Homes and Communities Agency

East Lancashire Paper Mill, Radcliffe

Preliminary Ground Investigation Report

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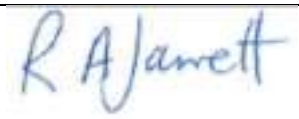
		

Content Page

1. Executive Summary 1

2. Introduction 3

3. Site Details 5

4. Desk Study Summary 6

5. WYG Investigation 7

6. Encountered Ground Conditions 13

7. Ground Gas Results and Assessment 26

8. Contamination Assessment 31

9. Refined Contamination Risk Assessment 45

10. Geotechnical Assessment 55

11. Conclusions, Recommendations and Development Constraints 64

Drawings

Appendices

Appendix A – Report Conditions

Appendix B – Exploratory Hole Logs and Photo Plates

Appendix C – Geo-chemical Laboratory Test Results

Appendix D – Geotechnical Test Results

Appendix E – Gas and Groundwater Level Monitoring Results

Appendix F – Tier 1 Screening and Statistical Assessment

1. Executive Summary

Current Site Status	The 19ha site located in Radcliffe, bury is mainly undeveloped land immediately north of the River Irwell with a reservoir and areas of surface water present. Residential properties, a former industrial building and the cricket club are present on the site. Two surface water culverts are also present. Historically, the site has been subject to potentially contaminative uses and land filling (specifically the Boiler House Landfill in the southeast). The land in the south being previously occupied by the East Lancashire Paper Mill, until its closure in 1998 and subsequent decommissioning in 2005. The site has been subject to past instructive investigation and some remediation. It is proposed that the site is redeveloped for a residential end use.
Preliminary Conceptual Site Model and Risk Assessment	The site is located on Made Ground deposits underlain by superficial deposits comprising Glaciofluvial deposits, alluvium, River Terrace Gravels and Glacial Till (mainly Secondary A Aquifers). A geological fault strikes through the site with the bedrock geology on the north side of the fault comprising the Pennine Middle Coal Measures (shallow coal seams, possibly worked) and the Westphalian Coal Measures and Nob End Rock (Sandstone) to the south (Secondary A Aquifers not in a SPZ). Two landfill sites are located immediately southeast and south of the site. The Preliminary risk assessment (Desk Study, WYG) determined that the site posed a high risk associated with ground gases and a moderate risk to future human health (residents) and controlled waters (River Irwell).
WYG Site Investigation	WYG investigation works were undertaken between January and March 2017 and comprised: • Five Cable Percussion Boreholes to a maximum depth of 14.80m bgl, • Nineteen Dynamic Sampling Boreholes to a maximum depth of 5.45m bgl, • Twenty-nine trial pits to a maximum depth of 3.00m bgl, • Six hand dug pits to a maximum depth of 1.0m bgl, • Six trial pits in to stockpiles, • Installation of monitoring wells in boreholes, • Topographic survey of the above exploratory locations, • Chemical laboratory testing including soil, soil-leachate testing and asbestos screening; • In-situ geotechnical testing and laboratory testing of soils; and, • Subsequent ground gas, groundwater and surface water monitoring and sampling.
Encountered Ground Conditions	Made Ground deposits were encountered across the site, notably thicker associated with the Boiler House Landfill. Made Ground deposits typically comprised varying quantities of brick, concrete, ash, clinker, metal and glass. Evidence of hydrocarbon contamination and paper waste (white clay) was observed in the southern part of the site. In-ground obstructions were encountered associated with the former paper mill building. Superficial deposits typically comprised bands of Sand, Sands & Gravels and Clay across the site. Bedrock was encountered in several locations across the site, typically comprising weathered mudstone and ranging from depths between 2m in the west to 15m towards the east. Monitored groundwater levels varied between 63m and 67m AOD, with groundwater flow inferred southwestwards towards the River Irwell.
Land Contamination Assessment	Generally elevated metal concentrations and asbestos (wide spread and/or localised) were noted with the exception of parts of the north of the site where Made Ground was absent. Hydrocarbon contamination (soils and groundwater) was noted in the southern part of the site. Statistical analysis showed that the soils may pose a risk to human health without mitigation/remediation. Although some elevated soil leachate and groundwater potential contaminants (including metals and hydrocarbons) were noted, elevated concentrations in the samples of surface waters were not. Significantly elevated methane and carbon dioxide concentrations were recorded in the southeast of the site, providing a RED rating for future residential properties. The remainder of the site is considered to be GREEN for future residential properties (subject to measures to control gas from the southeast and off site landfill sources).

