO			~10		~10				,,		N 4
0.	40 "	771110		М		M	40	M	M		М		М
Styrene	<10 µg/kg	TM116	<10		<10		<10		<10	<10		<10	
				#		#		#	#		#		#
Bromoform	<10 µg/kg	TM116	<10		<10		<10		<10	<10		<10	
		1 1	1	М		M		M	M		М		М
Isopropylbenzene	<5 µg/kg	TM116	<5		<5		<5		<5	<5	ヿ	<5	П
	5 [25.13			#		#		#	#		#		#
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10	"	<10	"	<10	"	<10	<10	" 	<10	
1, 1,2,2-16(1801)0106(181)6	~10 μg/kg	1101110		4	\10	4	~10	щ			4	\10	щ
	10 0			#		#		#	#		#		#
1,2,3-Trichloropropane	<16 µg/kg	TM116	<16		<16		<16		<16	<16		<16	
				М		M		М	M		М		M
Bromobenzene	<10 µg/kg	TM116	<10		<10		<10		<10	<10		<10	
		1 1	1	М		M		M	M		М		М
Propylbenzene	<10 µg/kg	TM116	<10		<10		<10		<10	<10	ヿ	<10	П
	15 [25/15			м		М		М	М		м		М
2-Chlorotoluene	<9 µg/kg	TM116	<9	-	<9		<9		<9	<9	\dashv	<9	
2-Officiological	15 µg/kg	1101110		М	٠,	М	,5	М	M	•	М		М
4.0.5.T.(10 . // .	TMAAC		IVI		IVI	-10	IVI			IVI		IVI
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<8		<8		<8		<8	<8		<8	
				М		M		M	М		М		М
4-Chlorotoluene	<10 µg/kg	TM116	<10		<10		<10		<10	<10		<10	
		1 1	ı	M		M		M	M		М		М
tert-Butylbenzene	<14 µg/kg	TM116	<14		<14		<14		<14	<14	Т	<14	П
,	100	1 1	1	М		М		М	М		М		М
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<9	-	<9		<9		<9	<9	\dashv	<9	_
1,2,1 1111100111001120110	o pg/ng	1		#		#		#	#		#		#
and Dutulhan sand	<10 µg/kg	TM116		π	<10	π	<10	π	<10	<10	" 	<10	-
sec-Butylbenzene	< 10 µg/kg	TIVITIO	<10		<10		<10		<10	\10		<10	
4.				+			2 -				4		_
4-Isopropyltoluene	<10 µg/kg	TM116	<10		<10		<10		<10	<10		<10	
				М		M		М	М		М		M
1,3-Dichlorobenzene	<8 µg/kg	TM116	<8		<8		<8		<8	<8	T	<8	- 1
		1 1	1	М		M		M	M		М		М
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5		<5		<5		<5	<5	ヿ	<5	\neg
., . 2.00.020200	0 149/119			М	· ·	М	, and the second	М	М		М		М
n-Butylbenzene	<11 µg/kg	TM116	<11	-	<11		<11		<11	<11	\dashv	<11	
n-butylbenzene	~11 μg/kg	1101110	\11		\11		\ 11		N 11	N11		> 11	
40 B: 11 1	.40 (T1440	.10	-	.10		.10		.40	.40	\dashv	.40	\dashv
1,2-Dichlorobenzene	<10 µg/kg	TM116	<10		<10		<10		<10	<10		<10	
				М		M		М	М		М		М
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14		<14		<14		<14	<14		<14	
		1 1	ı	M		M		M	M		М		М
Tert-amyl methyl ether	<10 µg/kg	TM116	<10		<10		<10		<10	<10	\dashv	<10	\neg
,,	פיייפייו ביי	"""		#	. •	#		#	#		#	. •	#
1,2,4-Trichlorobenzene	<20 µg/kg	TM116	<20	"	<20	π	<20	iΤ	<20	<20		<20	"
1,4,4-THORIOTODENZENE	~∠u µg/kg	1101110	\ 20		\ 20		\ 20		\ 20	\ZU		~20	
The cold of P	.00 "	T14440	.00	+	.00		.00		.00	-00	\dashv	-00	\dashv
Hexachlorobutadiene	<20 µg/kg	TM116	<20		<20		<20		<20	<20		<20	
											\bot		
Naphthalene	<13 µg/kg	TM116	<13		<13		<13		<13	<13	T	<13	1
		<u> </u>		М		М		М	М	<u> </u>	М		М
1,2,3-Trichlorobenzene	<20 µg/kg	TM116	<20		<20		<20		<20	<20	T	<20	\neg
				#		#		#	#		#		#
											ب		_

180424-31 Lowestoft SDG: Location:

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report: 457244

VOC MS (S)													
Results Legend # ISO17025 accredited.	Cust	omer Sample Ref.	VC05		VC05		VC05		VC06		VC06	Т	VC07
M mCERTS accredited. aq Aqueous / settled sample. diss.filit Dissolved / filtered sample. tot.unfilit Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate si check the efficiency of the me results of individual compoun samples aren't corrected for ti 1-5&+§@ Sample deviation (see append	thod. The ds within ne recovery l	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference Method	0.80 - 1.20 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431895		1.80 - 2.20 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431896		2.53 - 2.93 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431898		0.80 - 1.20 Soii/Solid (S) 20/04/2018 08:29:00 24/04/2018 180424-31 17431899		2.00 - 2.46 Soil/Solid (S) 20/04/2018 08:29:00 24/04/2018 180424-31 17431900		0.80 - 1.20 Soil/Solid (S) 20/04/2018 17:40:00 24/04/2018 180424-31 17431883
Dibromofluoromethane**	%	TM116	103		113		150		141		104	Ť	111
Toluene-d8**	%	TM116	99.2		98.3		101		98.1		99.1	†	99.7
4-Bromofluorobenzene**	%	TM116	94.4		96.3		104		94.3		96.6	T	100
Dichlorodifluoromethane	<6 µg/kg	TM116	<60	М	<6	М	<6	М	<60	М	<6 N	И	<6 M
Chloromethane	<7 µg/kg	TM116	<70	#	<7	#	<7	#	<70	#	<7	#	<7 #
Vinyl Chloride	<6 µg/kg	TM116	<60	М	<6	М	<6	М	<60	М	<6 N	И	<6 M
Bromomethane	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10 N	И	<10 M
Chloroethane	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10 N	И	<10 M
Trichlorofluorormethane	<6 µg/kg	TM116	<60	М	<6	М	<6	М	<60	М	<6 N	И	<6 M
1,1-Dichloroethene	<10 µg/kg	TM116	<100	#	<10	#	<10	#	<100	#	<10 ;	#	<10 #
Carbon Disulphide	<7 μg/kg	TM116	<70	М	<7	М	<7	М	<70	М	<7 N	И	<7 M
Dichloromethane	<10 µg/kg	TM116	<100	#	<10	#	<10	#	<100	#	<10 ;	#	<10 #
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10 N	И	<10 M
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10 N	И	<10 M
1,1-Dichloroethane	<8 µg/kg	TM116	<80	М	<8	М	<8	М	<80	М	<8 N	и	<8 M
cis-1,2-Dichloroethene	<6 µg/kg	TM116	<60	М	<6	М	<6	М	<60	М	<6 N	И	<6 M
2,2-Dichloropropane	<10 µg/kg	TM116	<100		<10		<10		<100		<10	T	<10
Bromochloromethane	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10 N	и	<10 M
Chloroform	<8 µg/kg	TM116	<80	М	<8	М	<8	М	<80	М	<8 N	И	<8 M
1,1,1-Trichloroethane	<7 µg/kg	TM116	<70	М	<7	М	<7	М	<70	М	<7 N	И	<7 M
1,1-Dichloropropene	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10 N	И	<10 M
Carbontetrachloride	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10 N	И	<10 M
1,2-Dichloroethane	<5 µg/kg	TM116	<50	М	<5	М	<5	М	<50	М	<5 N	И	<5 M
Benzene	<9 µg/kg	TM116	<90	М	<9	М	<9	М	<90	М	<9 N	И	<9 M
Trichloroethene	<9 µg/kg	TM116	<90	#	<9	#	<9	#	<90	#	<9	#	<9 #
1,2-Dichloropropane	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10 N	и	<10 M
Dibromomethane	<9 µg/kg	TM116	<90	М	<9	М	<9	М	<90	М	<9 N	И	<9 M
Bromodichloromethane	<7 µg/kg	TM116	<70	М	<7	М	<7	М	<70	М	<7 N	И	<7 M
cis-1,3-Dichloropropene	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10	И	<10 M
Toluene	<7 µg/kg	TM116	<70	М	<7	М	<7	М	<70	М	<7	И	<7 M
trans-1,3-Dichloropropene	<10 µg/kg	TM116	<100		<10		<10		<100		<10	\dagger	<10
1,1,2-Trichloroethane	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10 N	И	<10 M
1,3-Dichloropropane	<7 µg/kg	TM116	<70	М	<7	М	<7	M	<70	М	<7 N	VI	<7 M

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Solito Solito	46 (S) 18 0 18 31	VC07 0.80 - 1.20 Soil/Soid (S) 20/04/2018 17:40:00 24/04/2018 180424-31 17431883 <5 M <10 M <5 M
Part Part	M M M M	180424-31 17431883 <5 M <10 M <10 M <5 M
Tetrachloroethene	M M M	<10 M <10 M <10 M <5 M
Dibromochloromethane <10 μg/kg TM116 <100	M M M	<10 M <10 M <5 M
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	M M M	<10 M
Chlorobenzene <5 μg/kg TM116 <50 M <5 M <5 M <50 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M <5 M	M	<5 M
1,1,1,2-Tetrachloroethane <10 μg/kg TM116 <100 <10 <10 <10 <10 <10 M	М	
		<10 M
'		<4 M
p/m-Xylene <10 µg/kg TM116 <100 <10 <10 <10 <10 <10	#	<10 #
o-Xylene <10 μg/kg TM116 <100 <10 <10 <10 <10 M		<10 M
Styrene <10 μg/kg TM116 <100 <10 <10 <10 <10 <10 <10 <10 <10 <1	#	<10 #
Bromoform <10 μg/kg TM116 <100 <10 <10 <10 <10 <10 M		<10 M
Isopropylbenzene <5 μg/kg TM116 <50 <5 <5 <5 <5 <5 <5 <	#	<5 #
1,1,2,2-Tetrachloroethane <10 μg/kg TM116 <100	#	<10 #
1,2,3-Trichloropropane <16 μg/kg TM116 <160 <16 <16 <16 <16 <16 <16 <16 <16 <16 <16		<16 M
Bromobenzene <10 μg/kg TM116 <100 <10 <10 <10 <10 <10 M	M	<10 M
Propylbenzene <10 μg/kg TM116 <100 <10 <10 <10 <10 M	M	<10 M
2-Chlorotoluene <9 μg/kg TM116 <90 <9 <9 <9 <9 <9 M	M	<9 M
1,3,5-Trimethylbenzene <8 μg/kg TM116 <80 <8 <8 <8 <80 <8	М	<8 M
4-Chlorotoluene <10 μg/kg TM116 <100 <10 <10 <10 <10 <10	М	<10 M
tert-Butylbenzene <14 µg/kg TM116 <140 <14 <14 <14 <140 <14		<14
1,2,4-Trimethylbenzene <9 µg/kg TM116 <90 <9 <9 <9 <9 <9	#	<9
sec-Butylbenzene <10 μg/kg TM116 <100 <10 <10 <10 <10		<10
4-Isopropyltoluene <10 μg/kg TM116 <100 <10 <10 <10 <10 M	М	<10 M
1,3-Dichlorobenzene <8 μg/kg TM116 <80 <8 <8 <8 <80 <8 M	М	<8 M
1,4-Dichlorobenzene <5 μg/kg TM116 <50 <5 <5 <5 <50 <5 M	М	
n-Butylbenzene <11 μg/kg TM116 <110 <11 <11 <110 <11		<11
1,2-Dichlorobenzene <10 μg/kg TM116 <100 <10 <10 <10 <10 M M M	М	<10 M
1,2-Dibromo-3-chloropropane <14 μg/kg TM116 <140 <14 <14 <14 <140 <14 M M M M	М	
Tert-amyl methyl ether <10 μg/kg TM116 <100 <10 <10 <10 <10 <10	#	<10 #
1,2,4-Trichlorobenzene <20 μg/kg TM116 <200 <20 <20 <20 <20		<20
Hexachlorobutadiene <20 μg/kg TM116 <200 <20 <20 <20 <20		<20
Naphthalene <13 μg/kg TM116 <130 <13 <13 <13 <130 <13 M M M M M	М	
1,2,3-Trichlorobenzene <20 μg/kg TM116 <200 <20 <20 <20 <20 <20 <20 <20 <20 <2	#	<20 #

180424-31 Lowestoft SDG: Location:

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report: 457244

VOC MS (S)													
Results Legend # ISO17025 accredited.	Custo	omer Sample Ref.	VC07	V	008	VC08		VC11		VC11		VC11	
M mCERTS accredited. aq Aqueous / settled sample. bissolved / filtered sample. bissolved / filtered sample. Subcontracted test. were covery of the surrogate scheck the efficiency of the mersults of individual compour samples aren't corrected for 1.5&4\$@ Sample deviation (see append	ethod. The nds within the recovery L dix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference	1.60 - 2.00 Soil/Solid (S) 20/04/2018 17:40:00 24/04/2018 180424-31 17431882	Soil/S 20/0 ² 17:0 24/0 ² 1804	- 1.00 olid (S) 1/2018 06:00 1/2018 24-31 11902	1.00 - 1.45 Soil/Soild (S 20/04/2018 17:06:00 24/04/2018 180424-31 17431901	s) :	0.80 - 1.20 Soil/Solid (S; 20/04/2018 12:24:00 24/04/2018 180424-31 17431887		1.80 - 2.20 Soil/Solid (S 20/04/2018 12:24:00 24/04/2018 180424-31 17431886	()	2.20 - 2.50 Soil/Solid (20/04/201 12:24:00 24/04/201 180424-3 17431885	S) B B
Component Dibromofluoromethane**	LOD/Units %	Method TM116	102	1	04	103		111		110		105	
Toluene-d8**	%	TM116	99.3	99	9.2	98.6		98.2		99		99.1	
4-Bromofluorobenzene**	%	TM116	98.3	98	3.3	95.9		94.2		95.7		95.7	
Dichlorodifluoromethane	<6 µg/kg	TM116	<6	M	6 M	<6	М	<120	М	<6	М	<6	М
Chloromethane	<7 μg/kg	TM116	<7		 :7 #	<7	#	<140	#	<7	#	<7	#
Vinyl Chloride	<6 µg/kg	TM116	<6		6 M	<6	M	<120	М	<6	M	<6	M
Bromomethane	<10 µg/kg	TM116	<10		10 M	<10	М	<200	М	<10	М	<10	М
Chloroethane	<10 µg/kg	TM116	<10	_	10 M	<10	М	<200	М	<10	М	<10	М
Trichlorofluorormethane	<6 µg/kg	TM116	<6		6 M	<6	М	<120	М	<6	М	<6	М
1,1-Dichloroethene	<10 µg/kg	TM116	<10		10 #	<10	#	<200	#	<10	#	<10	#
Carbon Disulphide	<7 µg/kg	TM116	<7		7 M	<7	М	<140	М	<7	М	<7	М
Dichloromethane	<10 µg/kg	TM116	<10	#	10 #	<10	#	<200	#	<10	#	<10	#
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<10	М <	10 M	<10	М	<200	М	<10	М	<10	М
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<10	М <	10 M	<10	М	<200	М	<10	М	<10	М
1,1-Dichloroethane	<8 µg/kg	TM116	<8 I	М	<8 M	<8	М	<160	М	<8	М	<8	М
cis-1,2-Dichloroethene	<6 µg/kg	TM116	<6 I	М	6 M	<6	М	<120	М	<6	М	<6	М
2,2-Dichloropropane	<10 µg/kg	TM116	<10	<	10	<10		<200		<10		<10	
Bromochloromethane	<10 µg/kg	TM116	<10	М <	10 M	<10	М	<200	М	<10	М	<10	М
Chloroform	<8 µg/kg	TM116	<8 I	M ~	<8 M	<8	М	<160	М	<8	М	<8	М
1,1,1-Trichloroethane	<7 μg/kg	TM116	<7	VI -	:7 M	<7	М	<140	М	<7	М	<7	М
1,1-Dichloropropene	<10 µg/kg	TM116	<10	V	10 M	<10	М	<200	М	<10	М	<10	М
Carbontetrachloride	<10 µg/kg	TM116	<10 I	ν Ν	10 M	<10	М	<200	М	<10	М	<10	М
1,2-Dichloroethane	<5 μg/kg	TM116	<5 !	VI .	5 M	<5	М	<100	М	<5	М	<5	М
Benzene	<9 µg/kg	TM116		И	:9 M		М	<180	М	<9	М	<9	М
Trichloroethene	<9 µg/kg	TM116	<9	#	:9 #	<9	#	<180	#	<9	#	<9	#
1,2-Dichloropropane	<10 µg/kg	TM116	<10	< M	10 M	<10	М	<200	М	<10	М	<10	М
Dibromomethane	<9 µg/kg	TM116	<9 I	M .	<9 M	<9	М	<180	М	<9	М	<9	М
Bromodichloromethane	<7 μg/kg	TM116		И	:7 M		М	<140	М	<7	М	<7	М
cis-1,3-Dichloropropene	<10 µg/kg	TM116		И	10 M		М	<200	М	<10	М	<10	М
Toluene	<7 μg/kg	TM116		И	:7 M		М	<140	М	<7	М	<7	М
trans-1,3-Dichloropropene	<10 µg/kg	TM116	<10		10	<10		<200		<10		<10	
1,1,2-Trichloroethane	<10 µg/kg	TM116		И	10 M		М	<200	М	<10	М	<10	М
1,3-Dichloropropane	<7 μg/kg	TM116	<7 !	M .	:7 M	<7	М	<140	М	<7	М	<7	М



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

VUC IVIS (S)													
Results Legend # ISO17025 accredited. M mCERTS accredited.	Cus	tomer Sample Ref.	VC07		VC08		VC08		VC11	VC11		VC11	
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	1.60 - 2.00		0.60 - 1.00		1.00 - 1.45		0.80 - 1.20	1.80 - 2.20		2.20 - 2.50	
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)		Soil/Solid (S))	Soil/Solid (S)		Soil/Solid (S)	Soil/Solid (S)		Soil/Solid (S)	
* Subcontracted test.		Date Sampled	20/04/2018		20/04/2018		20/04/2018		20/04/2018	20/04/2018		20/04/2018	
** % recovery of the surrogate st check the efficiency of the me	tandard to	Sample Time	17:40:00		17:06:00		17:06:00		12:24:00	12:24:00		12:24:00	
results of individual compoun	ds within	Date Received SDG Ref	24/04/2018 180424-31		24/04/2018 180424-31		24/04/2018 180424-31		24/04/2018 180424-31	24/04/2018 180424-31		24/04/2018 180424-31	
samples aren't corrected for the (F) Trigger breach confirmed	he recovery	Lab Sample No.(s)	17431882		17431902		17431901		17431887	17431886		17431889	
1-5&+§@ Sample deviation (see append		AGS Reference											
Component	LOD/Units	Method											
Tetrachloroethene	<5 µg/kg	TM116	<5		<5		<5		<100	<5		<5	
		1 1	1	М		M		M	N		М		М
Dibromochloromethane	<10 µg/kg	TM116	<10		<10		<10		<200	<10	\neg	<10	
	13 [23.13			М		М		М	N		М		М
1.2-Dibromoethane	<10 µg/kg	TM116	<10	-	<10		<10		<200	<10		<10	
1,2-Dibrofficettiatie	-10 μg/kg	1101110		М	\10	М	\10	М	\200 M		М	\10	М
011	- "			IVI		IVI	_	IVI			IVI	_	IVI
Chlorobenzene	<5 µg/kg	TM116	<5		<5		<5		<100	<5		<5	
				М		М		М	N		М		М
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10		<10		<10		<200	<10		<10	
		1 1	1	М		M		M	N		М		М
Ethylbenzene	<4 µg/kg	TM116	<4		<4		<4		<80	<4	\neg	<4	
Laryiderizerie	n pg/kg	1		М	•	М		М	N		М		М
n/m Videne	<10 µg/kg	TM116	<10	IVI	<10	IVI	<10	IVI	<200	<10	IVI	<10	IVI
p/m-Xylene	< 10 µg/kg	TIVITIO		,,	<10		<10	,,				<10	.,
				#		#		#	#		#		#
o-Xylene	<10 µg/kg	TM116	<10		<10		<10		<200	<10		<10	
		1 1	1	М		M		M	N		М		М
Styrene	<10 µg/kg	TM116	<10		<10		<10		<200	<10		<10	
-4.5	10 [25/13			#		#		#	#		#		#
Bromoform	<10 µg/kg	TM116	<10	"	<10	"	<10	"	<200	<10		<10	-"-
Bioinoloini	-10 μg/kg	1101110		M	\10		\10	N 4			М	\10	
	.5 //	T1440		М		M		M	N		IVI	.=	М
Isopropylbenzene	<5 µg/kg	TM116	<5		<5		<5		<100	<5		<5	
				#		#		#	#		#		#
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10		<10		<10		<200	<10		<10	
		1 1		#		#		#	#	<u> </u>	#		#
1,2,3-Trichloropropane	<16 µg/kg	TM116	<16		<16		<16		<320	<16		<16	\neg
1,2,0 11101101001000110	To pg/ng	'''''		М		М	10	М	N N		М	-10	М
Dramahanzana	<10 a/lea	TM116	<10	IVI	<10	IVI	<10	IVI	<200	<10	IVI	<10	IVI
Bromobenzene	<10 µg/kg	1101110			\10		\10					\10	
				М		M		М	N		М		М
Propylbenzene	<10 µg/kg	TM116	<10		<10		<10		<200	<10		<10	
				М		М		М	N		М		М
2-Chlorotoluene	<9 µg/kg	TM116	<9		<9		<9		<180	<9		<9	
	'0'	1 1	1	М		М		М	N		М		М
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<8	-	<8		<8		<160	<8		<8	
1,0,0-11IIIICIIIyibcii2ciic	·ο μg/kg	1 11/11/10		М	٠0	М	10	М	1100 N		М	10	М
4.011	.40 //	T1440		IVI	.10	IVI	.40	IVI			IVI	.40	IVI
4-Chlorotoluene	<10 µg/kg	TM116	<10		<10		<10		<200	<10		<10	
				М		M		M	N		М		М
tert-Butylbenzene	<14 µg/kg	TM116	<14		<14		<14		<280	<14		<14	
		1 1	I	M		M		M	N		М		М
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<9		<9		<9		<180	<9		<9	
, i		1 1		#		#		#	#	<u> </u>	#		#
sec-Butylbenzene	<10 µg/kg	TM116	<10	" -	<10		<10		<200	<10		<10	
Sec-Dutylberizerie	10 µg/kg	1101110	10		10		10		\200	10		10	
4	40 "	711110	40	_			10		222	- 10	-	40	-
4-Isopropyltoluene	<10 µg/kg	TM116	<10		<10		<10		<200	<10		<10	
				М		M		М	N		М		М
1,3-Dichlorobenzene	<8 µg/kg	TM116	<8		<8		<8		<160	<8	1	<8	
		1 1	1	М		M		Μ	N		М		М
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5		<5		<5		<100	<5	\neg	<5	\neg
.,. 2.0	o parta			М	·	М	· ·	М	N		М	, and the second	М
n Putulbanzana	<11 ug/kg	TM116	<11	IVI	<11	IVI	<11	IVI	<220	<11	IVI	<11	IVI
n-Butylbenzene	<11 µg/kg	TIVITIO	VIII		<11		\11		<220	×11		\ 11	
				_									
1,2-Dichlorobenzene	<10 µg/kg	TM116	<10		<10		<10		<200	<10		<10	
		1 1	I	M		M		Μ	N		М		М
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14		<14		<14		<280	<14		<14	
	1-39	1 " 1		М		М		М	N		М		М
Tert-amyl methyl ether	<10 µg/kg	TM116	<10	-	<10	.•.	<10		<200	<10		<10	
ron-amyr meuryr euler	∼ το μg/kg	1101110		"	\10	щ	\10	щ			щ	\10	щ
404 Table 1	.00 "	T14440		#	.00	#	.00	#	400		#		#
1,2,4-Trichlorobenzene	<20 µg/kg	TM116	<20		<20		<20		<400	<20		<20	
Hexachlorobutadiene	<20 µg/kg	TM116	<20		<20		<20		<400	<20		<20	
Naphthalene	<13 µg/kg	TM116	<13	\dashv	<13		<13		<260	<13	\neg	<13	\neg
	io pgrilg			М	.10	М	10	М	\N		М	,10	М
1 2 3 Triphlorobonzona	<00/II	TM116			<20	IVI	<20	IVI			141	<20	141
1,2,3-Trichlorobenzene	<20 µg/kg	11/11/10	<20	_	<20		<20	ji.	<400	<20	,,,	<20	.11
				#		#		#	#	:	#		#

180424-31 Lowestoft SDG: Location:

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report: 457244

VOC MS (S)														
Results Legend # ISO17025 accredited.	Custo	omer Sample Ref.	VC10A		VC10A		VC10A		VC12A		VC12A		VC12A	
M mCERTS accredited. Aqueous / settled sample. Dissolved / filtered sample. Subcontracted test. W recovery of the surrogate check the efficiency of the results of individual compous samples aren't corrected for Trigger breach confirmed 1-5&+§@ Sample deviation (see appear	nethod. The unds within the recovery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference Method	0.80 - 1.20 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431891		1.80 - 2.20 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431890		2.45 - 2.85 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431892		0.80 - 1.20 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431913		1.80 - 2.20 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431911		2.80 - 3.30 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431912	
Dibromofluoromethane**	%	TM116	122		104		101		118		107		111	
Toluene-d8**	%	TM116	97.4		99		98.8		97.4		100		101	
4-Bromofluorobenzene**	%	TM116	92.1		96.3		96.5		91.5		99.1		105	
Dichlorodifluoromethane	<6 µg/kg	TM116	<60	М	<6	М	<6	М	<60	М	<6	М	<6	М
Chloromethane	<7 μg/kg	TM116	<70	#	<7	#	<7	#	<70	#	<7	#	<7	#
Vinyl Chloride	<6 µg/kg	TM116	<60	М	<6	М	<6	М	<60	M	<6	М	<6	М
Bromomethane	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10	М	<10	М
Chloroethane	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10	М	<10	М
Trichlorofluorormethane	<6 µg/kg	TM116	<60	М	<6	М	<6	М	<60	М	<6	М	<6	М
1,1-Dichloroethene	<10 µg/kg	TM116	<100	#	<10	#	<10	#	<100	#	<10	#	<10	#
Carbon Disulphide	<7 μg/kg	TM116	<70	M	<7	M	<7	M	147	M	<7	M	<7	M
Dichloromethane	<10 µg/kg	TM116	<100	#	<10	#	<10	#	<100	#	<10	#	<10	#
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<100	M	<10	M	<10	M	<100	M	<10	M	<10	M
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10	М	<10	М
1,1-Dichloroethane	<8 µg/kg	TM116	<80	М	<8	M	<8	М	<80	М	<8	М	<8	M
cis-1,2-Dichloroethene	<6 µg/kg	TM116	<60	М	<6	М	<6	М	<60	М	<6	М	<6	М
2,2-Dichloropropane	<10 µg/kg	TM116	<100		<10	141	<10		<100	IVI	<10	141	<10	141
Bromochloromethane	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10	М	<10	М
Chloroform	<8 µg/kg	TM116	<80	М	<8	М	<8	М	<80	М	<8	М	<8	М
1,1,1-Trichloroethane	<7 µg/kg	TM116	<70	М	<7	М	<7	М	<70	М	<7	М	<7	М
1,1-Dichloropropene	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10	М	<10	М
Carbontetrachloride	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10	М	<10	М
1,2-Dichloroethane	<5 µg/kg	TM116	<50	М	<5	М	<5	М	<50	М	<5	М	<5	М
Benzene	<9 µg/kg	TM116	<90	М	<9	М	<9	М	<90	М	<9	М	<9	М
Trichloroethene	<9 µg/kg	TM116	<90	#	<9	#	<9	#	<90	#	<9	#	<9	#
1,2-Dichloropropane	<10 µg/kg	TM116	<100	M	<10	M	<10	M	<100	M	<10	M	<10	M
Dibromomethane	<9 µg/kg	TM116	<90	М	<9	М	<9	М	<90	М	<9	М	<9	М
Bromodichloromethane	<7 µg/kg	TM116	<70	М	<7	М	<7	М	<70	М	<7	М	<7	М
cis-1,3-Dichloropropene	<10 µg/kg	TM116	<100	М	<10	M	<10	М	<100	M	<10	M	<10	M
Toluene	<7 µg/kg	TM116	<70	М	<7	M	<7	М	<70	M	<7	M	<7	M
trans-1,3-Dichloropropene	<10 µg/kg	TM116	<100	IVI	<10	IVI	<10	IVI	<100	171	<10	141	<10	IVI
1,1,2-Trichloroethane	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10	М	<10	М
1,3-Dichloropropane	<7 µg/kg	TM116	<70	М	<7	М	<7	М	<70	М	<7	М	<7	М
	-					.71								



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

VOC MS (S)											
Results Legend # ISO17025 accredited. M mCERTS accredited.	C	ustomer Sample Ref.	VC10A		VC10A		VC10A		VC12A	VC12A	VC12A
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.80 - 1.20		1.80 - 2.20		2.45 - 2.85		0.80 - 1.20	1.80 - 2.20	2.80 - 3.30
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test. ** % recovery of the surrogate st	andard to	Date Sampled Sample Time	20/04/2018		20/04/2018		20/04/2018		20/04/2018	20/04/2018	20/04/2018
check the efficiency of the me	thod. The	Date Received	09:24:00 24/04/2018		09:24:00 24/04/2018		09:24:00 24/04/2018		13:27:00 24/04/2018	13:27:00 24/04/2018	13:27:00 24/04/2018
results of individual compoun samples aren't corrected for the		SDG Ref	180424-31		180424-31		180424-31		180424-31	180424-31	180424-31
(F) Trigger breach confirmed	1	Lab Sample No.(s)	17431891		17431890		17431892		17431913	17431911	17431912
1-5&+§@ Sample deviation (see append		AGS Reference									
Component	LOD/Un		.50					\dashv	-50	.e-	
Tetrachloroethene	<5 μg/ŀ		<50	М	<5	М		M	<50 M	<5 M	<5 M
Dibromochloromethane	<10 µg/	kg TM116	<100	М	<10	М	<10	М	<100 M	<10 M	<10 M
1,2-Dibromoethane	<10 µg/	kg TM116	<100	М	<10	М	<10	M	<100 M	<10 M	<10 M
Chlorobenzene	<5 µg/ŀ	rg TM116	<50	М	<5	М	<5	М	<50	<5 M	<5 M
1,1,1,2-Tetrachloroethane	<10 µg/	kg TM116	<100	М	<10	M	<10	M	<100 M	<10 M	<10 M
Ethylbenzene	<4 µg/l	kg TM116	<40		<4		<4		<40	<4	<4
p/m-Xylene	<10 µg/	kg TM116	<100	M	<10	M	<10	M	<100	<10 M	<10 M
o-Xylene	<10 µg/	kg TM116	<100	#	<10	#	<10	#	<100	**************************************	*
Styrene	<10 µg/		<100	М	<10	M	<10	M	<100	<10 M	<10 M
Bromoform	<10 µg/		<100	#	<10	#	<10	#	<100	**************************************	*
Isopropylbenzene	<5 μg/l		<50	М	<5	M		M	<50	<5	<5 M
		<u> </u>		#		#	-	#	#	#	#
1,1,2,2-Tetrachloroethane	<10 µg/		<100	#	<10	#	<10	#	<100 #	<10 #	<10 #
1,2,3-Trichloropropane	<16 µg/	<u> </u>	<160	М	<16	М		М	<160 M	<16 M	<16 M
Bromobenzene	<10 µg/	kg TM116	<100	М	<10	М	<10	М	<100 M	<10 M	<10 M
Propylbenzene	<10 µg/	kg TM116	<100	М	<10	М	<10	М	<100 M	<10 M	<10 M
2-Chlorotoluene	<9 µg/l	kg TM116	<90	М	<9	М	<9	M	<90 M	<9 M	<9 M
1,3,5-Trimethylbenzene	<8 µg/k	rg TM116	<80	М	<8	М	<8	M	<80 M	<8 M	<8 M
4-Chlorotoluene	<10 µg/	kg TM116	<100	М	<10	М	<10	M	<100 M	<10 M	<10 M
tert-Butylbenzene	<14 µg/	kg TM116	<140	М	<14	М	<14	М	<140 M	<14 M	<14 M
1,2,4-Trimethylbenzene	<9 µg/l	kg TM116	<90	#	<9	#	<9	#	<90 #	<9 #	<9 #
sec-Butylbenzene	<10 µg/	kg TM116	<100	π	<10	π	<10	π	<100	<10	<10
4-Isopropyltoluene	<10 µg/	kg TM116	<100	М	<10	М	<10	M	<100 M	<10 M	<10 M
1,3-Dichlorobenzene	<8 µg/ŀ	kg TM116	<80		<8		<8		<80	<8	<8
1,4-Dichlorobenzene	<5 µg/l	kg TM116	<50	M	<5	M	<5	M	<50 M	<5 M	<5
n-Butylbenzene	<11 µg/	kg TM116	<110	M	<11	M	<11	M	<110	<11	<11 M
1,2-Dichlorobenzene	<10 µg/	kg TM116	<100		<10	,,	<10	,,	<100	<10	<10
1,2-Dibromo-3-chloropropane	<14 µg/	kg TM116	<140	M	<14	M	<14	M	<140	<14	<14
Tert-amyl methyl ether	<10 µg/	kg TM116	<100	M	<10	M	<10	M	<100	<10 M	<10 M
1,2,4-Trichlorobenzene	<20 µg/	kg TM116	<200	#	<20	#	<20	#	*	* <20	*
Hexachlorobutadiene	<20 μg/		<200		<20		<20		<200	<20	<20
Naphthalene	<13 µg/		<130		<13		<13		<130	<13	<13
1,2,3-Trichlorobenzene	<20 μg/	Ĭ	<200	М	<20	M		M	<200		<20 M
1,2,0 1110111010001120110	-20 µg/	y IIVIIIU	-200	#	720	#	٠٧٧	#			

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

VOC MS (S)		0 1 0 1 0 1									
Results Legend # ISO17025 accredited.		Customer Sample Ref.	VC01B		VC01B		VC09B		VC09B		
M mCERTS accredited. aq Aqueous / settled sample.		Depth (m)	0.80 - 1.20		1.24 - 1.54		0.80 - 1.20		1.26 - 1.66		
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)		
* Subcontracted test. ** % recovery of the surrogate st	tandard to	Date Sampled Sample Time	20/04/2018		20/04/2018		19/04/2018		19/04/2018		
check the efficiency of the me	thod. The	Date Received	11:50:00 24/04/2018		11:50:00 24/04/2018		13:44:00 24/04/2018		13:44:00 24/04/2018		
results of individual compoun samples aren't corrected for the	ds within he recovery	SDG Ref	180424-31		180424-31		180424-31		180424-31		
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see append	lix)	Lab Sample No.(s) AGS Reference	17431884		17431885		17431893		17431894		
Component	LOD/U	nits Method									
Dibromofluoromethane**	%	TM116	160		111		116		103		
Toluene-d8**	%	TM116	103		99		99.1		99		
4-Bromofluorobenzene**	%	TM116	107		95.2		97.1		95.1		
Dichlorodifluoromethane	<6 µg	/kg TM116	<6	М	<6	М	<6	М	<6	М	
Chloromethane	<7 µg	/kg TM116	<7	#	<7	#	<7	#	<7	#	
Vinyl Chloride	<6 µg	/kg TM116	<6	М	<6	М	<6	М	<6	М	
Bromomethane	<10 μς	g/kg TM116	<10	М	<10	М	<10	М	<10	М	
Chloroethane	<10 μς	g/kg TM116	<10	М	<10	М	<10	М	<10	М	
Trichlorofluorormethane	<6 µg	/kg TM116	<6	М	<6	М	<6	М	<6	М	
1,1-Dichloroethene	<10 µg	g/kg TM116	<10	#	<10	#	<10	#	<10	#	
Carbon Disulphide	<7 µg	/kg TM116	<7	M	<7	M	<7	M	<7	M	
Dichloromethane	<10 μς	g/kg TM116	<10	#	<10	#	<10	#	<10	#	
Methyl Tertiary Butyl Ether	<10 μς	g/kg TM116	<10	М	<10	М	<10	М	<10	М	
trans-1,2-Dichloroethene	<10 µg	g/kg TM116	<10	М	<10	М	<10	М	<10	М	
1,1-Dichloroethane	<8 µg	/kg TM116	<8	М	<8	М	<8	М	<8	М	
cis-1,2-Dichloroethene	<6 µg	/kg TM116	<6	М	<6	М	<6	М	<6	М	
2,2-Dichloropropane	<10 μς	g/kg TM116	<10		<10		<10		<10		
Bromochloromethane	<10 µg		<10	М	<10	М	<10	М	<10	М	
Chloroform	<8 µg	•	<8	М	<8	М	<8	М	<8	М	
1,1,1-Trichloroethane	<7 µg		<7	М	<7	М	<7	М	<7	М	
1,1-Dichloropropene	<10 µg		<10	М	<10	М	<10	М	<10	М	
Carbontetrachloride	<10 μς		<10	М	<10	М	<10	М	<10	М	
1,2-Dichloroethane	<5 µg		<5	М	<5	М	<5	М	<5	М	
Benzene	<9 µg		<9	М	<9	М	<9	М	<9	М	
Trichloroethene	<9 µg		<9	#	<9	#	<9	#	<9	#	
1,2-Dichloropropane	<10 μς		<10	М	<10	М	<10	М	<10	М	
Dibromomethane	<9 µg		<9	М	<9	М	<9	М	<9	М	
Bromodichloromethane	<7 µg		<7	М	<7	М	<7	М	<7	М	
cis-1,3-Dichloropropene	<10 µg		<10	М	<10	М	<10	М	<10	М	
Toluene	<7 µg		<7	М	<7	М	<7	М	<7	М	
trans-1,3-Dichloropropene	<10 µg		<10		<10		<10		<10		
1,1,2-Trichloroethane	<10 μς		<10	М	<10	М	<10	М	<10	М	
1,3-Dichloropropane	<7 µg	/kg TM116	<7	М	<7	М	<7	М	<7	М	
17:17:48 22/05/2018											

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

VOC MS (S)										_	
Results Legend # ISO17025 accredited. M mCERTS accredited.		Customer Sample Ref.	VC01B		VC01B		VC09B		VC09B		
aq Aqueous / settled sample.		Depth (m)	0.80 - 1.20		1.24 - 1.54		0.80 - 1.20		1.26 - 1.66		
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)		
* Subcontracted test. ** % recovery of the surrogate st	tandard to	Date Sampled	20/04/2018		20/04/2018		19/04/2018		19/04/2018		
check the efficiency of the me	thod. The	Sample Time Date Received	11:50:00 24/04/2018		11:50:00 24/04/2018		13:44:00 24/04/2018		13:44:00 24/04/2018		
results of individual compoun samples aren't corrected for t		SDG Ref	180424-31		180424-31		180424-31		180424-31		
(F) Trigger breach confirmed	- 1	Lab Sample No.(s)	17431884		17431885		17431893		17431894		
1-5&+§@ Sample deviation (see append		AGS Reference									
Component	LOD/U						.F	_	.F		
Tetrachloroethene	<5 µg		<5	М		M	<5	М	<5 M		
Dibromochloromethane	<10 µg	ı/kg TM116	<10	М	<10	М	<10	М	<10 M		
1,2-Dibromoethane	<10 µg	ı/kg TM116	<10	М	<10	М	<10	М	<10 M		
Chlorobenzene	<5 µg	/kg TM116	<5	М	<5	М	<5	М	<5 M		
1,1,1,2-Tetrachloroethane	<10 μς	ı/kg TM116	<10	М	<10	M	<10	M	<10 M		
Ethylbenzene	<4 µg	/kg TM116	<4		<4		<4		<4		
p/m-Xylene	<10 µg	ı/kg TM116	<10	<u>М</u>	<10	M 4	<10	M #	<10 M		
o-Xylene	<10 µg	ı/kg TM116	<10	#	<10	#	<10	#	<10		+
Styrene	<10 µg	ı/kg TM116	<10	M	<10	M	<10	M	<10 M		
Bromoform	<10 µg	ı/kg TM116	<10	#	<10	#	<10	#	<10		+
Isopropylbenzene	<5 μg	/kg TM116	<5	M	<5	M	<5	M	M <5		
1,1,2,2-Tetrachloroethane	<10 µg	ı/kg TM116	<10	#	<10	#	<10	#	<10		
1,2,3-Trichloropropane	<16 µg		<16	#	<16	#	<16	#	<16		
Bromobenzene	<10 µg		<10	М		M	<10	M	<10 M		
Propylbenzene	<10 µg		<10	M		M	<10	M	<10 M		
2-Chlorotoluene	<9 µg		<9	M		M	<9	М	M		
		<u> </u>		М		M		М	М		
1,3,5-Trimethylbenzene	<8 µg		<8	М		М	<8	М	<8 M		
4-Chlorotoluene	<10 µg		<10	М		М	<10	М	<10 M		
tert-Butylbenzene	<14 µg		<14	М		М	<14	М	<14 M		
1,2,4-Trimethylbenzene	<9 µg		<9	#	<9	#	<9	#	<9 #		
sec-Butylbenzene	<10 µg		<10		<10		<10		<10		
4-Isopropyltoluene	<10 µg		<10	М		M	<10	М	<10 M		
1,3-Dichlorobenzene	<8 µg		<8	М	<8	M	<8	М	<8 M		
1,4-Dichlorobenzene	<5 µg		<5	М	<5	М	<5	М	<5 M		
n-Butylbenzene	<11 µg	r/kg TM116	<11		<11		<11		<11		
1,2-Dichlorobenzene	<10 μς	r/kg TM116	<10	М	<10	M	<10	М	<10 M		
1,2-Dibromo-3-chloropropane	<14 µg	r/kg TM116	<14	М	<14	M	<14	М	<14 M		
Tert-amyl methyl ether	<10 µg	ı/kg TM116	<10	#	<10	#	<10	#	<10 #		
1,2,4-Trichlorobenzene	<20 µg	ı/kg TM116	<20	.,	<20		<20	.,	<20		
Hexachlorobutadiene	<20 µg	ı/kg TM116	<20		<20		<20		<20		
Naphthalene	<13 µg	ı/kg TM116	<13	М	<13	М	<13	М	<13 M		
1,2,3-Trichlorobenzene	<20 µg	ı/kg TM116	<20	#	<20	#	<20	#	<20 #		<u> </u>
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457244