Refined Risk Assessment	Overall, the site poses a **low to moderate** risk for most receptors, with a **moderate** risk to future human health and a **high** risk associated with ground gases in the location of the Boiler House Landfill.
Geotechnical Considerations	The recommended foundation solutions for Zone 3 would be conventional shallow strip footings, Zones 1, 2 and 5 possible trench fill, vibro stone or concrete columns and Zone 4 piles. Foundation solutions are constrained by Made Ground, soft natural soils and in-ground obstructions etc. Due to the presence of former in ground structures in Zone 2, a site turnover and re-engineering could be undertaken. Excavations may need temporary support with provision for groundwater management. In accordance with BRE Special Digest 1 (2005), a design classification for concrete of DS-1 and an ACEC class of AC-1 for the Made Ground and Natural Ground has been derived with an ACEC class of AC-3z for Zone 5.
Recommendations for remediation	Overall, it is considered that the site is suitable for residential end use, subject to the following mitigation/remediation: • Hardstanding or soil cover system to mitigation the risk to future residents or users of any open space, • Remediation of hydrocarbon contamination (soils and groundwater) with vapour membrane in built structure (if required post remediation), • Future built structure DPM to be 2000g (lapped and taped) subject to item below, • Gas vent and leachate trench to be constructed in the southeast of the site, to include passive gas venting of boiler house landfill dependant on the location of the main trench. • Suitable mitigation for future potable water supply pipelines. • The above should be detailed in a remediation strategy to discharge anticipated planning conditions including liaison with the CLO and EA. • Geotechnical remediation will require removal of existing hardstanding and relic foundations. Removal of made ground down to suitable competent founding stratum.
Revised potential Development Constraints	The following potential development constraints have been refined: • Requirement for gas/leachate trench/collection system associated with off site landfill. • Limited potential for residential development in southeastern part • Soil cover system for residential/open space development required across the southern part of the site and potentially where Made Ground is present in the northwest. • Upgrade of DPM including vapour resistance in the south as required. • Remediation of hydrocarbon contamination of soils and groundwater in the south. • Presence of in-ground asbestos across the majority of the Made Ground. • Likely presence of existing foundations / slabs and other below ground structures. • A mixture of foundation solutions dependant on ground conditions including conventional strip, trench fill, vibro stone/concrete columns, piles and/or re-engineering of the ground (Zone 2). • Aggressive ground conditions for concrete in Zone 5. • Proven through monitoring shallow groundwater table and presence of soft clay and loos sand deposits, notably towards the River Irwell. • Development High Risk Area with evidence for worked coal seams beneath the site (further investigation to be undertaken). • The Mersey Valley Sludge Pipelines (current and redundant). • Existing culverts (Hutchinson's Goit and Crow Tree Farm Brook) crossing the site. • Development easement associated with The River Irwell retaining wall and flood alleviation. • Areas not investigated due to access or existing infrastructure/buildings. • Areas of stockpiled waste (contain asbestos and elevated lead) associated within historical groundwork at the site. • Two unidentified wells (possible shafts). • Potential for waste excavated soils to attract a premium for disposal due to presence of asbestos, hydrocarbons and organic content.
This sheet is intended as a summary of the assessment of the site. It does not provide a definitive analysis.	

2. Introduction

2.1 Instruction

This Ground Investigation Report has been prepared by WYG on behalf of The Homes & Communities Agency (HCA) for a potential future residential development at the site of the East Lancashire Paper Mill, Rectory Lane, Radcliffe. A site location plan is enclosed as Drawing No. 001.

2.2 Objectives

The principal objective of the commission is to present an assessment of land quality and ground engineering constraints for residential development of the site. The report will be submitted as part of an outline planning application to provide confidence that the site can be developed as proposed.

At the time of this report, the proposals are for a residential end use although parts of the site may be constrained for this end use by flood issues and proximity to existing landfill. It is presumed the existing reservoir and residential properties are to be retained. The former mill towards the northeast will be demolished as part of the site redevelopment and the East Lancashire Cricket Club will be relocated off site.

2.3 Scope of Services

The scope of investigation has been determined based on the information obtained to date and understanding of the current development proposals. To achieve the above objectives, the following scope of works was determined:

- Ground investigation to obtain additional geo-environmental and geotechnical information on ground conditions,
- Reporting of factual information,
- Interpretation of results including a Tier 1 risk assessment and updated conceptual site model/ risk assessment; and,
- Geotechnical assessment.

This report should be read in conjunction with the Phase I Geo-Environmental Desk Top Study: East Lancashire Paper Mill, Radcliffe, WYG, December 2016.

This report refers to previous investigation reports where applicable based on the technical review undertaken as part of the aforementioned desk study. These other reports were submitted with the previous planning application for the site. Due to their age, different site boundary and the incomplete remedial works undertaken, the current report is based primarily on the newly obtained information to support the new outline planning application.

This report excludes consideration of coal mining hazards. A further investigation specific to these hazards has been carried out and the findings are reported separately.

2.4 Regulatory Liaison

Consultation with Bury Council via email dated 9th January 2017 was undertaken to determine whether the proposed scope of ground investigation works was sufficient. The Environmental Protection Officer approved the proposed works.

2.5 Report Conditions

Attention is drawn to the report conditions included in Appendix A.

3. Site Details

3.1 Site Description

The site is irregular in shape and the majority of the structures have been demolished with the exception of a Cricket Club and pavilion, former Cross Mill in the north of the site, a series of residential properties in the northwest and a derelict brick structure in the southwest, which was previously associated with an electricity substation. The site comprises approximately 90% vegetation and 10% hard standing with two areas of stockpiled soil. It gently slopes in a south westerly direction towards the River Irwell.

Key details for the site are provided in Table 3.1 below.

Table 3.1 Site Details

Site Address	East Lancashire Paper Mill, Radcliffe
Grid Reference	Site is centred upon 379290, 407410
Site Area	Approximately 19 ha.
Elevation	Approximately 70m AOD in the northeast to 63m AOD in the south.

The surrounding land uses adjacent to the site are summarised below in Table 3.2.

Table 3.2 Surrounding Land Uses

Boundary	Description
North	Cross Lane with residential properties beyond.
South	The River Irwell, former Bealey's Goit, areas of industrial use and undeveloped land.
East	Residential properties with associated community facilities and recreational space beyond.
West	Residential properties, the Metro Link viaduct orientated north south and Radcliffe town centre beyond.

4. Desk Study Summary

A Desk Study report was produced by WYG in December 2016. A summary of the pertinent findings of the desk study is given in Table 4.1 below.

Table 4.1 – Summary of Desk Study Information

Environmental Setting	There are no Special Protection Areas, Sites of Special Scientific Interest or Special Areas of Conservation surrounding the site. The nearest COMAH site (Lower Tier) is located approximately 500m north of the site. There are multiple listed trade entries within 250m of the site, with the closest pertinent entry associated with a garage approximately 45m north of the site. Japanese Knotweed, Himalayan Balsam and Giant Hogweed have been identified at the site. Two historic landfill sites have been identified within the surrounding land use. East Lancashire Paper Mill Landfill is located immediately south of the site and Tower Farm Landfill is located towards the southeast.
History	Historical maps show the site to be developed including a bleach works, brewery, print works, mill and residential properties. The East Lancashire Paper Mill is understood to have been operational at the site from the mid 1860s until its closure in 1998, and subsequent decommissioning in 2005. A number of reservoirs and an ox bow lake were also present and have since been infilled. During the operational years, notable onsite features have included numerous reservoirs, manufacturing, maintenance and engineering facilities and a Combined Heat and Power (CHP) plant including associated fuel storage. The Boiler House Landfill has been identified within the south-eastern site boundary and Bealey's Goit, which has reportedly been in filled, is located immediately along the site's southern boundary and was previously shown to discharged into the River Irwell The surrounding historical land use predominately comprised residential properties which remain neighbouring the site to the present day. Industrial land use surrounding the site has included numerous mills, railway infrastructure and Withins Lane Colliery towards the north. A previously undeveloped parcel of land southeast of the site was occupied by the East Lancashire Paper Mill Landfill and Tower Farm Landfill from 1980 with in filling operations terminating approximately in 1992.
Geology	Previous Investigations (Encia, 2005) have reported Made Ground across the site (max. 11.8m thick) with landfilling (Boiler Landfill) in the southeast. Geological mapping indicates that the site is underlain by Glaciofluvial deposits, Alluvium, River Terrace Deposits and Glacial Till. A geological fault strikes through the approximate site centre orientated northwest to southeast. The bedrock to the north of the fault comprises the Pennine Middle Coal Measures with the Nob End Rock (Sandstone) of the Westphalian Coal Measures identified south of the fault line. Shallow coal seams have been identified beneath the site.
Hydrogeology	Both the superficial and bedrock deposits across the site have been designated as a Secondary A Aquifers which may support base flow to the neighbouring River Irwell. The site is not located within a designated Source Protection Zone.
Hydrology	A reservoir is present in the east of the site with two culverts (Hutchinson's Goit and Tree Farm Brook) running southwards through the site before discharging into the River Irwell on the southern site boundary. Bealey's Goit, which has been reported in filled, is located immediately along the southwestern site boundary. The site is at risk from flooding form rivers and is waterlogged in places.
Preliminary Risk Assessment	The preliminary risk assessment has identified onsite sources of contamination associated with past industrial use and infilling; in addition to the Made Ground which have the potential to cause harm to future residents. A high risk is posed to future site residents in relation to ground gas. A moderate risk is posed to controlled waters.

5. WYG Investigation

5.1 Fieldworks Undertaken

The intrusive investigation works were undertaken between 16th January and 1st February 2017 with follow-up monitoring of borehole installations on six weekly occasions on 9th, 15th, 23rd, 28th February and 9th & 14th March 2017.

The works were undertaken in general accordance with BS 10175: Code of Practice for Site Investigations of Potentially Contaminative Sites, BS5930, BS EN1997-2, BS EN ISO 14688/9 and BS 8576.

Access constraints for the ground investigation were presented by the following features:

- Towards the northern site boundary within the existing derelict Mill building due to concerns over the safety and integrity of the building;
- Occupied residential properties immediately north of Rectory Lane, Church Street East and west of Cock Clod Street;
- Beneath the existing reservoir on the east of the site;
- Dense overgrown vegetation along parts of the eastern site boundary and terrain associated with the Boiler House Landfill reported during the Desk Top Study (WYG, 2016);
- The grounds of the East Lancashire Paper Mill Cricket Club at the request of the occupier;
- A 7m United Utilities restricted easement of the Mersey Valley Sludge Main identified running along the site's southern boundary;
- A 3m stand-off from National Grid plant located within the central part of the site;
- Utilities running along the former route of Church Street East.

In areas of poor access, hands pits were excavated where feasible, to obtain an understanding of ground conditions at shallow depth within those areas of the site.

As part of this investigation, representatives from the following companies attended the site to provide information on the following utilities:

1. National Grid (16th January 2017) - Attendance to positively identify an intermediate pressure gas main noted within a central site location running north via Croft Lane.
2. United Utilities (15th February 2017) - Attendance to positively identify the Mersey Valley Sludge Main noted to enter the site along the southern boundary and run eastwards. Following the site reconnaissance, United Utilities confirmed this route is now obsolete and the

sludge main replacement runs east to west along Church Street East, within a central site location.

The completed ground investigation works comprised the following:

- Five cable percussive boreholes (BH101/BH101A–BH105) drilled to depths of between 2.0m and 14.80m bgl with installation of 50mm diameter groundwater monitoring wells. Given an underground obstruction identified in BH101 and BH101A, no groundwater monitoring wells were installed within these locations;
- Nineteen dynamic sample holes (DS01–DS07, DS09, DS11, DS14, DS17, DS20, DS22–DS27) drilled to depths up to 5.45m bgl with the installation of 50mm diameter ground gas monitoring wells;
- Standard Penetration Tests (SPTs) in all cable percussive and dynamic sampling boreholes and undisturbed samples (U100) within the cable percussive boreholes;
- Excavation of twenty-nine trial pits (TP101–TP103, TP106, TP108, TP110, TP111, TP113-TP121, TP123, TP124, TP127, TP128, TP130, TP133–TP140) up to 3.00m bgl using a mechanical excavator;
- Seven hand dug pits (DS10HP and HP3–HP8) to a maximum depth of 1.0m bgl;
- Collection of six stockpile samples (SP1–SP6) from a maximum depth of 0.8m using a mechanical excavator;
- Survey of WYG exploratory locations to National Grid and Ordnance Datum;
- Full-time supervision by a WYG Engineer, to record the ground conditions and obtain soil samples;
- Semi-quantitative analysis of VOCs in soil samples using a Photo Ionization Detector (PID);
- Chemical laboratory testing, including soil, soil-leachate testing and asbestos screening;
- Geotechnical laboratory testing of soils;
- Two visits to undertake groundwater and surface water sampling on 9th February (BH102–BH105, DS101, DS14 and SW1-SW6) and 9th March 2017 (BH102, BH105, DS14, SW1 and SW2);
- Collection of one ground gas sample (09/03/17) from DS20 for subsequent laboratory analysis; and
- Six visits to site to monitor for ground gas and groundwater levels on 9th, 15th, 23rd, 28th February and 9th & 14th March 2017.