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Asbestos Identification - Solid Samples

		730	COLOG	iacii			Cona	- Caiiii	3103		
		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC02 0.80 - 1.20 SOLID 20/04/2018 00:00:00 25/04/2018 20:42:27 180424-31 17431917 TM048	02/05/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC02 1.80 - 2.20 SOLID 20/04/2018 00:00:00 25/04/2018 20:50:19 180424-31 17431916 TM048	02/05/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC02 2.80 - 3.20 SOLID 20/04/2018 00:00:00 25/04/2018 13:06:46 180424-31 17431915 TM048	30/04/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC02 3.20 - 3.63 SOLID 20/04/2018 00:00:00 25/04/2018 13:08:45 180424-31 17431914 TM048	30/04/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC03 0.80 - 1.20 SOLID 20/04/2018 00:00:00 25/04/2018 09:52:24 180424-31 17431903 TM048	30/04/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC03 1.80 - 2.20 SOLID 20/04/2018 00:00:00 24/04/2018 18:23:11 180424-31 17431906 TM048	30/04/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

ALS

SDG: 180424-31 Client Reference:62240712 Report Number: 457244 Location: Lowestoft Order Number: 62240712 Superseded Report:

(ALS)	Location:	Lowes	toft	Orc	ler Numbe	er: 62240)712	Sup	erseded Re	port:	
		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC03 2.80 - 3.20 SOLID 20/04/2018 00:00:00 25/04/2018 09:51:11 180424-31 17431905 TM048	30/04/2018	Lucy Caroe	'n	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC03 3.39 - 3.79 SOLID 20/04/2018 00:00:00 24/04/2018 18:19:07 180424-31 17431904 TM048	30/04/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC04 0.80 - 1.20 SOLID 19/04/2018 00:00:00 24/04/2018 18:03:51 180424-31 17431908 TM048	30/04/2018	Marcin Magdziarek	•	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC04 1.80 - 2.20 SOLID 19/04/2018 00:00:00 25/04/2018 20:47:33 180424-31 17431909 TM048	02/05/2018	Barbara Urbanek-Wal sh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC04 2.80 - 3.20 SOLID 19/04/2018 00:00:00 24/04/2018 18:21:50 180424-31 17431910 TM048	30/04/2018	Andrzej Ferfecki	•	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC04 3.60 - 4.00 SOLID 19/04/2018 00:00:00 25/04/2018 20:51:56 180424-31 17431907 TM048	02/05/2018	Barbara Urbanek-Wal sh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

ALS

SDG: 180424-31 Client Reference: 62240712 Report Number: 457244 Location: Lowestoft Order Number: 62240712 Superseded Report:

(ALS)	Location:	Lowes	tort	Oit	ier Numbe	er: 62240	7712	Зир	erseaea ke	port.	
		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC05 0.80 - 1.20 SOLID 19/04/2018 00:00:00 25/04/2018 08:27:11 180424-31 17431895 TM048	01/05/2018	Barbara Urbanek-Wal sh	•	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC05 1.80 - 2.20 SOLID 19/04/2018 00:00:00 25/04/2018 20:45:16 180424-31 17431896 TM048	02/05/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC05 2.53 - 2.93 SOLID 19/04/2018 00:00:00 25/04/2018 08:23:57 180424-31 17431898 TM048	30/04/2018	Andrzej Ferfecki	•	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC06 0.80 - 1.20 SOLID 20/04/2018 00:00:00 25/04/2018 20:43:48 180424-31 17431899 TM048	02/05/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC06 2.00 - 2.46 SOLID 20/04/2018 00:00:00 25/04/2018 15:08:49 180424-31 17431900 TM048	02/05/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC07 0.80 - 1.20 SOLID 20/04/2018 00:00:00 25/04/2018 14:53:52 180424-31 17431883 TM048	30/04/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

ALS

SDG: 180424-31 Client Reference: 62240712 Report Number: 457244 Location: Lowestoft Order Number: 62240712 Superseded Report:

(ALS)	Location:	Lowes	toft	Orc	ler Numbe	er: 62240	0712	Sup	erseded Re	port:	
		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC07 1.60 - 2.00 SOL1D 20/04/2018 00:00:00 25/04/2018 14:52:46 180424-31 17431882 TM048	02/05/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC08 0.60 - 1.00 SOLID 20/04/2018 00:00:00 25/04/2018 09:49:32 180424-31 17431902 TM048	30/04/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC08 1.00 - 1.45 SOLID 20/04/2018 00:00:00 25/04/2018 20:41:09 180424-31 17431901 TM048	02/05/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC11 0.80 - 1.20 SOLID 20/04/2018 00:00:00 25/04/2018 08:35:34 180424-31 17431887 TM048	30/04/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC11 1.80 - 2.20 SOLID 20/04/2018 00:00:00 25/04/2018 08:38:06 180424-31 17431886 TM048	01/05/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC11 2.20 - 2.50 SOLID 20/04/2018 00:00:00 25/04/2018 13:01:12 180424-31 17431889 TM048	30/04/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

ALS

SDG: 180424-31 Client Reference: 62240712 Report Number: 457244
Location: Lowestoft Order Number: 62240712 Superseded Report:

(ALS)	Location:	Lowes	ιστι	Ord	ier Numbe	er: 62240	7712	Зир	erseaea ke	port.	
	·	Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC10A 0.80 - 1.20 SOLID 20/04/2018 00:00:00 25/04/2018 08:39:49 180424-31 17431891 TM048	01/05/2018	Lucy Caroe	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Recceieved SDG Original Sample Method Number	VC10A 1.80 - 2.20 SOLID 20/04/2018 00:00:00 24/04/2018 17:53:03 180424-31 17431890 TM048	01/05/2018	Barbara Urbanek-Wal sh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC10A 2.45 - 2.85 SOLID 20/04/2018 00:00:00 25/04/2018 08:41:53 180424-31 17431892 TM048	30/04/2018	Lucy Caroe		Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC12A 0.80 - 1.20 SOLID 20/04/2018 00:00:00 25/04/2018 12:59:32 180424-31 17431913 TM048	01/05/2018	Andrzej Ferfecki		Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Trace
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC12A 1.80 - 2.20 SOLID 20/04/2018 00:00:00 25/04/2018 20:48:59 180424-31 17431911 TM048	02/05/2018	Barbara Urbanek-Wal sh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC12A 2.80 - 3.30 SOLID 20/04/2018 00:00:00 24/04/2018 18:20:21 180424-31 17431912 TM048	30/04/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

ALS

SDG: 180424-31 Client Reference: 62240712 Report Number: 457244 Location: Lowestoft Order Number: 62240712 Superseded Report:

(ALS)	Location:	Lowestoft		Order Number: 62240712			Superseded Report:				
		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC01B 0.80 - 1.20 SOLID 20/04/2018 00:00:00 25/04/2018 14:56:21 180424-31 17431884 TM048	02/05/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC01B 1.24 - 1.54 SOLID 20/04/2018 00:00:00 25/04/2018 14:57:45 180424-31 17431885 TM048	02/05/2018	Renata Bozhkov	•	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC09B 0.80 - 1.20 SOLID 19/04/2018 00:00:00 25/04/2018 08:25:40 180424-31 17431893 TM048	30/04/2018	James Richards		Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC09B 1.26 - 1.66 SOLID 19/04/2018 00:00:00 25/04/2018 08:30:37 180424-31 17431894 TM048	30/04/2018	Andrzej Ferfecki	•	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

REF: BS EN 12457/2

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICA	AL RESULTS
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Client Reference

Mass Sample taken (kg) 0.103

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)14.9Dry Matter Content (%)87

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431882

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC07

 Depth (m)
 1.60 - 2.00

Landfill Waste Acceptance Criteria Limits

Stable
Non-reactive

lazardous Waste

in Non-

Hazardous

457244

Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	<1
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	7.11
ANC to pH 6 (mol/kg)	0.0353
ANC to pH 4 (mol/kg)	0.0567

	Landfill	
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 1	0:1 eluate (mg/l)	A 2 10:1 conc ^r	leached (mg/kg)	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection	_		
Arsenic	0.00395	<0.0005	0.0395	<0.005	0.5	2	25
Barium	0.00297	<0.0002	0.0297	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	0.00228	<0.001	0.0228	<0.01	0.5	10	70
Copper	0.00212	<0.0003	0.0212	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	< 0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.00126	<0.0004	0.0126	<0.004	0.4	10	40
Lead	0.00204	<0.0002	0.0204	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00352	<0.001	0.0352	<0.01	4	50	200
Chloride	3.2	<2	32	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	26.7	<5	267	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	<3	<3	<30	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.33
Conductivity (µS/cm)	20.30
Temperature (°C)	19.90
Volume Leachant (Litres)	0.887

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation Mcerts Certification does not apply to leachates

17:17:48 22/05/2018

457244

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

84

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS Client Reference Mass Sample taken (kg) 0.107 REF: BS EN 12457/2 Lowestoft Natural Moisture Content (%) 19

Dry Matter Content (%)

Mass of dry sample (kg) 0.090 Particle Size <4mm >95%

Case Landfill Waste Acceptance
SDG 180424-31 Criteria Limits

 Lab Sample Number(s)
 17431883

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC07

 Depth (m)
 0.80 - 1.20

Inert Waste Landfill

Landfill

Landfill

Hazardous

Hazardous

Waste Landfill

Hazardous

Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	<1
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	7.08
ANC to pH 6 (mol/kg)	<0.03
ANC to pH 4 (mol/kg)	0.0389

	Landfill	
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 1	0:1 eluate (mg/l)	A 2 10:1 conc ^r	leached (mg/kg)				
Liuate Alialysis	Result Limit of Detection		Result Limit of Detection		using BS EN 12457-3 at L/S 10 l/kg			
Arsenic	0.00273	<0.0005	0.0273	<0.005	0.5	2	25	
Barium	0.00111	<0.0002	0.0111	<0.002	20	100	300	
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70	
Copper	0.000555	<0.0003	0.00555	<0.003	2	50	100	
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30	
Nickel	0.000599	<0.0004	0.00599	<0.004	0.4	10	40	
Lead	0.000669	<0.0002	0.00669	<0.002	0.5	10	50	
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5	
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
Zinc	0.00105	<0.001	0.0105	<0.01	4	50	200	
Chloride	2.7	<2	27	<20	800	15000	25000	
Fluoride	<0.5	<0.5	<5	<5	10	150	500	
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000	
Total Dissolved Solids	17.5	<5	175	<50	4000	60000	100000	
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
Dissolved Organic Carbon	<3	<3	<30	<30	500	800	1000	

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.93
Conductivity (µS/cm)	17.70
Temperature (°C)	20.00
Volume Leachant (Litres)	0.883

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation Mcerts Certification does not apply to leachates

17:17:48 22/05/2018

Hazardous

Waste Landfill

6 10

REF: BS EN 12457/2

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAI	L RESULTS
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Client Reference

Mass Sample taken (kg) 0.107

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)19Dry Matter Content (%)84

Inert Waste

Landfill

3

6

500 100

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431884

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC01B

 Depth (m)
 0.80 - 1.20

Landfill Waste Acceptance Criteria Limits

Stable
Non-reactive

lazardous Waste

in Non-

Hazardous Landfill

>6

457244

Solid Waste Analysis	Result		
Total Organic Carbon (%)	<0.2		
Loss on Ignition (%)	<0.7		
Sum of BTEX (mg/kg)	<0.024		
Sum of 7 PCBs (mg/kg)	<0.021		
Mineral Oil (mg/kg)	<1		
PAH Sum of 17 (mg/kg)	<10		
pH (pH Units)	8.28		
ANC to pH 6 (mol/kg)	0.0318		
ANC to pH 4 (mol/kg)	0.08		

ANC to pH 4 (mol/kg)	0.08				-	-	-
Eluate Analysis	C ₂ Conc ⁿ in 10	0:1 eluate (mg/l)	A 2 10:1 conc	ⁿ leached (mg/kg)	Limit values for compliance leaching te using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.0072	<0.0005	0.072	<0.005	0.5	2	25
Barium	0.00378	<0.0002	0.0378	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	0.00566	<0.001	0.0566	<0.01	0.5	10	70
Copper	0.0104	<0.0003	0.104	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.00504	<0.003	0.0504	<0.03	0.5	10	30
Nickel	0.00479	<0.0004	0.0479	<0.004	0.4	10	40
Lead	0.00525	<0.0002	0.0525	<0.002	0.5	10	50
Antimony	0.00145	<0.001	0.0145	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.0115	<0.001	0.115	<0.01	4	50	200
Chloride	11.2	<2	112	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	53.7	<5	537	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	7.03	<3	70.3	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.48
Conductivity (µS/cm)	66.20
Temperature (°C)	20.10
Volume Leachant (Litres)	0.883

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation Mcerts Certification does not apply to leachates

REF: BS EN 12457/2

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

Client Reference

Mass Sample taken (kg) 0.105

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)16.3Dry Matter Content (%)86

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431885

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC01B

 Depth (m)
 1.24 - 1.54

Landfill Waste Acceptance Criteria Limits

Stable

Non-reactive

lazardous Waste

in Non-

457244

Depth (m)	1.24 - 1.54
Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	<1
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	7.93
ANC to pH 6 (mol/kg)	0.0324
ANC to pH 4 (mol/kg)	0.0475

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A 2 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 I/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00551	<0.0005	0.0551	<0.005	0.5	2	25
Barium	0.00204	<0.0002	0.0204	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	0.00122	<0.001	0.0122	<0.01	0.5	10	70
Copper	0.00342	<0.0003	0.0342	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.00116	<0.0004	0.0116	<0.004	0.4	10	40
Lead	0.000973	<0.0002	0.00973	<0.002	0.5	10	50
Antimony	0.0011	<0.001	0.011	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00279	<0.001	0.0279	<0.01	4	50	200
Chloride	5.6	<2	56	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	40.5	<5	405	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	5.14	<3	51.4	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018					
pH (pH Units)	7.54					
Conductivity (µS/cm)	48.30					
Temperature (°C)	19.90					
Volume Leachant (Litres)	0.885					

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation Mcerts Certification does not apply to leachates

17:17:48 22/05/2018

REF: BS EN 12457/2

Hazardous

Waste Landfill

457244

lazardous Waste

in Non-

Hazardous

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS **Client Reference Site Location** Lowestoft Mass Sample taken (kg) 0.106

Mass of dry sample (kg) 0.090 Particle Size <4mm >95% **Natural Moisture Content (%)** 17.6 85 **Dry Matter Content (%)**

Landfill Waste Acceptance Case **Criteria Limits SDG** 180424-31 Lab Sample Number(s) 17431886 Stable **Sampled Date** 20-Apr-2018 Non-reactive

Customer Sample Ref. VC11 Depth (m) 1.80 - 2.20

Solid Waste Analysis	Result	
Total Organic Carbon (%)	<0.2	
Loss on Ignition (%)	<0.7	
Sum of BTEX (mg/kg)	<0.024	
Sum of 7 PCBs (mg/kg)	<0.021	
Mineral Oil (mg/kg)	<1	
PAH Sum of 17 (mg/kg)	<10	
pH (pH Units)	7.4	
ANC to pH 6 (mol/kg)	0.0522	
ANC to pH 4 (mol/kg)	0.0715	

Eluate Analysis	C ₂ Conc ⁿ in 1	n 10:1 eluate (mg/l) A2 10:1 conc ⁿ leached (mg/kg)			Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
_	Result	Limit of Detection	Result	Limit of Detection			, , ,
Arsenic	0.0069	<0.0005	0.069	<0.005	0.5	2	25
Barium	0.000795	<0.0002	0.00795	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00112	<0.0003	0.0112	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.000467	<0.0004	0.00467	<0.004	0.4	10	40
Lead	0.00074	<0.0002	0.0074	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	<0.001	<0.001	<0.01	<0.01	4	50	200
Chloride	3	<2	30	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	18.4	<5	184	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	<3	<3	<30	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018					
pH (pH Units)	7.92					
Conductivity (µS/cm)	20.30					
Temperature (°C)	20.10					
Volume Leachant (Litres)	0.884					

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation Mcerts Certification does not apply to leachates



SDG: 180424-31 Location: Lowestoft

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS		REF : BS EN 12457/2
Client Reference	Site Location	Lowestoft

0.122 Mass Sample taken (kg) Mass of dry sample (kg) 0.090 Particle Size <4mm >95% **Natural Moisture Content (%)** 35.8 73.7 **Dry Matter Content (%)**

Case **Landfill Waste Acceptance Criteria Limits SDG** 180424-31

Lab Sample Number(s) 17431887 **Sampled Date** 20-Apr-2018 **Customer Sample Ref.** VC11 Depth (m) 0.80 - 1.20

Stable Non-reactive **Inert Waste** Hazardous lazardous Waste Landfill Waste Landfill

in Non-

Hazardous

457244

Solid Waste Analysis	Result
Total Organic Carbon (%)	1.54
Loss on Ignition (%)	2.71
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	94
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	8.65
ANC to pH 6 (mol/kg)	0.185
ANC to pH 4 (mol/kg)	2.19

	Landfill	
3	5	6
3	J	U
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 1	0:1 eluate (mg/l)	A2 10:1 conc ⁿ leached (mg/kg) Limit values for compliance leaching tes using BS EN 12457-3 at L/S 10 l/kg				
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.0205	<0.0005	0.205	<0.005	0.5	2	25
Barium	0.0285	<0.0002	0.285	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	0.01	<0.001	0.1	<0.01	0.5	10	70
Copper	0.00849	<0.0003	0.0849	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.0158	<0.003	0.158	<0.03	0.5	10	30
Nickel	0.00656	<0.0004	0.0656	<0.004	0.4	10	40
Lead	0.00923	<0.0002	0.0923	<0.002	0.5	10	50
Antimony	0.00197	<0.001	0.0197	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.0191	<0.001	0.191	<0.01	4	50	200
Chloride	179	<2	1790	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	24.8	<2	248	<20	1000	20000	50000
Total Dissolved Solids	592	<5	5920	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	10.9	<3	109	<30	500	800	1000
		1					

Leach Test Information

Date Prepared	27-Apr-2018
pH (pH Units)	7.90
Conductivity (µS/cm)	765.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.868

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation Mcerts Certification does not apply to leachates



SDG: 180424-31 Location: Lowestoft

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS REF: BS EN 12457/2 Client Reference

Mass Sample taken (kg) 0.107 Mass of dry sample (kg) 0.090 Particle Size <4mm >95% **Site Location** Lowestoft **Natural Moisture Content (%)** 19 84 **Dry Matter Content (%)**

Landfill Waste Acceptance Case **Criteria Limits SDG** 180424-31 Lab Sample Number(s) 17431889

Sampled Date 20-Apr-2018 **Customer Sample Ref.** VC11 Depth (m) 2.20 - 2.50

Stable Non-reactive **Inert Waste** Hazardous lazardous Waste Landfill Waste Landfill

in Non-

Hazardous

457244

Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	<1
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	7.76
ANC to pH 6 (mol/kg)	<0.03
ANC to pH 4 (mol/kg)	0.0734

	Landfill	
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 1	0:1 eluate (mg/l)	A ₂ 10:1 conc ^r	leached (mg/kg)	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
-	Result	Limit of Detection	Result	Limit of Detection			, , 3
Arsenic	0.00653	<0.0005	0.0653	<0.005	0.5	2	25
Barium	0.00204	<0.0002	0.0204	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	0.00184	<0.001	0.0184	<0.01	0.5	10	70
Copper	0.000954	<0.0003	0.00954	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	< 0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.00135	<0.0004	0.0135	<0.004	0.4	10	40
Lead	0.00237	<0.0002	0.0237	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00292	<0.001	0.0292	<0.01	4	50	200
Chloride	2.8	<2	28	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	42.3	<5	423	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	4.78	<3	47.8	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.83
Conductivity (µS/cm)	18.60
Temperature (°C)	18.50
Volume Leachant (Litres)	0.883

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation Mcerts Certification does not apply to leachates

REF: BS EN 12457/2

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULT	S
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Client Reference

Mass Sample taken (kg) 0.103

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)14.9Dry Matter Content (%)87

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431890

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC10A

 Depth (m)
 1.80 - 2.20

Criteria Limits			
	Stable		

Non-reactive

lazardous Waste

in Non-

457244

Solid Waste Analysis	Result	
Total Organic Carbon (%)	<0.2	
Loss on Ignition (%)	0.728	
Sum of BTEX (mg/kg)	<0.024	
Sum of 7 PCBs (mg/kg)	<0.021	
Mineral Oil (mg/kg)	<1	
PAH Sum of 17 (mg/kg)	<10	
pH (pH Units)	8.22	
ANC to pH 6 (mol/kg)	<0.03	
ANC to pH 4 (mol/kg)	0.0449	

	Hazardous Landfill	
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.0149	<0.0005	0.149	<0.005	0.5	2	25
Barium	0.00126	<0.0002	0.0126	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.000387	<0.0003	0.00387	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	< 0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.000945	<0.0004	0.00945	<0.004	0.4	10	40
Lead	0.000573	<0.0002	0.00573	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	0.00132	<0.001	0.0132	<0.01	0.1	0.5	7
Zinc	<0.001	<0.001	<0.01	<0.01	4	50	200
Chloride	7.1	<2	71	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	46.9	<5	469	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	4.31	<3	43.1	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018			
pH (pH Units)	8.46			
Conductivity (µS/cm)	56.60			
Temperature (°C)	20.10			
Volume Leachant (Litres)	0.887			

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation Mcerts Certification does not apply to leachates

17:17:48 22/05/2018

REF: BS EN 12457/2

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS	
Client Reference	Site Location

Mass Sample taken (kg)0.180Mass of dry sample (kg)0.090Particle Size <4mm</th>>95%

Site LocationLowestoftNatural Moisture Content (%)100Dry Matter Content (%)49.9

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431891

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC10A

 Depth (m)
 0.80 - 1.20

Landfill Waste Acceptance Criteria Limits

Non-reactive

lazardous Waste

in Non-

Hazardous

457244

Solid Waste Analysis	Result	
Total Organic Carbon (%)	1.26	
Loss on Ignition (%)	-	
Sum of BTEX (mg/kg)	<0.024	
Sum of 7 PCBs (mg/kg)	<0.021	
Mineral Oil (mg/kg)	79.9	
PAH Sum of 17 (mg/kg)	<10	
pH (pH Units)	8.75	
ANC to pH 6 (mol/kg)	0.198	
ANC to pH 4 (mol/kg)	2.12	

	Landfill	
3	5	6
-	-	-
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 1	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A 2 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection				
Arsenic	0.0359	<0.0005	0.359	<0.005	0.5	2	25	
Barium	0.03	<0.0002	0.3	<0.002	20	100	300	
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
Chromium	0.00526	<0.001	0.0526	<0.01	0.5	10	70	
Copper	0.00971	<0.0003	0.0971	<0.003	2	50	100	
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
Molybdenum	0.033	<0.003	0.33	<0.03	0.5	10	30	
Nickel	0.00847	<0.0004	0.0847	<0.004	0.4	10	40	
Lead	0.00521	<0.0002	0.0521	<0.002	0.5	10	50	
Antimony	0.0036	<0.001	0.036	<0.01	0.06	0.7	5	
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
Zinc	0.0138	<0.001	0.138	<0.01	4	50	200	
Chloride	676	<10	6760	<100	800	15000	25000	
Fluoride	0.714	<0.5	7.14	<5	10	150	500	
Sulphate (soluble)	4	<2	40	<20	1000	20000	50000	
Total Dissolved Solids	1810	<5	18100	<50	4000	60000	100000	
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
Dissolved Organic Carbon	25.7	<3	257	<30	500	800	1000	
-								

Leach Test Information

Date Prepared	27-Apr-2018
pH (pH Units)	8.46
Conductivity (µS/cm)	2,710.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.810

Hazardous

Waste Landfill

10

REF: BS EN 12457/2

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANA	LYTICAL	RESU	LTS

Client Reference

Mass Sample taken (kg) 0.107

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location Lowestoft
Natural Moisture Content (%) 19
Dry Matter Content (%) 84

Inert Waste

Landfill

3

6

500 100

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431892

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC10A

 Depth (m)
 2.45 - 2.85

Landfill Waste Acceptance Criteria Limits

Non-reactive

lazardous Waste

in Non-

Hazardous Landfill

>6

Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	12.3
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	8.1
ANC to pH 6 (mol/kg)	<0.03
ANC to pH 4 (mol/kg)	0.0553

ANC to pH 4 (mol/kg)	0.0553				-	-	-
Eluate Analysis	C ₂ Conc ⁿ in 10	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg	
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00909	<0.0005	0.0909	<0.005	0.5	2	25
Barium	0.00207	<0.0002	0.0207	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	0.00201	<0.001	0.0201	<0.01	0.5	10	70
Copper	0.00271	<0.0003	0.0271	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.00304	<0.0004	0.0304	<0.004	0.4	10	40
Lead	0.00189	<0.0002	0.0189	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00393	<0.001	0.0393	<0.01	4	50	200
Chloride	5.4	<2	54	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	28	<5	280	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	4.72	<3	47.2	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.25
Conductivity (µS/cm)	32.20
Temperature (°C)	20.00
Volume Leachant (Litres)	0.883

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation Mcerts Certification does not apply to leachates

17:17:48 22/05/2018

457244

Landfill Waste Acceptance

Criteria Limits

CERTIFICATE OF ANALYSIS



Case

SDG

SDG: 180424-31 Location: Lowestoft

180424-31

Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RES	SULTS		REF: BS EN 12457/2
Client Reference		Site Location	Lowestoft
Mass Sample taken (kg)	0.123	Natural Moisture Content (%)	37
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	73
Particle Size <4mm	>95%		

Lab Sample Number(s) Sampled Date Customer Sample Ref. Depth (m)	17431893 19-Apr-2018 VC09B 0.80 - 1.20	-			Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill	Hazardous Waste Landfill
Solid Waste Analysis	Result					Landini	
Total Organic Carbon (%)	0.327				3	5	6
Loss on Ignition (%)	13.5				-	-	10
Sum of BTEX (mg/kg)	<0.024				6	-	-
Sum of 7 PCBs (mg/kg)	<0.021				1	-	-
Mineral Oil (mg/kg)	8.36				500	-	-
PAH Sum of 17 (mg/kg)	<10				100	-	-
pH (pH Units)	6.15				-	>6	-
ANC to pH 6 (mol/kg)	<0.03				-	-	-
ANC to pH 4 (mol/kg)	0.104				-	-	-
Eluate Analysis	C ₂ Conc ⁿ in 1	0:1 eluate (mg/l)	712	leached (mg/kg)	using BS	for compliance I EN 12457-3 at L	
Arsenic	0.00691	<0.0005	0.0691	<0.005	0.5	2	25

				or compliance leaching test N 12457-3 at L/S 10 l/kg			
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00691	<0.0005	0.0691	<0.005	0.5	2	25
Barium	0.00534	<0.0002	0.0534	<0.002	20	100	300
Cadmium	0.000341	<0.00008	0.00341	<0.0008	0.04	1	5
Chromium	0.00148	<0.001	0.0148	<0.01	0.5	10	70
Copper	0.00459	<0.0003	0.0459	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	< 0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.0025	<0.0004	0.025	<0.004	0.4	10	40
Lead	0.0013	<0.0002	0.013	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00957	<0.001	0.0957	<0.01	4	50	200
Chloride	16	<2	160	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	10.4	<2	104	<20	1000	20000	50000
Total Dissolved Solids	98	<5	980	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	5.93	<3	59.3	<30	500	800	1000

Leach Test Information

26-Apr-2018
8.09
124.00
19.80
0.867

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation Mcerts Certification does not apply to leachates

17:17:48 22/05/2018

457244

Stable

Non-reactive

CERTIFICATE OF ANALYSIS



ANC to pH 6 (mol/kg)

ANC to pH 4 (mol/kg)

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS REF : BS EN 12457/2

Client ReferenceSite LocationLowestoftMass Sample taken (kg)0.104Natural Moisture Content (%)16.3Mass of dry sample (kg)0.090Dry Matter Content (%)86

Particle Size <4mm >95%

Case

Landfill Waste Acceptance

SDG 180424-31

Criteria Limits

SDG 180424-31

Lab Sample Number(s) 17431894

Sampled Date 19-Apr-2018

Customer Sample Ref. VC09B

<0.03 0.0853

Inert Waste Hazardous azardous Waste Landfill Waste Landfill in Non-1.26 - 1.66 Depth (m) Hazardous Landfill Result Solid Waste Analysis < 0.2 Total Organic Carbon (%) 3 Loss on Ignition (%) <0.7 10 <0.024 Sum of BTEX (mg/kg) 6 Sum of 7 PCBs (mg/kg) <0.021 Mineral Oil (mg/kg) <1 500 PAH Sum of 17 (mg/kg) <10 100 pH (pH Units) 6 64 >6

C₂ Concⁿ in 10:1 eluate (mg/l) 10:1 concⁿ leached (mg/kg) Limit values for compliance leaching test **Eluate Analysis** using BS EN 12457-3 at L/S 10 l/kg Limit of Detection Limit of Detection Result Result <0.0005 <0.005 0.5 Arsenic 0.00342 0.0342 Barium 0.00451 <0.0002 0.0451 <0.002 20 100 300 <0.00008 <0.00008 <0.0008 <0.0008 0.04 Cadmium 5 10 0.5 70 Chromium 0.0145 < 0.001 0.145 < 0.01 0.00691 < 0.0003 0.0691 < 0.003 2 50 100 Copper Mercury Dissolved (CVAF) 0.01 0.2 < 0.00001 < 0.00001 < 0.0001 <0.0001 2 Molybdenum <0.003 <0.003 <0.03 0.5 10 30 < 0.03 40 Nickel 0.00552 < 0.0004 0.0552 < 0.004 0.4 10 Lead 0.00181 < 0.0002 0.0181 < 0.002 0.5 10 50 Antimony < 0.001 <0.001 < 0.01 <0.01 0.06 0.7 Selenium <0.001 <0.001 <0.01 <0.01 0.1 0.5 50 Zinc 0.00342 <0.001 0.0342 <0.01 4 200 800 57 15000 Chloride 5.7 <2 <20 25000 Fluoride < 0.5 <0.5 <5 <5 10 150 500 Sulphate (soluble) <2 <2 <20 <20 1000 20000 50000 **Total Dissolved Solids** 25 <5 250 <50 4000 60000 100000 Total Monohydric Phenols (W) <0.016 <0.016 <0.16 <0.16 Dissolved Organic Carbon 78 <30 500 800 1000 7.8 <3

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.67
Conductivity (µS/cm)	27.20
Temperature (°C)	20.20
Volume Leachant (Litres)	0.885

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS	REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.161

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)78.6Dry Matter Content (%)56

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431895

 Sampled Date
 19-Apr-2018

 Customer Sample Ref.
 VC05

 Depth (m)
 0.80 - 1.20

Landfill Waste Acceptance Criteria Limits

Stable
Non-reactive

lazardous Waste

in Non-

Hazardous

457244

Solid Waste Analysis	Result	
Total Organic Carbon (%)	1.56	
Loss on Ignition (%)	<0.7	
Sum of BTEX (mg/kg)	<0.024	
Sum of 7 PCBs (mg/kg)	<0.021	
Mineral Oil (mg/kg)	59.7	
PAH Sum of 17 (mg/kg)	<10	
pH (pH Units)	8.54	
ANC to pH 6 (mol/kg)	0.247	
ANC to pH 4 (mol/kg)	2.46	

	Landfill	
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 1	0:1 eluate (mg/l)	te (mg/l) A2 10:1 conc ⁿ leached (mg/kg)			Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection	J	3		
Arsenic	0.0213	<0.0005	0.213	<0.005	0.5	2	25	
Barium	0.0448	<0.0002	0.448	<0.002	20	100	300	
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70	
Copper	0.00429	<0.0003	0.0429	<0.003	2	50	100	
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
Molybdenum	0.0235	<0.003	0.235	<0.03	0.5	10	30	
Nickel	0.00447	<0.0004	0.0447	<0.004	0.4	10	40	
Lead	0.00261	<0.0002	0.0261	<0.002	0.5	10	50	
Antimony	0.00221	<0.001	0.0221	<0.01	0.06	0.7	5	
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
Zinc	0.00803	<0.001	0.0803	<0.01	4	50	200	
Chloride	1160	<20	11600	<200	800	15000	25000	
Fluoride	0.62	<0.5	6.2	<5	10	150	500	
Sulphate (soluble)	18.2	<2	182	<20	1000	20000	50000	
Total Dissolved Solids	2950	<20	29500	<200	4000	60000	100000	
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
Dissolved Organic Carbon	17.7	<3	177	<30	500	800	1000	

Leach Test Information

27-Apr-2018
8.13
3,740.00
19.70
0.829

457244

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.107

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)19Dry Matter Content (%)84

Case Landfill Waste Acceptance
SDG 180424-31 Criteria Limits
Lab Sample Number(s) 17431896

 Lab Sample Number(s)
 17431896

 Sampled Date
 19-Apr-2018

 Customer Sample Ref.
 VC05

 Depth (m)
 1.80 - 2.20

Stable
Non-reactive
Inert Waste
Landfill
in NonHazardous
Hazardous

Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	1.5
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	7.91
ANC to pH 6 (mol/kg)	<0.03
ANC to pH 4 (mol/kg)	0.0767

	Landfill	
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Flueto Analysia	C ₂ Conc ⁿ in 1	0:1 eluate (mg/l)	A 2 10:1 conc ^r	leached (mg/kg)		for compliance l		
Eluate Analysis	Result	Result Limit of Detection				using BS EN 12457-3 at L/S 10 l/kg		
Arsenic	0.00221	<0.0005	Result 0.0221	<0.005	0.5	2	25	
Barium	0.0163	<0.0002	0.163	<0.002	20	100	300	
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70	
Copper	0.00145	<0.0003	0.0145	<0.003	2	50	100	
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30	
Nickel	0.00211	<0.0004	0.0211	<0.004	0.4	10	40	
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50	
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5	
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
Zinc	0.00173	<0.001	0.0173	<0.01	4	50	200	
Chloride	113	<2	1130	<20	800	15000	25000	
Fluoride	<0.5	<0.5	<5	<5	10	150	500	
Sulphate (soluble)	4.1	<2	41	<20	1000	20000	50000	
Total Dissolved Solids	395	<5	3950	<50	4000	60000	100000	
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
Dissolved Organic Carbon	3.16	<3	31.6	<30	500	800	1000	
Dissolved Organic Carbon	3.10		31.0	100	300	000	10	

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.65
Conductivity (µS/cm)	518.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.883

REF: BS EN 12457/2

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESU	LTS
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Client Reference Mass Sample taken (kg) 0.107 Mass of dry sample (kg) 0.090 Particle Size <4mm >95% **Site Location** Lowestoft **Natural Moisture Content (%)** 19 84 **Dry Matter Content (%)**

Inert Waste

Landfill

Case **SDG** 180424-31 Lab Sample Number(s) 17431898 **Sampled Date** 19-Apr-2018 **Customer Sample Ref.** VC05 Depth (m) 2.53 - 2.93

Landfill Waste Acceptance Criteria Limits Stable Non-reactive

lazardous Waste

in Non-

Hazardous Landfill

457244

Solid Waste Analysis	Result
Total Companie Contract (0/)	<0.2
Total Organic Carbon (%)	~ 0.2
Loss on Ignition (%)	2.24
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	20.7
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	6.27
ANC to pH 6 (mol/kg)	<0.03
ANC to pH 4 (mol/kg)	0.0849

Iotal Organic Carbon (%)	<0.2				3	บ	O
Loss on Ignition (%)	2.24				-	-	10
Sum of BTEX (mg/kg)	<0.024				6	-	-
Sum of 7 PCBs (mg/kg)	<0.021				1	-	-
Mineral Oil (mg/kg)	20.7				500	-	-
PAH Sum of 17 (mg/kg)	<10				100	-	-
pH (pH Units)	6.27				-	>6	-
ANC to pH 6 (mol/kg)	<0.03				-	-	-
ANC to pH 4 (mol/kg)	0.0849				_	_	-
ANC to pri 4 (morkg)	0.0849				_		
Eluate Analysis		0:1 eluate (mg/l)	A 2 10:1 conc ⁿ	leached (mg/kg)	Limit values	for compliance l EN 12457-3 at L	
. (3/		D:1 eluate (mg/l) Limit of Detection	712	leached (mg/kg)	Limit values using BS I		
. (3/	C ₂ Conc ⁿ in 10	,	712		Limit values using BS I		
Eluate Analysis	C ₂ Conc ⁿ in 10	Limit of Detection	Result	Limit of Detection	Limit values using BS I	EN 12457-3 at L	/S 10 l/kg
Eluate Analysis Arsenic	C ₂ Conc ⁿ in 10 Result 0.0141	Limit of Detection <0.0005	Result 0.141	Limit of Detection <0.005	Limit values using BS I 0.5	EN 12457-3 at L	/ S 10 I /kg
Eluate Analysis Arsenic Barium	C ₂ Conc ⁿ in 10 Result 0.0141 0.0169	Limit of Detection <0.0005 <0.0002	Result 0.141 0.169	Limit of Detection <0.005 <0.002	Limit values using BS I	EN 12457-3 at L	/S 10 l/kg 25 300

	Result	Limit of Detection	Result	Limit of Detection		•	
Arsenic	0.0141	<0.0005	0.141	<0.005	0.5	2	25
Barium	0.0169	<0.0002	0.169	<0.002	20	100	300
Cadmium	0.0000959	<0.00008	0.000959	<0.0008	0.04	1	5
Chromium	0.00364	<0.001	0.0364	<0.01	0.5	10	70
Copper	0.0137	<0.0003	0.137	<0.003	2	50	100
Mercury Dissolved (CVAF)	0.0000439	<0.00001	0.000439	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.00557	<0.0004	0.0557	<0.004	0.4	10	40
Lead	0.0185	<0.0002	0.185	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	0.00178	<0.001	0.0178	<0.01	0.1	0.5	7
Zinc	0.109	<0.001	1.09	<0.01	4	50	200
Chloride	12.5	<2	125	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	5.8	<2	58	<20	1000	20000	50000
Total Dissolved Solids	33.2	<5	332	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	<3	<3	<30	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.64
Conductivity (µS/cm)	39.40
Temperature (°C)	19.40
Volume Leachant (Litres)	0.883

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation Mcerts Certification does not apply to leachates

17:17:48 22/05/2018

Hazardous

Waste Landfill

REF: BS EN 12457/2

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

Client Reference

Mass Sample taken (kg) 0.145

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)61.3Dry Matter Content (%)62

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431899

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC06

 Depth (m)
 0.80 - 1.20

Landfill Waste Acceptance Criteria Limits

Non-reactive

lazardous Waste

in Non-

Hazardous

457244

Solid Waste Analysis	Result
Total Organic Carbon (%)	1.68
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	62.4
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	8.48
ANC to pH 6 (mol/kg)	0.223
ANC to pH 4 (mol/kg)	2.13
	and the second second

Eluate Analysis	C ₂ Conc ⁿ in 10	0:1 eluate (mg/l)	A 2 10:1 conc ⁿ	leached (mg/kg)		for compliance le EN 12457-3 at L	
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.0169	<0.0005	0.169	<0.005	0.5	2	25
Barium	0.0192	<0.0002	0.192	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00289	<0.0003	0.0289	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.0209	<0.003	0.209	<0.03	0.5	10	30
Nickel	0.00464	<0.0004	0.0464	<0.004	0.4	10	40
Lead	0.000626	<0.0002	0.00626	<0.002	0.5	10	50
Antimony	0.00275	<0.001	0.0275	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00148	<0.001	0.0148	<0.01	4	50	200
Chloride	366	<4	3660	<40	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	1080	<5	10800	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	24.1	<3	241	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.32
Conductivity (µS/cm)	1,420.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.845