An Exploratory Hole Location Plan is presented as Figure 002.

BH101 and BH101A encountered building foundations and were replaced with TP112 and TP121 respectively.

Detailed engineering logs are presented as Appendix B and a summary of the encountered ground conditions is provided in Section 6.

5.2 Laboratory Analysis

Soil and water samples were collected in appropriate containers, stored in cool, dark conditions and sent to the laboratory under a chain of custody after sampling. Samples underwent the following testing at Jones Environmental Laboratory, a MCERTS/UKAS accredited laboratory in Deeside, Flintshire. Copies of the chemical laboratory test results and the accreditation details for each determinand analysed are included in Appendix C.

5.2.1 Soils Chemical Testing

The following soil testing was undertaken:

- Eighty-four soil suites which included the following determinands: arsenic, beryllium, vanadium, water soluble boron, cadmium, total chromium, hexavalent chromium, copper, free and total cyanide, lead, mercury, nickel, selenium, zinc, pH, water soluble sulphate, phenol, 16 Polycyclic Aromatic Hydrocarbons (PAHs), fraction organic carbon, asbestos screen, Total Petroleum Hydrocarbons – Criteria Working Group (TPH-CWG) and Benzene, Toluene, Ethylbenzene and Xylenes (BTEX);
- Five soil suites which include samples for arsenic, asbestos, beryllium, water soluble boron, cadmium, chromium (total), hexavalent chromium, copper, lead, mercury, nickel, selenium, vanadium, zinc, pH, sulphate (total and water soluble), sulphur, cyanide (free and total), total monohydric phenols, PAHs (speciated 16) and TPH C6-C40 (with carbon splits);
- Seventeen samples for Semi-Volatile Organic Compounds (SVOCs) including Tentatively Identified Compounds (TICs);
- Fifteen samples for Volatile Organic Compounds (VOCs) including TICs;
- Five samples for WHO Poly Chlorinated Biphenyls (PCBs);
- Five samples for asbestos quantification (Gravimetric and Phase Contrast Optical Microscopy (PCOM);
- Six samples for barium, aluminium, iron, ammoniacal nitrogen, chloride, bromide, elemental sulphur total sulphur, four samples for formaldehyde and two samples for phosphate, easily liberated sulphide, free sulphur and total alkalinity;
- Five samples for Glycol Suite;
- Two samples for Waste Acceptance Criteria (WAC) full waste suite; and
- Eleven samples for soil-leachate tests for pH, ammoniacal nitrogen, arsenic, boron, cadmium, copper, lead, mercury, nickel, selenium, zinc, mercury, chromium, sulphate and total cyanide.

5.2.2 Groundwater Chemical Testing

On 9th February 2017, groundwater samples were collected from boreholes DS01, DS14, and BH102-BH105 and were submitted for laboratory analysis as follows:

- Six groundwater suites which included the following determinands: arsenic, antimony, barium, beryllium, cadmium, chromium, hexavalent chromium, copper, lead, mercury, molybdenum, nickel, selenium, zinc, sulphate (total and water soluble), Chloride, Nitrate as NO3, Nitrite as NO2, water soluble boron, total monohydric phenols, total alkalinity as CaCo3, Ammoniacal Nitrogen as NH3 and NH4, Dissolved Organic Carbon, sulphide, total cyanide, pH, speciated USEPA 16 PAHs, TPH-CWG and BTEX;
- Six samples for hardness, free cyanide, aluminium, iron, sulphide, SVOCs and VOCs including TICs, phosphate, glycols and formaldehyde.

Due to elevated determinands reported from the aforementioned monitoring visit, on 9th March 2017, groundwater samples were collected from boreholes DS01, BH102, BH105 and submitted for laboratory analysis as follows:

- One sample for CLEA metals including arsenic, barium, beryllium, cadmium, chromium, hexavalent chromium, copper, lead, mercury, nickel, selenium, vanadium and zinc;
- One sample for speciated USEPA 16 PAHs,
- Three samples for TPH-CWG and BTEX;
- Two samples for total and free cyanide; and
- One sample for hexavalent chromium.

5.2.3 Surface Water Chemical Testing

On 9th February, six surface water samples (SW1 to SW6) were taken and submitted for laboratory analysis as follows:

- Six surface water sample suites which included the following determinands: arsenic, antimony, barium, beryllium, cadmium, chromium, hexavalent chromium, copper, lead, mercury, molybdenum, nickel, selenium, zinc, sulphate (total and water soluble), Chloride, Nitrate as NO3, Nitrite as NO2, water soluble boron, total monohydric phenols, total alkalinity as CaCo3, Ammoniacal Nitrogen as NH3 and NH4, Dissolved Organic Carbon, sulphide, total cyanide, pH, speciated USEPA 16 PAHs, TPH-CWG, BTEX, free cyanide and hardness;
- Three samples for aluminium, iron, sulphide, SVOCs and VOCs including TICs, phosphate, glycols and formaldehyde.

On 9th March 2017, two surface water samples (SW1 and SW2) were collected and submitted for laboratory analysis including:

- Two samples for CLEA Metals including arsenic, barium, beryllium, cadmium, chromium, hexavalent chromium, copper, lead, mercury, nickel, selenium, vanadium and zinc;
- Two samples for speciated USEPA 16 PAHs,
- Two samples for TPH-CWG and BTEX;
- Two samples for total and free cyanide; and
- Two samples for hexavalent chromium.

5.2.4 Ground Gas Chemical Testing

One ground gas sample was obtained from DS20 on 9th March 2017 and analysed for:

- Bulk ground gases; and,
- VOCs.

5.2.5 Geotechnical Testing

Soil samples underwent the following testing at Professional Soils Laboratory (PSL), a UKAS accredited laboratory in Doncaster.

The following testing was carried out:

- Twenty-five Moisture Contents;
- Twenty Atterberg Limits;
- Eleven Particle Size Distribution;
- Four Unconsolidated Undrained Triaxial Compression Tests (Multi-Stage Loading);
- Twenty-one Water Soluble Sulphate (2:1 water: soil extract) and pH value tests; and,
- Seven organic matter contents.

The geotechnical laboratory test results are included in Appendix D.

6. Encountered Ground Conditions

A summary of the ground conditions encountered across the site during the WYG investigation is presented below, with detailed information presented on the exploratory hole logs and photo plates included in Appendix B.

The locations of the exploratory holes are shown on Drawing 002 and visual or olfactory evidence of potential contamination on Drawing 003. The extent and thickness of Made Ground are presented on Drawing 004.

Given the extent of the site and the varying ground conditions and former land uses identified during the desk study (WYG, 2016), the ground conditions identified across the site have been zoned as outlined below:

- Zone 1 - Former Wilton Mill (Encia Area A).
- Zone 2 - Former Paper Mill Building (Encia Area B, part Areas D & F).
- Zone 3 - Land North of Church Street (Encia Area C forms central part of site).
- Zone 4 - Former Combined Heat and Power Plant (CHP) and Boiler House Landfill (Encia Area E and part Area F).
- Zone 5 - Former Reservoirs (Encia Area D, part Area C).
- Stockpiles (within Zone 2).

The zones are similar to those derived by Encia (2005), as given above. The boundaries of the Encia investigation area do not include some areas within the current site boundary, specifically in the northeast and northwest.

6.1 Zone 1 – Former Wilton Mill

Ground conditions encountered in the southwest of the site comprised Made Ground overlying sandy clay and sandy gravel. Weathered mudstone bedrock was encountered at shallow depths within this area of the site. The ground conditions encountered are similar to those reported by Encia in 2005.

A detailed summary of ground conditions is presented in Table 6.1 and the section below.

Table 6.1 Summary of Encountered Ground Conditions – Zone 1 Former Wilton Mill

Stratum	Depth Encountered (m bgl)	Elevation Encountered (m AOD)	Depth to Base (m bgl)	Thickness (m)
Concrete Hardstanding (DS01, DS02, TP103)	Ground Level	62.01 – 62.14	0.30 - 0.40	0.40
Topsoil (TP101, TP102)	Ground Level	62.27 – 64.78	<0.1	<0.1
Made Ground - Granular: (DS01-DS02, TP101-TP102).	Ground Level - 0.40	64.78 – 61.61	0.80 – 3.00	3.00*
Made Ground – Cohesive: (DS02, TP103).	0.3 - 0.80	61.79 - 61.34	1.30 – 1.60	1.30
Natural Ground – Cohesive: (DS01, TP103).	1.6	60.41	2.80	1.30
Natural Ground – Granular (DS01- DS02).	1.3 – 2.80	60.84 – 59.21	1.60 – 3.45	0.3 – 1.2
Bedrock – Weathered (Mudstone) (DS01, DS02, TP103).	1.90 – 3.45	60.54 – 58.56	3.50*	1.60*

*total depth/thickness not proven.

6.1.1 Surface Cover

The surface cover comprised a mixture of concrete hardstanding of the former Wilton Mill building footprint and grass overlying topsoil.

6.1.2 Made Ground

Made Ground was encountered within all exploratory hole locations. Generally, the Made Ground comprised the following:

- Granular: Loose sandy cobbly Gravel including varying deposits of mudstone, brick, concrete, ash and clinker.
- Cohesive: Soft and firm sandy gravelly Clay including brick. Rare white / cream bands were identified within the deposits recovered within DS01.

6.1.3 Superficial Deposits

The natural cohesive strata typically comprised light brown sandy Clay (very soft to stiff consistency) underlain by very soft dark grey silty clay. Rare thin bands of peat were identified. Laboratory test results obtained from DS01 and TP103 indicate that the Clay is of intermediate plasticity. Standard Penetration Test (SPT) results identified an N value of 11 within the peaty clay horizon.

Natural granular strata typically comprised brownish orange sandy subangular to rounded fine to coarse Gravel typical of River Terrace Deposits.

6.1.4 Solid Strata

Weathered rock was observed as weak reddish brown thinly laminated Mudstone recovered as angular gravel. Standard Penetration Test (SPT) results identified an N value of 18 within DS02.

6.1.5 Observed Obstructions

TP101 encountered a suspected concrete slab at a depth of 2.7m bgl and was unable to progress deeper.

6.1.6 Observed Contamination

Semi-quantitative analysis of concentrations of VOCs was obtained using a hand-held photo-ionisation detector (PID). Slightly elevated PID readings were reported on soil samples from DS01 at a maximum of 7.7ppm.

White/cream clay (assumed to be a by-product from the paper making process) was identified at borehole DS01. Varying quantities of ash, clinker, glass, plastic and traces of coal were recorded within the Made Ground deposits at DS01, DS02, TP101 and TP102.

6.2 Zone 2 – Former Paper Mill Building

Ground conditions encountered in the former paper mill building section of the site comprised Made Ground typically comprising angular demolition fill material overlying natural deposits of sandy gravelly Clay and/or soft silty Clay. Bedrock deposits comprising weathered Mudstone were identified towards the western section of the former building footprint. This is similar to the conditions reported by Encia in 2005.

A detailed summary of ground conditions is presented in Table 6.2 and the section below.