457244

Landfill Waste Acceptance

Criteria Limits

>6

CERTIFICATE OF ANALYSIS



Particle Size <4mm

Case

SDG

pH (pH Units)

ANC to pH 6 (mol/kg)

ANC to pH 4 (mol/kg)

SDG: 180424-31 Location: Lowestoft

>95%

180424-31

9.01

< 0.03

0.0908

Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RE	SULTS		REF : BS EN 12457/2
Client Reference		Site Location	Lowestoft
Mass Sample taken (kg)	0.092	Natural Moisture Content (%)	1.83
Mass of dry sample (kg)	0.090	Dry Matter Content (%)	98.2

Lab Sample Number(s) 17431900 Stable **Sampled Date** 20-Apr-2018 Non-reactive **Inert Waste** Hazardous **Customer Sample Ref.** VC06 lazardous Waste Landfill Waste Landfill in Non-Depth (m) 2.00 - 2.46Hazardous Landfill **Solid Waste Analysis** Result <0.2 3 Total Organic Carbon (%) Loss on Ignition (%) <0.7 10 Sum of BTEX (mg/kg) <0.024 6 Sum of 7 PCBs (mg/kg) <0.021 Mineral Oil (mg/kg) <1 500 PAH Sum of 17 (mg/kg) <10 100

Eluate Analysis	C ₂ Conc ⁿ in 1	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
-	Result	Limit of Detection	Result	Limit of Detection				
Arsenic	0.0112	<0.0005	0.112	<0.005	0.5	2	25	
Barium	0.00329	<0.0002	0.0329	<0.002	20	100	300	
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
Chromium	0.00325	<0.001	0.0325	<0.01	0.5	10	70	
Copper	0.00438	<0.0003	0.0438	<0.003	2	50	100	
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
Molybdenum	0.00388	<0.003	0.0388	<0.03	0.5	10	30	
Nickel	0.00158	<0.0004	0.0158	<0.004	0.4	10	40	
Lead	0.00156	<0.0002	0.0156	<0.002	0.5	10	50	
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5	
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
Zinc	0.00343	<0.001	0.0343	<0.01	4	50	200	
Chloride	12.7	<2	127	<20	800	15000	25000	
Fluoride	<0.5	<0.5	<5	<5	10	150	500	
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000	
Total Dissolved Solids	64.1	<5	641	<50	4000	60000	100000	
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
Dissolved Organic Carbon	6.23	<3	62.3	<30	500	800	1000	

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.87
Conductivity (µS/cm)	62.90
Temperature (°C)	19.90
Volume Leachant (Litres)	0.898

457244

Landfill Waste Acceptance Criteria Limits

CERTIFICATE OF ANALYSIS



Case

SDG

Lab Sample Number(s)

SDG: 180424-31 Location: Lowestoft

180424-31

17431901

Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS Client Reference Mass Sample taken (kg) 0.105 Mass of dry sample (kg) 0.090 Particle Size <4mm >95% REF: BS EN 12457/2 Lowestoft Natural Moisture Content (%) 16.3 Dry Matter Content (%) 86

e mple Ref.	20-Apr-2018 VC08 1.00 - 1.45	Inert Waste Landfill	Stable Non-reactive Hazardous Waste in Non- Hazardous Landfill	,
alysis	Result		Zanami	
	<0.2	3	5	
	<0.7	-	-	
	<0.024	6	-	
	<0.021	1	-	
	<1	500	-	
	<10	100	-	
	8.56	-	>6	
	< 0.03	-	-	
	0.00			

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00362	<0.0005	0.0362	<0.005	0.5	2	25
Barium	0.00512	<0.0002	0.0512	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	0.00477	<0.001	0.0477	<0.01	0.5	10	70
Copper	0.000852	<0.0003	0.00852	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.00281	<0.0004	0.0281	<0.004	0.4	10	40
Lead	0.000305	<0.0002	0.00305	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	<0.001	<0.001	<0.01	<0.01	4	50	200
Chloride	74.5	<2	745	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	10.3	<2	103	<20	1000	20000	50000
Total Dissolved Solids	224	<5	2240	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	<3	<3	<30	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.10
Conductivity (µS/cm)	285.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.885

Hazardous

Waste Landfill

6 10

REF: BS EN 12457/2

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

Landfill

3

6

500 100

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

Client Reference

Mass Sample taken (kg) 0.108

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)20.5Dry Matter Content (%)83

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431902

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC08

 Depth (m)
 0.60 - 1.00

Landfill Waste Acceptance Criteria Limits

Stable
Non-reactive

lazardous Waste

in Non-

Hazardous Landfill

>6

457244

Solid Waste Analysis	Result		
Total Organic Carbon (%)	<0.2		
Loss on Ignition (%)	<0.7		
Sum of BTEX (mg/kg)	<0.024		
Sum of 7 PCBs (mg/kg)	<0.021		
Mineral Oil (mg/kg)	1.16		
PAH Sum of 17 (mg/kg)	<10		
pH (pH Units)	8.97		
ANC to pH 6 (mol/kg)	0.0375		
ANC to pH 4 (mol/kg)	0.059		

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg			
	Result	Result Limit of Detection		Result Limit of Detection		using B3 LN 12437-3 at L/3 10 1/kg		
Arsenic	0.00823	<0.0005	0.0823	<0.005	0.5	2	25	
Barium	0.00549	<0.0002	0.0549	<0.002	20	100	300	
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70	
Copper	0.000726	<0.0003	0.00726	<0.003	2	50	100	
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
Molybdenum	0.00425	<0.003	0.0425	<0.03	0.5	10	30	
Nickel	0.000502	<0.0004	0.00502	<0.004	0.4	10	40	
Lead	0.000444	<0.0002	0.00444	<0.002	0.5	10	50	
Antimony	0.00177	<0.001	0.0177	<0.01	0.06	0.7	5	
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
Zinc	<0.001	<0.001	<0.01	<0.01	4	50	200	
Chloride	56	<2	560	<20	800	15000	25000	
Fluoride	<0.5	<0.5	<5	<5	10	150	500	
Sulphate (soluble)	4.4	<2	44	<20	1000	20000	50000	
Total Dissolved Solids	183	<5	1830	<50	4000	60000	100000	
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
Dissolved Organic Carbon	4.03	<3	40.3	<30	500	800	1000	

Leach Test Information

26-Apr-2018
8.18
239.00
20.20
0.882

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS Client Reference Site Location Lowestoft

Mass Sample taken (kg) 0.167 Natural Moisture Content (%) 85.2

Mass of dry sample (kg) 0.090 Dry Matter Content (%) 54

Particle Size <4mm >95%

Case Landfill Waste Acceptance SDG 180424-31 Criteria Limits

 Lab Sample Number(s)
 17431903

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC03

 Depth (m)
 0.80 - 1.20

Inert Waste Landfill Stable Non-reactive Hazardous Waste Landfill Waste Landfill Waste Landfill

Hazardous

457244

Solid Waste Analysis	Result
Total Organic Carbon (%)	1.37
Loss on Ignition (%)	6.91
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	56.1
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	8.62
ANC to pH 6 (mol/kg)	0.227
ANC to pH 4 (mol/kg)	2.02

Eluate Analysis	C ₂ Conc ⁿ in 1	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection				
Arsenic	0.035	<0.0005	0.35	<0.005	0.5	2	25	
Barium	0.0286	<0.0002	0.286	<0.002	20	100	300	
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70	
Copper	0.00283	<0.0003	0.0283	<0.003	2	50	100	
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
Molybdenum	0.021	<0.003	0.21	<0.03	0.5	10	30	
Nickel	0.00298	<0.0004	0.0298	<0.004	0.4	10	40	
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50	
Antimony	0.00127	<0.001	0.0127	<0.01	0.06	0.7	5	
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
Zinc	0.0056	<0.001	0.056	<0.01	4	50	200	
Chloride	588	<10	5880	<100	800	15000	25000	
Fluoride	0.614	<0.5	6.14	<5	10	150	500	
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000	
Total Dissolved Solids	1610	<5	16100	<50	4000	60000	100000	
Total Monohydric Phenols (W)	0.02	<0.016	0.2	<0.16	1	-	-	
Dissolved Organic Carbon	22	<3	220	<30	500	800	1000	

Leach Test Information

Date Prepared	27-Apr-2018
pH (pH Units)	8.30
Conductivity (µS/cm)	2,290.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.823

REF: BS EN 12457/2

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

Client Reference

Mass Sample taken (kg) 0.103

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location Lowestoft
Natural Moisture Content (%) 14.9
Dry Matter Content (%) 87

Inert Waste

Landfill

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431904

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC03

 Depth (m)
 3.39 - 3.79

_	Criteria Limits		
	Stable Non-reactive		

Hazardous Waste

in Non-

Landfill Wests Assentance

457244

Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	<1
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	5.78
ANC to pH 6 (mol/kg)	<0.03
ANC to pH 4 (mol/kg)	0.0866

	Hazardous Landfill	
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 10	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A2 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg	
-	Result	Result Limit of Detection		Limit of Detection			,, 5
Arsenic	0.00688	<0.0005	0.0688	<0.005	0.5	2	25
Barium	0.112	<0.0002	1.12	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	0.00231	<0.001	0.0231	<0.01	0.5	10	70
Copper	0.00263	<0.0003	0.0263	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.00228	<0.0004	0.0228	<0.004	0.4	10	40
Lead	0.00167	<0.0002	0.0167	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	0.00362	<0.001	0.0362	<0.01	0.1	0.5	7
Zinc	0.0148	<0.001	0.148	<0.01	4	50	200
Chloride	7.3	<2	73	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	49.3	<5	493	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	8.36	<3	83.6	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.42
Conductivity (µS/cm)	44.70
Temperature (°C)	20.10
Volume Leachant (Litres)	0.887

457244

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft

Client Reference: 62240712 Order Number: 62240712 Report Number: **Superseded Report:**

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS **REF: BS EN 12457/2**

Client Reference Mass Sample taken (kg) 0.117 Mass of dry sample (kg) 0.090 Particle Size <4mm >95% **Site Location** Lowestoft 29.9 **Natural Moisture Content (%) Dry Matter Content (%)** 77

Case **Landfill Waste Acceptance Criteria Limits SDG** 180424-31 Lab Sample Number(s) 17431905 Stable Non-reactive

Sampled Date 20-Apr-2018 **Customer Sample Ref.** VC03 Depth (m) 2.80 - 3.20

Solid Waste Analysis

Result

Inert Waste Landfill	Hazardous Waste in Non- Hazardous Landfill	Hazardous Waste Landfill
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-

0.414 Total Organic Carbon (%) Loss on Ignition (%) 9.71 <0.024 Sum of BTEX (mg/kg) Sum of 7 PCBs (mg/kg) <0.021 Mineral Oil (mg/kg) 7.57 PAH Sum of 17 (mg/kg) <10 pH (pH Units) 6 26 ANC to pH 6 (mol/kg) < 0.03 ANC to pH 4 (mol/kg) 0.0825 C₂ Concⁿ in 10:1 eluate (mg/l) 10:1 concⁿ leached (mg/kg) Limit values for compliance leaching test **Eluate Analysis** using BS EN 12457-3 at L/S 10 l/kg Limit of Detection Limit of Detection Result Result 0.00378 <0.0005 <0.005 Arsenic 0.0378

Barium	0.0096	<0.0002	0.096	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.000823	<0.0003	0.00823	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.00775	<0.0004	0.0775	<0.004	0.4	10	40
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00193	<0.001	0.0193	<0.01	4	50	200
Chloride	8.8	<2	88	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	3.7	<2	37	<20	1000	20000	50000
Total Dissolved Solids	128	<5	1280	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	3.83	<3	38.3	<30	500	800	1000

Leach Test Information

	-
Date Prepared	26-Apr-2018
pH (pH Units)	7.31
Conductivity (µS/cm)	162.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.873

EN 12457/2

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS	REF : BS	
Olland Defenses	014 - 1 41	1

Client Reference Site Location

Mass Sample taken (kg) 0.113 Natural Moisture Co

Mass of dry sample (kg) 0.090 Dry Matter Content

Particle Size <4mm >95%

Site Location Lowestoft

Natural Moisture Content (%) 25

Dry Matter Content (%) 80

Case Landfill Waste Acceptance SDG 180424-31 Criteria Limits

 Lab Sample Number(s)
 17431906

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC03

 Depth (m)
 1.80 - 2.20

Stable
Non-reactive
Hazardous Waste
Landfill
NonIn NonWaste Landfill

Hazardous

457244

Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	1.04
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	3.87
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	8.08
ANC to pH 6 (mol/kg)	<0.03
ANC to pH 4 (mol/kg)	0.0787

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection		•	
Arsenic	0.00436	<0.0005	0.0436	<0.005	0.5	2	25
Barium	0.00322	<0.0002	0.0322	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00135	<0.0003	0.0135	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.000709	<0.0004	0.00709	<0.004	0.4	10	40
Lead	0.000574	<0.0002	0.00574	<0.002	0.5	10	50
Antimony	0.00133	<0.001	0.0133	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00113	<0.001	0.0113	<0.01	4	50	200
Chloride	15	<2	150	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	78.5	<5	785	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	3.15	<3	31.5	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.35
Conductivity (µS/cm)	100.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.878

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS REF : BS EN 12457/2

Client ReferenceSite LocationLowestoftMass Sample taken (kg)0.103Natural Moisture Content (%)14.9Mass of dry sample (kg)0.090Dry Matter Content (%)87

Particle Size <4mm >95%

Case Landfill Waste Acceptance

 SDG
 180424-31

 Lab Sample Number(s)
 17431907

 Sampled Date
 19-Apr-2018

 Customer Sample Ref.
 VC04

 Depth (m)
 3.60 - 4.00

Criteria Limits

Stable
Non-reactive
Hazardous Waste
Landfill
in NonWaste Landfill

Hazardous

457244

Solid Waste Analysis	Result	
Total Organic Carbon (%)	<0.2	
Loss on Ignition (%)	<0.7	
Sum of BTEX (mg/kg)	<0.024	
Sum of 7 PCBs (mg/kg)	<0.021	
Mineral Oil (mg/kg)	<1	
PAH Sum of 17 (mg/kg)	<10	
pH (pH Units)	6.18	
ANC to pH 6 (mol/kg)	<0.03	
ANC to pH 4 (mol/kg)	0.0635	

	Lanatili	
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 1	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection				
Arsenic	0.00381	<0.0005	0.0381	<0.005	0.5	2	25	
Barium	0.0033	<0.0002	0.033	<0.002	20	100	300	
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
Chromium	0.00184	<0.001	0.0184	<0.01	0.5	10	70	
Copper	0.00536	<0.0003	0.0536	<0.003	2	50	100	
Mercury Dissolved (CVAF)	0.0000123	<0.00001	0.000123	<0.0001	0.01	0.2	2	
Molybdenum	< 0.003	<0.003	<0.03	<0.03	0.5	10	30	
Nickel	0.00115	<0.0004	0.0115	<0.004	0.4	10	40	
Lead	0.00249	<0.0002	0.0249	<0.002	0.5	10	50	
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5	
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
Zinc	0.00295	<0.001	0.0295	<0.01	4	50	200	
Chloride	14.1	<2	141	<20	800	15000	25000	
Fluoride	<0.5	<0.5	<5	<5	10	150	500	
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000	
Total Dissolved Solids	66.8	<5	668	<50	4000	60000	100000	
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
Dissolved Organic Carbon	3.23	<3	32.3	<30	500	800	1000	
-								

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.80
Conductivity (µS/cm)	53.60
Temperature (°C)	20.00
Volume Leachant (Litres)	0.887

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

81

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS Client Reference Mass Sample taken (kg) 0.111 REF: BS EN 12457/2 Lowestoft Natural Moisture Content (%) 23.5

Dry Matter Content (%)

Mass of dry sample (kg) 0.090 Particle Size <4mm >95%

Case Landfill Waste Acceptance SDG 180424-31 Criteria Limits

 Lab Sample Number(s)
 17431908

 Sampled Date
 19-Apr-2018

 Customer Sample Ref.
 VC04

 Depth (m)
 0.80 - 1.20

204 80 - 1.20 Criteria Limits

Stable
Non-reactive
Hazardous Waste

Hazardous

in Non-

Hazardous

457244

Solid Waste Analysis	Result	
Total Organic Carbon (%)	<0.2	
Loss on Ignition (%)	1.96	
Sum of BTEX (mg/kg)	<0.024	
Sum of 7 PCBs (mg/kg)	<0.021	
Mineral Oil (mg/kg)	5.09	
PAH Sum of 17 (mg/kg)	<10	
pH (pH Units)	8.69	
ANC to pH 6 (mol/kg)	0.0537	
ANC to pH 4 (mol/kg)	0.0799	

Eluate Analysis	C ₂ Conc ⁿ in 1	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg	
	Result	Limit of Detection	Result	Limit of Detection	_		
Arsenic	0.00379	<0.0005	0.0379	<0.005	0.5	2	25
Barium	0.00958	<0.0002	0.0958	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00198	<0.0003	0.0198	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.00881	<0.003	0.0881	<0.03	0.5	10	30
Nickel	0.00177	<0.0004	0.0177	<0.004	0.4	10	40
Lead	0.001	<0.0002	0.01	<0.002	0.5	10	50
Antimony	0.00168	<0.001	0.0168	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	<0.001	<0.001	<0.01	<0.01	4	50	200
Chloride	45.6	<2	456	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	2.3	<2	23	<20	1000	20000	50000
Total Dissolved Solids	172	<5	1720	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	4.23	<3	42.3	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.08
Conductivity (µS/cm)	218.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.879

Hazardous

REF: BS EN 12457/2

457244

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANAI	YTICAL F	RESULTS
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Client Reference

Mass Sample taken (kg) 0.106

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location Lowestoft
Natural Moisture Content (%) 17.6

Dry Matter Content (%) 85

Case
SDG 180424-31

Lab Sample Number(s) 17431909
Sampled Pate 10 Apr 2018
Stable

 Lab Sample Number(s)
 17431909

 Sampled Date
 19-Apr-2018

 Customer Sample Ref.
 VC04

 Depth (m)
 1.80 - 2.20

Solid Waste Analysis

Total Organic Carbon (%) Loss on Ignition (%)

Sum of BTEX (mg/kg) Sum of 7 PCBs (mg/kg)

PAH Sum of 17 (mg/kg)

ANC to pH 6 (mol/kg)

Mineral Oil (mg/kg)

pH (pH Units)

Result

< 0.2

<0.7 <0.024

<0.021

<1

<10

8 42

<0.03

Landfill	in Non- Hazardous Landfill	Waste Landfill
3	5	6
	U	
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-

Non-reactive

ardoue Waete

0.0369 ANC to pH 4 (mol/kg) C₂ Concⁿ in 10:1 eluate (mg/l) 10:1 concⁿ leached (mg/kg) Limit values for compliance leaching test **Eluate Analysis** using BS EN 12457-3 at L/S 10 l/kg Limit of Detection Limit of Detection Result Result <0.0005 <0.005 0.5 Arsenic 0.00634 0.0634 Barium 0.00406 <0.0002 0.0406 <0.002 20 100 300 0.000131 <0.00008 <0.0008 0.04 Cadmium 0.00131 5 10 70 Chromium 0.0107 < 0.001 0.107 < 0.01 0.5 0.00943 < 0.0003 0.0943 < 0.003 2 50 100 Copper Mercury Dissolved (CVAF) 0.01 0.2 < 0.00001 < 0.00001 < 0.0001 <0.0001 2 10 30 Molybdenum < 0.003 < 0.003 < 0.03 < 0.03 0.5 40 Nickel 0.00639 < 0.0004 0.0639 < 0.004 0.4 10 0.00739 < 0.0002 0.0739 < 0.002 0.5 10 50 Lead Antimony < 0.001 <0.001 < 0.01 <0.01 0.06 Selenium <0.001 <0.001 <0.01 <0.01 0.1 0.5 50 Zinc 0.0192 <0.001 0.192 <0.01 4 200 800 180 15000 Chloride 18 <2 <20 25000 Fluoride < 0.5 <0.5 <5 <5 10 150 500 Sulphate (soluble) <2 <2 <20 <20 1000 20000 50000 **Total Dissolved Solids** 60.7 <5 607 <50 4000 60000 100000 Total Monohydric Phenols (W) <0.016 <0.016 <0.16 <0.16 71.6 <30 500 800 1000 Dissolved Organic Carbon 7.16 <3

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.09
Conductivity (µS/cm)	73.60
Temperature (°C)	18.40
Volume Leachant (Litres)	0.884

REF: BS EN 12457/2

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALY	TICAL	RESU	JLTS
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Client Reference

Mass Sample taken (kg) 0.103

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)14.9Dry Matter Content (%)87

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431910

 Sampled Date
 19-Apr-2018

 Customer Sample Ref.
 VC04

 Depth (m)
 2.80 - 3.20

Landfill Waste Acceptance Criteria Limits

Stable

Non-reactive

lazardous Waste

in Non-

457244

Depth (m)	2.60 - 3.20
Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	0.854
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	<1
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	7.49
ANC to pH 6 (mol/kg)	0.0388
ANC to pH 4 (mol/kg)	0.0605

Eluate Analysis	C ₂ Conc ⁿ in 1	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection				
Arsenic	0.00843	<0.0005	0.0843	<0.005	0.5	2	25	
Barium	0.00643	<0.0002	0.0643	<0.002	20	100	300	
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70	
Copper	0.00144	<0.0003	0.0144	<0.003	2	50	100	
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30	
Nickel	0.00581	<0.0004	0.0581	<0.004	0.4	10	40	
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50	
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5	
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
Zinc	0.00456	<0.001	0.0456	<0.01	4	50	200	
Chloride	28.1	<2	281	<20	800	15000	25000	
Fluoride	<0.5	<0.5	<5	<5	10	150	500	
Sulphate (soluble)	2.9	<2	29	<20	1000	20000	50000	
Total Dissolved Solids	163	<5	1630	<50	4000	60000	100000	
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
Dissolved Organic Carbon	4.52	<3	45.2	<30	500	800	1000	

Leach Test Information

Date Prepared	26-Apr-2018					
pH (pH Units)	8.41					
Conductivity (µS/cm)	213.00					
Temperature (°C)	20.00					
Volume Leachant (Litres)	0.887					

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation Mcerts Certification does not apply to leachates

17:17:48 22/05/2018

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS Client Reference Site Location Lowestoft

Mass Sample taken (kg) 0.102
Mass of dry sample (kg) 0.090
Particle Size <4mm >95%

Natural Moisture Content (%) 13.6

Dry Matter Content (%) 88

Case
SDG 180424-31

Lab Sample Number(s) 17431911
Sampled Date 20-Apr-2018

Landfill Waste Acceptance Criteria Limits

Stable Number(s) Stable Sta

 Customer Sample Ref.
 VC12A

 Depth (m)
 1.80 - 2.20

Inert Waste Landfill Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill

457244

Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	6.49
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	8.77
ANC to pH 6 (mol/kg)	0.0344
ANC to pH 4 (mol/kg)	0.0497

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 I/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00534	<0.0005	0.0534	<0.005	0.5	2	25
Barium	0.00226	<0.0002	0.0226	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.000939	<0.0003	0.00939	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.000878	<0.0004	0.00878	<0.004	0.4	10	40
_ead	0.00106	<0.0002	0.0106	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	0.00119	<0.001	0.0119	<0.01	0.1	0.5	7
Zinc	0.00123	<0.001	0.0123	<0.01	4	50	200
Chloride	13.6	<2	136	<20	800	15000	25000
-luoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	60.8	<5	608	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	4.95	<3	49.5	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.86
Conductivity (µS/cm)	74.20
Temperature (°C)	20.10
Volume Leachant (Litres)	0.888

Hazardana

457244

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft

Client Reference: 62240712 Order Number: 62240712 Report Number: **Superseded Report:**

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS **REF: BS EN 12457/2**

Client Reference Mass Sample taken (kg) 0.110 Mass of dry sample (kg) 0.090 Particle Size <4mm >95% **Site Location** Lowestoft **Natural Moisture Content (%)** 22 82 **Dry Matter Content (%)**

Case **Landfill Waste Acceptance Criteria Limits SDG** 180424-31 Lab Sample Number(s) 17431912 Stable Sampled Date 20-Apr-2018

Customer Sample Ref. VC12A Depth (m) 2.80 - 3.30

Solid Waste Analysis

Result

Landfill	Hazardous Waste in Non- Hazardous Landfill	Waste Landfill
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-

Non-reactive

<0.2 Total Organic Carbon (%) Loss on Ignition (%) 1.54 <0.024 Sum of BTEX (mg/kg) Sum of 7 PCBs (mg/kg) <0.021 Mineral Oil (mg/kg) 6.2 PAH Sum of 17 (mg/kg) <10 pH (pH Units) 8 68 ANC to pH 6 (mol/kg) 0.0407 ANC to pH 4 (mol/kg) 0.0616 C₂ Concⁿ in 10:1 eluate (mg/l) 10:1 concⁿ leached (mg/kg) Limit values for compliance leaching test **Eluate Analysis** using BS EN 12457-3 at L/S 10 l/kg Limit of Detection Limit of Detection Result Result

Arsenic	0.00959	<0.0005	0.0959	<0.005	0.5	2	25
Barium	0.0028	<0.0002	0.028	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00494	<0.0003	0.0494	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.00903	<0.003	0.0903	<0.03	0.5	10	30
Nickel	0.00217	<0.0004	0.0217	<0.004	0.4	10	40
Lead	0.0016	<0.0002	0.016	<0.002	0.5	10	50
Antimony	0.00549	<0.001	0.0549	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00153	<0.001	0.0153	<0.01	4	50	200
Chloride	13.2	<2	132	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	53.7	<5	537	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	5.85	<3	58.5	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018					
pH (pH Units)	8.22					
Conductivity (µS/cm)	66.20					
Temperature (°C)	20.00					
Volume Leachant (Litres)	0.880					

Hazardous

Waste Landfill

REF: BS EN 12457/2

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

Client Reference

Mass Sample taken (kg) 0.155

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)72.4Dry Matter Content (%)58

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431913

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC12A

 Depth (m)
 0.80 - 1.20

Landfill Waste Acceptance Criteria Limits				
	Stable			

Hazardous Waste

in Non-

Hazardous

457244

Solid Waste Analysis	Result	
Total Organic Carbon (%)	1.55	
Loss on Ignition (%)	<0.7	
Sum of BTEX (mg/kg)	<0.024	
Sum of 7 PCBs (mg/kg)	<0.021	
Mineral Oil (mg/kg)	184	
PAH Sum of 17 (mg/kg)	<10	
pH (pH Units)	8.55	
ANC to pH 6 (mol/kg)	0.177	
ANC to pH 4 (mol/kg)	1.74	

	Landfill	
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 1	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg	
	Result	Limit of Detection	Result	Limit of Detection	_		
Arsenic	0.0438	<0.0005	0.438	<0.005	0.5	2	25
Barium	0.0161	<0.0002	0.161	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	0.00503	<0.001	0.0503	<0.01	0.5	10	70
Copper	0.0017	<0.0003	0.017	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.0239	< 0.003	0.239	<0.03	0.5	10	30
Nickel	0.00496	<0.0004	0.0496	<0.004	0.4	10	40
Lead	0.000316	<0.0002	0.00316	<0.002	0.5	10	50
Antimony	0.0029	<0.001	0.029	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00533	<0.001	0.0533	<0.01	4	50	200
Chloride	379	<4	3790	<40	800	15000	25000
Fluoride	0.516	<0.5	5.16	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	1120	<5	11200	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	20	<3	200	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.61
Conductivity (µS/cm)	1,440.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.835

Hazardous

Waste Landfill

REF: BS EN 12457/2

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS	

Client Reference

Mass Sample taken (kg) 0.115

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)28.2Dry Matter Content (%)78

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431914

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC02

 Depth (m)
 3.20 - 3.63

Landfill Waste Acceptance Criteria Limits

Stable

Non-reactive

lazardous Waste

in Non-

457244

Depth (m)	3.20 - 3.63
Solid Waste Analysis	Result
otal Organic Carbon (%)	0.552
oss on Ignition (%)	11.5
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	7.47
PAH Sum of 17 (mg/kg)	<10
oH (pH Units)	6.73
ANC to pH 6 (mol/kg)	< 0.03
ANC to pH 4 (mol/kg)	0.0986

Eluate Analysis	C ₂ Conc ⁿ in 1	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg	
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00242	<0.0005	0.0242	<0.005	0.5	2	25
Barium	0.0133	<0.0002	0.133	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00318	<0.0003	0.0318	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.00884	<0.0004	0.0884	<0.004	0.4	10	40
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00809	<0.001	0.0809	<0.01	4	50	200
Chloride	21.1	<2	211	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	4.5	<2	45	<20	1000	20000	50000
Total Dissolved Solids	184	<5	1840	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	4.17	<3	41.7	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.38
Conductivity (µS/cm)	243.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.875

REF: BS EN 12457/2

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULT	ΓS
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Client Reference

Mass Sample taken (kg) 0.123

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location Lowestoft
Natural Moisture Content (%) 37
Dry Matter Content (%) 73

Inert Waste

Landfill

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431915

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC02

 Depth (m)
 2.80 - 3.20

Landfill Waste Acceptance Criteria Limits

Stable
Non-reactive

lazardous Waste

in Non-

Hazardous

457244

Solid Waste Analysis	Result		
Total Organic Carbon (%)	0.78		
Loss on Ignition (%)	5.27		
Sum of BTEX (mg/kg)	<0.024		
Sum of 7 PCBs (mg/kg)	<0.021		
Mineral Oil (mg/kg)	19.2		
PAH Sum of 17 (mg/kg)	<10		
pH (pH Units)	5.77		
ANC to pH 6 (mol/kg)	< 0.03		
ANC to pH 4 (mol/kg)	0.101		

	Landfill	
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 1	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg	
<u> </u>	Result	Limit of Detection	Result	Limit of Detection			, , 3
Arsenic	0.0136	<0.0005	0.136	<0.005	0.5	2	25
Barium	0.0104	<0.0002	0.104	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	0.0052	<0.001	0.052	<0.01	0.5	10	70
Copper	0.00656	<0.0003	0.0656	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.00272	<0.0004	0.0272	<0.004	0.4	10	40
Lead	0.00184	<0.0002	0.0184	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00957	<0.001	0.0957	<0.01	4	50	200
Chloride	21.3	<2	213	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	6.5	<2	65	<20	1000	20000	50000
Total Dissolved Solids	92.2	<5	922	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	5.16	<3	51.6	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.20
Conductivity (µS/cm)	117.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.867

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation Mcerts Certification does not apply to leachates

17:17:48 22/05/2018

457244

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.105

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)16.3Dry Matter Content (%)86

Case Landfill Waste Acceptance SDG 180424-31 Criteria Limits

Lab Sample Number(s)17431916Sampled Date20-Apr-2018Customer Sample Ref.VC02Depth (m)1.80 - 2.20

Inert Waste Landfill

Landfill

Stable
Non-reactive
Hazardous Waste
in NonHazardous
Landfill

Hazardous
Waste Landfill

Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	<1
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	7.32
ANC to pH 6 (mol/kg)	<0.03
ANC to pH 4 (mol/kg)	0.0613

ka)	l imit values	for compliance le	aching test
	-	-	-
	-	-	-
	-	>6	-
	100	-	-
	500	-	-
	1	-	-
	6	-	-
	-	-	10

Eluate Analysis	C ₂ Conc ⁿ in 1	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection	_			
Arsenic	0.0109	<0.0005	0.109	<0.005	0.5	2	25	
Barium	0.00347	<0.0002	0.0347	<0.002	20	100	300	
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70	
Copper	0.00225	<0.0003	0.0225	<0.003	2	50	100	
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
Molybdenum	0.0113	< 0.003	0.113	<0.03	0.5	10	30	
Nickel	0.00104	<0.0004	0.0104	<0.004	0.4	10	40	
Lead	0.000231	<0.0002	0.00231	<0.002	0.5	10	50	
Antimony	0.00281	<0.001	0.0281	<0.01	0.06	0.7	5	
Selenium	0.00127	<0.001	0.0127	<0.01	0.1	0.5	7	
Zinc	<0.001	<0.001	<0.01	<0.01	4	50	200	
Chloride	23.2	<2	232	<20	800	15000	25000	
Fluoride	<0.5	<0.5	<5	<5	10	150	500	
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000	
Total Dissolved Solids	138	<5	1380	<50	4000	60000	100000	
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
Dissolved Organic Carbon	6.49	<3	64.9	<30	500	800	1000	

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.92
Conductivity (µS/cm)	157.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.885

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable Stated limits are for guidance only and ALS Environmental cannot be held responsible for any discrepancies with current legislation Mcerts Certification does not apply to leachates

17:17:48 22/05/2018

REF: BS EN 12457/2

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULT	S
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Client Reference

Mass Sample taken (kg) 0.101

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)12.4Dry Matter Content (%)89

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431917

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC02

 Depth (m)
 0.80 - 1.20

Landfill Waste Acceptance Criteria Limits

Stable

Non-reactive

lazardous Waste

in Non-

457244

Depth (m)	0.80 - 1.20
Solid Waste Analysis	Result
Total Organic Carbon (%)	0.235
Loss on Ignition (%)	6.24
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	13.2
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	8.5
ANC to pH 6 (mol/kg)	0.0689
ANC to pH 4 (mol/kg)	0.157

Eluate Analysis	C ₂ Conc ⁿ in 1	0:1 eluate (mg/l)	A ₂ 10:1 conc	leached (mg/kg)	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.0128	<0.0005	0.128	<0.005	0.5	2	25
Barium	0.00729	<0.0002	0.0729	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	0.00126	<0.001	0.0126	<0.01	0.5	10	70
Copper	0.00351	<0.0003	0.0351	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.00536	<0.003	0.0536	<0.03	0.5	10	30
Nickel	0.00179	<0.0004	0.0179	<0.004	0.4	10	40
Lead	0.00183	<0.0002	0.0183	<0.002	0.5	10	50
Antimony	0.00369	<0.001	0.0369	<0.01	0.06	0.7	5
Selenium	0.00128	<0.001	0.0128	<0.01	0.1	0.5	7
Zinc	0.00319	<0.001	0.0319	<0.01	4	50	200
Chloride	119	<2	1190	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	374	<5	3740	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	7.17	<3	71.7	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.54
Conductivity (µS/cm)	491.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.889

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Client Reference: 62240712 Report Number: 457244 Location: Lowestoft Order Number: 62240712 Superseded Report:

Notification of NDPs (No determination possible)

Date Received: 24/04/2018 11:01:28

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
17431891	VC10A	0.80 - 1.20	Loss on Ignition in soils	Unsuitable sample for analysis
17431891	VC10A	0.80 - 1.20	Polybrominated Diphenyl Ethers*	Unsuitable sample for analysis
17431891	VC10A	0.80 - 1.20	Passing Through >63µm sieve	Unsuitable sample for analysis

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
PM115		Leaching Procedure for CEN One Stage Leach Test 2:1 & 10:1 1 Step
SUB		Subcontracted Test
TBC		
TM008	BS 1377:Part 1977	Particle size distribution of solid samples
TM018	BS 1377: Part 3 1990	Determination of Loss on Ignition
TM019	Modified: US EPA Method 9056	Determination of Anions in Soils using Ion Chromatography
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH, Massachusetts Dept. of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
TM062 (S)	National Grid Property Holdings Methods for the Collection & Analysis of Samples from National Grid Sites version 1 Sec 3.9	Determination of Phenols in Soils by HPLC
TM073	MEWAM BOOK 60 1980,95 1985, HMSO / Modified: US EPA Method 8081A & 8141A	Determination of organochlorine and organophosphorous pesticides by GCMS
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)
TM090	Method 5310, AWWA/APHA, 20th Ed., 1999 / Modified: US EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM123	BS 2690: Part 121:1981	The Determination of Total Dissolved Solids in Water
TM132	In - house Method	ELTRA CS800 Operators Guide
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM153	Method 4500A,B,C, I, M AWWA/APHA, 20th Ed., 1999	Determination of Total Cyanide, Free (Easily Liberatable) Cyanide and Thiocyanate using the Skalar SANS+ System Segmented Flow Analyser
TM157	HP 6890 Gas Chromatograph (GC) system and HP 5973 Mass Selective Detector (MSD).	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM182	CEN/TC 292 - WI 292046-chacterization of waste-leaching Behaviour Tests- Acid and Base Neutralization Capacity Test	Determination of Acid Neutralisation Capacity (ANC) Using Autotitration in Soils
TM183	BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3	Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry
TM184	EPA Methods 325.1 & 325.2,	The Determination of Anions in Aqueous Matrices using the Kone Spectrophotometric Analysers
TM218	Shaker extraction - EPA method 3546.	The determination of PAH in soil samples by GC-MS
TM221	Inductively Coupled Plasma - Atomic Emission Spectroscopy. An Atlas of Spectral Information: Winge, Fassel, Peterson and Floyd	Determination of Acid extractable Sulphate in Soils by IRIS Emission Spectrometer
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

er: 457244

Test Completion Dates

rest completion bates										
Lab Sample No(s)	17431914	17431915	17431916	17431917	17431903	17431904	17431905	17431906	17431907	17431908
Customer Sample Ref.	VC02	VC02	VC02	VC02	VC03	VC03	VC03	VC03	VC04	VC04
Cactomor Campio Iton										
AGS Ref.										
Depth	3.20 - 3.63	2.80 - 3.20	1.80 - 2.20	0.80 - 1.20	0.80 - 1.20	3.39 - 3.79	2.80 - 3.20	1.80 - 2.20	3.60 - 4.00	0.80 - 1.20
-	Soil/Solid (S)		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
ANC at pH4 and ANC at pH 6	02-May-2018	Composite (C)	30-Apr-2018	27-Apr-2018	30-Apr-2018	30-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018	30-Apr-2018
Anions by ion Chromatography	03-May-2018		02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
Anions by Kone (w)	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018
Asbestos ID in Solid Samples	30-Apr-2018	30-Apr-2018	02-May-2018	02-May-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	02-May-2018	30-Apr-2018
CEN 10:1 Leachate (1 Stage)	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018	27-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018
CEN Readings	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	28-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
Cyanide Comp/Free/Total/Thiocyanate	30-Apr-2018	00 / tp1 2010	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	30-Apr-2018	30-Apr-2018
Dissolved Metals by ICP-MS	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018
Dissolved Organic/Inorganic Carbon	01-May-2018	01-May-2018	01-May-2018	02-May-2018	01-May-2018	02-May-2018	30-Apr-2018	01-May-2018	01-May-2018	30-Apr-2018
EPH CWG (Aliphatic) GC (S)	01-May-2018	01 Way 2010	30-Apr-2018	30-Apr-2018	01-May-2018	30-Apr-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018
EPH CWG (Aromatic) GC (S)	01-May-2018		30-Apr-2018	30-Apr-2018	01-May-2018	30-Apr-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018
Fluoride	04-May-2018	04-May-2018	03-May-2018	04-May-2018	03-May-2018	04-May-2018	04-May-2018	04-May-2018	04-May-2018	03-May-2018
GRO by GC-FID (S)	01-May-2018	04 May 2010	01-May-2018	01-May-2018	02-May-2018	03-May-2018	01-May-2018	02-May-2018	02-May-2018	01-May-2018
Hexavalent Chromium (s)	30-Apr-2018		03-May-2018	30-Apr-2018	02-May-2018	30-Apr-2018	02-May-2018	03-May-2018	03-May-2018	02-May-2018
Loss on Ignition in soils	02-May-2018		03-May-2018	03-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	03-May-2018	02-May-2018
Mercury Dissolved	02-May-2018	02-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	02-May-2018	03-May-2018	03-May-2018
Metals in solid samples by OES	01-May-2018	02-Way-2010	30-Apr-2018	30-Apr-2018	02-May-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
Mineral Oil	01-May-2018		30-Apr-2018	30-Apr-2018	01-May-2018	30-Apr-2018	01-May-2018	30-Apr-2018	30-Apr-2018	01-May-2018
OC, OP Pesticides and Triazine Herb	02-May-2018		02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
Organotins on soils*	11-May-2018		11-May-2018	11-May-2018	11-May-2018	11-May-2018	22-May-2018	11-May-2018	11-May-2018	11-May-2018
PAH by GCMS	02-May-2018		01-May-2018	01-May-2018	02-May-2018	01-May-2018	02-May-2018	02-May-2018	01-May-2018	01-May-2018
Passing Through >63µm sieve	02-May-2018	02-May-2018	03-May-2018	04-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	03-May-2018	02-May-2018
PCBs by GCMS	03-May-2018	02-1VIAY-2010	30-Apr-2018	30-Apr-2018	03-May-2018	03-May-2018	03-May-2018	02-May-2018	02-May-2018	02-May-2018
pH	27-Apr-2018		28-Apr-2018	28-Apr-2018	27-Apr-2018	28-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018
Phenois by HPLC (S)	29-Apr-2018		29-Apr-2018	29-Apr-2018	27-Apr-2018	29-Apr-2018	27-Apr-2018	29-Apr-2018	29-Apr-2018	27-Apr-2018
Phenois by HPLC (W)	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018
Polybrominated Diphenyl Ethers*	17-May-2018	01 Way 2010	17-May-2018	17-May-2018	17-May-2018	17-May-2018	17-May-2018	17-May-2018	17-May-2018	17-May-2018
Sample description	25-Apr-2018		24-Apr-2018	24-Apr-2018	25-Apr-2018	24-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018
Semi Volatile Organic Compounds	02-May-2018		02-May-2018	02-May-2018	27-Apr-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
Solid Content	26-Apr-2018		25-Apr-2018	25-Apr-2018	27-Apr-2018	25-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018
Total Dissolved Solids	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018
Total Organic Carbon	30-Apr-2018	01-Way-2010	27-Apr-2018	27-Apr-2018	30-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018
Total Sulphate	01-May-2018		30-Apr-2018	01-May-2018	01-May-2018	30-Apr-2018	01-May-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
TPH CWG GC (S)	01-May-2018		01-May-2018	01-May-2018	02-May-2018	03-May-2018	01-May-2018	02-May-2018	02-May-2018	01-May-2018
VOC MS (S)	01-May-2018		01-May-2018	01-May-2018	03-May-2018	01-May-2018	01-May-2018	01-May-2018	02-May-2018	01-May-2018
V 0 0 1 1 1 0 (0)	0 1-11/10 y-20 10		01-11/ay-2010	01-11/ay-2010	00-11/1ay-2010	01-111ay-2010	01-111ay-2010	0 1-11/10y-2010	02-11/ay-2010	01-101ay-2010