Table 6.2 Summary of Encountered Ground Conditions – Former Paper Mill Building

Stratum	Depth Encountered (m bgl)	Elevation Encountered (m AOD)	Depth to Base (m bgl)	Thickness (m)
Topsoil (TP106, TP108, TP123, DS03, DS04, DS05, DS06, DS14).	Ground Level	64.85 – 64.16	0.05 - 0.30	<0.3
Made Ground – Granular (TP108, TP110, TP111, TP113, TP119, TP121, TP123, TP124, DS03, DS04, DS05, DS06, DS14, BH101/ BH101A).	Ground Level - 0.70	64.90 - 63.50	1.90 – 5.45	5.45*
Made Ground – Cohesive: (TP106, TP111, TP119, TP120, TP123, TP124).	Ground Level - 2.30	64.52 - 62.60	0.40 – 3.00	2.60
Natural Ground – Granular (TP120, DS03).	2.60 – 5.00	60.82 – 59.21	3.0* – 5.00*	0.45*
Natural Ground – Cohesive (TP106, TP113, DS03).	2.00 – 3.00	62.24 – 61.21	2.50* – 5.00	3.00
Bedrock: Mudstone (TP106)	2.70	61.54	3.00	0.3*

*total depth/thickness not proven.

6.2.1 Surface Cover

The surface cover typically comprised grass overlying topsoil/ angular made ground including brick and concrete.

6.2.2 Made Ground

Made Ground was encountered within all exploratory hole locations. Generally, the Made Ground comprised the following:

- Granular: Loose sandy cobbly subangular Gravel including varying deposits of demolition/ masonry fill, brick, concrete, ash and clinker.
- Cohesive: Soft and firm sandy gravelly Clay including brick, concrete and metal and soft black organic silty Clay identified with DS14 and TP123 which has the potential to be associated with the historical filter beds identified within this section of the site.

6.2.3 Superficial Deposits

The natural soil deposits encountered typically comprised cohesive deposits including firm to very stiff grey and brown sandy gravelly Clay and/or soft light grey and orange silty Clay. Granular deposits comprising medium to coarse Sand were encountered within the base of DS03, the thickness of which was unproven.

Soft very silty organic Clay was encountered within DS03 between depths of 3.0m and 5.0m bgl which has the potential to be associated with the infilling of the former oxbow lake previously identified within this area of the site (WYG, 2016).

Laboratory test results obtained from DS03 indicate that the Clay at a depth of 3.0m bgl is of very high plasticity. Results obtained from TP123 at a depth of 2.4m bgl indicate that the Clay at this depth is of extremely high plasticity.

6.2.4 Solid Strata

Rock was encountered within TP106 and typically comprised weathered reddish brown Mudstone, recovered as gravel.

6.2.5 Observed Obstructions

Numerous obstructions were encountered across the former Paper Mill building within exploratory holes TP110, TP112, TP121, DS04, DS05, DS06, BH101 and BH101A. Obstructions were encountered at depths of between 1.65m and 2.85m bgl and are believed to be associated with former building foundations.

6.2.6 Observed Contamination

Semi-quantitative analysis of concentrations of VOCs was obtained using a hand-held photo-ionisation detector (PID). Slightly elevated PID readings were reported on soil samples from DS03, DS14 TP110 and TP111 at a maximum reading of 56.0ppm.

White/cream clay (assumed to be a by-product from the paper making process) was identified in TP106 (0.3m bgl) and TP123 (1.0m bgl). Varying quantities of ash, clinker, plastic, glass, tile, timber, metal and coal traces was recorded within the made ground deposits of BH101, BH101A, DS03, DS04, DS05, DS06, DS14, TP106, TP108, TP111, TP120, TP123 and TP124. Evidence of hydrocarbon impacts including visual sheens, odours and staining were noted in TP110 (1.8m bgl), TP113 (0.5-2.4m bgl) and TP119 (2.3-2.8m bgl).

6.3 Zone 3 – Land North of Church Street

Ground conditions encountered in Zone 3 typically comprised Made Ground underlain by Sands and Gravels.

A detailed summary of ground conditions is presented in Table 6.3 and the section below.

Table 6.3 Summary of Encountered Ground Conditions – Land North of Church Street

Stratum	Depth Encountered (m bgl)	Elevation Encountered (m AOD)	Depth to Base (m bgl)	Thickness (m)
Topsoil (DS07, DS09, DS10HP, BH102, HP05-HP08, TP114, TP116, TP118)	Ground Level	66.51 – 67.65	0.05 - 0.40	0.40
Made Ground – Cohesive: (DS26, HP06, HP08)	0.05 – 0.40	67.38 – 69.85	0.60 – 2.90	2.90
Made Ground – Granular (DS27, HP05-HP08,)	0.10 – 1.00	66.72 - 69.35	0.4 - 4.70	3.80
Natural Ground - Granular: (DS07, DS09, DS10HP, DS27, BH102, TP114, TP115, TP116, TP118)	1.4 – 5.90	67.48 – 61.16	0.60 – 8.20	5.40*
Natural Ground - Cohesive (DS07, DS09, BH102, TP116, TP118)	0.60 – 4.40	67.06 – 62.98	4.50 – 12.0	7.40
Bedrock: Mudstone (BH102)	9.80	57.26	10.95*	2.75*

*total depth/thickness not proven.

6.3.1 Surface Cover

The surface cover typically comprised grass overlying topsoil comprising soft dark brown sandy Clay.

6.3.2 Made Ground

Made Ground deposits were limited in thickness within a central site location, however typically increased in thickness towards the north and northwest at HP05 to HP08. Where encountered, Made Ground comprised the following:

- Granular: Dark grey and black fine to coarse Gravel including varying deposits of brick, concrete, ash, coal and clinker.
- Cohesive: Soft dark brown very gravelly Clay with brick.

6.3.3 Superficial Deposits

The natural soil encountered typically comprised deposits of subangular and subrounded, fine to coarse Sand & Gravel at shallow depths underlain by soft to firm greyish brown sandy gravelly Clay including rare coal.

Laboratory test results obtained from TP116, DS07 and BH102 indicate that the Clay within these locations is of low plasticity.

SPT results from the granular deposits identified an N value ranging between 9 – 27, typically becoming higher with greater depth. SPT results obtained from the cohesive deposits typically identified N values of between 9 and 17.