CERTIFICATE OF ANALYSIS

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

(ALS) Location:	Lowestoft Order Number: 62240712 Superseded Report:									
Lab Sample No(s)	17431909	17431910	17431895	17431896	17431898	17431899	17431900	17431882	17431883	17431901
Customer Sample Ref.	VC04	VC04	VC05	VC05	VC05	VC06	VC06	VC07	VC07	VC08
AGS Ref.										
Depth	1.80 - 2.20	2.80 - 3.20	0.80 - 1.20	1.80 - 2.20	2.53 - 2.93	0.80 - 1.20	2.00 - 2.46	1.60 - 2.00	0.80 - 1.20	1.00 - 1.45
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
ANC at pH4 and ANC at pH 6	02-May-2018	30-Apr-2018	30-Apr-2018	27-Apr-2018	03-May-2018	02-May-2018	30-Apr-2018	27-Apr-2018	30-Apr-2018	02-May-2018
Anions by ion Chromatography	02-May-2018	02-May-2018	03-May-2018	02-May-2018	04-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
Anions by Kone (w)	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018
Asbestos ID in Solid Samples	02-May-2018	30-Apr-2018	01-May-2018	02-May-2018	30-Apr-2018	02-May-2018	02-May-2018	02-May-2018	30-Apr-2018	02-May-2018
CEN 10:1 Leachate (1 Stage)	26-Apr-2018	26-Apr-2018	27-Apr-2018	26-Apr-2018						
CEN Readings	27-Apr-2018	30-Apr-2018	28-Apr-2018	30-Apr-2018	28-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
Cyanide Comp/Free/Total/Thiocyanate	30-Apr-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	30-Apr-2018	01-May-2018	01-May-2018
Dissolved Metals by ICP-MS	03-May-2018	03-May-2018	03-May-2018	04-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	04-May-2018
Dissolved Organic/Inorganic Carbon	02-May-2018	02-May-2018	01-May-2018	01-May-2018	03-May-2018	02-May-2018	01-May-2018	01-May-2018	02-May-2018	02-May-2018
EPH CWG (Aliphatic) GC (S)	01-May-2018	30-Apr-2018	01-May-2018	30-Apr-2018	01-May-2018	30-Apr-2018	30-Apr-2018	01-May-2018	01-May-2018	30-Apr-2018
EPH CWG (Aromatic) GC (S)	01-May-2018	30-Apr-2018	01-May-2018	30-Apr-2018	01-May-2018	30-Apr-2018	30-Apr-2018	01-May-2018	01-May-2018	30-Apr-2018
Fluoride	03-May-2018	04-May-2018	04-May-2018	04-May-2018	03-May-2018	03-May-2018	04-May-2018	04-May-2018	03-May-2018	04-May-2018
GRO by GC-FID (S)	01-May-2018	02-May-2018	02-May-2018	02-May-2018	01-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
Hexavalent Chromium (s)	03-May-2018	30-Apr-2018	03-May-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	02-May-2018	03-May-2018	30-Apr-2018
Loss on Ignition in soils	03-May-2018	02-May-2018	02-May-2018	03-May-2018	01-May-2018	04-May-2018	03-May-2018	03-May-2018	02-May-2018	03-May-2018
Mercury Dissolved	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	02-May-2018	02-May-2018
Metals in solid samples by OES	30-Apr-2018	30-Apr-2018	02-May-2018	30-Apr-2018	02-May-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
Mineral Oil	30-Apr-2018	30-Apr-2018	01-May-2018	30-Apr-2018	03-May-2018	01-May-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
OC, OP Pesticides and Triazine Herb	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
Organotins on soils*	11-May-2018	11-May-2018	11-May-2018	11-May-2018	11-May-2018	11-May-2018	11-May-2018	11-May-2018	11-May-2018	11-May-2018
PAH by GCMS	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018
Passing Through >63µm sieve	03-May-2018	02-May-2018	02-May-2018	04-May-2018	02-May-2018	04-May-2018	04-May-2018	04-May-2018	02-May-2018	03-May-2018
PCBs by GCMS	02-May-2018	02-May-2018	03-May-2018	02-May-2018	03-May-2018	03-May-2018	02-May-2018	02-May-2018	03-May-2018	03-May-2018
pH	27-Apr-2018	28-Apr-2018	27-Apr-2018	27-Apr-2018	28-Apr-2018	28-Apr-2018	28-Apr-2018	28-Apr-2018	27-Apr-2018	28-Apr-2018
Phenols by HPLC (S)	01-May-2018	29-Apr-2018	29-Apr-2018	01-May-2018	29-Apr-2018	29-Apr-2018	01-May-2018	29-Apr-2018	30-Apr-2018	01-May-2018
Phenols by HPLC (W)	01-May-2018	01-May-2018	01-May-2018	01-May-2018	02-May-2018	01-May-2018	01-May-2018	02-May-2018	01-May-2018	01-May-2018
Polybrominated Diphenyl Ethers*	17-May-2018	17-May-2018	17-May-2018	17-May-2018	17-May-2018	22-May-2018	22-May-2018	22-May-2018	22-May-2018	22-May-2018
Sample description	25-Apr-2018	24-Apr-2018	25-Apr-2018	25-Apr-2018	24-Apr-2018	24-Apr-2018	24-Apr-2018	25-Apr-2018	25-Apr-2018	24-Apr-2018
Semi Volatile Organic Compounds	27-Apr-2018	03-May-2018	02-May-2018	02-May-2018	03-May-2018	02-May-2018	03-May-2018	27-Apr-2018	02-May-2018	02-May-2018
Solid Content	26-Apr-2018	25-Apr-2018	27-Apr-2018	26-Apr-2018	25-Apr-2018	26-Apr-2018	25-Apr-2018	26-Apr-2018	26-Apr-2018	25-Apr-2018
Total Dissolved Solids	01-May-2018	01-May-2018	01-May-2018	01-May-2018	02-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018
Total Organic Carbon	27-Apr-2018	27-Apr-2018	30-Apr-2018	27-Apr-2018	03-May-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018
Total Sulphate	30-Apr-2018	30-Apr-2018	01-May-2018	30-Apr-2018	03-May-2018	01-May-2018	30-Apr-2018	30-Apr-2018	01-May-2018	01-May-2018
TPH CWG GC (S)	01-May-2018	02-May-2018	02-May-2018	02-May-2018	01-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
VOC MS (S)	01-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	03-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018

CERTIFICATE OF ANALYSIS

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Location: Lo	Location: Lowestort Order Number: 02240712 Superseded Report.									
Lab Sample No(s)	17431902	17431886	17431887	17431889	17431890	17431891	17431892	17431911	17431912	17431913
Customer Sample Ref.	VC08	VC11	VC11	VC11	VC10A	VC10A	VC10A	VC12A	VC12A	VC12A
AGS Ref.										
Depth	0.60 - 1.00	1.80 - 2.20	0.80 - 1.20	2.20 - 2.50	1.80 - 2.20	0.80 - 1.20	2.45 - 2.85	1.80 - 2.20	2.80 - 3.30	0.80 - 1.20
-	Soil/Solid (S)		Soil/Solid (S)	Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)
ANC at pH4 and ANC at pH 6	02-May-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	()	30-Apr-2018	27-Apr-2018	02-May-2018	30-Apr-2018	27-Apr-2018
Anions by ion Chromatography	02-May-2018	03-May-2018	03-May-2018	02-May-2018		03-May-2018	02-May-2018	02-May-2018	02-May-2018	04-May-2018
Anions by Kone (w)	05-May-2018	05-May-2018	05-May-2018	05-May-2018		05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018
Asbestos ID in Solid Samples	30-Apr-2018	01-May-2018	30-Apr-2018	30-Apr-2018		01-May-2018	30-Apr-2018	02-May-2018	30-Apr-2018	01-May-2018
CEN 10:1 Leachate (1 Stage)	26-Apr-2018	26-Apr-2018	27-Apr-2018	01-May-2018		27-Apr-2018	26-Apr-2018	01-May-2018	01-May-2018	26-Apr-2018
CEN Readings	30-Apr-2018	30-Apr-2018	30-Apr-2018	02-May-2018		28-Apr-2018	30-Apr-2018	02-May-2018	02-May-2018	27-Apr-2018
Cyanide Comp/Free/Total/Thiocyanate	01-May-2018	30-Apr-2018	01-May-2018	30-Apr-2018		01-May-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	01-May-2018
Dissolved Metals by ICP-MS	03-May-2018	03-May-2018	03-May-2018	03-May-2018		03-May-2018	04-May-2018	03-May-2018	03-May-2018	03-May-2018
Dissolved Organic/Inorganic Carbon	30-Apr-2018	30-Apr-2018	03-May-2018	01-May-2018		02-May-2018	30-Apr-2018	02-May-2018	02-May-2018	01-May-2018
EPH CWG (Aliphatic) GC (S)	30-Apr-2018	01-May-2018	01-May-2018	30-Apr-2018		01-May-2018	30-Apr-2018	01-May-2018	01-May-2018	30-Apr-2018
EPH CWG (Aromatic) GC (S)	30-Apr-2018	01-May-2018	01-May-2018	30-Apr-2018		01-May-2018	30-Apr-2018	01-May-2018	01-May-2018	30-Apr-2018
Fluoride	04-May-2018	03-May-2018	03-May-2018	04-May-2018		04-May-2018	03-May-2018	04-May-2018	03-May-2018	04-May-2018
GRO by GC-FID (S)	03-May-2018	02-May-2018	03-May-2018	02-May-2018		02-May-2018	02-May-2018	01-May-2018	01-May-2018	01-May-2018
Hexavalent Chromium (s)	03-May-2018	02-May-2018	30-Apr-2018	30-Apr-2018		30-Apr-2018	30-Apr-2018	02-May-2018	02-May-2018	30-Apr-2018
Loss on Ignition in soils	02-May-2018	02-May-2018	02-May-2018	02-May-2018			02-May-2018	03-May-2018	02-May-2018	02-May-2018
Mercury Dissolved	03-May-2018	03-May-2018	03-May-2018	03-May-2018		03-May-2018	03-May-2018	02-May-2018	02-May-2018	03-May-2018
Metals in solid samples by OES	01-May-2018	30-Apr-2018	02-May-2018	30-Apr-2018		02-May-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
Mineral Oil	01-May-2018	01-May-2018	01-May-2018	30-Apr-2018		01-May-2018	30-Apr-2018	01-May-2018	01-May-2018	01-May-2018
OC, OP Pesticides and Triazine Herb	02-May-2018	02-May-2018	02-May-2018	02-May-2018		02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
Organotins on soils*	11-May-2018	11-May-2018	11-May-2018	11-May-2018		11-May-2018	11-May-2018	11-May-2018	11-May-2018	11-May-2018
PAH by GCMS	02-May-2018	01-May-2018	01-May-2018	01-May-2018	03-May-2018	01-May-2018	02-May-2018	01-May-2018	01-May-2018	01-May-2018
Passing Through >63µm sieve	02-May-2018	02-May-2018	02-May-2018	02-May-2018			02-May-2018	04-May-2018	02-May-2018	02-May-2018
PCBs by GCMS	03-May-2018	03-May-2018	03-May-2018	03-May-2018		03-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
pH	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018		27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018	28-Apr-2018
Phenols by HPLC (S)	27-Apr-2018	29-Apr-2018	29-Apr-2018	27-Apr-2018		29-Apr-2018	27-Apr-2018	01-May-2018	01-May-2018	29-Apr-2018
Phenols by HPLC (W)	01-May-2018	01-May-2018	01-May-2018	03-May-2018		01-May-2018	01-May-2018	03-May-2018	03-May-2018	01-May-2018
Polybrominated Diphenyl Ethers*	17-May-2018	17-May-2018	17-May-2018	17-May-2018			17-May-2018	22-May-2018	17-May-2018	17-May-2018
Sample description	25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018		25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018	24-Apr-2018
Semi Volatile Organic Compounds	02-May-2018	27-Apr-2018	02-May-2018	27-Apr-2018		02-May-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018	03-May-2018
Solid Content	26-Apr-2018	26-Apr-2018	27-Apr-2018	26-Apr-2018		27-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018
Total Dissolved Solids	01-May-2018	01-May-2018	01-May-2018	01-May-2018		01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018
Total Organic Carbon	30-Apr-2018	27-Apr-2018	30-Apr-2018	27-Apr-2018		30-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018
Total Sulphate	01-May-2018	01-May-2018	01-May-2018	01-May-2018		01-May-2018	01-May-2018	01-May-2018	30-Apr-2018	01-May-2018
TPH CWG GC (S)	03-May-2018	02-May-2018	03-May-2018	02-May-2018		02-May-2018	02-May-2018	01-May-2018	01-May-2018	01-May-2018
VOC MS (S)	02-May-2018	01-May-2018	03-May-2018	01-May-2018		03-May-2018	01-May-2018	01-May-2018	01-May-2018	02-May-2018
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457244

CERTIFICATE OF ANALYSIS

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

(AL3) =				
Lab Sample No(s)	17431884	17431885	17431893	17431894
Customer Sample Ref.	VC01B	VC01B	VC09B	VC09B
outermen campio item				
AGS Ref.				
Depth	0.80 - 1.20	1.24 - 1.54	0.80 - 1.20	1.26 - 1.66
Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
ANC at pH4 and ANC at pH 6	02-May-2018	30-Apr-2018	27-Apr-2018	27-Apr-2018
Anions by ion Chromatography	02-May-2018	02-May-2018	03-May-2018	02-May-2018
Anions by Kone (w)	05-May-2018	05-May-2018	05-May-2018	05-May-2018
Asbestos ID in Solid Samples	02-May-2018	02-May-2018	30-Apr-2018	30-Apr-2018
CEN 10:1 Leachate (1 Stage)	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018
CEN Readings	30-Apr-2018	30-Apr-2018	28-Apr-2018	30-Apr-2018
Cyanide Comp/Free/Total/Thiocyanate	01-May-2018	01-May-2018	01-May-2018	01-May-2018
Dissolved Metals by ICP-MS	03-May-2018	04-May-2018	03-May-2018	04-May-2018
Dissolved Organic/Inorganic Carbon	01-May-2018	01-May-2018	02-May-2018	02-May-2018
EPH CWG (Aliphatic) GC (S)	01-May-2018	30-Apr-2018	01-May-2018	01-May-2018
EPH CWG (Aromatic) GC (S)	01-May-2018	30-Apr-2018	01-May-2018	01-May-2018
Fluoride	03-May-2018	03-May-2018	03-May-2018	04-May-2018
GRO by GC-FID (S)	02-May-2018	02-May-2018	02-May-2018	03-May-2018
Hexavalent Chromium (s)	30-Apr-2018	03-May-2018	30-Apr-2018	30-Apr-2018
Loss on Ignition in soils	03-May-2018	03-May-2018	02-May-2018	02-May-2018
Mercury Dissolved	03-May-2018	03-May-2018	03-May-2018	03-May-2018
Metals in solid samples by OES	01-May-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
Mineral Oil	01-May-2018	30-Apr-2018	01-May-2018	30-Apr-2018
OC, OP Pesticides and Triazine Herb	02-May-2018	02-May-2018	02-May-2018	02-May-2018
Organotins on soils*	11-May-2018	11-May-2018	11-May-2018	11-May-2018
PAH by GCMS	01-May-2018	01-May-2018	01-May-2018	01-May-2018
Passing Through >63µm sieve	03-May-2018	04-May-2018	02-May-2018	02-May-2018
PCBs by GCMS	03-May-2018	03-May-2018	02-May-2018	30-Apr-2018
pH	27-Apr-2018	27-Apr-2018	28-Apr-2018	28-Apr-2018
Phenols by HPLC (S)	27-Apr-2018	02-May-2018	29-Apr-2018	01-May-2018
Phenols by HPLC (W)	01-May-2018	01-May-2018	01-May-2018	01-May-2018
Polybrominated Diphenyl Ethers*	17-May-2018	17-May-2018	17-May-2018	17-May-2018
Sample description	25-Apr-2018	25-Apr-2018	24-Apr-2018	24-Apr-2018
Semi Volatile Organic Compounds	27-Apr-2018	02-May-2018	02-May-2018	02-May-2018
Solid Content	26-Apr-2018	26-Apr-2018	25-Apr-2018	25-Apr-2018
Total Dissolved Solids	01-May-2018	01-May-2018	02-May-2018	01-May-2018
Total Organic Carbon	30-Apr-2018	01-May-2018	27-Apr-2018	27-Apr-2018
Total Sulphate	01-May-2018	01-May-2018	01-May-2018	01-May-2018
TPH CWG GC (S)	02-May-2018	02-May-2018	02-May-2018	03-May-2018
VOC MS (S)	02-May-2018	01-May-2018	02-May-2018	01-May-2018

CERTIFICATE OF ANALYSIS



SDG: Location: 180424-31 Lowestoft

Client Reference: Order Number:

62240712 62240712

Report Number Superseded Report: 457244

Appendix

General

- Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except 21. For the BSEN 12457-3 two batch process to allow the cumulative release to be for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH4 by the BRE method, VOC TICs and SVOC TICs.
- 2. Samples will be run in duplicate upon request, but an additional charge may be incurred
- 3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALS reserve the right to charge for samples received and stored but not analysed.
- 4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
- 5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised
- 6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.
- 7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate
- 8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.
- 9. NDP No determination possible due to insufficient/unsuitable sample.
- 10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately
- 11. Results relate only to the items tested.
- 12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content
- 13. Surrogate recoveries Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.
- 14. Product analyses Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
- 15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).
- 16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).
- 17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
- 18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
- 19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

- calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
- 22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.
- 23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.
- 24. Tentatively Identified Compounds (TICs) are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

Sample Deviations

If a sample is classed as deviated then the associated results may be compromised.

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
•	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALS (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbe stos Type	Common Name
Chrysof le	White Asbests
Amosite	Brown Asbestos
Cro d dolite	Blue Asbe stos
Fibrous Act nolite	-
Fib to us Anthop hyll ite	-
Fibrous Tremolite	-

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Annex E

HUMAN HEALTH RISK ASSESSMENT

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BACKGROUND INFORMATION



METHODOLOGY FOR THE DERIVATION OF GENERIC QUANTITATIVE ASSESSMENT CRITERIA TO EVALUATE RISKS TO HUMAN HEALTH FROM SOIL & GROUNDWATER CONTAMINATION

UK APPROACH

In the UK, the potential risks to human health from contamination in the ground are usually evaluated through a generic quantitative risk assessment (GQRA) approach. This allows generic and conservative exposure assumptions to be readily applied to risk assessments and can be a useful tool for rapidly screening data and to identify those contaminants or scenarios that could benefit from further investigation and/or site-specific detailed quantitative risk assessment (DQRA). Current industry good practice is to use the approach presented in the Environment Agency (EA) publications SR2¹ and SR3². This approach allows the derivation of Generic Assessment Criteria (GACs), primarily for chronic exposure.

In April 2012, the Department of Environment, Food and Rural Affairs (Defra) published updated statutory guidance³ which introduced a four category approach to determining whether land <u>in England and Wales</u> is contaminated or not on the grounds of significant possibility of significant harm (SPOSH). **Figure 1** presents a graphical representation of the categories.

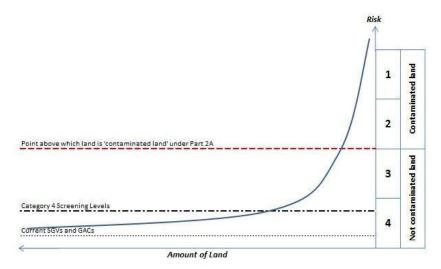


Figure 1: Four Categories for Determining if Land Represent a SPOSH

Cases classified as Category 1 are considered to be SPOSH based on actual evidence or an unacceptably high probability of harm existing. Category 4 cases are those where there is no risk, or a low risk of SPOSH.

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¹ Environment Agency 'Human Health Toxicological Assessment of Contaminants in Soil', Report SC050021/SR2. January 2009.

² Environment Agency 'Updated Technical Background to the CLEA Model,' Report SC050021/SR3. January 2009.

Defra 'Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance'. April 2012.



GACs represent a minimal risk level, well within Category 4. A 2014 publication by Contaminated Land: Applicatons in Real Environments (CL:AIRE),SP1010⁴ and endorsed by Defra⁵ provided an approach to determine Category 4 Screening Levels (C4SLs) which are higher than the GACs whilst being "more pragmatic but still strongly precautionary". It also provided C4SLs for six contaminants of concern. Although the C4SLs were designed to support Part 2A assessments to determine 'contaminated land' they are specifically mentioned, along with reference to the Part 2A statutory guidance, by the Department for Communities and Local Government (DCLG) for use in a planning context⁶.

An updated version the Contaminated Land Exposure Assessment (CLEA) Workbook (v1.071) was released by the EA in September 2015 to take into account the publication of SP1010. The updates comprised: additional toxicity data for the six chemicals for which C4SLs were derived; two new public open space land use scenarios; updated exposure parameters; options to run the model using C4SL exposure assumptions; and increased functionality. There were no changes to algorithms, so it is still possible to replicate the withdrawn SGVs using the input parameters held within v1.071.

It should be noted that the four category approach has not been adopted in Scotland under Part 2A or the planning regime. The Part 2A statutory guidance applicable in Scotland (Paper SE/2006/44 dated May 2006) does not reflect the changes introduced by Defra in April 2012 which allow for the use of C4SLs within Part 2A risk assessments. Additionally, it is considered that the principal of 'minimal risk' should still apply under planning in Scotland, based on current guidance.

WSP APPROACH

Following the withdrawal of the SGVs, and in the absence of an industry-wide, accepted set of GACs it is down to individual practitioners to derive their own soil assessment criteria. WSP has used the approach provided within SR2, SR3, SP1010, CLEA Workbook v1.071and SR4⁷ to produce a set of minimal risk GACs. The chemical-specific data within two key publications were considered during their production: CL:AIRE 2010⁸ and LQM 2015⁹. Both documents provide comprehensive sets of GACs for different contaminants of concern.

The LQM Suitable For Use Levels (S4ULs) have selected exposure parameters someway between those of the SR3 land uses and the C4SL exposure scenarios. This approach was rejected by WSP as not representing minimal risk, however, the LQM S4UL document was critically reviewed and the approach and chemical input parameters were utilised where considered to be appropriate.

An industry-led C4SL Working Group is in the process of deriving a larger set of C4SLs in the near future, for approximately 20 contaminants. This will include a critical review of the chemical input data for all selected substances, and may therefore lead to further amendments to the chemical input data used in the WSP in-house screening values. It is considered likely that the contaminant list will

⁴ CL:AIRE 'Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination' SP1010, Final Project Report (Revision 2). September 2014.

⁵ Defra 'SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document'. December 2014.

⁶ DCLG Planning Practice Guidance 'Land Affected by Contamination', particularly Paragraphs 001 and 007. Ref IDs: 33-001-20140306 & 33-007-20140612.

⁷ Environment Agency 'CLEA Software (Version 1.05) Handbook (and Software)', Report SC050021/SR4. September 2009.

⁸ CL:AIRE 'The EIC/AGS/CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment'. ISBN 978-1-05046-20-1. January 2010.

⁹ Nathanail et al 'The LQM/CIEH S4ULs for Human Health Risk Assessment', Land Quality Press, ISBN 978-0-9931084-0-2. 2015.



crossover with the current CL:AIRE GACs. As such, this document was not critically reviewed by WSP.

WSP's current approach to the assessment of risks to human health is to continue to evaluate minimal risk through the use of in-house derived GACs, and to use the published C4SLs as a secondary tier of assessment until such time as additional C4SLs are published and/or in-house values are derived.

EXPOSURE MODELS

LAND USES

WSP has largely adopted the exposure assumptions of the generic land use scenarios included within SR3, with two additional public open space scenarios included from within SP1010:

- a Residential with homegrown produce consumption;
- a Residential without homegrown produce consumption;
- à Allotments:
- à Commercial;
- à Public open space near residential housing (POS_{resi}); and
- à Public park (POSpark).

Exceptions are described in the following Sections.

SOIL PROPERTIES

SR3 assumes a sandy loam soil with a pH of 7 and a Soil Organic Matter (SOM) content of 6% for its generic land uses, based on the geographical spread of topsoils in the UK. WSP has adopted these default values. In addition, GACs based on an SOM of 1% and 2.5% have been derived, based on common experience of the nature of Made Ground and lack of topsoil on many brownfield sites.

RECEPTOR CHARACTERISTICS AND BEHAVIOURS

SP1010 provides some updated exposure parameters for long-term inhalation rates¹⁰ and the consumption rates for homegrown produce¹¹ compared to those provided in SR3. This data was used to derived WSP's GACs.

The changes in inhalation rates do not apply to the allotment generic land use scenario, as these are based on the breathing rates for short-term exposure of light to moderate intensity activity which were derived from a study that was not updated in USEPA 2011, so the SR3 rates were retained.

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¹⁰ USEPA, National Centre for Environmental Assessment 'Exposure Factors Handbook: 2011 Edition' EPA/600/R-09/052F. September 2011.

¹¹ National Diet and Nutrition Survey 2008/2009 to 2010/2011.



CHEMICAL DATA

PHYSICO-CHEMICAL PARAMETERS

Physico-chemical properties for the contaminants for which GACs have been derived have been obtained following critical review of the following hierarchy of data sources:

- 1. Environment Agency/Defra SGV reports where available.
- 2. Environment Agency 'Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values', Report SC050021/SR7, November 2008.
- 3. Published fate and transport reviews within Nathanail et. al 2015 and CL:AIRE 2010.

Where appropriate, and where sufficient data is available, values were adjusted to reflect a UK soil temperature of 10°C (e.g. K_{aw}).

TOXICOLOGICAL DATA

Toxicological data for the derivation of minimal risk Health Criteria Values (HCV) for each contaminant was selected with due regard to the approach presented in SR2. Where appropriate, the following hierarchy of data sources was used:

- 1. UK toxicity reviews published by authoritative bodies including:
 - < EA;
 - Public Health England (PHE);
 - Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT);
 and
 - Committee on Carcinogenicity of Chemicals in Food, Consumer Products and the Environment (COC).
- Authoritative European sources such as European Food Standards Agency (EFSA)
- 3. International organisations including:
 - World Health Organisation (WHO); and
 - Joint FAO/WHO Expert Committee on Food Additives (JECFA).
- **4.** Authoritative country-specific sources including:
 - United States Environmental Protection Agency (USEPA);
 - US Agency for Toxic Substances and Disease Registry (ATSDR);
 - US Integrated Risk Information System (IRIS); and
 - Netherlands National Institute for Public Health and the Environment (RIVM).

Factors such as the applicability of the data to human health (e.g. epidemiological vs. animal studies), the quality of the data, the level of uncertainty in the results and the age of the data were also taken into account in the final selection. Details for specific substances are available on request.



MEAN DAILY INTAKES

Estimations of background exposure for each threshold substance have been updated. In line with the SR2 approach, the exposure from non-threshold substances in the soil does not take into account exposure from other sources, and as such GACs were derived without consideration of the Mean Daily Intake (MDI) for those substances.

The data published by the EA in its series of TOX reports between 2002 and 2009 was evaluated to determine whether the values were considered to remain valid today. Values from these current UK published sources were not amended unless they were considered to be significantly different so that the GACs remained as comparable as possible with the revoked SGVs.

ORAL MEAN DAILY INTAKES

Oral MDI were generally estimated as the sum of exposure via the ingestion of food and drinking water using the default adult physiological parameters presented in Table 3.3 of SR2.

Data on the exposure of substances from food ingestion was generally obtained from UK Total Diet Studies (TDS) published by the Food Standards Agency (FSA) and its predecessor the Ministry of Agriculture, Fisheries and Food (MAFF) and from studies commissioned by COT. Where no UK-specific data was available, MDI were derived from the European Food Safety Authority (EFSA), Health Canada and US sources. This was a rare occurrence, and in these instances, the data was evaluated to determine its applicability to the UK.

Data on the concentrations of substances in tap water was obtained from a variety of sources. UK data was used where available, with preference given to Drinking Water Inspectorate (DWI) 2014 data from water company tap water testing (LOD, 1st and 99th percentile data is available). Where the substance was not included in tap water testing, other UK sources of information were considered including:

- à DWI data from water company tap water testing from previous years;
- à COT; and
- à FSA.

Where UK data was not available, a number of other data sources were considered, largely WHO International Programme on Chemical Safety (IPCS) Concise International Chemical Assessment Documents (CICADs) and background documents for the development of Guidelines for Drinking Water Quality, using professional judgement on the relevance of the data to the UK. The final decision on the MDI from drinking water was made using professional judgement on the balance of relevance and probability, taking into account the detection limit where not detected, Koc and solubility, reduction in use of the substance, banned substances, tight controls (e.g. on explosives) and with due consideration to the SR2 instruction that "if no data or information in background exposure are available, background exposure should be assumed to be negligible and the MDI set to zero...."

Data from other countries was generally not used because it was considered that the hydrogeology of these countries along with industrial practices were unlikely to be reflective of the UK.



INHALATION MEAN DAILY INTAKES

Inhalation MDIs were based on estimates of average daily exposure by the inhalation pathway and calculated using the default adult physiological parameters presented in Table 3.3 of SR2.

The inhalation MDIs were generally estimated using background exposure data from the UK, derived from Defra's UK-AIR: Air Information Resource¹², which provides ambient air quality data from a number of sites forming a UK-wide monitoring network. The MDIs for heavy metals were based on rolling annual average metal mass concentration data from Defra's UK Heavy Metals Monitoring Network from the period October 2009 to September 2010¹³.

Information for some substances was obtained from UK sources including Environment Agency TOX reports and data from the UK Expert Panel on Air Quality Standards (EPAQS). Where recent UK data was not available, data was sourced from the International Programme on Chemical Safety (IPCS), the World Health Organisation (WHO), the Agency for Toxic Substances and Diseases Registry (ATSDR), Health Canada, and various other peer-reviewed sources summarised by LQM/CIEH¹⁴.

For other substances, where no data or information on background exposure was available, background exposure was assumed to be negligible and the MDI set at 0.5*TDI in accordance with guidance in SR2.

PLANT UPTAKE

Soil to plant concentration factors are available in CLEA v1.071 for arsenic, cadmium, hexavalent chromium, lead, mercury, nickel and selenium. For all remaining inorganic chemicals, concentration factors were obtained using the PRISM model. Substance-specific correction factors have been selected in accordance with the guidance established within SR3. This is consistent to the approach utilised in the derivation of the LQM S4UL values and the EIC/AGS/CL:AIRE GAC.

Where there is a lack of appropriate data to enable the derivation of specific soil to plant concentrations factors for organic chemicals, plant uptake was modelled within CLEA v1.071 using the generic equations recommended within SR3, as follows:

- a Green Vegetables Ryan et al. (1988);
- à Root Vegetables Trapp (2002);
- Tuber Vegetables Trapp et al. (2007); and
- a Tree Fruit Trapp et al. (2003).

There are no suitable models available for modelling uptake for herbaceous fruit or shrub fruit. Exposure is considered negligible.

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¹² Crown 2016 copyright Defra via uk-air.defra.gov.uk, licenced under the Open Government Licence (OGL).

¹³ Defra, 2013 Spreadsheet of historic data for multiple years for the Metals network. Available online at: http://uk-air.defra.gov.uk/data/metals-data. [Accessed 13/03/2016].

¹⁴ LQM/CIEH, 2015. The LQM/CIEH S4ULs for Human Health Risk Assessment.



SOIL SATURATION LIMITS

GACs are not limited to their theoretical soil saturation within CLEA, although where either the aqueous or the vapour-based saturation is exceeded, this is highlighted within the Workbook (compared with the lower of the two values). This affects pathways which depend on partitioning calculations so in reality this only affects the vapour pathways and is relevant to organic substances and other substances, such as elemental mercury, that have a significant volatile component. However, the Workbook highlights saturation for direct contact pathways to indicate to the user where further qualitative consideration of free phase contamination at surface may be required.

Where the lower of the two saturation limits is exceeded and the vapour pathway is the only exposure route being considered, the chronic risks to human health are likely to be negligible. Further evaluation could be undertaken using an alternative model suitable for evaluating non-aqueous phase liquids (NAPLs), such as the Johnson & Ettinger (J&E) approach described in USEPA 2003. However, WSP considers that if NAPLs are suspected, given the known limitations and oversimplifications of J&E, soil vapour monitoring is a more accurate way of assessing potential risks.

Where the lower saturation limit is exceeded for the vapour pathway and a number of exposure routes are being considered, then the contribution from the NAPL via vapour inhalation to the overall exposure can be evaluated using the procedure provided in SR4. WSP would evaluate this as part of a DQRA process or through soil vapour monitoring on-site to determine site-specific soil vapour concentrations.

CHEMICAL SPECIFIC ASSUMPTIONS

CYANIDES

Cyanide has high acute toxicity, and short term exposure is an important consideration when assessing the risks from soils contaminated with cyanide. The primary risk to human receptors from free cyanide in soils is an acute risk.

There is no current UK guidance available for calculating acute risks from free cyanide. Consequently, GAC for acute exposure were derived using the algorithms presented in MADEP 1992¹⁵ and assuming a one-off ingestion of 10g of soil (this conservative value has been taken as an upper bound estimate for a one-off soil ingestion rate amongst children). Receptor body weights have been selected according to the critical receptor for each exposure scenario. The lowest of the chronic and acute GAC for each land use scenario were adopted by WSP. Brinckerhoff.

LEAD

The SGV for lead was withdrawn by the EA in 2009, and in 2011 the EA withdrew their published TOX report in light of new scientific evidence. The C4SL for lead was derived using the latest scientific evidence from a large human dataset. As such, no chemical-specific margin was applied in the derivation of the C4SL for lead. It may be possible for WSP to derive a GAC for lead using the same dataset and applying a chemical-specific margin, but the value is likely to be lower than UK natural background concentrations. Therefore, WSP has adopted the toxicological data used to derive the C4SLs in deriving the GAC for lead until such time as alternative GACs are published by an authoritative body. The relative bioavailability was set at 100% in line with the approach taken for other GACs, whereas the C4SL assumes 60% for soil and 64% for airborne dust. Thus, the WSP GAC are lower than the C4SLs.

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¹⁵ MADEP 'Background Documentation for the Development of an "Available Cyanide" Benchmark Concentration' 1992. http://www.mass.gov/dep/toxics/cn_soil.htm



POLYCYCLIC AROMATIC HYDROCARBONS

WSP's approach to the assessment of polycyclic aromatic hydrocarbons (PAHs) uses the surrogate marker approach. BaP was used as a surrogate marker for all genotoxic PAHs in line with the Health Protection Agency 2010¹⁶ recommendations and SP1010. This assumes that the PAH profile of the data is similar to that of the coal tars used in the Culp *et al* oral carcinogenicity study from which the toxicity data for BaP was produced. In reality, this profile has been shown by HPA to be applicable on the majority of contaminated sites based on assessment of sites across the country.

The alternative is the Toxic Equivalency Factor (TEF) approach which uses a reference compound and assigns TEFs for other compounds based on estimates of potency. Key uncertainties with this approach include the assumption that all compounds have the same toxic mechanism of action within the body and that no compounds with a greater potency than the reference compound are present. It is considered by the HPA that the TEF approach is likely to under predict the true carcinogenicity of PAHs and therefore favours the surrogate marker approach.

For these reasons, WSP considers that the adoption of BaP as a surrogate marker for genotoxic PAHs as opposed to the TEF approach is reasonable, even in cases where the PAH profile may differ from that of the Culp *et al* study. In addition, WSP has derived a GAC for naphthalene, which is commonly a risk driver due to its high volatility, relative to other PAH compounds, as an indicator compound for threshold PAHs.

TRIMETHYLBENZENES

The GAC for trimethylbenzenes can be used for the assessment of any individual isomer (1,2,3-trimethylbenzene, 1,2,4-trimethylbenzene or 1,3,5-trimethylbenzene), or a mixture of the three isomers.

CHEMICAL GROUPS

For a number of chemical groups, the available toxicity data is for combinations of chemicals. Given that the physico-chemical parameters may differ between the chemicals, the GACs for the chemicals within the groups have been calculated and then the lowest GAC selected to represent the entire group. This was the approach taken by the EA for m-, o- and p-xylenes, and has also been adopted by WSP for:

- 2-chlorophenol, 2,4-dichlorophenol, 2,4,6-trichlorophenol and 2,3,4,6-tetrachlorophenol;
- 2-, 3- and 4-methylphenol (total cresols);
- aldrin and dieldrin; and
- $\stackrel{\ }{a}$ α and β -endosulphan.

¹⁶ HPA Contaminated Land Information Sheet 'Risk Assessment Approaches for Polycyclic Aromatic Hydrocarbons (PAHs) 2010

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EXPOSURE TO VAPOURS

INHALATION OF MEASURED VAPOURS

WSP has derived a set of soil vapour GACs (GAC_{sv}) that allow for the assessment of measured site soil vapour concentrations, using J&E, in order to establish potential risks via indoor inhalation of vapours. This methodology enables a more robust assessment of exposure via the inhalation of soil vapours indoors than using CLEA-derived soil GAC, as it is based upon measured soil vapour concentrations beneath the site. It also allows for the assessment of vapours from all source terms (i.e. groundwater, soil or NAPL). Outdoor inhalation was not included. WSP considers that the indoor inhalation pathway is the significantly dominant risk-driver.

The generic land use scenarios within CLEA (residential and commercial) that were used to derive the soil GAC were used to define the receptor and building characteristics for the soil vapour GAC. Only residential and commercial generic land use scenarios include the indoor inhalation of vapours pathway.

The GAC_{sv} were derived for three different soil types; sand, sandy loam and clay, reflecting the importance of this parameter within the J&E model. A depth to contamination of 0.85 m below the base of the building foundation was assumed (i.e. 1 m below ground level). This differs from the depth assumed for the soil GAC (0.5 m bgl), but was selected by WSP as a reasonable worst case scenario.

It is acknowledged that the J&E commonly over-predicts indoor vapour concentrations. In particular, it will significantly over-predict vapour concentrations for suspended floor slabs, which many new builds are constructed with, it does not take into account lateral migration and assumes an infinite source of contamination at steady state conditions. In addition, it is common for soil gas/vapour wells to be installed with at least 1 m of plain riser at the surface and this equates to a total depth of 0.85 m below the building foundation plus a 0.15 m thick foundation, and so is more representative of the depth that samples will be taken from.

The TDSIs and IDs for each substance were converted from µgkg⁻¹bwday⁻¹ to µgm⁻³ using the standard conversions quoted in Table 3.3 of SR2, thereby replacing the need to model C_{air} in the equation:

$$C_{air} = \alpha. C_{vap}$$
. 1,000,000 cm^3m^{-3}

Where:

 C_{air} is the concentration of vapours within the building, mg⁻³ α is the steady state attenuation coefficient between soil and indoor air, dimensionless C_{vap} is the soil vapour concentration, mgcm⁻³

The target concentrations within indoor air for each substance (C_{air}) are a function of receptor inhalation rates and occupancy periods, as defined by the site conceptual exposure model (assuming standard CLEA occupancy periods and receptors).

The attenuation factor was calculated using J&E (Equation 10.4 in SR3) and the resulting C_{vap} is equivalent to the GAC_{sv} for the modelled exposure scenario.

Where the calculated GAC_{sv} for a substance exceeds the vapour saturation limit, no GAC_{sv} has been proposed.



INHALATION OF GROUNDWATER-DERIVED VAPOURS

The CLEA model does not have the capacity to derive GACs to assess vapours derived from dissolved phase contamination. WSP has derived a set of groundwater GACs (GAC_{gw}) to evaluate the potential risks through the indoor inhalation of groundwater-derived vapours by first applying the approach described above for the derivation of the WSP GAC_{sv} to determine the acceptable concentration in soil vapour directly above the water table.

The depth to groundwater was assumed to be 1 m bgl (i.e. 0.85 m below the base of the building foundation). This depth was considered to be more representative of commonly encountered groundwater conditions than the 0.5 m below the base of the building foundation (i.e. 0.65 m bgl) that is used by CLEA for an unsaturated source present in the overlying soil.