6.3.4 Solid Strata

Bedrock was encountered within BH102 and typically comprised weak weathered thinly laminated Mudstone at a depth of approximately 9.80m bgl.

6.3.5 Observed Obstructions

A concrete obstruction was noted within HP05 at depth of 0.54m bgl.

6.3.6 Observed Contamination

Semi-quantitative analysis of concentrations of VOCs was obtained using a hand-held photo-ionisation detector (PID). Elevated PID readings were not recorded.

Varying quantities of ash, clinker, plastic, glass and traces of coal were recorded within the Made Ground deposits of HP06 to HP08. Evidence of black staining was noted on soil sampled from TP118.

6.4 Zone 4 – Combined Heat and Power (CHP) and Boiler House Landfill

Ground conditions encountered within the location of the former CHP and onsite landfill typically comprised Made Ground including ash and soft silty clays overlying natural deposits of Sands & Gravels overlying stiff Clay.

A detailed summary of ground conditions is presented in Table 6.4 and the section below.

Table 6.4 Summary of Encountered Ground Conditions – Former CHP and Boiler House Landfill

Stratum	Depth Encountered (m bgl)	Elevation Encountered (m AOD)	Depth to Base (m bgl)	Thickness (m)
Topsoil (DS20, TP127).	Ground Level	76.31 – 68.96	<0.1 – 0.15	<0.15
Made Ground - Granular: (DS17, DS22, TP127, TP128, TP130, BH105, HP03).	Ground Level – 4.7	64.23 – 71.15	2.20 - 5.70	>5.45
Made Ground – Cohesive (DS17, DS20, TP127, TP128, TP130, BH105, HP04).	Ground Level – 3.90	76.31 - 67.88	5.45	5.45
Natural Ground - Granular: (BH105).	8.00	60.93	9.90	1.90
Natural Ground - Cohesive: (BH105).	9.90	9.03	13.42	>3.50
Bedrock: Mudstone (BH105).	13.42	55.51	13.42	<0.1*

*total depth/thickness not proven.

6.4.1 Surface Cover

The surface cover typically comprised grassed vegetation overlying topsoil typically comprising soft brown sandy gravel Clay.

6.4.2 Made Ground

Made Ground was encountered within all exploratory hole locations. Generally, the Made Ground comprised the following:

- Granular: Loose dark brown and black angular and subangular fine to coarse sandy Gravel including brick, ash, clinker, concrete, metal and coal.
- Cohesive: Soft grey and mottled black sandy silty Clay and very soft black Peat.

Based on the occurrence and composition of Made Ground deposits identified, the extent of the identified onsite landfill has the potential to be more widespread northwards than reported in the WYG desk top study and Green Remediation Location of Landfill Trial Pits Drawing, dated 2008.

6.4.3 Superficial Deposits

The natural soil deposits were encountered solely within BH105 and comprised Sand & Gravel overlying stiff greyish brown gravelly Clay.

SPT results from the natural granular deposits identified an N value of 5 whilst SPT results obtained from the natural cohesive deposits identified an N value of 32.

Test results obtained from the Clay within BH105 at a depth of 10.50m bgl identified low plasticity.

6.4.4 Solid Strata

Bedrock was encountered within location BH105 at an approximate depth of 13.4m bgl.

6.4.5 Observed Obstructions

No ground obstructions were encountered within this area of the site.

6.4.6 Observed Contamination

Semi-quantitative analysis of concentrations of VOCs was obtained using a hand-held photo-ionisation detector (PID). Slightly elevated PID readings were reported on soil samples from DS17, DS20 and DS22 with a maximum reading of 16.9ppm recorded.

Cream Clay deposits were identified within DS17, DS22, TP127 and BH105 and proven to a depth of 8.0m bgl. It is assumed the material is a by-product of the paper making process.

Varying quantities of ash, clinker, metal, glass, timber, tile and traces of coal were recorded within the Made Ground deposits of DS17, DS22, BH105, TP127, TP128 TP130, HP03 and HP04.

6.5 Zone 5 – Former Reservoirs

Ground conditions encountered in Zone 5 comprised some Made Ground deposits overlying Sands & Gravels, with firm to stiff gravelly Clay encountered at depth. Bedrock was encountered at a depth of 13.50m bgl.

A detailed summary of ground conditions is presented in Table 6.5 and the section below.

Table 6.5 Summary of Encountered Ground Conditions – Former Reservoirs

Stratum	Depth Encountered (m bgl)	Elevation Encountered (m AOD)	Depth to Base (m bgl)	Thickness (m)
Concrete Hardstanding (DS26)	Ground Level	70.25	0.4	0.40
Topsoil (DS11, DS24,)	Ground Level	67.57 - 66.73	<0.05 – 0.15	<0.15
Made Ground – Granular (BH104, DS24, DS25, DS26, TP117, TP134)	Ground Level – 0.30	66.94 – 66.12	1.90 – 2.45	2.30*
Made Ground – Cohesive (BH103, BH104, DS11, TP133, TP135, TP136, TP137, TP138, TP139, TP140)	Ground Level - 1.90	67.01 - 65.04	1.40 - 2.40	0.5 – 1.4
Natural Ground – Cohesive (BH103, BH104, DS11, DS23, TP133, TP134, TP139)	1.40 - 4.60	65.61 - 62.34	3.00 - 7.50	2.90
Natural Ground – Granular (BH103, BH104, DS10HP, DS11, DS25, DS26, TP117, TP134, TP137, TP138, TP139, TP140)	1.10 - 2.40	65.75 - 64.54	2.45 - 4.60	2.20
Bedrock: Mudstone (BH103, BH104)	13.50 – 14.82	53.44 – 52.56	13.77 – 14.82	0.27*

*total depth/thickness not proven

6.5.1 Surface Cover

The surface cover comprised a mixture of concrete hardstanding, grassed vegetation overlying topsoil and granular Made Ground.

6.5.2 Made Ground

Where encountered, Made Ground typically comprised the following;

- Granular: Dark grey fine to coarse Sands & Gravel including varying deposits of concrete and brick.
- Cohesive: Soft to firm slightly sandy gravelly Clay including rare brick and concrete.