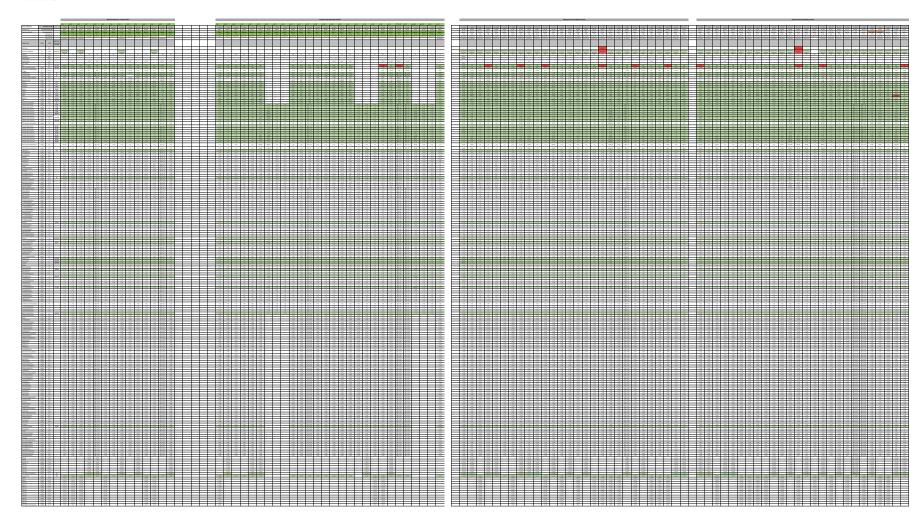
The GAC_{gw} was then back-calculated from the GAC_{sv} using the air-water partition coefficient (K_{aw}) for each substance.

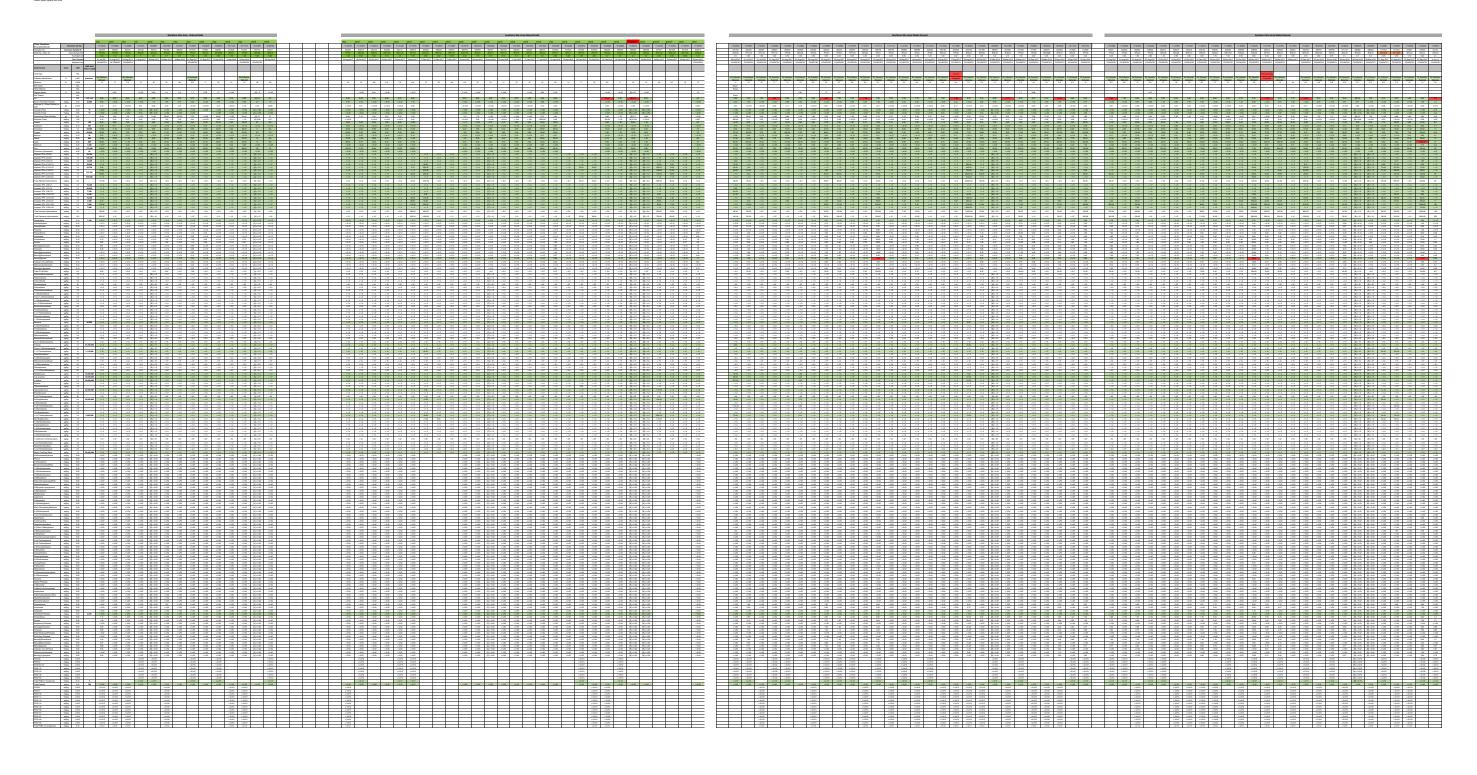
Where the calculated GAC_{gw} for a substance exceeds the solubility limit, no GAC_{gw} has been proposed.

Annex F

CHEMICAL SCREENING







Determinand (laboratory concentrations) Unit Classification Result	nit BHC06 TPC05	TPC103 TPC103[1] TPC101	TPC06 TPC06[1]				BHC02[1] IPC0	01 IPC02	IPC03 IPC04 IPC05	BHC03 TPC02	TPC21 TPC21[1] TPC2	2 TPC23	TPC23[1] BHC04 BHC05	BHC28 BHC28[1]	BHC28[2] BHC101 WSC17			WSC23 BHC103	BH102 BH102[1]	BHC27 BHC27[1]	BHC101[1] BHC101[2] B	HC101[3] BHC101[4] WSC19A[2]
Classification Result	Non Hazardous Non Hazardous	Non Hazardous Non Hazardous Non Hazardous	Non Hazardous Non Hazardous	Non Hazardous Non Hazardous	Non Hazardous Non Hazardous Non Hazardous	Non Hazardous Non Hazardous I	Non Hazardous Non	Hazardous Non Hazardous	Non Hazardous Non Hazardous Non Haza	irdous Non Hazardous Hazardou	s Non Hazardous Non Hazardous Non H	Hazardous Non Hazardou	is Non Hazardous Hazardous Non Hazardou	s Non Hazardous Non Hazardous	Non Hazardous Non Hazardous Non Hazar	ious Non Hazardous Non Hazardous Non Hazard	ous Non Hazardous Non Hazardous	s Hazardous Non Hazardous	Non Hazardous Non Hazardo	us Hazardous Non Hazardous	Hazardous Hazardous N	Ion Hazardous Non Hazardous Non Hazardous
moisture (no correction) %	0.5 1.00	0.50 1.50 1.80 4 12 10 1	7 12 17	2.00 0.80	0.55 2.20 0.20	7 26 9	3 0.30	21 10	0.90 0.90 1.20	1.30 0.30	0.25 1.45 0.60	1.00	2.60 0.90 0.6	1.40 2.60	3.60 0.60 1.60	0.90 1.70 1.50	2.10 0.50	0.50 4.5	0.30 1.50	0.60 1.60	2.10 3.00 4.	36 30 4.9
antimony (antimony trioxide) mg/k	n/kn	10 10	19		0 10 / 0.	2.0	1.0	2.1 1.0	4.5	1.0		2.0	5 5.4 2.1		10 10	2.7 7.7	5.7	3 7.0	1	0 15 27	5.5	20 4.0
arsenic (arsenic trioxide) mg/k beryllium (beryllium oxide) mg/k	a/kg 10 9	2 8.2 <1.32 <1.32	14 8.6	.6 8.9 4.6	6 17 7.6 9.3	3 4.8 8.1	<1.32	12 2.1	4.8 7 <1.32	<1.32	15 11 16	2.2	20 6.5 3.3 5	.1 24 1.9	3.9 7.1	12 9.9 12	29 1.6	8 12 8.	5 32	10 25 25	16	<1.32
	a/kg																					
boron (diboron trioxide; boric oxide) mg/k	g/kg 0.43 0	6 1.2 <1.288 <1.288	0.66 <1.288		<1.288 <1.288 <1.288	0.65 4.2	<1.288	1.5 <1.288		<1.288 0.		8 0.1	81 0.68 <1.288 0.	52 1.2 0.85	0.74 0.76 <1.288	0.46 <1.288 <1.288	<1.288 1	.2 0.58 <1.288	<1.288	1.1 0.81 1.9	<1.288	0.4
cadmium (cadmium oxide) mg/k chromium in chromium(III) compounds (chromium(III) d mg/k chromium in chromium(VI) compounds (chromium(VI) mg/k	pkg 0.1 0.1	9 0.19 <0.114 <0.114	0.16 0.1	1 < 0.114 < 0.114	0.14 < 0.114 0.2	1 <0.114 <0.114	<0.114	0.78 0.12	k0.114 k0.114 k0.114	k0.114 k0.114	0.13 0.63 k0.11	4 0.4	43 k0.114 0.1 k0.114	0.15 0.38	<0.114 0.1 k0.114	0.21 0.23 < 0.114	<0.114 <0.114	0.17 < 0.114	0.88 x0.114	0.85 0.16	k0.114	<0.114
chromium in chromium(iii) compounds (chromium(iii) d mg/s	9 1	3 8.1 4.1 3	3 10 11	0.000 0.000	2 21 12 7.3	2 4 15	4.3	62 4.7	0.000 0.000	3.5 2.4	25 13 28	4.5	21 9.2 8.5	.8 32 4.8	40.962 40.962 40.962	15 12 16 16 10.962 16.962 16.962	2/ 8.2 8	0.65 24 6.	4 18	12 21 24	<0.962	3.2
copper (dicopper oxide; copper (1) oxide) mg/k	3/4 60.962 60.962 3/40 57 5	5 100 3.7 1.6	6 480 83	3 52 11	5 66 78 2:	1 18 27	3.5	35 6.6	33 11	4.8 0.99	14 11 64	3.2 1/	40 6 73	18 18 1	5.3 9.9	10 47 20	30 22 5	1 36	5 77	6 57 14	91	5.4
lead (lead compounds with the exception of those spec mg/k	a/kg 85 S	8 540 15 1	1 110 12	2 54 1-	4 110 11 7	0 5.2 27	4.8	170 28	9.8 44	7.8 3.7	45 53 88	10 2	70 8.4 40 1	10 48 6.4	5.7 28	12 160 150	110 8.4 1	18 120 3.	5 330	47 250 44	19	54
manganese (manganese sulphate) mg/k	ake .																					
mercury (mercury dichloride) mg/k	g/kg 0.36 0.2	3 0.34 <0.135 <0.135	0.34 < 0.135	<0.135 <0.135	0.3 0.1 0.29	9 <0.135 <0.135	<0.135	0.11 < 0.135	<0.135 <0.135 <0.135	<0.135 0.	11 0.17 0.15 0.13	5 0.	16 <0.135 <0.135 0.	21 0.52 0.31	0.25 0.34 < 0.135	0.13 < 0.135	0.1 < 0.135 < 0.135	0.19 < 0.135	0.34 0	0.14 0.4 0.16	<0.135	<0.135
malybdenum (malybdenum(VI) oxide) mg/k	akg																					
nickel (nickel chromate) mg/k	9×9 1/ 1	b 10 3 1.0	1/ 054	3 6.4 3.	3 24 11 9.	3 2.9 14	2.7	18 4.3	4.8 6.9	2.8 2.5	14 11 4/	3.6	44 12 /	12 30 2.7	11 11	16 24 1/	3/ 6.2 /	2 2/ 5.	2 32	11 22 24	16	2.1
selenium (selenium compounds with the exception of c zinc (zinc sulphate) mg/k	3/4g KUSHI KUSHI 3/4g KUSHI 14	0 140 67 73	8 230 2	3 16 1	1 59 18 8	4 11 40	8.8	130 42	14 36	17 75	47 58 150	55 3	10 31 86	52 220 20	21 91	40 170 59	130 12 2	21 71 1	8 670	59 1500 110	29	16
TPH (C6 to C40) petroleum group mg/k	a/kg 140 28	0 130 <10 <10	<10 <10	<10 <10	85 <10 19	0 < 10 < 10	<10	300 < 10	<10 15 <10	<10 <10	320 <10 <10	11	90 <10 33000 1	0 < 10 < 10	<10 <10 <10	110 16<10	<10	18 3800 <10	260	330 230 e10	1200 1400 €	10 <10 <10
confirm TPH has NOT arisen from diesel or petrol n/a																						
tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropa mg/k	g/kg																					
berzene mgF	ykg <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 <0.0	001 < 0.001	<0.001 <0.001 <0.001	<0.001 <0.001	<0.001 <0.001 <0.00	1 <0.001	<0.001 0.0094 <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	<0.001 <0.001 <	0.001 <0.001 <0.001
	okg 0.0039 x0.001	<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 <0.0	001 <0.001	<0.001 <0.001 <0.001	<0.001 <0.001	<0.001 <0.001 <0.00	1 <0.001	<0.001 0.016 <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	<0.001 <0.001	<0.001 <0.001 <	0.001 <0.001 <0.001
ethylbenzene mg/k	okg 0.016 <0.001	<0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.001 <0.001	0.0019 (0.001	KU.001 KU.001 KU.001	×0.001 ×0.001	<0.00 +0.001	001 (0.001	<0.001 <0.001 <0.001	40.001 40.001	00.001 c0.001 c0.001	1 40.001	CO.001 0.0076 x0.001	-0.001 -0.001	40.001 40.001 40.001	40.001 K0.001 C0.001	-0.001 -0.001	e0.001 e0.001	40.001 k0.001	<0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.001 <0.001 <1 <0.001 <0.001 <1	0.001 <0.001 <0.001
xylene mg/k cyanides (salts of hydrogen cyanide with the exception mg/k	oko e0.942 e0.942	<0.942 <0.942 <0.942	<0.942 <0.942	<0.942 <0.942	<0.942 <0.942 <0.942	<0.942 <0.942	8.4	0.5 < 0.942	<0.001 <0.001 <0.001 <0.942 <0.942 <0.942	5.5 (0.942	\$0.001 \$0.001 \$0.000 \$0.000 \$0.001 \$0.001 \$0.000 \$	2 <0.942	<0.942 <0.942	4 < 0.942 < 0.942	<0.942 <0.942 <0.942	<.0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.942 <0.942 <0.942	<0.942 <0.942	<0.942 <0.942	<0.942 <0.942	0.9 < 0.942	<0.001 <0.001 d <0.001 <0.001 d <0.001 <0.001 d <0.001 <0.001 d <0.001 <0.001 d	c0.942
pH pH	6.9 6	5 7.4 7.2 9.5	9 8.2 8.5	.5 8.5 8.3	3 9.8 8.8 7.1	8 7.5 11	8.6	7.8 7.6	7.6 7.7	7.6 7.9 11	.8 9.6 8.2	7 8	3.3 8 8.2 5	.1 8.3 8	8.2 8.9	7.2 8.2 8.6	8.3 8 9	1.1 8.7 8.	7 11.2	8.6 9.5 7.7	10.3	8.2
naphthalene mg/r	ykg e0.1 e0.1	<0.1 <0.1 <0.1	<0.1 <0.1	<0.1 <0.1	0.37 < 0.1 < 0.1	<0.1 <0.1	<0.1	3.1 <0.1	<0.1 <0.1 <0.1	<0.1 <0.1	0.16 < 0.1 < 0.1	0.4	44 < 0.1 < 0.1 < 0.1	40.1	k0.1 k0.1 k0.1	0.18 0.19 < 0.1	×0.1 <0.1	0.73 < 0.1	<0.1 <0.1	<0.1 <0.1	<0.1 <0.1 d	0.1 <0.1 <0.1
acenaphthylene mg/k	ykg <0.1 <0.1	<0.1 <0.1 <0.1	<0.1 <0.1	<0.1 <0.1	0.1 <0.1 <0.1	<0.1 <0.1	<0.1	1.9 ×0.1	<0.1 <0.1 <0.1	<0.1 <0.1	0.37 < 0.1 < 0.1	0.3	79 < 0.1 < 0.1 < 0.1	<0.1 <0.1	<0.1 <0.1 <0.1	<0.1 0.16 <0.1	<0.1 <0.1	2.4 <0.1	<0.1 <0.1	<0.1 <0.1	<0.1 <0.1 <	0.1 <0.1 <0.1
acenaphthene mg/k	okg <0.1 <0.1	<0.1 <0.1 <0.1	<0.1 <0.1	<0.1 <0.1	0.13 <0.1 <0.1	<0.1 <0.1	<0.1	5.7 < 0.1	<0.1 <0.1 <0.1	<0.1 <0.1	0.23 <0.1 <0.1	0.	19 < 0.1 < 0.1	<0.1 <0.1	40.1 40.1	<0.1 <0.1 <0.1	<0.1 <0.1	1.1 <0.1	<0.1 <0.1	<0.1 <0.1	<0.1 <0.1 <	0.1 <0.1 <0.1
fluorene mg/k	okg <0.1 <0.1	<0.1 <0.1 <0.1	<0.1 <0.1	<0.1 <0.1	0.27 < 0.1 < 0.1	<0.1 <0.1	<0.1	5.8 kQ.1	40.1 40.1 40.1	40.1 40.1	0.4 <0.1 <0.1	<0.1	<0.1 <0.1 <0.1	e0.1 e0.1	d0.1 d0.1 d0.1	<0.1 <0.1 <0.1	<0.1 <0.1	1.3 <0.1	<0.1 <0.1	<0.1 <0.1	<0.1 <0.1 <	0.1 <0.1 <0.1
phenanthrene mg/k	0xg <0.1 <0.1	1 40.1 40.1	<0.1	<0.1 <0.1	1.5 <0.1 0.7	2 40.1 0.82	<0.1	30 0.15	e0.1 0.62 e0.1	40.1 40.1	1.8 <0.1	0	75 (0.1	.1 <0.1	d0.1 d0.1 d0.1	0.81 0.52 (0.1	<0.1	11 (0.1	3.6 (0.1	1.6 (0.1	<0.1 <0.1 <	0.1 <0.1 <0.1
anthracene mg/k fluoranthene mg/k	3/G e0.1 60.1	3 23 01 01	0.91 #0.1	e0.1 e0.1	21 (0.1 2:	1 0.16 0.66	r0.1	30 0.38	e0.1 0.2 e0.1	e0.1	34 47 01 01	0	16 (0.1 0.12 1	4 (0.1	0.1 0.43 0.1	21 11	0.21 e0.1	4.9 60.1	4 (0.1	42 0.23	e0.1 e0.1 e1	0.1 (0.1 (0.1
pyrene ma/k	oko <0.1 0.8	7 2 <0.1 <0.1	0.98 < 0.1	<0.1 <0.1	2.3 <0.1 2.1	8 0.2 0.79	<0.1	29 0.33	<0.1 1.2 ×0.1	<0.1 0.	18 4.4 < 0.1 < 0.1		1.6 < 0.1 0.1	5 < 0.1 < 0.1	<0.1 0.44 < 0.1	1.9 0.93	0.23 < 0.1 0	.3 45 40.1	3.3 < 0.1	4 0.24	<0.1 <0.1 <	0.1 <0.1 <0.1
benzo[a]anthracene mg/k	ykg <0.1 0.€	1 2.7 <0.1 <0.1	1 <0.1	<0.1 <0.1	1.2 <0.1 1.3	2 <0.1 <0.1	<0.1	12 < 0.1	<0.1 0.96 ×0.1	<0.1 <0.1	2.8 <0.1 <0.1	1	1.1 <0.1	.3 <0.1 <0.1	<0.1 <0.1 <0.1	1.3 0.49 < 0.1	<0.1 <0.1	20 < 0.1	1 <0.1	2.6 < 0.1	<0.1 <0.1 d	0.1 <0.1 <0.1
chrysene mg/k		3 1.3 <0.1 <0.1	0.49 < 0.1	<0.1 <0.1	1.1 <0.1 1.0	6 <0.1 <0.1	<0.1	16 < 0.1	<0.1 0.55 d0.1	<0.1 <0.1	2.8 <0.1 <0.1	0.3	72 <0.1 <0.1 0.	6 40.1	d0.1 d0.1 d0.1	1.1 0.18 < 0.1	<0.1 <0.1	22 <0.1	1.7 <0.1	3.3 <0.1	<0.1 <0.1 <	0.1 <0.1
berzo[b]fluoranthene mg/k	3kg <0.1 <0.1	1.8 <0.1 <0.1	0.78 < 0.1	<0.1 <0.1	1.3 <0.1 1.6	6 <0.1 <0.1	<0.1	14 < 0.1	<0.1 0.55 d0.1	<0.1 <0.1	3.8 <0.1 <0.1	1	1.5 <0.1 <0.1 0.	79 <0.1 <0.1	d0.1 d0.1 d0.1	1.5 0.39 < 0.1	<0.1 <0.1	32 <0.1	1.7 <0.1	4.1 < 0.1	<0.1 <0.1 d	0.1 <0.1 <0.1
berzo[k]fluoranthene mg/k	okg <0.1 <0.1	0.8 <0.1 <0.1	0.39 < 0.1	<0.1 <0.1	0.52 (0.1 0.6)	2 <0.1 <0.1	<0.1	6.4 40.1	<0.1 0.15 k0.1	40.1	1.5 <0.1 <0.1		1.2 ×0.1 ×0.1 0.	29 e0.1 e0.1	d0.1 d0.1 d0.1	0.53 < 0.1 < 0.1	<0.1 <0.1	12 <0.1	0.54 (0.1	1.7 <0.1	<0.1 <0.1 d	0.1 <0.1 <0.1
berzo[a]pyrene; berzo[def]chrysene mg/k Indeno[123-od]pyrene mg/k	okg <0.1 <0.1	1 <0.1 <0.1	0.91 <0.1	<0.1 <0.1	1 (0.1	1 <0.1 <0.1	<0.1	12 k0.1	e0.1 0.31 e0.1	40.1 40.1	3.4 <0.1 <0.1	1	1.1 <0.1	37 (0.1 (0.1	40.1 40.1 40.1	1.1 0.27 ±0.1	<0.1 <0.1	26 (0.1	1.2 ×0.1	2.7 (0.1	<0.1 <0.1 d	0.1 <0.1 <0.1
Indeno[123-od]pyrene mg/k dibenz[a,h]anthracene mg/k	3kg e01 e01	0.17 e0.1	e0.1	e0.1 e0.1	e01 e01 e01	01 01	e0.1	51401	(0.1	e0.1	07 01 01	0.	19 (0.1 (0.1	e0.1	01 01	e0.1 e0.1 e0.1	e0.1 e0.1	51 (0.1	e0.1	0.55 ±0.1	e0.1 e0.1 e1	0.1
benzo[ghi]perylene mg/k	oko <0.1 <0.1	0.53 <0.1 <0.1	<0.1 <0.1	<0.1 <0.1	0.25 < 0.1 0.2	4 < 0.1 < 0.1	<0.1	9.3 < 0.1	<0.1 <0.1 <0.1	s0.1 s0.1	2.5 < 0.1 < 0.1	- 1	1.1 < 0.1 < 0.1 0	29 40.1 40.1	40.1 40.1 40.1	0.7 < 0.1 < 0.1	<0.1 <0.1	16 < 0.1	0.66 < 0.1	1.8 < 0.1	<0.1 <0.1 <	0.1 <0.1 <0.1
phenol mg/k	ykg <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	3 <0.3	<0.3 <0.3 <0.3	40.3 d0.3	<0.3 <0.3 <0.3	<0.3	<0.3 <0.3 <0.3	<0.3 <0.3	<0.3 d0.3 d0.3	<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
1,1-dichloroethane and 1,2-dichloroethane (combined) mg/k	3kg <0.003 <0.003	<0.003 <0.003 <0.003	<0.003 <0.003	<0.003 <0.003	<0.003 <0.003 <0.003	<0.003 <0.003	<0.003 <0.0	0.003	<0.003 <0.003 <0.003	<0.003 <0.003	<0.003 <0.003 <0.003 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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	3 <0.003	<0.003 <0.003 <0.003	<0.003 <0.003	<0.003 <0.003 <0.003	<0.003 <0.003 <0.003	<0.003 <0.003	<0.003 <0.003 <0.001 <0.001 <0.001 <0.001	<0.003 <0.003	40.003 <0.003 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.003 <0.003 <	0.003 <0.003 <0.003
tetrachloroethylene mg/k	okg <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 <0.0	001 <0.001	<0.001 <0.001 <0.001	<0.001 <0.001	<0.001 <0.001 <0.00	1 <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 <0.001	<0.001 <0.001	<0.001 <0.001 <	0.001 <0.001 <0.001
carbon tetrachloride; tetrachloromethane mg/k		0.001 00.001	<0.001	<0.001 <0.001	<0.001 <0.001 <0.001	<0.001 <0.001	<0.001 <0.0	001 <0.001	<0.001 <0.001 <0.001	20.001	0.005 0.005 0.005	1 <0.001	<0.001 <0.001 <0.001 <0.001 <0.001	<0.001	20.001 20.001	20.001 20.001	0.001	<0.001 <0.001 <0.001	<0.001 <0.001	<.U.001 <u.001< td=""><td><0.001 <0.001 <1</td><td>0.001 <0.001 <0.001</td></u.001<>	<0.001 <0.001 <1	0.001 <0.001 <0.001
trichloroethylene; trichloroethene mg/k vinyl chloride; chloroethylene mg/k	3kg e0.001 e0.001	20.001 20.001 20.001	×0.001 ×0.001	<0.001 <0.001	L0 001 L0 001 L0 001	e0.001 e0.001	<0.001 <0.0	001 (0.001	20.001 20.001 20.001	20.001 20.001	20.001 20.001 20.00	1 <0.001	c0.001 c0.001 c0.001	r0.001 r0.001	20.001 20.001 20.001	20.001 20.001 20.001	20.001 20.001	e0.001 e0.001	e0.001 e0.001	r0.001 r0.001	20.001 20.001 21	0.001 (0.001 (0.001
DDT (ISO); clofenotane (INN); dicophane; 1,1,1-trichloro mg/k	ako				10001																	
DDT (ISO); clofenotane (INN); dicophane; 1,1,1-trichloro mg/k chlordane (ISO); 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-te mg/k	a/kg																					
hexachlorocyclohexanes, including lindane mg/k	g/kg																					
dieldrin (ISO) mg/k endrin (ISO); 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4 mg/k	akg																					
endrin (ISO); 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4 mg/	p/kg																					
heptachlor (ISO); 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-te mg/k hexachlorobenzene mg/k	2/kg =0.5	k0.5 k0.5	<0.5 <0.5	z05 z05	r05 r05	r0.5	v0.5	5 205	z05 z05	k0.5 k0.5	r0.5 r0.5 r0.6	×0.5	r05 r05	v05 v05	r05 r05	r05 r05	r05	<0.5 <0.5	r0.5	k0.5 k0.5	v0.5	en F
chlordecone (ISO); perchloropentacyclo[5,3,0,02,6,03,9 mg/k	aka	10.0	10.0			10.0					30.0	20.0		1000		120 000	10.5		10.0	100		50.0
aldrin (ISO) mg/k																						
polychlorobiphenyls; PCB mg/k dodecachloropentacyclo[5.2.1.02,6.03,9.05,8]decane; r mg/k	ykg k0.1 k0.12	<0.1 <0.12 <0.1	<0.1 <0.12	<0.12	<0.1 <0.12 <0.1	<0.1 <0.12	<0.1	1 <0.12	<0.1 <0.12 <0.1	<0.12 <0.12	<0.1 <0.12 <0.1	<0.12	<0.1 <0.12 <0.12	<0.1 <0.12	k0.1 k0.12	<0.12 <0.12 <0.1	<0.12	<0.1 <0.1	<0.12 <0.1	<0.1 <0.12	k0.1	<0.12
gogecacrisoropentacyclo[5.2.1.02,6.03,9.05,8]decane; r mg/r	awa	+	 	+ + +	+	+							+						+ + +			
camprisoritor (ISO), toxaprierie Ingile	ang		 	+	 	1					+ + + + + +							+				
hexabromobiphenyl mg/k 2,3,7,8-TeCDD ng/ky	ang iko	 	l																			
1.2.3.7.8-PeCDD ng/			t														_	+ + +				
1,2,3,7,8-PeCDD ng/kg 1,2,3,4,7,8-HxCDD ng/kg 1,2,3,6,7,8-HxCDD ng/kg	ykg .		1 1	1 1			1 1						1				1 1	1 1	1 1			
1.2,3.4,7.8-HxCDD ng/ki 1.2,3.6,7.8-HxCDD ng/ki 1.2,3.7.8,9-HxCDD ng/ki 1.2,3.7.8,4-HyCDD ng/ki	/kg																					
1,2,3,7,8,9-HxCDD ng/kr 1,2,3,4,6,7,8-HpCDD ng/kr	ykg																					
1,2,3,4,6,7,8-HpCDD ng/k	/kg																	+ + +				
OCDD ng/kg	ykg	+	 	+ + +	+	+							+						+ + +			
2,3,7,8-TeCDF ng/kg 1,2,3,7,8-PeCDF ng/kg	rny iko	 	 	+ + +	1 1	1 1			 				+ + + + + + + + + + + + + + + + + + + +	1 1					+ + +			
2,3,4,7,8-PeCDF Ingle	- Sko	 	l l	1 1	 	1 1	_				1 1			1 1								
1,2,3,4,7,8-HxCDF ng/kg)kg																					
1,2,3,6,7,8-HxCDF ng/kg	/kg																					
2,3,4.7,8-PeCDF ng/ky 1,2,3,4.7,8-PeCDF ng/ky 1,2,3,6.7,8-PeCDF ng/ky 1,2,3,6.7,8-PeCDF ng/ky 2,3,4,6,7,8-PeCDF ng/ky	ykg																					
2,3,4,6,7,8-HxCDF ng/kg	ykg																					
1,2,3,4,6,7,8-HpCDF ng/ks 1,2,3,4,7,8,9-HpCDF ng/ks	ykg																	+ + +				
1,2,3,4,6,7,8-HpCDF ng/ki 1,2,3,4,7,8,9-HpCDF ng/ki DCDF ng/ki	ing in a																					
OCOF Ingw	yng	1 1 1	l	1 1	1 1	1 1	1							1 1								

Determinand (laboratory concentrations)					T									I	1								
	Unit WSC19A	WSC21	WSC21[1] BHC14 BHC14[1]	BHC15	BHC15[1] BHC22	BHC17	BHC17[1] BHC18 BHC19	BHC19[1] BHC2	0 BHC	24 BHC26 BHC26[1]	BHC23	HC23[1] BHC32 BHC32[1]		BHC08[1] BHC05 TPC02	TPC07	TPC08 BH13CP BH13CP[1] BHC30	BHC31 BHC32[2] BHC102	BHC102[1] E	HC102[2] BHC06B BHC06B[1] B	BHC10	BHC01 BHC01[1] TPC09	TPC09[1]	BHC09 BHC10[1] WSC23 WSC16
Classification Result	Non Hazardo	us Non Hazardous	Non Hazardous Non Hazardous Non Hazardou 1.75 3.10 5.10	Non Hazardous	Non Hazardous Non Hazardous	s Non Hazardous	Non Hazardous Non Hazardous Non Hazardous		azardous Non F	Hazardous Non Hazardous Non Hazardous	Non Hazardous	ion Hazardous Non Hazardous Non Hazard	ous Non Hazardous	Non Hazardous Non Hazardous Non Hazardous	Non Hazardous	Non Hazardous Non Hazardous Non Hazardous Non Hazardo	us Hazardous Non Hazardous Non Hazardous	Non Hazardous IN	on Hazardous Non Hazardous Non Hazardous N 0.50 0.45 2.60 0.	ion Hazardous	Non Hazardous Non Hazardous Non Hazardous		Non Hazardous Non Hazardous Non Hazardous Non Hazardous
Depth	m 2.40	0.75	1.75 3.10 5.10	3.7	6.7 2.0	2.50	5.30 0.1 3.00	4.00 4.7	2.5	0.7 2.3	0.8	.0 0.6 4.5	2.6	3.7 2.5 1.00	1.50	2.00 2.00 3.00 1.15	0.40 0.75 2.50	4.50 1	0.50 0.45 2.60 0.	0.20	0.30 1.70 0.20	1.50	5.50 6.50 1.10 0.4
moisture (no correction)	%	4.6 3.8	12 16	1 1:	12 16	16 20	14 6.8 1	1/ 15	9.5	11 8.7 1	5.9	14 12	16 1/	27 30 1	7 9.6	15 9.6 7.9	14 13 11 20	2.7	15 10 32	9.4	4.2 15 12	12 19	26 24 12 7.8
antimony (antimony trioxide)	mg/kg <1.32														_								
arsenic (arsenic trioxide)		K1.32	13 b.1 E	. 1 2	3.3 1	18	12	+	3.6	1.0 4./ 2	3.3	1.3 /.9	2.0 4.8	15 ZZ 7.8	9	p.d /./ 26	0.0 41 10		11 27	25	4.5 Z 24	25	9.1 5.8 b 8.5
beryllium (beryllium oxide)	mg×g		<1.288 <1.288 <1.288											19 31-1288									
boron (diboron trioxide; boric oxide)	mg/xg <1.288	<1.288	<1.288 <1.288 <1.288	<1.288	<1.288 0.86	86 €1.288	0.91		<1.28				1.1 <1.288		0.5	1.1 <1.288 <1.288 <1.288	1.5 <1.288		1 25	1.9	<1.288 <1.288 0.71	1 2.8	2.7 1.6 (1.288 1.2
cadmium (cadmium oxide)	mg×g xu.114	<0.114	<0.114 <0.114 <0.114	KU.114	KU.114 KU.114	0.21	0.12	80.11	<0.11	4 0.22 e0.114	<0.114	0.114 <0.114 <0.114	kU.114	<0.114 <0.114 0.14	4 < 0.114	<0.114 <0.114 <0.114 0	.14 0.84 0.15		KU.114 KU.114	2.4	d0.114 d0.114 0.19	9 80.114	KU.114 KU.114 U.1
chromium in chromium(III) compounds (chro chromium in chromium(VI) compounds (chro	omium(iii) q mg/kg	2.4 5	7.39 4.6 5 ×0.962 ×0.962 ×0.962	.1 4.	6.2 25 -0.052 -0.052	25 26	14		10	3.4 6.8 2	9 4	2.3 10	8.9 9	22 28 10	9.9	6 8.2 18	11 33 10 <0.962 <0.962		11 34	50	6.6 3.4 10	<0.962	11 8.2 / 13
		<0.962	<0.962 <0.962 <0.962	<0.962	<0.962 <0.962	<0.962	<0.962	<0.96	< 0.96	2 <0.962 <0.962	<0.962	0.962 <0.962 <0.962	<0.962	<0.962 ×0.962 <0.962	×0.962	<0.962 <0.962 <0.962 <0.962	<0.962 <0.962		<0.962 <0.962 d	:0.962	<0.962 <0.962 <0.962	<0.962	<0.962 <0.962 <0.962 <0.962
copper (dicopper oxide; copper (1) oxide)	mg/kg	1.8 2.9	5.5 3.5 3	.8 2.	2.6 19	19 20	36		3.9	1.3 9 1	2 1	0.63 43	4.6 9.5	11 13 13	3 11	4.9 3.2 7.6	7.4 250 16		35 18	270	9.8 1.8 810	10 22	5 3.9 7.2 10
lead (lead compounds with the exception of t	those sped mg/kg	4.4 5.6	6.4 3.2 2	.7 2.9	2 12	12 22	52		5.5	4.4 19 1	1 3.8	1.9 22	8.4 28	41 31 74	4 22	15 5.6 9.8	14 1500 21		67 49	280	19 4.3 340	90 45	13 9.8 47 37
manganese (manganese sulphate)	mg/kg																						
mercury (mercury dichloride)	mg/kg <0.135	<0.135	<0.135 <0.135 <0.135	0.1	<0.135 0.1	11 0.31	0.8	<0.13	<0.13	5 <0.135 <0.135	<0.135	0.135 0.19 <0.135	0.11	<0.135 <0.135 0.18	8 0.1	<0.135 <0.135 <0.135	0.1 0.63 < 0.135		0.24 (0.135	0.43	c0.135 c0.135 1.3	3 40.135	<0.135 <0.135 0.1
molybdenum (molybdenum(VI) oxide)	mg/kg																						
nickel (nickel chromate)	mg/kg ception of c mg/kg <0.511	1.4 2.5	5.3 4.6 4	.4 5.	4.2 30	30 33	18		6.1	1.5 7.3 1	6 3.2	1.9 12	8.9 14	22 26 6.8	8 9.9	6.5 5.7 14	12 64 12		14 33	50	7.7 3 25	27	10 8 6 12
selenium (selenium compounds with the exc	ception of cimg/kg <0.511	<0.511	<0.511 <0.511 <0.511	<0.511	<0.511 0.1	0.8 < 0.511	0.25	<0.51	<0.51	1 <0.511 <0.511	<0.511	0.511 <0.511 <0.511	<0.511	<0.511 <0.511 <0.511	<0.511	<0.511 <0.511 <0.511 <0.511	0.73 < 0.511		<0.511 <0.511 <	:0.511	0.23 0.2 1.3	.3 0.56	<0.511 <0.511 <0.511
zinc (zinc sulphate)	mg/kg	8.1 11	18 13	0 9	8.8 3	38 46	83		12	4.2 27 5	4 6.7	3.9 32	18 34	49 64 240	0 74	53 15 110	29 330 30		51 76	590	23 9.4 150	68	28 18 17 59
TPH (C6 to C40) petroleum group	mg/kg <10	<10	<10 <10	<10	<10 <10	<10	<10 36 5	50 34 <10	<10	<10 <10	<10	10 <10 <10	<10	<10 <10 25	3 <10	<10 180 910 <10	2600 <10 780	69 6	10 <10 <10	39	<10 <10 250	50 <10	<10 <10 <10 250
	petrol n/a																						
tert-butyl methyl ether; MTBE; 2-methoxy-2-m	nethylpropal mg/kg			1																			
berzene	mg/kg <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	<0.001 <0.00	<0.00	11 <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	<0.001 <	0.001 <0.001 <0.001 <	0.001	<0.001 <0.001 <0.001	<0.001	<0.001 <0.001 <0.001
toluene	mg/kg <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 <0.00	<0.00	1 <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	<0.001 <	0.001 <0.001 <0.001 <	0.001	d0.001 d0.001	<0.001	<0.001 <0.001 <0.001
ethylbenzene	mg/kg <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 <0.00	<0.00	11 <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	<0.001 <	0.001 <0.001 <0.001 <	0.001	<0.001 <0.001 <0.001	<0.001	<0.001 <0.001 <0.001
xylene	mg/kg <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 <0.00	<0.00	1 <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 <0.001	<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
cyanides (salts of hydrogen cyanide with the	exception mg/kg <0.942	< 0.942	<0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.042 <0.942 <0.942	<0.942	<0.942 <0.942	<0.942	<0.942	< 0.94	< 0.94	2 <0.942 <0.942	<0.942	0.942 <0.942 <0.942	<0.942	<0.942 <0.942 <0.942	< 0.942	<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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <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 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <	<0.942		<0.942 <0.942 <	0.942	0.942 4.9	9 < 0.942	<0.942 <0.942 <0.942 <0.942
	pH	8.2 8.3	8 9.3 8	.3 8.	8.3 9.4	0.4 6	8.4		10.4	8.5 8.8 4.1	8 7.3	8.2 8.9	8.6 10.1	8.4 9 8.4	4 8.7	8.1 9.1 8.3	8.9 8.4 8.9		8.1 9.2	10	8.6 8.7 8.4	4 8.5	9 9.3 8.3 10.5
naphthalene	mg/kg <0.1	<0.1	<0.1 d0.1 d0.1	<0.1	<0.1 <0.1	<0.1	<0.1 0.44 <0.1	<0.1 <0.1	<0.1	<0.1 <0.1	<0.1	0.1 40.1 40.1	<0.1	<0.1 <0.1 0.69	9 < 0.1	<0.1 <0.1 <0.1 <0.1	3 <0.1 <0.1	<0.1	0.1 40.1	0.21	d0.1 d0.1 2.9	9 40.1	<0.1 <0.1 <0.1 <0.1
acenaphthylene	mg/kg <0.1	<0.1	<0.1 <0.1 <0.1	<0.1	<0.1 <0.1	<0.1	<0.1 0.99 <0.1	<0.1	<0.1	<0.1 <0.1	<0.1	0.1 <0.1 <0.1	<0.1	<0.1 <0.1 2.7	7 <0.1	<0.1 <0.1 <0.1 <0.1	1 <0.1 <0.1	<0.1	0.1 <0.1 <0.1	0.42	d0.1 d0.1 0.29	29 < 0.1	<0.1 <0.1 <0.1
acenaphthene	maka k0.1	<0.1	<0.1 <0.1 <0.1	<0.1	<0.1 <0.1	<0.1	<0.1 0.57 <0.1	<0.1 <0.1	<0.1	<0.1 <0.1	<0.1	0.1 40.1 40.1	k0.1	d0.1 d0.1 0.79	9 < 0.1	<0.1 <0.1 <0.1 <0.1	0.93 < 0.1 < 0.1	<0.1	0.1 <0.1 <0.1	0.24	d0.1 d0.1 0.25	25 < 0.1	<0.1 <0.1 <0.1 <0.1
fluorene	mg/kg <0.1	<0.1	<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 5.1	1 < 0.1	<0.1 <0.1 <0.1 <0.1	1.2 <0.1 <0.1	<0.1	0.1 <0.1 <0.1	0.25	40.1 0.66	6 < 0.1	<0.1 <0.1 <0.1
phenanthrene	mg/kg <0.1	<0.1	<0.1 <0.1 <0.1	<0.1	<0.1 <0.1	0.51	<0.1 4.4 <0.1	<0.1 <0.1	<0.1	<0.1 <0.1	<0.1	0.1 <0.1 <0.1	<0.1	40.1 40.1 25	5 1.1	0.33 <0.1 <0.1 <0.1	8.3 0.14 < 0.1	<0.1	0.1 <0.1 <0.1	2.3	40.1 1.6	.6 <0.1	<0.1 <0.1 0.97 0.46
anthracene	maka <0.1	<0.1	<0.1 <0.1 <0.1	<0.1	<0.1 <0.1	<0.1	<0.1 2.2 <0.1	<0.1	<0.1	<0.1 <0.1	<0.1	0.1 40.1 40.1	<0.1	k0.1 k0.1 7.8	0.33	0.11 < 0.1 < 0.1 < 0.1	3.1 <0.1 <0.1	<0.1	0.1 <0.1	1.2	d0.1 d0.1 0.3	3 < 0.1	<0.1 <0.1 0.2 0.16
fluoranthene	mg/kg <0.1 mg/kg <0.1	<0.1	<0.1 <0.1 <0.1	<0.1	<0.1 <0.1	1.5	<0.1 15 <0.1	<0.1	<0.1	<0.1 <0.1	0.52	0.1 0.12 < 0.1	<0.1	1.2 <0.1 21	1 1	0.61 <0.1 <0.1 <0.1	13 0.2 <0.1	<0.1	0.15 < 0.1	5.1	1 40.1 1.2	2 0.75	<0.1 <0.1 1.6 1.1
pyrene	maka k0.1	<0.1	<0.1 <0.1 <0.1	<0.1	<0.1 <0.1	1.5	<0.1 14 <0.1	<0.1 <0.1	<0.1	<0.1 <0.1	0.42	0.1 0.15 40.1	<0.1	1.2 <0.1	9 1.1	0.88 < 0.1 < 0.1 < 0.1	17 0.3 < 0.1	<0.1	0.17 < 0.1	6.1	0.82 40.1 1.4	4 0.51	<0.1 <0.1 2 0.94
berzo[a]anthracene	mg/kg <0.1	<0.1	<0.1 <0.1 <0.1	<0.1	<0.1 <0.1	0.9	<0.1 7.5 <0.1	<0.1 <0.1	<0.1	<0.1 <0.1	<0.1	0.1 <0.1 <0.1	<0.1	<0.1 <0.1 12	2 0.9	0.18 < 0.1 < 0.1	8.1 <0.1 <0.1	<0.1	0.1 <0.1	2.8	d0.1 d0.1 0.6	.6 <0.1	<0.1 <0.1 1.6 0.43
chrysene	mg/kg <0.1	<0.1	<0.1 <0.1 <0.1	<0.1	<0.1 <0.1	0.98	<0.1 6.7 <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 12	2 0.66	0.23 <0.1 <0.1 <0.1	10 < 0.1 < 0.1	<0.1	0.1 <0.1 <0.1	3.5	e0.1 e0.1 0.94	34 < 0.1	<0.1 <0.1 1 0.23
chrysene benzo[b]fluoranthene benzo[k]fluoranthene	mg/kg <0.1	<0.1	<0.1 <0.1 <0.1	<0.1	<0.1 <0.1	1	<0.1 9.2 <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	1 0.67	0.49 < 0.1 < 0.1	12 < 0.1 < 0.1	<0.1	0.1 <0.1 <0.1	3.9	e0.1 e0.1 0.64	4 < 0.1	<0.1 <0.1 1.3 1.1
berzo[k]fluoranthene	mg/kg <0.1	<0.1	<0.1 <0.1 <0.1	<0.1	<0.1 <0.1	0.57	<0.1 3.8 <0.1	<0.1 <0.1	<0.1	<0.1 <0.1	<0.1	0.1 <0.1 <0.1	<0.1	<0.1 <0.1 4.1	3 0.15	0.11 < 0.1 < 0.1	4 <0.1 <0.1	<0.1	0.1 <0.1 <0.1	1.8	d0.1 d0.1 0.43	3 < 0.1	<0.1 <0.1 0.53 0.36
benzo[a]pyrene; benzo[def]chrysene	maka k0.1	<0.1	<0.1 <0.1 <0.1	<0.1	<0.1 <0.1	0.85	<0.1 7.3 <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 7.8	8 0.33	0.4 < 0.1 < 0.1	12 < 0.1 < 0.1	<0.1	0.1 <0.1	3.1	«0.1 «0.1 0.56	6 40.1	<0.1 <0.1 1.1 0.64
indeno[123-od]pyrene	mg/kg <0.1	<0.1	<0.1 <0.1 <0.1	<0.1	<0.1 <0.1	0.4	<0.1 4.8 <0.1	<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.	7 0.54	0.38 < 0.1 < 0.1 < 0.1	7.9 < 0.1 < 0.1	<0.1	0.1 <0.1 <0.1	2.2	e0.1 e0.1 e0.1	<0.1	<0.1 <0.1 0.61 0.73
dibenz(a,h)anthracene	mg/kg <0.1	<0.1	<0.1 <0.1 <0.1	<0.1	<0.1 <0.1	<0.1	<0.1 1.3 < 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 1.4	4 0.34	<0.1 <0.1 <0.1 <0.1	2.4 < 0.1 < 0.1	<0.1	0.1 <0.1	1.2	o.1 o.1 o.1	<0.1	<0.1 <0.1 <0.1
benzo[ghi]perylene	moka e0.1	e0.1	e0.1 e0.1 e0.1	e0.1	c0.1	0.51	e0.1 5.1 e0.1	e0.1 e0.1	e0.1	e01 e01	e0.1	01 -01 -01	e0.1	e0.1 e0.1 4.3	2 0.33	0.18 e0.1 e0.1	14 (0.1	e0.1	01 (01	21	01 (01 (01	e0.1	e0.1 0.73 0.39
phenol	maka <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 <0.3	<0.3	<0.3 <0.3 <0.3 <0.3	<0.3 <0.3		<0.3 <0.3	.0.3	0.3 40.3 40.3	<0.3	<0.3 <0.3 <0.3 <0.3
1,1-dichloroethane and 1,2-dichloroethane (c	mg/kg <0.3	e0.003	×0.003 ×0.003 ×0.003	e0.003	×0.003 ×0.003	c0.003	r0.003 r0.003 r0.003	r0.003 r0.00	3 60.00	3 20.003 20.003	e0.003	0.003 20.003 20.003	e0.003	v0.003 v0.003 v0.003	r0.003	×0.003 ×0.003 ×0.003	r0.003 r0.003 r0.003	e0.003	0.003 20.003 20.003	0.003	r0.003	r0.003	e0.003 e0.003 e0.003
tetrachloroethylene	mg/kg <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 <0.00	<0.00	1 <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 <0.001	<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
carbon tetrachloride; tetrachloromethane	mg/kg <0.001	e0.001	<0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	e0.001	<0.001	c0.001	c0.001 c0.001 c0.001	c0.001 c0.00	<0.00	1 20.001 20.001	c0.001	0.001 20.001 20.001	z0.001	v0.001 v0.001	z0.001	e0.001 e0.001 e0.001	e0.001 e0.001 e0.001	<0.001	0.001 (0.001 (0.001	-0.001 -0.001 -0.001	r0.001	c0.001 c0.001 c0.001
trichloroethylene; trichloroethene	mo/kg #0.001	<0.001	e0.001 e0.001 e0.001	e0.001	<0.001	c0.001	c0.001 c0.001 c0.001	c0.001 c0.00	<0.00	1 20.001 20.001	c0.001	0.001 20.001 20.001	z0.001	v0.001 v0.001	z0.001	e0.001 e0.001 e0.001	<0.001 <0.001 <0.001	<0.001	0.001 (0.001 (0.001	0.001 40.001	r0.001	c0.001 c0.001 c0.001
vinyl chloride; chloroethylene	mg/kg <0.001	×0.001	<0.001 <0.001 <0.001	e0.001	×0.001 ×0.001	c0.001	c0.001 c0.001	c0.001 c0.00	<0.00	1 0.001 0.001	c0.001	0.001 20.001 20.001	z0.001	40.001 40.001	c0.001	e0.001 e0.001 e0.001	20 001 20 001 20 001	<0.001	0.001 20.001 2	0.001	40.001 ×0.001	r0.001	c0.001 c0.001 c0.001
DDT (ISO); clofenotane (INN); dicophane; 1,1,	1.trichloss make															10.001							
chlordane (ISO); 1,2,4,5,6,7,8,8-octachloro-3	3a 4 7 7a-te moško																						
hexachlorocyclohexanes, including lindane											1				1			+					
dieldrin (ISO)		-																				+	
makin (RDO), 4 D D 4 40 40 hours 11																							
	ma/ka																						
endrin (ISO); 1,2,3,4,10,10-hexachloro-6,7-ep	mg/kg paxy-1,4,4 mg/kg																						
heptachlor (ISO); 1,4,5,6,7,8,8-heptachloro-3	mg/kg paxy-1,4,4 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 <0.5 <0.5	<0.5	2.05	<0.5 <0.5	k0.5	05 405 405	40.5	40.5 40.5 40.5	<0.5	*05 *05 *05 *04	05 05		×05 ×05 ×	0.5	05 05 05	<0.5	vii.5 vii.5 vii.5 vii.5
heptachlor (ISO); 1,4,5,6,7,8,8-heptachloro-3 hexachlorobenzene	mg/kg poxy-1,4,4 mg/kg 3a,4,7,7a-te mg/kg mg/kg e0.5	<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		<05 <05 <	0.5	a5 a5 a5	<0.5	×0.5 ×0.5 ×0.5
heptachlor (ISO); 1,4,5,6,7,8,8-heptachloro-3 hexachlorobenzene chlordecone (ISO); perchloropentacyclo(5,3,6	mg/kg paxy-1,4,4 mg/kg 3a,4,7,7a-te mg/kg mg/kg x0.5 0,02,6,03,5 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 <0.5	<0.5	0.5 <0.5 <0.5	- 0.5	40.5 40.5 40.5	<0.5	<05 <05 <05 <05	<0.5 <0.5		d0.5 d0.5 d	:0.5	:05	<0.5	<0.5 <0.5 <0.5
heptachlor (ISO); 1.4,5,6,7,8,8-heptachloro-3 hexachlorobenzene chlordecone (ISO); perchloropentacyclo[5,3,6 aldrin (ISO)	mg/kg spoxy-1.4.4 mg/kg 3a.4.7.7a-64 mg/kg mg/kg 0.02,6,03,9 mg/kg mg/kg	<0.5	<0.5 <0.5 <0.5	<0.5	<0.5 <0.5	<0.5	<d.5 <0.5="" <0.5<="" td=""><td><0.5 <0.5</td><td><0.5</td><td><0.5 <0.5</td><td><0.5</td><td>05 -05 -05</td><td>-0.5</td><td>d0.5 d0.5 d0.5</td><td><0.5</td><td><0.5 ×0.5 ×0.5</td><td><0.5 <0.5</td><td></td><td>405 405 4</td><td>.0.5</td><td>-0.5 -0.5</td><td><0.5</td><td><0.5 <0.5 <0.5 <0.5 <0.5</td></d.5>	<0.5 <0.5	<0.5	<0.5 <0.5	<0.5	05 -05 -05	-0.5	d0.5 d0.5 d0.5	<0.5	<0.5 ×0.5 ×0.5	<0.5 <0.5		405 405 4	.0.5	-0.5 -0.5	<0.5	<0.5 <0.5 <0.5 <0.5 <0.5
heptachlor (ISO); 1,4,5,6,7,8,8-heptachloro-3 hexachlorobenzene chlordecone (ISO); perchloropentacyclo(5,3,0 aldrin (ISO) perfachlorobenzene	malkg spacy-1.4.4 mg/kg 3a.4.7.7a-te mg/kg mg/kg 0.02.6.03.5 mg/kg mg/kg	<0.5	d5 d5 d5	<0.5	K0.5 K0.5	<0.5	405 405 405	<0.5 <0.5	<0.5	d0.5 d0.5	<0.5 -	05 05 05	40.5 40.12	405 405 405	<0.5	d5 d5 d5 d5	45.5 45.5		40.5 40.5 44.5 41.5 40.5	0.5	45 45	<0.5	405 405 405
heptachlor (ISO); 1,4,5,6,7,8,8-heptachloro-3 hexachlorobenzene chlordecone (ISO); perchloropentacyclo(5,3,0 aldrin (ISO) perfachlorobenzene	malkg spacy-1.4.4 mg/kg 3a.4.7.7a-te mg/kg mg/kg 0.02.6.03.5 mg/kg mg/kg	<0.5 <0.1	-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 <0.12 <0.12	<0.5	c0.5 < c0.5	<0.5	05 05 05	<0.5	e0.5 e0.5 e0.5 e0.12 e0.1	<0.5	40.5 40.5 40.5 40.5 40.5 40.5 40.12 40.12 40.12	<0.5 <0.5 <0.1		60.5 40.5 dd	0.5	-0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5 -0.5	<0.5	
heptachlor (SOI): 1,4,5,6,7,8,8-heptachloro-3 heardhiorobenzene chlordecone (SOI): perchloropentacyclo(5,3, aldrin (SOI) pertachlorobenzene polychlorobipharyld; PCB dodecachloropentacyclo(5,2,1,02,6,03,9,05,8	mg/kg mg/kg sa.4.7.7a-kt mg/kg sa.4.7.7a-kt mg/kg mg/kg s0.5 mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg sijdecane; mg/kg mg/kg sijdecane; mg/kg mg/kg mg/kg mg/kg sijdecane; mg/kg mg/kg sijdecane; mg/kg mg/kg mg/kg mg/kg sijdecane; mg/kg mg/k	<0.5	405 405 405	<0.5	×0.5 ×0.5	<0.5	405 405 405 40.12 40.1	<0.5 <0.5	<0.5	-0.5 <0.5	<0.5	0.5 0.5 0.5	<0.5	40.5 40.5 40.5 40.12 40.1	<0.5	d5 d5 d5 d5	40.5		40.5 40.5 41 40.12 40.1 4	0.5	40.5 40.5 40.5 40.5 40.1 40.12 40.1	<0.5 <0.12	40.5 40.5 40.5 40.5 40.5 40.5 40.5
hapsachior (SO); 1.4.6.6.7.8,8-hapsachioro-3 hassachiorobanzane chiordecone (ISO); perchioropentacyclo[5.3.6 aldin (ISO) pertachiorobenzene polychlorobjohervis; POB dodocar/foropentacyclo[5.2.1.02.6.03,9.05,8 camphochior (SO); toxaphone	mg/kg mg/k	<0.5 <0.1	40.5 40.5 40.5	<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 +0.1	<0.5	05 «05 «05 «01 «01	40.5	e0.5 ×0.5 ×0.5 ×0.5 ×0.5 ×0.5 ×0.5 ×0.5 ×	<0.5	45 45 45 45 45 45 45 45 45 45 45 45 45 4	40.5 40.5		40.5 40.5 40.1 40.11 40.11 40.11	0.5	-0.5 -0.5 -0.5 -0.1 -0.12 -0.1	<0.5	-05 -05 -05 -05 -05 -05 -05 -05 -05 -05
hepaschier (SIC): 1.4.5.6.7.8.8-hepaschicro-3 hexaciforotenanea chioriacone (SICI): perchioropentacyclo[5.3.6] alalini (SICI): pertrachliorobenzene polychtorobenzene polychtorobenzene campochieri (SICI): toxaphene hexabiromobiphanyi.	mg/kg paxy-1,4,4 mg/kg a,4,7,7a-let mg/kg mg/kg <0.55 mg/kg <0.55 mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	<0.5	d5 d5 d5	<0.5	<05 <05	<0.5	-0.5 -0.5 -0.5 -0.12 -0.1	<0.5 <0.5	<0.5	-0.5 -0.5 -0.1	<0.12	+0.5 +0.5 +0.5 +0.1 +0.1	<0.5 <0.12	40.5 40.5 40.5 40.12 40.1	<0.5	d5 d5 d5 d5 d5	d5 d5 d5		(0.5 (0.5 (0.5 (0.5 (0.5 (0.5 (0.5 (0.5	0.5	-05 -05 -05 -01 -012 -0.1	<0.5	d5 d5 d5 d5
hepaschier (SIC): 1.4.5.6.7.8.8-hepaschicro-3 hexaciforotenanea chioriacone (SICI): perchioropentacyclo[5.3.6] alalini (SICI): pertrachliorobenzene polychtorobenzene polychtorobenzene campochieri (SICI): toxaphene hexabiromobiphanyi.	maka payy-1.4.4 mgka 13,4.7.7a-te mgka	<0.5 <0.1	65 (65 (65)	<0.5	<0.5	<0.5	65 (65 (65 (65 (65 (65 (65 (65 (65 (65 (<0.5 <0.5	<0.5	+0.5 +0.5 -0.1	<0.5	40.1	<0.5 <0.12	65 65 65	<0.5	d5 d5 d5 d5	65 05		d5 d5 d	.0.5	05 05 05	<0.5	
hepaschier (SIC): 1.4.5.6.7.8.8-hepaschicro-3 hexaciforotenanea chioriacone (SICI): perchioropentacyclo[5.3.6] alalini (SICI): pertrachliorobenzene polychtorobenzene polychtorobenzene campochieri (SICI): toxaphene hexabiromobiphanyi.	mg/kg	<0.5	d5 d5 d5	<0.5	405 405	<0.5	46.5 46.5 46.5 46.5 46.12 46.11	<0.5 <0.5 <0.12 <0.12	<0.5	(65) (65)	<0.5 -0.12	65 65 65	<0.5 <0.12	ed.5 ed.5 ed.5	<0.5	405 405 405 405 405 405 405 405 405 405	45 05		465 460 4	0.12	-0.5 -0.5 -0.5 -0.5 -0.5	<0.5 <0.12	45 45 45 45
hepachin (EG): 1.4.6.6.7.8.8-hepachico-3 hexaciforobenzene chiordecone (EG): perchioropentacyclofi.3.0 aldrin (EG) pertachlorobenzene polychlorobenzene polychlorobenzene conductive (EG): 10.2.6.03.9.05.8 camphochiris (EG): 10.2.6.03.9.05.8 camphochiris (EG): 10.2.6.03.9.05.8 camphochiris (EG): 10.2.6.03.9.05.8 12.3.7.8-FeCDD 12.3.7.8-PECDD 12.3.7.8-PECDD	mg/kg	<0.5 <0.1	45 45 45	<0.5	e0.5 e0.5	<0.5	65 65 65	<0.5 <0.5	<0.1	465 465 461	<0.12	G5 46.5 46.5 661 46.1	<0.5	d5 d5 d5	<0.5 <0.1	d5 d5 d5 d5	45 45		Q35 Q35 Q Q	:0.5	as as as	<0.5 <0.12	ds ds ds ds
hepachier (BCI): 1.4.6.6.7.8.8 hepatechiero-3 hexadirizortamen chioriscome (BCI): perchioropartiacy-iolifi.3.1 aidm (BCI): perchioropartiacy-iolifi.3.1 aidm (BCI): perchioropartiacy-iolifi.3.1 doctoration-perchiary-iolifi.2.1 doctoration-perchiary-iolifi.2.1 (D. Isaaphenia (D. Isaaphen	mg/kg	<0.5	45 45 45	<0.5	-0.5 ×0.5	<0.5	65 65 65	<0.5 <0.5	<0.5	46.5	<0.5 ×0.12	40.5 40.5 40.5 40.5 40.5 40.5 40.5 40.5	<0.5 <0.12	65 65 65	<0.5	d5 d5 d5 d5	d2 d2		05 05 05	.0.5	d5 d5 d5 d5	<0.5 <0.12	
happacher (EGC); 1.4.6.6.7.8.8.heptachiro-3 happacher (EGC); 1.4.6.6.7.8.8.heptachiro-3 happacher (EGC); perchargertacy (x)(5.1.4.6.7.8.8.8.8.8.8.8.8.8.8.8.8.8.8.8.8.8.8	moke moke	<0.5 <0.1	d5 d5 d5	<0.5	465 465	<0.5	G5 G5 G5	<0.5 <0.5 <0.12 <0.12	<0.5	-05 -05 -01	<0.5 <0.12	05	<0.5	d5 d5 d5	<0.5 <0.1	de 1 de 12 de 12	-65 - 65		0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	0.05	d5 d5 d5	<0.5	d5 d5 d5 d5
hepachier (BCI): 1.4.6.6.7.8.8 hepatechiero-3 hexadirizortamen chioriscome (BCI): perchioropartiacy-iolifi.3.1 aidm (BCI): perchioropartiacy-iolifi.3.1 aidm (BCI): perchioropartiacy-iolifi.3.1 doctoration-perchiary-iolifi.2.1 doctoration-perchiary-iolifi.2.1 (D. Isaaphenia (D. Isaaphen	mayka mayka	k0.5	35 35 45	<0.5	65.5	<0.5	55 - 55 - 55 - 62 - 61	d5 d5	<0.5	65 65	<0.5 <0.12	65 65 65	<0.5 <0.12	05 05 05 01 01	<0.1	d5 d5 d5 d5	43 43		35 35 35 3 35 35 35 3	.0.5	as as as	<0.5	ds ds ds ds
hepischier (EO); 1.4.6.6.7.8.8.hepischiero-3 heauchirochiera h	maks maks	<0.5	45 45 45	<0.5	e65 <65	<0.5	d5 d5 d5	<0.5 <0.5 <0.5 <0.12 <0.12 <0.12	<0.5	ed 5 ed 5	×0.5	40.5 40.5 40.5 40.5 40.5 40.5 40.5 40.5	<0.5 <0.12	65 65 65 65 65	<0.5 <0.1	46.5 46.5 46.5 46.5 46.5 46.5 46.5 46.5	d2 d2		0.6.0.6.0	.0.5	45 45 45 45 46 1 46 1 46 1 46 1 46 1 46	<0.5	d5 d5 d5 d5
hypother (IGD: 1.4.6.5.7.8 h synachro-) and insubstitution of IGD performance (IGD)	mayba mayba	<0.5 <0.1	35 35 35	<0.5	65 65	<0.5	35 35 35 35 35 372 31	d.5 d.5 d.5 d.12 d.12	<0.5	GS GS	r0.5	05 05 05	<0.12	d5 d5 d5	<0.1	4012 401 4012 4012	45 45		05 05 05 05 05 05 05 05 05 05 05 05 05 0	.0.12	G5 G5 G5	<0.12	45 45 45 43
hopsocker (GO: 1.4.6.6.7.18.8 registeritors -) hospocker (GO: 1.4.6.6.7.18.8 registeritors) hospocker (GO: 1.4.6.6.7.18.8 registeritors) and registeritors (GO: 1.4.6.18.8 registeritors) partial-footoobseritory (GO: 1.4.6.18.8 registeritors) partial-footoobseritory (GO: 1.4.6.18.8 registeritors) footoo calvinoperatory (GO: 1.4.6.18.8	mg/sc mg/s	-0.5 -0.1	35 35 45	×0.5	e3.5 e3.5	<0.5	05 05 05 05 07 07	+0.5 +0.5 +0.12 +0.12	<0.1	65 65	<0.5 s	05 d5 d5	<0.5 <0.12	05 05 05 01 01	<0.5	d5 d5 d5 d5	43 43		35 35 35 3 35 35 35 3	:0.12	85 45 45 461 401 401	<0.5	
hopsocker (GO: 1.4.6.6.7.18.8 registeritor) - Introductive (GO: 1.4.6.6.7.18.8 registeritor) - Introductive International Intern	mg/sc mg/s	<0.5 <0.1	d5 d5 d5	<0.5	40.5 40.5	<0.5	d5 d5 d5	40.5 ×0.5	<0.5	ed 5	x0.5	05 05 05 05 05 05 05 05 05 05 05 05 05 0	<0.5	65 65 65	<0.5 <0.1	45 45 45 45 45 45 45 45 45 45 45 45 45 4	d2 d2		0.6.0.6.0	.0.5	d5 d5 d5 d5	<0.12	
hepitels (60: 14.6.5.7.1.8 haputelses 3 (16.6.5.1.8 haputelses 3 (16.6.	100 http://dx.com/scales/scale	+0.5 +0.1	35 35 35	40.5	-0.5	<0.5	25 25 25 25 25 25 25 25 25 25 25 25 25 2	<0.5 <0.5 <0.5 <0.5 <0.12 <0.12 <0.12	<0.1	-05 -05 -05 -05 -05 -05 -05 -05 -05 -05	<0.5 s	05 05 05 05 05 05 05 05 05 05 05 05 05 0	<0.5 <0.12	d5 d5 d5	«0.5 «0.1	d3 d3 d3 d3 d12 d12	41		35 35 35 35 37 37 37 37 37 37 37 37 37 37 37 37 37	.0.5	65 65 65	<0.5	45 45 45
hepitels (60: 14.6.5.7.1.8 haputelses 3 (16.6.5.1.8 haputelses 3 (16.6.	mg/sc mg/s	40.5 40.1	35 35 45	40.5	45 45	<0.5	55 05 05 65 05 05	d0.5 d0.5 d0.5 d0.12	<0.5	65 65	<0.5	05 45 45 45 45 45 45 45 45 45 45 45 45 45	<0.5	05 05 05 01 01	×0.5	65 65 65 65 612 61 60 60	43 43		35 35 35 3 35 35 35 3	100.00	ds ds ds	<0.5	
hepother (GO: 1.4.6.5.7.8 in Symptotics o 3 beginner (GO: 1.4.6.5.7.8 in Symptotics o 3 the Control of the Co	100 yr. 1.4.7 (1995) 200 yr. 1.4.7 (1995) 200 yr. 1.4.7 (1995) 200 yr. 1.4.7 (1995) 200 yr. 1.4.7 (1995) 200 yr. 1.4.7 (1995) 200 yr. 1.7 (1995) 2	so.s	d5 d5 d5	c0.5	d5 d5	<05	65 d5 d5	e0.5 e0.5	<0.1	-05 -055 -051	<0.5 × 0.12	05	<0.5	d5 d5 d5	<05 <01	405 405 405 405 405 405 405 405 405 405			05 05 05 0	0.05	d5 d5 d5	<0.5 <0.12	d5 d5 d5 d5
Impactor (IGS. 1.4.6.2.7.2.8 Apparatives 3 Checkoose (IGS.) Checkoose (IGS.) (I	port 1.4 d poly li port 1.4 d poly li di 4.7 2 se poly li port 1.4 d poly li di 5.7 se poly li poly	±0.5	d5 d5 d5	<0.5	3 35	d5	35 35 35	40.5 40.5 40.5 40.12	<0.5	-05 -05	4012	05 05 05 05	<0.5 <0.12	d5 d5 d5	<0.5 <0.1	d1 d12 d12	41		35 35 3	100.00	65 65 65	K05	d5 d5 d5 d5
heganity (805, LASA 7,18 Apparties a females (810, partinepsis, partine), (810, partinepsis, pa	200 1 A 4 (1995) 200 1	40.1	35 35 45 35 35 45	c0.5	05 05	e05	05 05 05 05 05 05	40.5 40.5 40.12 40.12	40.1	65 65	405 × 405	05 45 45 45 45 45 45 45 45 45 45 45 45 45	40.5	05 05 05 01 01	<05 <01	455 45 45 45 45 45 45 45 45 45 45 45 45	43		35 35 35	0.05	25 d5 d5	ed.5	
https://doi.org/10.10.10.10.10.10.10.10.10.10.10.10.10.1	por 1.4 d psylo por 1.4 d psylo por 1.4 d psylo por 1.4 d psylo por 1.4 d psylo p	d5	d5 d5 d5	<0.5	d5 d5	<05	d5 d5 d5	d5 d5	<0.1	-05 -05	40.5	05	<0.5 do 12	#5 #5 #5 #5 #5 #65 #65 #65 #65 #65 #65 #	<0.5	405 405 405 405 405 405 405 405 405 405			05 05 0 05 05 0	.0.12	d5 d5 d5	cd.5	d5 d5 d5 d5
Impactor (IGS. 1.4.6.2.7.2.8 Apparatives 3 Checkoose (IGS.) Checkoose (IGS.) (I	2001 1.4 (1995) 2001 1.4 (1995) 2001 1.4 (1995) 2001 1.4 (1995) 2001 1.4 (1995) 2001 2.4 (1995	-05	35 45 45	×0.5	35 355	40.5	25 25 25 312 31	-0.5 -0.5 -0.5 -0.5 -0.12 -0.12	40.1	-05 -05 -05 -05 -05 -05 -05 -05 -05 -05	G0.5 G0.5 G0.12	05 05 05	d0.5	05 05 05 05 05 012 01	<05 <01	d1 d12 d12 d12 d12 d12 d12 d12 d13 d12 d13 d13 d13 d13 d13 d13 d13 d13 d13 d13	43		35 35 3		65 65 63 81 612 61	rd.12	d5 d5 d5 d5

Client: Geosphere Environmental Ltd Quotation No.: Q17-10179 Order No.: 2543,GL			Chemtes Clier Clie	ttest Job No.: t Sample ID.: t Sample Ref. nt Sample ID.: Sample Type:		Januar 18-00330 560625 BHC102 W1 WATER	18-00356 560719 BHC02 W1 WATER 05-Jan-2018	18-13183 621158 BHC09 WATER	18-13032 620297 BHC07 W1 WATER	18-13180 621138 BHC27 WATER	18-13180 621139 BHC24 WATER	5ampling Visi 18-13535 623008 BHC24(D) WATER	t 1 18-13535 623009 BHC08 WATER 14-May-2018	18-13535 623010 BHC01 WATER	18-13535 623011 BHC14 WATER
Determinand pH Ammonia (Free) as N Sulphur Sulphate Cyanide (Total) Cyanide (Free)	Accred. U U N U U U U U	1010 1220 1220 1220 1220 1300 1300	mg/l mg/l mg/l mg/l mg/l	N/A 0.010 1.0 0.050 0.050	EQS Screen	8.4 0.25 18 53 < 0.050	6.9 < 0.010 22 65 < 0.050 < 0.050	10-May-2018 11.7 1.1 160 < 0.050 < 0.050	09-May-2018 8.2 0.39 33 < 0.050 < 0.050	11-May-2018 8.6 0.15 120 < 0.050 < 0.050	11-May-2018 12.4 1.1 38 < 0.050 < 0.050	14-May-2018 12.3 0.57 28 < 0.050 < 0.050	9.9 0.55 100 < 0.050 < 0.050	13.2 0.31 350 < 0.050 < 0.050	12.8 0.66 8.7 < 0.050
Arsenic (Dissolved) Boron (Dissolved) Cadmium (Dissolved) Chromium (Dissolved) Copper (Dissolved) Mercury (Dissolved) Nickel (Dissolved) Lead (Dissolved)	U U U U U	1450 1450 1450 1450 1450 1450 1450 1450	Hay Hay Hay Hay Hay Hay Hay Hay	1.0 20 0.080 1.0 1.0 0.50 1.0	25 0.2 3.76 0.07 8.6	9.2 150 < 0.080 5.1 8.8 < 0.50 9.9 < 1.0	3.1 110 < 0.080 6.0 1.0 < 0.50 3.4 < 1.0	3.8 34 0.082 19 4.8 < 0.50 11 < 1.0	5.1 270 < 0.080 9.7 1.5 < 0.50 1.9 < 1.0	17 210 < 0.080 12 3.1 < 0.50 3.3 1.1	2.9 < 20 < 0.080 2.4 37 < 0.50 77 < 1.0	6.7 < 20 < 0.080 16 1.9 < 0.50 8.3 < 1.0	4.2 64 < 0.080 22 1.6 < 0.50 16 < 1.0	2.4 < 20 0.088 160 61 < 0.50 43	2.4 < 20 < 0.080 7.4 23 < 0.50 19
Setenium (Dissolved) Zinc (Dissolved) Zinc (Dissolved) Chromium (Hexavalent) Aliphatic TPH >C5-C6 Aliphatic TPH >C8-C1 Aliphatic TPH >C8-C1 Aliphatic TPH >C1-C1 Aliphatic TPH >C1-C1	U U U N N N N	1450 1450 1490 1675 1675 1675	h8y h8y h8y h8y h8y h8y	1.0 1.0 20 0.10 0.10 0.10 0.10	6.8 0.6	2.2 24 < 20 < 0.10 < 0.10 < 0.10 < 0.10	2.5 12 < 20 < 0.10 < 0.10 < 0.10 < 0.10	9.8 7.6 < 20 < 0.10 < 0.10 < 0.10 < 0.10	7.8 7.0 < 20 < 0.10 < 0.10 < 0.10 < 0.10	4.8 9.0 < 20 < 0.10 < 0.10 < 0.10 < 0.10	9.4 3.4 < 20 < 0.10 < 0.10 < 0.10 < 0.10	10 < 1.0 < 20 < 0.10 < 0.10 < 0.10 < 0.10	4.2 2.7 < 20 < 0.10 < 0.10 < 0.10 < 0.10	9.6 17 160 < 0.10 < 0.10 < 0.10 < 0.10	7.2 6.4 < 20 < 0.10 < 0.10 < 0.10 < 0.10
Aliphatic TPH xC12-C16 Aliphatic TPH xC12-C16 Aliphatic TPH xC21-C35 Aliphatic TPH xC35-C44 Total Aliphatic Hydrocarbons Aromatic TPH xC5-C7 Aromatic TPH xC7-C8 Aromatic TPH xC8-C10	N N N N N N N N N N N N N N N N N N N	1675 1675 1675 1675 1675 1675 1675 1675	hay hay hay hay hay hay hay	0.10 0.10 0.10 0.10 5.0 0.10 0.10 0.10	-	< 0.10 < 0.10 < 0.10 < 0.10 < 5.0 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 5.0 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 5.0 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 5.0 < 0.10 < 0.10 < 0.10	62 < 0.10 < 0.10 < 0.10 62 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 5.0 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 5.0 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 5.0 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 5.0 < 0.10 < 0.10 < 0.10	<0.10 <0.10 <0.10 <0.10 <5.0 <0.10 <0.10 <0.10
Aromatic TPH >C10-C12 Aromatic TPH >C12-C16 Aromatic TPH >C12-C16 Aromatic TPH >C21-C35 Aromatic TPH >C21-C35 Aromatic TPH >C35-C44 Total Aromatic Hydrocarbons Total Petroleum	N N N N	1675 1675 1675 1675 1675 1675	hay hay hay hay hay	0.10 0.10 0.10 0.10 0.10 0.10 5.0		< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 5.0	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.50	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 5.0	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 5.0	< 0.10 30 < 0.10 < 0.10 < 0.10 30	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 5.0	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.50	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 5.0	63 < 0.10 < 0.10 < 0.10 < 0.10 63	46 < 0.10 < 0.10 < 0.10 < 0.10 46
Hydrocarbons Naphthalene Acenaphthylene Acenaphthylene Fluorene Phenarithrene Anthracene Fluoranthene	N U U U U U U U U U U U U	1675 1700 1700 1700 1700 1700 1700 1700	h8y h8y h8y h8y h8y h8y	0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10	. 2	<10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10	< 10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	92 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	<10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10	< 10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	<10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10	63 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	46 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10
Pyrene Benzo[a]anthracene Chrysene Benzo[b]fluoranthene Benzo[k]fluoranthene Benzo[a]pyrene Indeno(1,2,3-c,d)Pyrene	U U U U U	1700 1700 1700 1700 1700 1700 1700	h8y h8y h8y h8y h8y h8y	0.10 0.10 0.10 0.10 0.10 0.10 0.10	0.017 0.017 0.00017	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10
Dibenz(a,h)Anthracene Benzo(g,h,lijberylene Total Of 16 PAH's Dichlorodifluoromethane Chloromethane Virnyl Chloride Bromomethane Chloroethane Chloroethane	U U U U V V V V V V V V V V V V V V V V	1700 1700 1700 1700 1760 1760 1760 1760	h8y h8y h8y h8y h8y h8y h8y	0.10 0.10 2.0 1.0 1.0 1.0 5.0 2.0	0.00082	< 0.10 < 0.10 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0 < 2.0	< 0.10 < 0.10 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0 < 2.0	< 0.10 < 0.10 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0 < 2.0	< 0.10 < 0.10 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0 < 2.0	< 0.10 < 0.10 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0 < 2.0	< 0.10 < 0.10 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0 < 2.0	< 0.10 < 0.10 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0 < 2.0	< 0.10 < 0.10 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0 < 2.0	< 0.10 < 0.10 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0 < 2.0	<0.10 <0.10 <2.0 <1.0 <1.0 <1.0 <1.0 <5.0 <5.0 <2.0
Trichlorofluoromethane 1,1-Dichloroethene 1,1-Dichloroethene 1,1-Dichloroethane cis 1,2-Dichloroethane Bromochloromethane Trichloromethane 1,1,1-Trichloroethane	U U U U U U U U U	1760 1760 1760 1760 1760 1760 1760 1760	hay hay hay hay hay hay hay	1.0 1.0 1.0 1.0 1.0 5.0 1.0		< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 5.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 5.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 5.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 5.0 < 1.0 < 1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <5.0 <1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <5.0 <1.0	< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 5.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 5.0 < 1.0 < 1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <5.0 <1.0	< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 5.0 < 1.0 < 1.0
Tetrachloromethane 1,1-Dichloropropene Benzene 1,2-Dichloroethane Trichloroethane 1,2-Dichloropropane Dibromomethane Bromodichloromethane	U U U U U U U U U U U U U U U U U U U	1760 1760 1760 1760 1760 1760 1760 1760	1991 1991 1991 1991 1991 1991 1991	1.0 1.0 1.0 2.0 1.0 1.0 1.0		< 1.0 < 1.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0	< 1.0 < 1.0 < 1.0 < 2.0 < 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 <1.0 <1.0 <2.0 <1.0 <1.0 <1.0 <5.0	< 1.0 < 1.0 < 1.0 < 2.0 < 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 <1.0 <1.0 <2.0 <1.0 <1.0 <1.0 <5.0	<1.0 <1.0 <1.0 <2.0 <1.0 <1.0 <1.0 <1.0	< 1.0 < 1.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0
Trans-1,3-Dichloropropene Trans-1,3-Dichloropropene 1,1,2-Trichloroethane Tetrachloroethene 1,3-Dichloropropane Dibromochloromethane	N U U U U U U U	1760 1760 1760 1760 1760 1760 1760	h8y h8y h8y h8y h8y h8y	10 1.0 10 10 10 1.0 2.0		<10 <1.0 <10 <10 <10 <1.0 <2.0 <10	< 10 < 1.0 < 10 < 10 < 10 < 1.0 < 2.0 < 10	<10 <1.0 <10 <10 <10 <1.0 <2.0 <10	<10 <1.0 <10 <10 <10 <1.0 <2.0 <10	<10 <1.0 <10 <10 <10 <1.0 <2.0 <10	< 10 < 1.0 < 10 < 10 < 10 < 1.0 < 2.0 < 10	<10 <1.0 <10 <10 <10 <1.0 <2.0 <10	<10 <1.0 <10 <10 <10 <1.0 <2.0 <10	<10 <1.0 <10 <10 <10 <1.0 <2.0 <10	< 10 < 1.0 < 10 < 10 < 10 < 1.0 < 2.0 < 10
1,2-Dibromoethane Chlorobenzene 1,1,1,2-Tetrachioroethane Ethylbenzene m & p-Xylene o-Xylene Styrene Tribromomethane	U N U U U U	1760 1760 1760 1760 1760 1760 1760 1760	hay hay hay hay hay hay hay	5.0 1.0 2.0 1.0 1.0 1.0 1.0		< 5.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0	< 5.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0	< 5.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0	< 5.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0	< 5.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0	< 5.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0	< 5.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0	< 5.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0	< 5.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0	< 5.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0
Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane N-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene	U U U U U U U	1760 1760 1760 1760 1760 1760 1760	h8y h8y h8y h8y h8y h8y	1.0 1.0 50 1.0 1.0 1.0		< 1.0 < 1.0 < 50 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 50 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 50 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 50 < 1.0 < 1.0 < 1.0	<1.0 <1.0 <50 <1.0 <1.0 <1.0	< 1.0 < 1.0 < 50 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 50 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 50 < 1.0 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 50 < 1.0 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 50 < 1.0 < 1.0 < 1.0
Tenf-Butylbenzene 1,2,4-Trimethylbenzene Sec-Butylbenzene 1,3-Dichlorobenzene 4-Isopropyltoluene 1,4-Dichlorobenzene N-Butylbenzene 1,2-Dichlorobenzene	U U U U U U U U U	1760 1760 1760 1760 1760 1760 1760 1760	нді нді нді нді нді нді нді	1.0 1.0 1.0 1.0 1.0 1.0 1.0		< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0
1.2-Dibromo-3- Chloropropane 1.2-4-Trichlorobenzene Hexachlorobutadiene 1.2-3-Trichlorobenzene Methyl Tert-Buyl Ether N-Nitrosodimethylamine Phenol 2-Chlorophenol	U U U V N N N	1760 1760 1760 1760 1760 1760 1790 1790 1790	Hay Hay Hay Hay Hay Hay Hay Hay	1.0 1.0 2.0 1.0 0.50 0.50	0.0077	< 50 < 1.0 < 1.0 < 2.0 < 1.0 < 0.50 < 0.50 < 0.50	< 50 < 1.0 < 1.0 < 2.0 < 1.0 < 0.50 < 0.50 < 0.50	< 50 < 1.0 < 1.0 < 2.0 < 1.0 < 0.50 < 0.50	< 50 < 1.0 < 1.0 < 2.0 5.2 < 0.50 < 0.50	< 50 < 1.0 < 1.0 < 2.0 < 1.0 < 0.50 < 0.50 < 0.50	< 50 < 1.0 < 1.0 < 2.0 < 1.0 < 0.50 < 0.50 < 0.50	< 50 < 1.0 < 1.0 < 2.0 < 1.0 < 0.50 < 0.50 < 0.50	< 50 < 1.0 < 1.0 < 2.0 < 1.0 < 0.50 < 0.50	< 50 < 1.0 < 1.0 < 2.0 < 1.0 < 0.50 < 0.50 < 0.50	< 50 < 1.0 < 1.0 < 2.0 < 1.0 < 0.50 < 0.50
Bis-(2-Chloroethyl)Ether 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2-Dichlorobenzene 2-Methylphenol (o-Cresol) Bis(2-Chloroisopropyl)Ether Hexachloroethane	N N N N N	1790 1790 1790 1790 1790 1790 1790	h8y h8y h8y h8y h8y h8y	0.50 0.50 0.50 0.50 0.50 0.50 0.50		< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50
N-Nitrosodi-n-propylamine 4-Methylphenol Nitrobenzene Isophorone 2-Nitrophenol 2,4-Dimethylphenol Bis(2-Chloroethoxy)Methane	N N N N N	1790 1790 1790 1790 1790 1790 1790 1790	h8y h8y h8y h8y h8y h8y	0.50 0.50 0.50 0.50 0.50 0.50 0.50		< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50
2.4-Dichlorophenol 1.2.4-Trichlorobenzene Naphthalene 4-Chloroaniline Hexachlorobutadiene 4-Chloro-3-Methylphenol 2-Methylnaphthalene Hexachlorocyclopentadiene	N N N N N N	1790 1790 1790 1790 1790 1790 1790 1790	h8y h8y h8y h8y h8y h8y h8y	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.0042	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50
2.4.6-Trichlorophenol 2.4.5-Trichlorophenol 2Chloronaphthalene 2-Nitroaniline Acenaphthylene Dimethylphthalate 2.6-Dinitrototuene	N N N N N	1790 1790 1790 1790 1790 1790 1790	h8y h8y h8y h8y h8y	0.50 0.50 0.50 0.50 0.50 0.50 0.50		< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50
Acenaphthene 3-Nitroaniline Dibenzofuran 4-Chlorophenylphenylether 2.4-Dniftrotofuene Fluorene Diethyl Phthalate	N N N N N	1790 1790 1790 1790 1790 1790 1790	h8y h8y h8y h8y h8y h8y	0.50 0.50 0.50 0.50 0.50 0.50 0.50		< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50
4-Nitroaniline 2-Methyl-4,6-Dinitrophenol Azobenzene 4-Bromophenylphenyl Ether Hexachlorobenzene Pentachlorophenol Phenarithrene Anthracene	N N N N N N	1790 1790 1790 1790 1790 1790 1790 1790	hay hay hay hay hay hay hay	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.004	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50
Carbazole Di-N-Butyl Phthalate Fluoranthene Pyrene Butylbenzyl Phthalate Benzo(a)anthracene Chrysene Bis(2-Ethylhexyl) Phthalate	N N N N N N	1790 1790 1790 1790 1790 1790 1790 1790	h8y h8y h8y h8y h8y h8y	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50		< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50
Bisiz-Entyrhexyl)-Prinisate Di-N-Octyl Prihalate Benzo[h]tuoranthene Benzo[k]fluoranthene Benzo[a]pyrene Indeno(1,2,3-c,d)Pyrene Dibenz(a,h)Anthracene Benzo(a,h)Anthracene Benzo(a,h)Anthracene 4-Nitrophenol	N N N N N N N N N N N N N N N N N N N	1790 1790 1790 1790 1790 1790 1790 1790	hay hay hay hay hay hay hay hay	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50		< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50

18-14854	18-15148	18-14854	Groundy 18-14854	vater Sampli 18-14854	ng Visit 2 18-14854	18-14854	18-15148	18-14854
628914 BHC09	630539 BHC07	628019 BHC27	628912 BHC24 (s)	628911 BHC24 (d)	628909 BHC08	628913 BHC01	630538 BHC02	628910 BHC102
WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
24-May-2018	30-May-2018	23-May-2018	24-May-2018	24-May-2018	24-May-2018	25-May-2018	30-May-2018	24-May-2018
8.5	8.3	8.7	11.8	11.4	9.1	12.6	7.7	8.4
0.28	0.32	0.16	0.9	0.49	0.096	0.25	< 0.050	0.098
160	27	120	9.2	37	79	110	110	50
< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050
7.6 60	7.2 250	9.8 170	2.1 < 20	2.3 < 20	1.4	1.3	3.4 140	3.4 130
< 0.080	< 0.080 3.1	< 0.080 7.3	< 0.080	< 0.080	< 0.080	< 0.080 42	0.098	< 0.080 < 1.0
2.1 < 0.50	< 1.0 < 0.50	1.9	19 0.68	< 1.0 < 0.50	2.2 < 0.50	36 < 0.50	3.1 < 0.50	< 1.0 < 0.50
8.7 < 1.0	2.7	1.8	41 < 1.0	4.8 < 1.0	19 < 1.0	30 3.8	2.4 < 1.0	1.8
5.2	2.8	5.7	5.1	5.9	7.4	2.7	3.9	2.7
6.3 < 20	< 20	< 20	< 20	< 1.0 < 20	< 20	40	< 20	< 20
< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10 < 0.10	< 0.10	6.8 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10
< 0.10	< 0.10	53 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10
< 5.0	< 5.0	60	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10
< 0.10	< 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10	9.5 59
< 0.10 < 0.10	< 0.10 < 0.10	50	< 0.10 < 0.10	36 < 0.10				
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 5.0	< 5.0	72	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	100
< 10	< 10	130	< 10	< 10	< 10	< 10	< 10	110
< 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10
< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10
< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10 < 2.0	< 0.10 < 2.0	< 0.10 < 2.0	< 0.10 < 2.0	< 0.10 < 2.0	< 0.10 < 2.0	< 0.10 < 2.0	< 0.10 < 2.0	< 0.10 < 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 < 1.0	< 1.0 < 1.0
< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0
< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 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 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0
< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0
< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 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 < 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 < 1.0	< 1.0 < 1.0
< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
< 5.0 < 10	< 5.0 < 10	< 5.0 < 10	< 5.0 < 10	< 5.0 < 10	< 5.0 < 10	< 5.0 < 10	< 5.0 < 10	< 5.0 < 10
< 1.0	< 1.0	< 1.0 < 10	< 1.0 < 10	< 1.0	< 1.0 < 10	< 1.0	< 1.0 < 10	< 1.0 < 10
< 10 < 1.0	< 10 < 1.0	< 10 < 1.0	< 10 < 1.0	< 10 < 1.0	< 10 < 1.0	< 10 < 1.0	< 10 < 1.0	< 10 < 1.0
< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
< 10 < 5.0	< 10 < 5.0	< 10 < 5.0	< 10 < 5.0	< 10 < 5.0	< 10 < 5.0	< 10 < 5.0	< 10 < 5.0	< 10 < 5.0
< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 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 < 1.0	< 1.0 < 1.0
< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0
< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0
< 1.0	< 1.0 < 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 < 50
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0
< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0
< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0
< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0
< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 50 < 1.0	< 50 < 1.0	< 50 < 1.0	< 50 < 1.0	< 50 < 1.0	< 50 < 1.0	< 50 < 1.0	< 50 < 1.0	< 50 < 1.0
< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0
< 1.0 < 0.50	< 1.0 < 0.50	< 1.0 < 0.50	< 1.0 < 0.50	< 1.0 < 0.50	< 1.0 < 0.50	< 1.0 < 0.50	< 1.0 < 0.50	< 1.0 < 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50 < 0.50
< 0.50	< 0.50 < 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50 < 0.030	< 0.50 < 0.030	< 0.50	< 0.50 < 0.030	< 0.50 < 0.030	< 0.50	< 0.50 < 0.030	< 0.50 < 0.030
								_

Exceeds screening value

Limit of detection of above screening value

Client: Geosphere Environmental Ltd Quotation No.: Q17-10179 Order No.: 2543,GL			Chemtes Clier Clie	ttest Job No.: t Sample ID.: t Sample Ref. nt Sample ID.: Sample Type:		Januar 18-00330 560625 BHC102 W1 WATER	18-00356 560719 BHC02 W1 WATER 05-Jan-2018	18-13183 621158 BHC09 WATER	18-13032 620297 BHC07 W1 WATER	18-13180 621138 BHC27 WATER	18-13180 621139 BHC24 WATER	5ampling Visi 18-13535 623008 BHC24(D) WATER	t 1 18-13535 623009 BHC08 WATER 14-May-2018	18-13535 623010 BHC01 WATER	18-13535 623011 BHC14 WATER
Determinand pH Ammonia (Free) as N Sulphur Sulphate Cyanide (Total) Cyanide (Free)	Accred. U U N U U U U U	1010 1220 1220 1220 1220 1300 1300	mg/l mg/l mg/l mg/l mg/l	N/A 0.010 1.0 0.050 0.050	EQS Screen	8.4 0.25 18 53 < 0.050	6.9 < 0.010 22 65 < 0.050 < 0.050	10-May-2018 11.7 1.1 160 < 0.050 < 0.050	09-May-2018 8.2 0.39 33 < 0.050 < 0.050	11-May-2018 8.6 0.15 120 < 0.050 < 0.050	11-May-2018 12.4 1.1 38 < 0.050 < 0.050	14-May-2018 12.3 0.57 28 < 0.050 < 0.050	9.9 0.55 100 < 0.050 < 0.050	13.2 0.31 350 < 0.050 < 0.050	12.8 0.66 8.7 < 0.050
Arsenic (Dissolved) Boron (Dissolved) Cadmium (Dissolved) Chromium (Dissolved) Copper (Dissolved) Mercury (Dissolved) Nickel (Dissolved) Lead (Dissolved)	U U U U U	1450 1450 1450 1450 1450 1450 1450 1450	Hay Hay Hay Hay Hay Hay Hay Hay	1.0 20 0.080 1.0 1.0 0.50 1.0	25 0.2 3.76 0.07 8.6	9.2 150 < 0.080 5.1 8.8 < 0.50 9.9 < 1.0	3.1 110 < 0.080 6.0 1.0 < 0.50 3.4 < 1.0	3.8 34 0.082 19 4.8 < 0.50 11 < 1.0	5.1 270 < 0.080 9.7 1.5 < 0.50 1.9 < 1.0	17 210 < 0.080 12 3.1 < 0.50 3.3 1.1	2.9 < 20 < 0.080 2.4 37 < 0.50 77 < 1.0	6.7 < 20 < 0.080 16 1.9 < 0.50 8.3 < 1.0	4.2 64 < 0.080 22 1.6 < 0.50 16 < 1.0	2.4 < 20 0.088 160 61 < 0.50 43	2.4 < 20 < 0.080 7.4 23 < 0.50 19
Setenium (Dissolved) Zinc (Dissolved) Zinc (Dissolved) Chromium (Hexavalent) Aliphatic TPH >C5-C6 Aliphatic TPH >C8-C1 Aliphatic TPH >C8-C1 Aliphatic TPH >C1-C1 Aliphatic TPH >C1-C1	U U U N N N N	1450 1450 1490 1675 1675 1675	h8y h8y h8y h8y h8y h8y	1.0 1.0 20 0.10 0.10 0.10 0.10	6.8 0.6	2.2 24 < 20 < 0.10 < 0.10 < 0.10 < 0.10	2.5 12 < 20 < 0.10 < 0.10 < 0.10 < 0.10	9.8 7.6 < 20 < 0.10 < 0.10 < 0.10 < 0.10	7.8 7.0 < 20 < 0.10 < 0.10 < 0.10 < 0.10	4.8 9.0 < 20 < 0.10 < 0.10 < 0.10 < 0.10	9.4 3.4 < 20 < 0.10 < 0.10 < 0.10 < 0.10	10 < 1.0 < 20 < 0.10 < 0.10 < 0.10 < 0.10	4.2 2.7 < 20 < 0.10 < 0.10 < 0.10 < 0.10	9.6 17 160 < 0.10 < 0.10 < 0.10 < 0.10	7.2 6.4 < 20 < 0.10 < 0.10 < 0.10 < 0.10
Aliphatic TPH xC12-C16 Aliphatic TPH xC12-C16 Aliphatic TPH xC21-C35 Aliphatic TPH xC35-C44 Total Aliphatic Hydrocarbons Aromatic TPH xC5-C7 Aromatic TPH xC7-C8 Aromatic TPH xC8-C10	N N N N N N N N N N N N N N N N N N N	1675 1675 1675 1675 1675 1675 1675 1675	hay hay hay hay hay hay hay	0.10 0.10 0.10 0.10 5.0 0.10 0.10 0.10	-	< 0.10 < 0.10 < 0.10 < 0.10 < 5.0 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 5.0 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 5.0 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 5.0 < 0.10 < 0.10 < 0.10	62 < 0.10 < 0.10 < 0.10 62 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 5.0 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 5.0 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 5.0 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 5.0 < 0.10 < 0.10 < 0.10	<0.10 <0.10 <0.10 <0.10 <5.0 <0.10 <0.10 <0.10
Aromatic TPH >C10-C12 Aromatic TPH >C12-C16 Aromatic TPH >C12-C16 Aromatic TPH >C21-C35 Aromatic TPH >C21-C35 Aromatic TPH >C35-C44 Total Aromatic Hydrocarbons Total Petroleum	N N N N	1675 1675 1675 1675 1675 1675	hay hay hay hay hay	0.10 0.10 0.10 0.10 0.10 0.10 5.0		< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 5.0	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.50	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 5.0	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 5.0	< 0.10 30 < 0.10 < 0.10 < 0.10 30	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 5.0	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.50	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 5.0	63 < 0.10 < 0.10 < 0.10 < 0.10 63	46 < 0.10 < 0.10 < 0.10 < 0.10 46
Hydrocarbons Naphthalene Acenaphthylene Acenaphthylene Fluorene Phenarithrene Anthracene Fluoranthene	N U U U U U U U U U U U U	1675 1700 1700 1700 1700 1700 1700 1700	h8y h8y h8y h8y h8y h8y	0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10	. 2	<10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10	< 10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	92 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	<10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10	< 10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	<10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10	63 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	46 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10
Pyrene Benzo[a]anthracene Chrysene Benzo[b]fluoranthene Benzo[k]fluoranthene Benzo[a]pyrene Indeno(1,2,3-c,d)Pyrene	U U U U U	1700 1700 1700 1700 1700 1700 1700	h8y h8y h8y h8y h8y h8y	0.10 0.10 0.10 0.10 0.10 0.10 0.10	0.017 0.017 0.00017	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10
Dibenz(a,h)Anthracene Benzo(g,h,lijberylene Total Of 16 PAH's Dichlorodifluoromethane Chloromethane Virnyl Chloride Bromomethane Chloroethane Chloroethane	U U U U V V V V V V V V V V V V V V V V	1700 1700 1700 1700 1760 1760 1760 1760	h8y h8y h8y h8y h8y h8y h8y	0.10 0.10 2.0 1.0 1.0 1.0 5.0 2.0	0.00082	< 0.10 < 0.10 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0 < 2.0	< 0.10 < 0.10 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0 < 2.0	< 0.10 < 0.10 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0 < 2.0	< 0.10 < 0.10 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0 < 2.0	< 0.10 < 0.10 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0 < 2.0	< 0.10 < 0.10 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0 < 2.0	< 0.10 < 0.10 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0 < 2.0	< 0.10 < 0.10 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0 < 2.0	< 0.10 < 0.10 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0 < 2.0	<0.10 <0.10 <2.0 <1.0 <1.0 <1.0 <1.0 <5.0 <2.0
Trichlorofluoromethane 1,1-Dichloroethene 1,1-Dichloroethene 1,1-Dichloroethane cis 1,2-Dichloroethane Bromochloromethane Trichloromethane 1,1,1-Trichloroethane	U U U U U U U U U	1760 1760 1760 1760 1760 1760 1760 1760	hay hay hay hay hay hay hay	1.0 1.0 1.0 1.0 1.0 5.0 1.0		< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 5.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 5.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 5.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 5.0 < 1.0 < 1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <5.0 <1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <5.0 <1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <5.0 <1.0	< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 5.0 < 1.0 < 1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <5.0 <1.0	< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 5.0 < 1.0 < 1.0
Tetrachloromethane 1,1-Dichloropropene Benzene 1,2-Dichloroethane Trichloroethane 1,2-Dichloropropane Dibromomethane Bromodichloromethane	U U U U U U U U U U U U U U U U U U U	1760 1760 1760 1760 1760 1760 1760 1760	1991 1991 1991 1991 1991 1991 1991	1.0 1.0 1.0 2.0 1.0 1.0 1.0		< 1.0 < 1.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0	< 1.0 < 1.0 < 1.0 < 2.0 < 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 <1.0 <1.0 <2.0 <1.0 <1.0 <1.0 <5.0	< 1.0 < 1.0 < 1.0 < 2.0 < 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 <1.0 <1.0 <2.0 <1.0 <1.0 <1.0 <5.0	<1.0 <1.0 <1.0 <2.0 <1.0 <1.0 <1.0 <1.0	< 1.0 < 1.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 5.0
Trans-1,3-Dichloropropene Trans-1,3-Dichloropropene 1,1,2-Trichloroethane Tetrachloroethene 1,3-Dichloropropane Dibromochloromethane	N U U U U U U U	1760 1760 1760 1760 1760 1760 1760	h8y h8y h8y h8y h8y h8y	10 1.0 10 10 10 1.0 2.0		<10 <1.0 <10 <10 <10 <1.0 <2.0 <10	< 10 < 1.0 < 10 < 10 < 10 < 1.0 < 2.0 < 10	<10 <1.0 <10 <10 <10 <1.0 <2.0 <10	<10 <1.0 <10 <10 <10 <1.0 <2.0 <10	<10 <1.0 <10 <10 <10 <1.0 <2.0 <10	< 10 < 1.0 < 10 < 10 < 10 < 1.0 < 2.0 < 10	<10 <1.0 <10 <10 <10 <1.0 <2.0 <10	<10 <1.0 <10 <10 <10 <1.0 <2.0 <10	<10 <1.0 <10 <10 <10 <1.0 <2.0 <10	< 10 < 1.0 < 10 < 10 < 10 < 1.0 < 2.0 < 10
1,2-Dibromoethane Chlorobenzene 1,1,1,2-Tetrachioroethane Ethylbenzene m & p-Xylene o-Xylene Styrene Tribromomethane	U N U U U U	1760 1760 1760 1760 1760 1760 1760 1760	hay hay hay hay hay hay hay	5.0 1.0 2.0 1.0 1.0 1.0 1.0		< 5.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0	< 5.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0	< 5.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0	< 5.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0	< 5.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0	< 5.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0	< 5.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0	< 5.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0	< 5.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0	< 5.0 < 1.0 < 2.0 < 1.0 < 1.0 < 1.0 < 1.0
Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane N-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene	U U U U U U U	1760 1760 1760 1760 1760 1760 1760	h8y h8y h8y h8y h8y h8y	1.0 1.0 50 1.0 1.0 1.0		< 1.0 < 1.0 < 50 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 50 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 50 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 50 < 1.0 < 1.0 < 1.0	<1.0 <1.0 <50 <1.0 <1.0 <1.0	< 1.0 < 1.0 < 50 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 50 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 50 < 1.0 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 50 < 1.0 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 50 < 1.0 < 1.0 < 1.0
Tenf-Butylbenzene 1,2,4-Trimethylbenzene Sec-Butylbenzene 1,3-Dichlorobenzene 4-Isopropyltoluene 1,4-Dichlorobenzene N-Butylbenzene 1,2-Dichlorobenzene	U U U U U U U U	1760 1760 1760 1760 1760 1760 1760 1760	нді нді нді нді нді нді нді	1.0 1.0 1.0 1.0 1.0 1.0 1.0		< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	<1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0
1.2-Dibromo-3- Chloropropane 1.2-4-Trichlorobenzene Hexachlorobutadiene 1.2-3-Trichlorobenzene Methyl Tert-Buyl Ether N-Nitrosodimethylamine Phenol 2-Chlorophenol	U U U V N N N	1760 1760 1760 1760 1760 1760 1790 1790 1790	Hay Hay Hay Hay Hay Hay Hay Hay	1.0 1.0 2.0 1.0 0.50 0.50	0.0077	< 50 < 1.0 < 1.0 < 2.0 < 1.0 < 0.50 < 0.50	< 50 < 1.0 < 1.0 < 2.0 < 1.0 < 0.50 < 0.50 < 0.50	< 50 < 1.0 < 1.0 < 2.0 < 1.0 < 0.50 < 0.50	< 50 < 1.0 < 1.0 < 2.0 5.2 < 0.50 < 0.50	< 50 < 1.0 < 1.0 < 2.0 < 1.0 < 0.50 < 0.50 < 0.50	< 50 < 1.0 < 1.0 < 2.0 < 1.0 < 0.50 < 0.50 < 0.50	< 50 < 1.0 < 1.0 < 2.0 < 1.0 < 0.50 < 0.50 < 0.50	< 50 < 1.0 < 1.0 < 2.0 < 1.0 < 0.50 < 0.50	< 50 < 1.0 < 1.0 < 2.0 < 1.0 < 0.50 < 0.50 < 0.50	< 50 < 1.0 < 1.0 < 2.0 < 1.0 < 0.50 < 0.50
Bis-(2-Chloroethyl)Ether 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,2-Dichlorobenzene 2-Methylphenol (o-Cresol) Bis(2-Chloroisopropyl)Ether Hexachloroethane	N N N N N	1790 1790 1790 1790 1790 1790 1790	h8y h8y h8y h8y h8y h8y	0.50 0.50 0.50 0.50 0.50 0.50 0.50		< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50
N-Nitrosodi-n-propylamine 4-Methylphenol Nitrobenzene Isophorone 2-Nitrophenol 2,4-Dimethylphenol Bis(2-Chloroethoxy)Methane	N N N N N	1790 1790 1790 1790 1790 1790 1790 1790	h8y h8y h8y h8y h8y h8y	0.50 0.50 0.50 0.50 0.50 0.50 0.50		< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50
2.4-Dichlorophenol 1.2.4-Trichlorobenzene Naphthalene 4-Chloroaniline Hexachlorobutadiene 4-Chloro-3-Methylphenol 2-Methylnaphthalene Hexachlorocyclopentadiene	N N N N N N	1790 1790 1790 1790 1790 1790 1790 1790	h8y h8y h8y h8y h8y h8y h8y	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.0042	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50
2.4.6-Trichlorophenol 2.4.5-Trichlorophenol 2Chloronaphthalene 2-Nitroaniline Acenaphthylene Dimethylphthalate 2.6-Dinitrototuene	N N N N N	1790 1790 1790 1790 1790 1790 1790	h8y h8y h8y h8y h8y	0.50 0.50 0.50 0.50 0.50 0.50 0.50		< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50
Acenaphthene 3-Nitroaniline Dibenzofuran 4-Chlorophenylphenylether 2.4-Dniftrotofuene Fluorene Diethyl Phthalate	N N N N N	1790 1790 1790 1790 1790 1790 1790	h8y h8y h8y h8y h8y h8y	0.50 0.50 0.50 0.50 0.50 0.50 0.50		< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50
4-Nitroaniline 2-Methyl-4,6-Dinitrophenol Azobenzene 4-Bromophenylphenyl Ether Hexachlorobenzene Pentachlorophenol Phenarithrene Anthracene	N N N N N N	1790 1790 1790 1790 1790 1790 1790 1790	hay hay hay hay hay hay hay	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.004	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50
Carbazole Di-N-Butyl Phthalate Fluoranthene Pyrene Butylbenzyl Phthalate Benzo(a)anthracene Chrysene Bis(2-Ethylhexyl) Phthalate	N N N N N N	1790 1790 1790 1790 1790 1790 1790 1790	h8y h8y h8y h8y h8y h8y	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50		< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50
Bisiz-Entyrhexyl)-Prinisate Di-N-Octyl Prihalate Benzo[h]tuoranthene Benzo[k]fluoranthene Benzo[a]pyrene Indeno(1,2,3-c,d)Pyrene Dibenz(a,h)Anthracene Benzo(a,h)Anthracene Benzo(a,h)Anthracene 4-Nitrophenol	N N N N N N N N N N N N N N N N N N N	1790 1790 1790 1790 1790 1790 1790 1790	hay hay hay hay hay hay hay hay	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50		< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50

18-14854	18-15148	18-14854	Groundy 18-14854	vater Sampli 18-14854	ng Visit 2 18-14854	18-14854	18-15148	18-14854
628914 BHC09	630539 BHC07	628019 BHC27	628912 BHC24 (s)	628911 BHC24 (d)	628909 BHC08	628913 BHC01	630538 BHC02	628910 BHC102
WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
24-May-2018	30-May-2018	23-May-2018	24-May-2018	24-May-2018	24-May-2018	25-May-2018	30-May-2018	24-May-2018
8.5	8.3	8.7	11.8	11.4	9.1	12.6	7.7	8.4
0.28	0.32	0.16	0.9	0.49	0.096	0.25	< 0.050	0.098
160	27	120	9.2	37	79	110	110	50
< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050
7.6 60	7.2 250	9.8 170	2.1 < 20	2.3 < 20	1.4 60	1.3	3.4 140	3.4 130
< 0.080	< 0.080 3.1	< 0.080 7.3	< 0.080	< 0.080	< 0.080	< 0.080 42	0.098	< 0.080 < 1.0
2.1 < 0.50	< 1.0 < 0.50	1.9	19 0.68	< 1.0 < 0.50	2.2 < 0.50	36 < 0.50	3.1 < 0.50	< 1.0 < 0.50
8.7 < 1.0	2.7	1.8	41 < 1.0	4.8 < 1.0	19 < 1.0	30 3.8	2.4 < 1.0	1.8
5.2	2.8	5.7	5.1	5.9	7.4	2.7	3.9	2.7
6.3 < 20	< 20	< 20	< 20	< 1.0 < 20	< 20	40	< 20	< 20
< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10 < 0.10	< 0.10	6.8 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10
< 0.10	< 0.10	53 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10
< 5.0	< 5.0	60	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10
< 0.10	< 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10	9.5 59
< 0.10 < 0.10	< 0.10 < 0.10	50	< 0.10 < 0.10	36 < 0.10				
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 5.0	< 5.0	72	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	100
< 10	< 10	130	< 10	< 10	< 10	< 10	< 10	110
< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10
< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10
< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10 < 2.0	< 0.10 < 2.0	< 0.10 < 2.0	< 0.10 < 2.0	< 0.10 < 2.0	< 0.10 < 2.0	< 0.10 < 2.0	< 0.10 < 2.0	< 0.10 < 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 < 1.0	< 1.0 < 1.0
< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0
< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 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 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0	< 1.0 < 5.0
< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0
< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 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 < 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 < 1.0	< 1.0 < 1.0
< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
< 5.0 < 10	< 5.0 < 10	< 5.0 < 10	< 5.0 < 10	< 5.0 < 10	< 5.0 < 10	< 5.0 < 10	< 5.0 < 10	< 5.0 < 10
< 1.0	< 1.0	< 1.0 < 10	< 1.0 < 10	< 1.0	< 1.0 < 10	< 1.0	< 1.0 < 10	< 1.0 < 10
< 10 < 1.0	< 10 < 1.0	< 10 < 1.0	< 10 < 1.0	< 10 < 1.0	< 10 < 1.0	< 10 < 1.0	< 10 < 1.0	< 10 < 1.0
< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
< 10 < 5.0	< 10 < 5.0	< 10 < 5.0	< 10 < 5.0	< 10 < 5.0	< 10 < 5.0	< 10 < 5.0	< 10 < 5.0	< 10 < 5.0
< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 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 < 1.0	< 1.0 < 1.0
< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0
< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0
< 1.0	< 1.0 < 50	< 1.0 < 50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 < 50
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0
< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0
< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0
< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0
< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 50 < 1.0	< 50 < 1.0	< 50 < 1.0	< 50 < 1.0	< 50 < 1.0	< 50 < 1.0	< 50 < 1.0	< 50 < 1.0	< 50 < 1.0
< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0	< 1.0 < 2.0
< 1.0 < 0.50	< 1.0 < 0.50	< 1.0 < 0.50	< 1.0 < 0.50	< 1.0 < 0.50	< 1.0 < 0.50	< 1.0 < 0.50	< 1.0 < 0.50	< 1.0 < 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50 < 0.50
< 0.50	< 0.50 < 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50 < 0.030	< 0.50	< 0.50 < 0.030	< 0.50 < 0.030				
								_

Exceeds screening value

Limit of detection of above screening value

Client: Geosphere Environmental Ltd				emtest Job No.:		17-20019 491165	17-20560 493823	17-20560 493826	17-20669	17-21231	17-21712 499158	17-21913	17-22420 502630	17-22844 504746	17-26355 521396	17-27357	17-29383	17-30076 538508	17-31448 545141	17-31794 546616	17-33041	18-00159 559757	18-02644 571137	18-03574 575449	18-06475 588382	18-06487 588453	18-07089 591585	17-25501 517037	17-25501 517043	17-26029 519841	18-09432	18-11312 612825	17-29274 534738
Order No.: 2543, GI			Clie	est Sample ID.: ent Sample Ref.: Top Depth (m):		BHC06 0.5	TPC101 1.80	TPC06	494333 TPC01 0.20	496746 BHC02 0.25	IPC01 0.30	500003 IPC05 1.20	TPC23	BHC04 0.90	BHC05 0.6	526215 BHC28 2.60	535385 WSC19A 1.50	WSC23 0.50	BHC103 4.5	BH102 0.30	552743 BHC101 2.10	WSC19A 0.80	BHC18 0.1	BHC19 3.00	BHC26 0.7	BHC23 0.8	BHC08 2.6	TPC08 2.00	BH13CP 2.00	BHC30 1.15	602978 BHC06B 0.45	BHC01 0.30	WSC16 0.4
Determinand	Accred.	SOP	Units	Date Sampled:	DWS	28-Jul-2017	01-Aug-2017	01-Aug-2017	03-Aug-2017	10-Aug-2017	15-Aug-2017	16-Aug-2017	21-Aug-2017	25-Aug-2017	03-Oct-2017	13-Oct-2017	02-Nov-2017	09-Nov-2017	22-Nov-2017	24-Nov-2017	07-Dec-2017	02-Jan-2018	26-Jan-2018	05-Feb-2018	26-Feb-2018	05-Mar-2018	09-Mar-2018	22-Sep-2017	21-Sep-2017	27-Sep-2017	29-Mar-2018	19-Apr-2018	31-Oct-2017
pH Ammonia (Free)	U	1010 1220	mg1	N/A 0.010	<6.5 >10	8.00 < 0.010	10.00	0.06	8.10 < 0.010	11.00	8.30 0.02	8.40 0.02	9.10 0.06	8.40 0.02	9.50 0.63	8.40 0.03	8.40 < 0.010	9.70 0.05		10.40	9.80 0.12	8.30 < 0.010	8.70 0.14		7.60 < 0.050	7.10 < 0.050	9.70 0.85	7.50 < 0.010	< 0.010	9.00	8.70 0.16	8.60 < 0.050	9.9
Sulphate Cyanide (Total) Cyanide (Free)	U	1220 1300 1300	mg1 mg1	1.0 0.050 0.050	0.050	< 1.0 < 0.050 < 0.050	8.70 < 0.050 < 0.050	8.20 < 0.050 < 0.050	1.10 < 0.050 < 0.050	45.00 < 0.050 < 0.050	23.00 < 0.050 < 0.050	< 0.050 < 0.050	24.00 < 0.050 < 0.050	100.00 < 0.050 < 0.050	24.00 < 0.050 < 0.050	9.30 < 0.050 < 0.050	3.20 < 0.050 < 0.050	16.00 < 0.050 < 0.050		17.00 < 0.050 < 0.050	82.00 < 0.050 < 0.050	2.90 < 0.050 < 0.050	15.00 < 0.050 < 0.050		9.90 < 0.050 < 0.050	6.40 < 0.050 < 0.050	13.00 < 0.050 < 0.050	4.90 < 0.050 < 0.050	3.70 < 0.050 < 0.050	40.00 < 0.050 < 0.050	13.00 < 0.050 < 0.050	< 1.0 < 0.050 < 0.050	<0.050 <0.050
Arsenic (Dissolved) Boron (Dissolved)	U	1450 1450	µg/l	1.0	10	3.50	5.30	4.10	2.70	1.40	8.50 22.00	1.70	7.00	2.30	25.00 39.00	7.20 27.00	1.10	10.00		6.70	2.90	7.90	1.70		1.90	1.10	5.80	2.30	1.40	2.30	2.00	< 1.0	1.4
Cadmium (Dissolved) Chromium (Dissolved)	U	1450 1450	рд1 Гец	0.080	5 50	< 0.080	< 0.080	< 0.080 < 1.0	< 0.080	< 0.080	0.11 1.50	< 0.080	< 0.080 1.90	< 0.080 < 1.0	< 0.080	< 0.080 10.00	< 0.080	< 0.080		< 0.080	< 0.080 2.00	< 0.080	< 0.080		< 0.080	< 0.080	0.21 52.00	< 0.080	< 0.080 < 1.0	< 0.080	< 0.080	< 0.080 < 1.0	<0.08 15.0
Copper (Dissolved) Mercury (Dissolved) Nickel (Dissolved)	U	1450 1450	pg1 pg1 lgq	1.0 0.50 1.0	2000 1 20	15.00 < 0.50 1.50	2.60 < 0.50 < 1.0	2.80 < 0.50 < 1.0	4.20 < 0.50 1.20	7.40 < 0.50 < 1.0	10.00 < 0.50 4.40	3.20 < 0.50 < 1.0	7.40 < 0.50 < 1.0	5.10 < 0.50 1.00	19.00 < 0.50 2.30	3.80 < 0.50 1.00	< 1.0 < 0.50 6.30	2.80 < 0.50 2.10		32.00 < 0.50 < 1.0	4.30 < 0.50 < 1.0	1.50 < 0.50 < 1.0	1.20 < 0.50 < 1.0		4.60 < 0.50	1.60 < 0.50 < 1.0	22.00 0.53 65.00	< 1.0 < 0.50 < 1.0	< 1.0 0.52 < 1.0	1.80 < 0.50 < 1.0	3.00 < 0.50 1.20	< 0.50 < 1.0	3.0 <0.5 <1
Lead (Dissolved) Selenium (Dissolved)	U	1450 1450	р91 р91	1.0	10 10	6.30 < 1.0	< 1.0 1.30	1.40	6.30 < 1.0	< 1.0 < 1.0	25.00 < 1.0	2.20 < 1.0	2.30 1.60	2.30 1.70	2.90 3.70	3.60 2.60	1.10	< 1.0 1.10		14.00	< 1.0 < 1.0	5.20 < 1.0	1.80		3.70 < 1.0	1.80	19.00 7.80	< 1.0 1.10	< 1.0 < 1.0	1.30	1.20	< 1.0 < 1.0	<1 <1
Zinc (Dissolved) Chromium (Hexavalent) Aliphatic TPH >C5-C6	U	1450 1490 1675	pg1 pg1 feu	1.0 20 0.10		3.40 < 20 < 0.10	< 1.0 < 20 < 0.10	2.10 < 20 < 0.10	11.00 < 20 < 0.10	2.80 [B] < 20 < 0.10	20.00 [B] < 20 < 0.10	4.00 < 20 < 0.10	3.10 < 20 < 0.10	7.80 [B] < 20 < 0.10	2.20 < 20 < 0.10	3.20 < 20 < 0.10	5.10 [B] < 20 < 0.10	< 1.0 < 20 < 0.10	< 0.10	< 1.0 < 20 < 0.10	4.30 < 20 < 0.10	4.90 < 20 < 0.10	3.00 < 20 < 0.10	< 0.10	3.40 [B] < 20 [B] < 0.10	2.80 [B] < 20 [B] < 0.10	190.00 < 20 < 0.10	1.90 < 20 < 0.10	< 1.0 [B] < 20 < 0.10	3.50 [B] < 20 < 0.10	2.30 [B] < 20 < 0.10	1.10 < 20 < 0.10	7.1 <20 < 0.10
Aliphatic TPH >C6-C8 Aliphatic TPH >C8-C10	N N	1675	191 194	0.10	15000	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10 [B] < 0.10	[B] < 0.10 [B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12 Aliphatic TPH >C12-C16 Aliphatic TPH >C16-C21	N N	1675 1675 1675		0.10 0.10 0.10	300	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10	29.00 97.00	< 0.10 < 0.10 < 0.10	< 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10	< 0.10 < 0.10 < 0.10	< 0.10	< 0.10 310.00 < 0.10	[B] < 0.10 [B] < 0.10	[B] < 0.10 [B] < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 18.00 76.00	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10
Aliphatic TPH >C16-C21 Aliphatic TPH >C21-C35 Aliphatic TPH >C35-C44	N N	1675 1675	pg1 pg1 lgq			< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10		< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	6.90 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	[B] < 0.10 [B] < 0.10	[B] < 0.10 [B] < 0.10 [B] < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10
Total Aliphatic Hydrocarbons Aromatic TPH >C5-C7	N N	1675 1675	Pg4 Pg4	5.0		< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	140.00	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	310.00 < 0.10	[B] < 5.0 [B] < 0.10	[B] < 5.0	< 5.0 < 0.10	< 5.0 < 0.10	94.00	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10
Aromatic TPH >C7-C8 Aromatic TPH >C8-C10	N N	1675 1675		0.10	700 300	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	[B] < 0.10 [B] < 0.10	[B] < 0.10 [B] < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10
Aromatic TPH >C10-C12 Aromatic TPH >C12-C16 Aromatic TPH >C16-C21	N N	1675 1675	164 164	0.10 0.10 0.10	90	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 84.00 74.00	< 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10	< 0.10 7.90 < 0.10	[B] < 0.10 [B] < 0.10 [B] < 0.10	[B] < 0.10 [B] < 0.10 [B] < 0.10	< 0.10 < 0.10	< 0.10 < 0.10 < 0.10	8.00 110.00 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10 < 0.10
Aromatic TPH >C21-C35 Aromatic TPH >C35-C44	N N	1675 1675			90	< 0.10 < 0.10 < 0.10	< 0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	60.00	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	[B] < 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons Total Petroleum	N N	1675 1675	1gq 1gq	5.0		< 5.0 < 10	< 5.0 < 10	< 5.0 < 10	< 5.0 < 10	< 5.0	< 5.0	< 5.0 < 10	< 5.0 < 10	< 5.0 < 10	< 5.0 140.00	< 5.0 < 10	< 5.0 < 10	220.00 220.00	< 5.0	< 5.0 < 10	< 5.0 < 10	< 5.0 < 10	< 5.0 < 10	7.90 320.00	[B] < 5.0 [B] < 10	[B] < 5.0 [B] < 10	< 5.0	< 5.0 < 10	110.00	< 5.0 < 10	< 5.0 < 10	< 5.0 < 10	< 5.0 < 10
Hydrocarbons Naphthalene Acenaphthylene	U	1700	pgi pgi	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.70	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aceraphthene Fluorene	U	1700 1700	1gq 1gq	0.10		< 0.10 < 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	1.20 2.10	< 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10	< 0.10 < 0.10
Pheranthrene Anthracene Fluoranthene	U	1700 1700	р91	0.10 0.10 0.10		< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	2.30 0.15 2.20	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	8.40 2.80 7.60	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10
Pyrene Benzo(a)anthracene	U	1700 1700	р91 р91	0.10		< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	2.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	6.70 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10
Chrysene Benzo[b]fluoranthene Benzo[k]fluoranthene	U	1700 1700 1700	pg1 fgq fgq	0.10 0.10 0.10		< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10
Benzo(a)pyrene Indeno(1,2,3-c,d)Pyrene	U	1700	µg/l	0.10	0.01	< 0.10 < 0.10 < 0.10	< 0.10	< 0.10 < 0.10 < 0.10	< 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10	< 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10
Diberz(a,h)Anthracene Benzo(g,h)[perylene	U	1700 1700	pg1 pg1	0.10		< 0.10 < 0.10	< 0.10 < 0.10		< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10
Total 4 PAHs Total Of 16 PAH's Benzene	U	1700 1760	Pg1 Pg1 Pg4	2.0	0.1	<0.4 < 2.0 < 1.0	<0.4 < 2.0 < 1.0	< 2.0 < 1.0	< 2.0 < 1.0	<0.4 < 2.0 < 1.0	< 2.0 < 1.0	<0.4 < 2.0 < 1.0	<0.4 < 2.0 < 1.0	<0.4 13.00 < 1.0	<0.4 < 2.0 < 1.0	<0.4 < 2.0 < 1.0	<0.4 < 2.0 < 1.0	<0.4 26.00 < 1.0	<0.4 < 2.0 < 1.0	<0.4 < 2.0 < 1.0	<0.4 < 2.0 < 1.0	<0.4 < 2.0 < 1.0	<0.4 < 2.0 < 1.0	<0.4 < 2.0	<0.4 < 2.0 [B] < 1.0	<0.4 < 2.0 [B] < 1.0	<0.4 < 2.0 < 1.0	<0.4 < 2.0 < 1.0	<0.4 < 2.0 < 1.0	<0.4 < 2.0 < 1.0	<0.4 <2.0 <1.0	<0.4 < 2.0 < 1.0	< 2.0 < 1.0 < 1.0
Toluene Ethylbenzene	U	1760 1760	1gq 1gq	1.0	700 300	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	2.10	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0		[B] < 1.0 [B] < 1.0	[B] < 1.0 [B] < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0
m & p-Xylene o-Xylene Methyl Tert-Butyl Ether	U	1760 1760 1760	164 164 164	1.0 1.0	500 500	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	<1.0 <1.0 <1.0	9.40 4.10 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0		[B] < 1.0 [B] < 1.0 [B] < 1.0	[B] < 1.0 [B] < 1.0 [B] < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 0.50
N-Nitrosodimethylamine Phenol	N N	1790 1790				< 0.50 < 0.50	< 0.50		< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	(2) - 112	(2) - 110	< 0.50	< 0.50 < 0.50		< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50
2-Chlorophenol Bis-(2-Chlorophyl)Ether 1.3-Dichlorobenzene	N N	1790 1790	pg1 pg1 feu	0.50 0.50 0.50		< 0.50 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
1,4-Dichlorobenzene 1,2-Dichlorobenzene	N N	1790 1790				< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol (o-Cresol) Bis(2-Chloroisopropyl)Ethe	N r N	1790 1790	Pgq Pgq	0.50	-	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50
Hexachioroethane N-Nitrosodi-n-propylamine	N N	1790 1790	pg1 pg1	0.50		< 0.50 < 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol Nitrobenzene	N N	1790 1790	ид1	0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
Isophorone 2-Nitrophenol	N N	1790 1790	Pg4 Pg4	0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
2,4-Dimethylphenol Bis(2- Chloroethoxy)Methane	N N	1790 1790	рд1 рд1	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50
2,4-Dichlorophenol 1,2,4-Trichlorobenzene Naphthalene	N N	1790 1790 1790	pg1 pg1 leu	0.50 0.50 0.50		< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
4-Chloroaniline Hexachlorobutadiene	N N	1790 1790	pg1 pg1			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
4-Chloro-3-Methylphenol 2-Methylnaphthalene			pg1 pg1		-			< 0.50 < 0.50		< 0.50 < 0.50	< 0.50 < 0.50		< 0.50 < 0.50					< 0.50 < 0.50	< 0.50 < 0.50		< 0.50 < 0.50			< 0.50 < 0.50				< 0.50 < 0.50	< 0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
Hexachiorocyclopentadien 2,4,6-Trichiorophenol 2,4,5-Trichiorophenol	N N	1790 1790 1790				< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
2-Chloronaphthalene 2-Nitroaniline	N N	1790 1790	рд1 184	0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
Aceraphthylene Dimethylphthalate 2,6-Dinitrotoluene	N N	1790 1790		0.50 0.50 0.50		< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
Aceraphthene 3-Nitroaniline	N N	1790 1790	руј	0.50		< 0.50 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50 0.92 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50
Diberzofuran 4-Chlorophenylphenylether	N N	1790 1790	164			< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50
2,4-Dinitrotoluene Fluorene	N N	1790 1790	ру1	0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
Diethyl Phthalate 4-Nitroaniline	N N	1790	1gq 1gq	0.50		< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
2-Methyl-4,6-Dinitrophenol Azoberizene	N N	1790 1790				< 0.50 < 0.50	< 0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50			< 0.50	< 0.50 < 0.50		< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50
4-Bromophenylphenyl Ethe Hexachlorobenzene Restachlomobesol	N	1790 1790 1790	µg1 µg1			< 0.50	< 0.50 < 0.50 < 0.50		< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50 < 0.50 < 0.50		< 0.50	< 0.50	< 0.50	< 0.50
Pentachiorophenol Phenanthrene Anthracene	N N	1790		0.50		< 0.50 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 5.60 1.90	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
Carbazole DI-N-Butyl Phthalate	N N	1790 1790	pg1 pg1	0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	1.80	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50			< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 0.82
Fluoranthene Pyrene Butylbenzyl Phthalate	N N	1790 1790 1790	µg/l	0.50 0.50 0.50		< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	9.50 7.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	1.3 < 0.50 2.3
Benzo(a)anthracene Chrysene	N N		µg/l			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	1.30	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	2.3
Bis(2-Ethylhexyt)Phthalate Di-N-Octyl Phthalate	N N	1790 1790				< 0.50 < 0.50	< 0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50
Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)fluoranthene	N N	1790 1790 1790	Pg/l			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
Benzo(a)pyrene Indeno(1,2,3-c,d)Pyrene Diberz(a,h)Anthracene	N N	1790 1790 1790	pg1 pg1 lgq			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50		< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50		< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
Benzo[g,h,i]perylene 4-Nitrophenol	N N	1790 1790	pg1 pg1	0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
Total Phenois	U	1920	mg/l	0.030		< 0.030	0.45	0.05	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030		< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030

Exceeds screening value

Limit of detection of above screening value

Passes screening value

								sand											cond					cond									
Client: Geosphere Environmental Ltd				ntest Job No.:		17-20019	17-20560	17-20560	17-20669	17-21231	17-21712	17-21913	17-22420	17-22844	17-26355	17-27357	17-29383	17-30076	17-31448	17-31794	17-33041	18-00159	18-02644	18-03574	18-06475	18-06487	18-07089	17-25501	17-25501	17-26029	18-09432	18-11312	17-29274
Quotation No.: Order No.: 2543, GI			Clier	st Sample ID.: t Sample Ref.: Top Depth (m):		491165 BHC06 0.5	493823 TPC101 1.80	493826 TPC06	494333 TPC01 0.20	496746 BHC02 0.25	499158 IPC01 0.30	500003 IPC05 1.20	502630 TPC23 1.00	504746 BHC04 0.90	521396 BHC05 0.6	526215 BHC28 2.60	535385 WSC19A 1.50	538508 WSC23 0.50	545141 BHC103	546616 BH102 0.30	552743 BHC101 2.10	559757 WSC19A 0.80	571137 BHC18 0.1	575449 BHC19	588382 BHC26 0.7	588453 BHC23 0.8	591585 BHC08 2.6	517037 TPC08 2.00	517043 BH13CP 2.00	519841 BHC30 1.15	602978 BHC06B 0.45	612825 BHC01 0.30	534738 WSC16 0.4
Determinand	Accred.	SOP		Date Sampled:	EQS-	28-Jul-2017	01-Aug-2017	01-Aug-2017	03-Aug-2017	10-Aug-2017	15-Aug-2017	16-Aug-2017	21-Aug-2017	25-Aug-2017	03-Oct-2017	13-Oct-2017	02-Nov-2017	09-Nov-2017	22-Nov-2017	24-Nov-2017	07-Dec-2017		26-Jan-2018	05-Feb-2018	26-Feb-2018	05-Mar-2018	09-Mar-2018		21-Sep-2017	27-Sep-2017	29-Mar-2018	19-Apr-2018	
pH Ammonia (Free)	U	1010		N/A 0.010	Coastal	8.0 < 0.010	10.0	8.9	8.1 < 0.010	11.0	8.3 0.023	8.4	9.1	8.4	9.5 0.63	8.4 0.029	8.4 < 0.010	9.7		10.4	9.8	8.3 < 0.010	8.7 0.14		7.6 < 0.050	7.1 < 0.050	9.7	7.5 < 0.010	8.0 < 0.010	9.0	8.7 0.16	8.6 < 0.050	9.9
Sulphate Cyanide (Total)	U	1220	mg/l	1.0	0.001	< 1.0	8.7 < 0.050	8.2 < 0.050	1.1	45 < 0.050	23	< 1.0	24 < 0.050	100	24 < 0.050	9.3	3.2	16 < 0.050		17 < 0.050	82 < 0.050	2.9	15 < 0.050		9.9	6.4	13	4.9	3.7	40 < 0.050	13 < 0.050	< 1.0	150.0
Cyanide (Free) Arsenic (Dissolved)	U	1300 1450	mg/l µg/l	0.050	0.001 25	< 0.050 3.5	< 0.050 5.3	< 0.050 4.1	< 0.050 2.7	< 0.050 1.4	< 0.050 8.5	< 0.050 1.7	< 0.050 7.0	< 0.050 2.3	< 0.050 25.0	< 0.050 7.2	< 0.050 1.1	< 0.050 10		< 0.050 6.7	< 0.050 2.9	< 0.050 7.9	< 0.050 1.7		< 0.050 1.9	< 0.050 1.1	< 0.050 5.8	< 0.050 2.3	< 0.050	< 0.050 2.3	< 0.050 2.0	< 0.050 < 1.0	<0.050 1.4
Boron (Dissolved) Cadmium (Dissolved)	U	1450 1450	pg1	0.080	0.2	37 < 0.080	< 20	< 20	< 0.080	210 < 0.080	0.11 1.5	< 20	25 < 0.080	< 0.080	39 < 0.080	27 < 0.080	< 0.080	37 < 0.080		< 20 < 0.080 < 1.0	< 20	< 20	< 20		41 < 0.080	25 < 0.080	30 0.21 52	< 0.080	< 20	< 20 < 0.080	36 < 0.080	< 20 < 0.080 < 1.0	48.0 <0.08
Chromium (Dissolved) Copper (Dissolved) Mercury (Dissolved)	U	1450 1450 1450	µg/l	1.0 1.0 0.50	3.76	< 1.0 15	< 1.0 2.6	< 1.0 2.8	< 1.0 4.2	< 1.0 7.4 < 0.50	1.5	< 1.0 3.2	7.4	< 1.0 5.1	2.4	3.8	1.3 < 1.0	1.8		< 1.0 32	2.0 4.3 < 0.50	< 1.0 1.5 < 0.50	< 1.0 1.2		4.6 < 0.50	< 1.0 1.6 < 0.50	52 22	< 1.0	< 1.0 < 1.0	< 1.0 1.8	< 1.0 3.0	< 1.0	15.0 3.0 <0.5
Nickel (Dissolved) Lead (Dissolved)	U	1450	µg/l	1.0	8.6	1.5	< 1.0 < 1.0	< 1.0	1.2	< 1.0 < 1.0	4.4	< 1.0	< 1.0 2.3	1.0	2.3	1.0	6.3 1.1	2.1		< 1.0	< 1.0 < 1.0	< 1.0 5.2	< 1.0 1.8		1.1	< 1.0	65 19	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 1.3	1.2	< 1.0 < 1.0	ব
Selenium (Dissolved) Zinc (Dissolved)	U	1450 1450			6.8	< 1.0 3.4	1.3	< 1.0 2.1	< 1.0	< 1.0 2.8	< 1.0 20	< 1.0 4.0	1.6	1.7 7.8	3.7 2.2	2.6 3.2	< 1.0 5.1	1.1		< 1.0 < 1.0	< 1.0 4.3	< 1.0 4.9	< 1.0 3.0		< 1.0 3.4	< 1.0 2.8	7.8 190	1.1	< 1.0 < 1.0	< 1.0 3.5	< 1.0 2.3	< 1.0 1.1	<1 7.1
Chromium (Hexavalient) Aliphatic TPH >C5-C6 Aliphatic TPH >C6-C8	N N	1490 1675 1675	Pg1 Pg1 Pg4	20 0.10 0.10	0.6	< 20 < 0.10 < 0.10	< 20 < 0.10 < 0.10	< 20 < 0.10 < 0.10	< 20 < 0.10 < 0.10	(B) < 20 < 0.10 < 0.10	(B) < 20 < 0.10 < 0.10	< 0.10 < 0.10	< 20 < 0.10 < 0.10	(B) < 20 < 0.10 < 0.10	< 20 < 0.10 < 0.10	< 20 < 0.10 < 0.10	(B) < 20 < 0.10 < 0.10	< 20 < 0.10 < 0.10	< 0.10 < 0.10	< 20 < 0.10 < 0.10	< 20 < 0.10 < 0.10	< 20 < 0.10 < 0.10	< 20 < 0.10 < 0.10	< 0.10	[B] < 20 [B] < 0.10 [B] < 0.10	[B] < 20 [B] < 0.10 [B] < 0.10	< 20 < 0.10 < 0.10	< 0.10 < 0.10	(B) < 20 < 0.10 < 0.10	(B) < 20 < 0.10 < 0.10	(B) < 20 < 0.10 < 0.10	< 20 < 0.10 < 0.10	< 0.10 < 0.10
Aliphatic TPH >C8-C10 Aliphatic TPH >C10-C12	N N	1675	µg/l	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10	5.8	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10 < 0.10	[B] < 0.10 [B] < 0.10	[B] < 0.10 [B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16 Aliphatic TPH >C16-C21	N N	1675 1675	Pg1 Pg1	0.10		< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10	97 6.9	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	310 < 0.10	[B] < 0.10 [B] < 0.10	[B] < 0.10 [B] < 0.10	< 0.10	< 0.10 < 0.10	18 76	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10				
Aliphatic TPH >C21-C35 Aliphatic TPH >C35-C44 Total Aliphatic	N N	1675 1675	194 194	0.10		< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	[B] < 0.10 [B] < 0.10	[B] < 0.10 [B] < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10
Hydrocarbons Aromatic TPH >C5-C7	N N	1675 1675	194 194	5.0 0.10		< 5.0 < 0.10	< 5.0 < 0.10	< 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	140 < 0.10	< 5.0 < 0.10	< 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	310 < 0.10	[B] < 5.0 [B] < 0.10	[B] < 5.0 [B] < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	94 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10
Aromatic TPH >C7-C8 Aromatic TPH >C8-C10	N N	1675 1675	pg1	0.10		< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	[B] < 0.10 [B] < 0.10	[B] < 0.10 [B] < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10
Aromatic TPH >C10-C12 Aromatic TPH >C12-C16 Aromatic TPH >C16-C21	N N	1675 1675	ру1	0.10 0.10 0.10		< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 84 74	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 7.9 < 0.10	[B] < 0.10 [B] < 0.10	[B] < 0.10 [B] < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10	8.0 110 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10
Aromatic TPH >C21-C35 Aromatic TPH >C35-C44	N N	1675 1675	h91	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	60	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	[B] < 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons Total Petroleum	N N	1675 1675	pg1	5.0		< 5.0 < 10	< 5.0 < 10	< 5.0 < 10	< 5.0 < 10	< 5.0 < 10	< 5.0 140	< 5.0 < 10	< 5.0 < 10	220 220	< 5.0 < 10	< 5.0	< 5.0 < 10	< 5.0 < 10	< 5.0	7.9 320	[B] < 5.0	[B] < 5.0	< 5.0 < 10	< 5.0 < 10	110	< 5.0	< 5.0 < 10	< 5.0 < 10	< 5.0				
Hydrocarbons Naphthalene Acenaphthylene	U	1700 1700	Pgq Pgq Pgq Pgq	0.10	2	< 10 < 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	1.7	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	(B) < 10 < 0.10 < 0.10	(B) < 10 < 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10
Acenaphthene Fluorene	U	1700 1700	191 191 194	0.10 0.10 0.10		< 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	1.0	< 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10	< 0.10	< 0.10 < 0.10 < 0.10	< 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10
Phenanthrene Anthracene	U	1700 1700	Pg1 Pgq	0.10	0.1	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	2.3 0.15	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	8.4 2.8	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10									
Fluoranthene Pyrene Benzolalanthracene	U	1700 1700	Pgq Pgq Pgq	0.10 0.10 0.10	0.0063	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	2.1 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	7.6 6.7 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10
Chrysene Benzo(b)fluoranthene	U	1700	191 194	0.10	0.017	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(k)fluoranthene Benzo(a)pyrene	U	1700 1700	pg/1		0.017	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10				
Indeno(1,2,3-c,d)Pyrene Diberz(a,h)Anthracene	U	1700	pg1 pg1	0.10		< 0.10 < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo(g.h.)[perylene Total Of 16 PAH's Benzene	U	1700 1700	pg1 pg1 lgq	0.10 2.0 1.0	0.00082	< 0.10 < 2.0 < 1.0	< 0.10 < 2.0 < 1.0	< 0.10 < 2.0 < 1.0	< 0.10 < 2.0 < 1.0	< 0.10 < 2.0 < 1.0	< 0.10 < 2.0 < 1.0	< 0.10 < 2.0 < 1.0	< 0.10 < 2.0 < 1.0	< 0.10 13 < 1.0	< 0.10 < 2.0 < 1.0	< 0.10 < 2.0 < 1.0	< 0.10 < 2.0 < 1.0	< 0.10 26 < 1.0	< 0.10 < 2.0 < 1.0	< 0.10 < 2.0 < 1.0	< 0.10 < 2.0 < 1.0	< 0.10 < 2.0 < 1.0	< 0.10 < 2.0 < 1.0	< 2.0	< 0.10 < 2.0 [B] < 1.0	< 0.10 < 2.0 [B] < 1.0	< 0.10 < 2.0 < 1.0	< 0.10 < 2.0 < 1.0	< 0.10 < 2.0 < 1.0	< 0.10 < 2.0 < 1.0	< 0.10 < 2.0 < 1.0	< 0.10 < 2.0 < 1.0	< 0.10 < 2.0 < 1.0
Toluene Ethylbenzene	U	1760 1760	pg1	1.0	74	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0	< 1.0 < 1.0	< 1.0	< 1.0 < 1.0	< 1.0	2.1	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0	< 1.0	<1.0	< 1.0	< 1.0	<1.0	< 1.0		[B] < 1.0 [B] < 1.0	[B] < 1.0 [B] < 1.0	< 1.0 < 1.0	< 1.0	< 1.0	< 1.0 < 1.0	< 1.0	< 1.0 < 1.0	< 1.0
m & p-Xylene o-Xylene	U	1760 1760	pg1 lgq	1.0		< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	9.4 4.1	< 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		[B] < 1.0 [B] < 1.0	[B] < 1.0 [B] < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0				
Methyl Tert-Butyl Ether N-Nitrosodimethylamine Phenol	N N	1760 1790	Pgq Pgq Pgq	1.0 0.50 0.50	7.7	< 1.0 < 0.50 < 0.50	< 1.0 < 0.50 < 0.50	< 1.0 < 0.50	< 1.0 < 0.50 < 0.50	< 1.0 < 0.50 < 0.50	< 0.50 < 0.50	< 1.0 < 0.50 < 0.50	< 1.0 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 1.0 < 0.50 < 0.50	< 0.50 < 0.50	< 1.0 < 0.50 < 0.50	< 1.0 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 1.0 < 0.50 < 0.50	< 1.0 < 0.50 < 0.50	< 0.50	[B] < 1.0	[B] < 1.0	< 1.0	< 0.50 < 0.50	< 1.0 < 0.50 < 0.50	< 1.0 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
2-Chlorophenol Bis-(2-Chloroethyl)Ether	N N	1790	16t 16t	0.50		< 0.50 < 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene 1,4-Dichlorobenzene	N N	1790 1790	рд1 164	0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50				
1,2-Dichloroberizene 2-Methylphenol (o-Cresol)	N N	1790 1790	194 194	0.50	-	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50			< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ethe Hexachloroethane	N N	1790 1790	рд1 184	0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine 4-Methylphenol	N N	1790 1790	Pg4 Tgu	0.50		< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50 < 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene Isophorone	N N	1790 1790		0.50 0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50				
2-Nitrophenol 2,4-Dimethylphenol	N N	1790 1790	pg1 pg1	0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50
Chloroethoxy/Methane 2,4-Dichlorophenol	N N	1790 1790	164 164	0.50	0.42	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50				
1,2,4-Trichlorobenzene Naphthalene 4-Chloroaniline	N N	1790 1790 1790	pg1 pg1 lgq	0.50 0.50 0.50	0.4	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
Hexachiorobutadiene 4-Chioro-3-Methylphenol	N N	1790 1790	р91		0.6	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50
2-Methylnaphthalene Hexachlorocyclopentadiene	N N	1790 1790	рд1 Гец	0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50
2,4,6-Trichloropherol 2,4,5-Trichloropherol	N N	1790		0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50				
2-Chloronaphthalene 2-Nitroaniline Aceraphthylene	N N		Pgq Pgq Pgq	0.50		< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
Aceraphthylene Dimethylphthalate 2.6-Dinitrotoluene	N N	1790	lequ lequ lequ	0.50		< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50		< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
Aceraphthere 3-Nitroaniline	N N	1790 1790	Pg4 Pg4	0.50 0.50	Ŀ	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.92	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50
Diberzofuran 4-Chlorophenylphenylether	N N		рд1	0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50
2,4-Dinitrotoluene Fluorene	N N	1790	рд1 1ец	0.50 0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50				
Diethyl Phthalate 4-Nitroaniline	N N	1790		0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50				
2-Methyl-4,6-Dinitrophenol Azoberzene	N N	1790 1790		0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50
4-Bromophenylphenyl Ether Hexachlorobenzene	N N	1790 1790	рд1 164	0.50 0.50	0.05	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50				
Pentachiorophenol Phenanthrene	N N	1790	pg1 pg1	0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50 5.6	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50
Anthracene Carbazole Di-N-Butyl Phthalate	N N	1790	Pgq Pgq Pgq	0.50		< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	1.9 1.8 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
Di-N-Butyl Phthalate Fluoranthene Pyrene	N N		µg/l	0.50		< 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 9.5 7.5	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 0.82 1.3
Butylbenzyl Phthalate Benzo(aljanthracene	N N	1790 1790	lgq 1gq	0.50 0.50	0.75	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 1.3	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 2.3									
Chrysene Bis(2-Ethylhexyl)Phthalate	N N	1790			1.3	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	0.94	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	2.3 < 0.50
Di-N-Octyl Phthalate Benzo(b)fluoranthene	N N	1790 1790	µg/l	0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50				
Benzo[k]fluoranthene Benzo[a]pyrene Indeno(1,2,3-c,d)Pyrene	N N	1790 1790 1790				< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
Indeno(1,2,3-c,d)Pyrene Diberiz(a,h)Anthracene Berizo(g,h)[perylene	N N	1790		0.50		< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
4-Nitrophenol Total Phenols	N U	1790	pg1 mg1	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.030	< 0.030	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50



		_				
			17424916	17424917	17424918	17424919
		SDG ID.	180423-34	180423-34	180423-34	180423-34
		Project Site	Lowestoft	Lowestoft	Lowestoft	Lowestoft
		Sample Description	WS01	WS02	WS03	WS04
		Sample Depth	0.00-0.20	0.00-0.20	0.00-0.20	0.00-0.20
		Date Sampled	19/04/2018	19/04/2018	19/04/2018	19/04/2018
		Received On	23/04/2018	23/04/2018	23/04/2018	23/04/2018
		Date Complete	30/04/2018	30/04/2018	30/04/2018	30/04/2018
		EQS Coastal				
		Screen				
Carbon						
Organic Carbon, Total	mg/l		<3	<3	<3	<3
Inorganics						
Alkalinity, Total as CaCO3	mg/l		135	124	122	122
Ammoniacal Nitrogen as N			<0.2		<0.2	<0.2
Apparent Colour			27.3		9.61	11.3
Chloride			18400		18000	18300
Conductivity @ 20 deg.C		•	45.8		46.3	45.1
Nitrate as NO3		•	<0.3		<0.3	<0.3
'	pH Units	•	7.9		7.93	7.9
Phosphate (Ortho as PO4)	Ĭ		<0.05		<0.05	<0.05
Sulphate			2640		2610	
Suspended solids, Total	mg/l		42.3	36.8	40.8	34.2
True Colour	mg/I Pt/Co		1.38	1.95	1.49	1.51
Filtered (Dissolved) Metals						1
Aluminium (diss.filt)	μg/l		<60	<60	<60	<60
Arsenic (diss.filt)	μg/l	25	<3	<3	<3	<3
Cadmium (diss.filt)	μg/l	0.2	<0.48	<0.48	<0.48	<0.48
Chromium (diss.filt)	μg/l	0.6	<6	<6	<6	<6
Copper (diss.filt)	μg/l	3.76	3.32	1.84	<1.8	<1.8
Iron (Dis.Filt)	mg/l	1	<0.114	<0.114	<0.114	<0.114
Lead (diss.filt)	μg/l	1.3	<1.2	<1.2	<1.2	<1.2
Manganese (diss.filt)	µg/l		<18	18.5	22.3	18.9
Mercury (diss.filt)		0.07	<0.01	<0.01	<0.01	<0.01
Nickel (diss.filt)		8.6	3.13		<2.4	3.32
Zinc (diss.filt)		6.8	26.8		21.2	8.88
Unfiltered (Total) Metals	μ9/1		20.0	10.0	21.2	0.00
Calcium (Tot. Unfilt.)	ma/l		440	450	415	461
Magnesium (Tot. Unfilt.)		·				
<u> </u>			1130 361		1150	1130 349
Potassium (Tot. Unfilt.)	_			356		
Sodium (Tot. Unfilt.)	ITIG/I		8440	8940	9050	8890
Gasoline Range Organics (GRO)						
EPH (C6-C10)	1	•	<100			
GRO >C5-C10	μg/l		<10	<10	<10	<10
EPH (Extractable Petroleum Hydrocarbons)						1
EPH Range >C10 - C40 (aq)	μg/l		<100	<100	<100	<100
TPH Criteria Working Group (TPH CWG)						
Benzene	μg/l	8	<7	<7	<7	<7
Ethylbenzene	μg/l	20	<5	<5	<5	<5
m,p-Xylene	μg/l	30	<8	<8	<8	<8>
Methyl tertiary butyl ether (MTBE)	μg/l		<3	<3	<3	<3
				0	-2	<3
o-Xylene	μg/l	30	<3	<3	<3	
o-Xylene Sum of detected BTEX	· -	30	<3 <28		<28	
	μg/l			<28	<28	<28

Sample		ı	Location		Contaminant	Arsenic	Cadmium	Chromium	Copper	Mercury	Nickel	Lead	Zinc	Organotins; (TBT, DBT, MBT)	PCB's, ICES 7	PCB's, 25 congeners	Boron	Selenium	Total Metal Load Vs AL1
					Action Level 1	20	0.4	40	40	0.3	20	50	130	0.1	0.01	0.02	N/A	N/A	100
	Е	N	Lat	Long	Action Level 2	100	5	400	400	3	200	500	800	1	0.139	0.2	N/A	N/A	I
G01	652497.9	292762.6	52°28'27.59"N	001°42′59.65″E		19.1	0.392	26.2	131	<0.14	24.7	65.8	212	<lod< td=""><td><lod< td=""><td><lod< td=""><td>40.3</td><td><lod< td=""><td>162.4519259</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>40.3</td><td><lod< td=""><td>162.4519259</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>40.3</td><td><lod< td=""><td>162.4519259</td></lod<></td></lod<>	40.3	<lod< td=""><td>162.4519259</td></lod<>	162.4519259
G02	653038.5	293033.9	52°28'35.48"N	001°43′28.96″E		18.4	<0.02	25.8	63.4	<0.14	23.6	47.8	161	<lod< td=""><td><lod< td=""><td><lod< td=""><td>34.6</td><td><lod< td=""><td>118.4944605</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>34.6</td><td><lod< td=""><td>118.4944605</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>34.6</td><td><lod< td=""><td>118.4944605</td></lod<></td></lod<>	34.6	<lod< td=""><td>118.4944605</td></lod<>	118.4944605
G03	653285.85	292941.3	52°28'32.06"N	001°43′41.77″E		19.8	0.297	27.2	35	<0.14	25.8	37.4	124	<lod< td=""><td><lod< td=""><td><lod< td=""><td>41.8</td><td><lod< td=""><td>91.4097875</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>41.8</td><td><lod< td=""><td>91.4097875</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>41.8</td><td><lod< td=""><td>91.4097875</td></lod<></td></lod<>	41.8	<lod< td=""><td>91.4097875</td></lod<>	91.4097875
G04	653542.93	292882.1	52°28'29.73"N	001°43′55.25″E		19.8	0.313	24.3	23.6	<0.14	24.1	33.2	100	<lod< td=""><td><lod< td=""><td><lod< td=""><td>38.4</td><td><lod< td=""><td>74.58948174</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>38.4</td><td><lod< td=""><td>74.58948174</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>38.4</td><td><lod< td=""><td>74.58948174</td></lod<></td></lod<>	38.4	<lod< td=""><td>74.58948174</td></lod<>	74.58948174
G05	653619.93	292806	52°28'27.14"N	001°43′59.11″E		21.2	<0.02	23.4	21.3	<0.14	24	32.6	101	<lod< td=""><td><lod< td=""><td><lod< td=""><td>41.8</td><td><lod< td=""><td>74.58039978</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>41.8</td><td><lod< td=""><td>74.58039978</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>41.8</td><td><lod< td=""><td>74.58039978</td></lod<></td></lod<>	41.8	<lod< td=""><td>74.58039978</td></lod<>	74.58039978
G06	653760.79	292834.2	52°28'27.81"N	001°44′06.65″E		24.2	0.255	27.3	21.3	<0.14	27.8	36.5	108	<lod< td=""><td><lod< td=""><td><lod< td=""><td>44.8</td><td><lod< td=""><td>80.55085736</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>44.8</td><td><lod< td=""><td>80.55085736</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>44.8</td><td><lod< td=""><td>80.55085736</td></lod<></td></lod<>	44.8	<lod< td=""><td>80.55085736</td></lod<>	80.55085736
G07	654026.34	292762.7	52°28'25.08"N	001°44′20.47″E		18.6	0.311	24.7	21.7	<0.14	25.3	37.2	108	<lod< td=""><td><lod< td=""><td><lod< td=""><td>27.2</td><td><lod< td=""><td>79.63215949</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>27.2</td><td><lod< td=""><td>79.63215949</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>27.2</td><td><lod< td=""><td>79.63215949</td></lod<></td></lod<>	27.2	<lod< td=""><td>79.63215949</td></lod<>	79.63215949
G08	654060.18	292676.3	52°28'22.21"N	001°44′22.03″E		20.6	0.258	25.4	18.6	<0.14	25.4	31.4	94	<lod< td=""><td><lod< td=""><td><lod< td=""><td>45</td><td><lod< td=""><td>70.38430444</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>45</td><td><lod< td=""><td>70.38430444</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>45</td><td><lod< td=""><td>70.38430444</td></lod<></td></lod<>	45	<lod< td=""><td>70.38430444</td></lod<>	70.38430444
G09	654245.01	292706.7	52°28'22.90"N	001°44′31.90″E		18.7	0.236	20.3	13.9	<0.14	20.7	25.1	72.5	<lod< td=""><td><lod< td=""><td><lod< td=""><td>44.5</td><td><lod< td=""><td>54.85451822</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>44.5</td><td><lod< td=""><td>54.85451822</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>44.5</td><td><lod< td=""><td>54.85451822</td></lod<></td></lod<>	44.5	<lod< td=""><td>54.85451822</td></lod<>	54.85451822
G10	654843.57	292696.6	52°28'21.54"N	001°45′03.49″E		17.5	0.294	14.8	12.7	<0.14	16.5	21.4	60.4	<lod< td=""><td><lod< td=""><td><lod< td=""><td>32</td><td><lod< td=""><td>45.73505668</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>32</td><td><lod< td=""><td>45.73505668</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>32</td><td><lod< td=""><td>45.73505668</td></lod<></td></lod<>	32	<lod< td=""><td>45.73505668</td></lod<>	45.73505668
G11	655114.78	292628.4	52°28′18.89″N	001°45′17.69″E		19.5	<0.02	21.4	14.8	<0.14	22.3	29.9	85.1	<lod< td=""><td><lod< td=""><td><lod< td=""><td>41.7</td><td><lod< td=""><td>63.42667279</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>41.7</td><td><lod< td=""><td>63.42667279</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>41.7</td><td><lod< td=""><td>63.42667279</td></lod<></td></lod<>	41.7	<lod< td=""><td>63.42667279</td></lod<>	63.42667279
G12	655186.48	292816.4	52°28'24.84"N	001°45′21.96″E		19.6	0.286	22.5	20.7	<0.14	23.7	32.3	93.9	<lod< td=""><td><lod< td=""><td><lod< td=""><td>38.8</td><td><lod< td=""><td>70.15358554</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>38.8</td><td><lod< td=""><td>70.15358554</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>38.8</td><td><lod< td=""><td>70.15358554</td></lod<></td></lod<>	38.8	<lod< td=""><td>70.15358554</td></lod<>	70.15358554

Sample	Depth			Location		Contaminant	Arsenic	Cadmium	Chromium	Copper	Mercury	Nickel	Lead	Zinc	Organotins; (TBT, DBT, MBT)	PCB's, ICES 7	PCB's, 25 congeners	Boron	Selenium	Total Metal Load Vs AL1
						Action Level 1	20	0.4	40	40	0.3	20	50	130	0.1	0.01	0.02	N/A	N/A	100
		E	N	Lat	Long	Action Level 2	100	5	400	400	3	200	500	800	1	0.139	0.2	N/A	N/A	
VC2	1						4.22	0.098	3.31	4.19	0.14	4.38	7.83	16	<lod< td=""><td><lod< td=""><td><lod< td=""><td>40.3</td><td><lod< td=""><td>12.57927244</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>40.3</td><td><lod< td=""><td>12.57927244</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>40.3</td><td><lod< td=""><td>12.57927244</td></lod<></td></lod<>	40.3	<lod< td=""><td>12.57927244</td></lod<>	12.57927244
VC2	2						3.84	0.063	2.58	3.22	0.14	3.47	2.65	11.6	<lod< td=""><td></td><td><lod< td=""><td>34.6</td><td><lod< td=""><td>8.627117403</td></lod<></td></lod<></td></lod<>		<lod< td=""><td>34.6</td><td><lod< td=""><td>8.627117403</td></lod<></td></lod<>	34.6	<lod< td=""><td>8.627117403</td></lod<>	8.627117403
VC2	3						37.9	0.553	24.9	29.3	0.14	35.9	31.1	104		<lod< td=""><td><lod< td=""><td></td><td><lod< td=""><td>79.99599662</td></lod<></td></lod<></td></lod<>	<lod< td=""><td></td><td><lod< td=""><td>79.99599662</td></lod<></td></lod<>		<lod< td=""><td>79.99599662</td></lod<>	79.99599662
VC2	3.5						15.3	1.18	0.9	12.1	0.14	21.5	13.5	61.7			-		<lod< td=""><td>42.53165671</td></lod<>	42.53165671
VC3	1						19.7	0.241	22	25.6	0.14	23.4	31.7	95.8			<lod< td=""><td></td><td><lod< td=""><td>71.8160635</td></lod<></td></lod<>		<lod< td=""><td>71.8160635</td></lod<>	71.8160635
VC3	2						3.42	0.086	5.45	2.9	0.14	3.3	4.27	18.7					<lod< td=""><td>13.30317582</td></lod<>	13.30317582
VC3	3						22.4	1.01	0.9	8.11	0.14	18.3	10.9	47.5				27.2	<lod< td=""><td>33.73829767</td></lod<>	33.73829767
VC3	3.5						1.75	0.038	2.91	2.9	0.14	2.78	4.52	9.05		<lod< td=""><td>-</td><td>45</td><td><lod< td=""><td>7.374096943</td></lod<></td></lod<>	-	45	<lod< td=""><td>7.374096943</td></lod<>	7.374096943
VC4	1						3.4	0.139	12	10.8	0.14	12.9	10.2	31.6		<lod< td=""><td><lod< td=""><td>44.5</td><td><lod< td=""><td>25.02579075</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>44.5</td><td><lod< td=""><td>25.02579075</td></lod<></td></lod<>	44.5	<lod< td=""><td>25.02579075</td></lod<>	25.02579075
VC4	2						1.35	0.036	2.89	2.29	0.14	3	3.54	8.25		<lod< td=""><td><lod< td=""><td>32</td><td><lod< td=""><td>6.597179432</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>32</td><td><lod< td=""><td>6.597179432</td></lod<></td></lod<>	32	<lod< td=""><td>6.597179432</td></lod<>	6.597179432
VC4	3						2.74	0.053	4.51	5.46	0.14	6.32	9.64	15			<lod< td=""><td></td><td><lod< td=""><td>12.87192709</td></lod<></td></lod<>		<lod< td=""><td>12.87192709</td></lod<>	12.87192709
VC4	3.8						0.936	0.02	1.1	1.4	0.14	1.1	3.31	4.24			<lod< td=""><td>38.8</td><td><lod< td=""><td>3.66436256</td></lod<></td></lod<>	38.8	<lod< td=""><td>3.66436256</td></lod<>	3.66436256
VC5	1						21	0.241	24.7	23.3	0.14	25.8	36.3	105		<lod< td=""><td></td><td></td><td></td><td>78.29462677</td></lod<>				78.29462677
VC5	2						3.65	0.088	1.73	5.48	0.14	2.83	6.85	15.6						11.91686909
VC5	2.7						11.4	0.342	0.9	7.98	0.14	6.13	8.54	48.1		<lod< td=""><td></td><td></td><td></td><td>31.56367475</td></lod<>				31.56367475
VC6	1						34.8	0.282	23	20.1	0.14	24.5	38.3	98.6		<lod< td=""><td><lod< td=""><td></td><td></td><td>75.39729191</td></lod<></td></lod<>	<lod< td=""><td></td><td></td><td>75.39729191</td></lod<>			75.39729191
VC6	2.2						2.21	0.13	1.65	2.14	0.14	3.04	2.49	8.13		<lod< td=""><td></td><td></td><td></td><td>6.145635196</td></lod<>				6.145635196
VC7	1						0.6	0.03	1.11	3.43	0.14	0.59	2.72	4.07		<lod< td=""><td></td><td></td><td></td><td>3.720276493</td></lod<>				3.720276493
VC7	1.8						0.832	0.067	1.69	1.4	0.14	1.1	5.36	4.78		<lod< td=""><td></td><td></td><td></td><td>4.494434034</td></lod<>				4.494434034
VC8	0.8						1.19	0.2	2.11	1.69	0.14	1.45	3.3	6.29						5.07525347
VC8	1.2						0.6	0.025	1.23	1.4	0.14	1.35	1.95	3.87		<lod< td=""><td>$\overline{}$</td><td></td><td></td><td>3.183093685</td></lod<>	$\overline{}$			3.183093685
VC9	1						36.1	1.98	0.9	3.79	0.14	14.7	11.3	47.2		<lod< td=""><td></td><td></td><td></td><td>33.78354505</td></lod<>				33.78354505
VC9	1.4						0.703	0.032	1.65	1.4	0.14	1.16	2.34	6.75		<lod< td=""><td></td><td></td><td></td><td>4.930779799</td></lod<>				4.930779799
VC10	1						19	0.243	24.4	23	0.14	24.8	34.1	101		<lod< td=""><td></td><td></td><td></td><td>75.24338073</td></lod<>				75.24338073
VC10	2						1.67	0.052	1.68	1.45	0.14	2.37	2.97	8.26		<lod< td=""><td>-</td><td></td><td></td><td>6.104048461</td></lod<>	-			6.104048461
VC10	2.7						1.09	0.045	1.1	1.95	0.14	1.38	4.31	10.1		<lod< td=""><td>-</td><td></td><td></td><td>7.26470871</td></lod<>	-			7.26470871
VC11	1						19.9	0.277	25.2	27	0.14	25.7	38.8	117		<lod< td=""><td>-</td><td></td><td>\square</td><td>86.11084411</td></lod<>	-		\square	86.11084411
VC11	2						1.21	0.025	1.6	1.4	0.14	1.36	2.48	5.66						4.407012746
VC11	2.4						1.54	0.03	1.76	2.69	0.14	1.75	4.25	7.5		<lod< td=""><td></td><td></td><td></td><td>6.116832085</td></lod<>				6.116832085
VC12	1						18.3	0.373	24.1	26.2	0.14	23	43.7	125		<lod< td=""><td></td><td></td><td></td><td>90.91010224</td></lod<>				90.91010224
VC12	2						1.08	0.051	1.62	1.99	0.14	1.88	2.5	5.35	<lod< td=""><td><lod< td=""><td><lod< td=""><td></td><td></td><td>4.376715633</td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td></td><td></td><td>4.376715633</td></lod<></td></lod<>	<lod< td=""><td></td><td></td><td>4.376715633</td></lod<>			4.376715633
VC12	3						4.54	0.116	14	10.4	0.14	15.3	11.9	48.6	<lod< td=""><td><lod< td=""><td><lod< td=""><td></td><td></td><td>35.40940118</td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td></td><td></td><td>35.40940118</td></lod<></td></lod<>	<lod< td=""><td></td><td></td><td>35.40940118</td></lod<>			35.40940118



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