6.5.3 Superficial Deposits

The natural soil encountered typically comprised deposits of subangular to rounded, fine to coarse Sand & Gravel including Cobbles. These deposits were typically underlain by firm, becoming stiff greyish brown slightly gravelly Clay including mudstone and sandstone gravels.

SPT results from the natural granular deposits identified an N value range of 4 to 43, whilst SPT results obtained from the natural cohesive deposits identified an N value range of 36 to refusal.

Laboratory test results obtained from BH103 and BH104 indicate that the Clay at a depth of approximately 4.5m bgl is of low plasticity.

6.5.4 Solid Strata

Bedrock comprising grey weathered Mudstone was encountered at depths of between 13.50m and 14.82m bgl within BH104 and BH103 respectively.

6.5.5 Observed Obstructions

No in-ground obstructions were encountered within this area of the site.

6.5.6 Observed Contamination

Semi-quantitative analysis of concentrations of VOCs was obtained using a hand-held photo-ionisation detector (PID). Slightly elevated PID readings were reported on soil samples from DS26 with a maximum reading of 13.2ppm recorded.

Varying quantities of ash, clinker, pottery, metal, glass, plastic and traces of coal was recorded within the made ground deposits of TP117. Black organic staining was noted on soils samples from TP134 (1.0-1.15m bgl), TP137 (0.88-0.90m bgl), TP138 (0.5-0.9m bgl) and TP139 (0.6-2.2m bgl) and is believed to be associated with the former reservoirs within this section of the site.

6.6 Stockpiles

The stockpiles typically comprise granular deposits including dark greyish brown sandy angular cobbly Gravel with varying quantities of brick, concrete, ash and clinker and metal.

6.7 Groundwater

6.7.1 Groundwater Observed during Investigation

Based on the current investigation, the following information on groundwater across the site was determined:

- Groundwater was encountered across the majority of the site ranging from 1.2m bgl in TP134 to 4.7m bgl in DS26. Smaller variations in water table depth were recorded within the superficial Sands and Gravel deposits in the north of the site (1.65 to 1.78m);
- Groundwater was encountered within at the site of the former reservoirs in the northeast of the site at depths of 1.2m and 1.3m bgl.
- No groundwater was recorded within trial pits or boreholes excavated within the vicinity of the Boiler House Landfill in the southeast of the site;
- Multiple groundwater strikes were encountered within BH102 at depths of 2.8m, 6.2m, and 7.2m and with BH103 at depths of 1.80m and 12.0m; and
- The groundwater regime encountered is broadly similar to that reported previously (Encia, 2005).

6.7.2 Monitoring Well Installations

All exploratory holes (excluding BH101 and BH101A) were installed with standpipes/monitoring wells, as summarised in the tables below. Groundwater levels were monitored on 9th, 15th 23rd, 28th February and 9th and 14th March 2017 in newly installed monitoring wells. Table 6.6 below summarises the levels monitored, with the results presented in Appendix E.

Table 6.6 – Summary of Monitored Groundwater Levels

Exploratory Hole	Monitored Groundwater Level (Range)				Response Zone (m bgl) and Strata Installed Into
	m bgl		m AOD		
	From	To	From	To	
BH102	1.60	2.05	65.46	65.01	1.0 – 3.8: NG – Sand & Gravel
BH103	3.19	3.78	64.17	63.60	12.0 – 14.8: NG – Clay
BH104	0.99	1.16	66.04	65.78	2.5 – 4.5: NG - Gravel
BH105	5.00	5.18	63.93	63.75	7.5 – 9.5: NG - Gravel
DS01	1.05	1.38	60.96	60.63	0.5 – 2.5: MG (Granular)
DS02	0.84	2.00	61.30	60.14	0.5 – 1.5: MG (Granular and cohesive)
DS03	2.32	Dry	61.87	61.21	0.5 – 3.0: MG (Granular)
DS04	Dry	Dry	Dry	Dry	0.5 – 1.0: MG (Granular)
DS05	Dry	Dry	Dry	Dry	0.6 – 2.6: MG (Granular)
DS06	Dry	Dry	Dry	Dry	1.5 – 2.0: MG (Granular)
DS07	1.61	1.81	64.90	64.70	0.5 – 2.5: NG (Granular)
DS09	1.60	1.66	66.05	65.99	0.5 – 2.5: NG (Granular)
DS11	1.66	1.72	65.91	65.85	0.5 – 3.5: NG (Granular and cohesive)
DS14	1.44	1.72	62.88	62.60	1.0 – 4.0: MG (Granular)
DS17	Dry	Dry	Dry	Dry	1.0 – 4.0: MG (Granular and cohesive)
DS20	Dry	Dry	Dry	Dry	2.0 – 5.0: MG (Cohesive)
DS22	Dry	Dry	Dry	Dry	0.5 – 5.0: MG (Granular)
DS23	0.20	0.32	67.03	66.90	0.5 – 1.0: MG (Granular)
DS24	0.58	0.81	66.15	65.92	0.5 – 1.0: MG (Granular)
DS25	0.55	1.05	66.30	65.80	0.5 – 1.0: MG (Granular)
DS26	3.96	4.27	66.29	65.98	0.5 – 5.0: MG (Granular)
DS27	1.60	1.70	65.22	65.12	0.5 – 3.95: NG (Granular and cohesive)

Notes: Made Ground (MG), Natural Ground (NG)

Groundwater flow direction was found to be to the south southwest towards the River Irwell. Groundwater elevation drawings for the six groundwater monitoring visits are presented as Drawings 005a to 005f.

6.8 Visual and Olfactory Evidence of Groundwater Contamination

Hydrocarbon sheens were noted on groundwater within TP110 and TP120 at depths of 1.80m and 2.60m bgl respectively. Both observations are located within Zone 2 and assumed associated with former tanks located within this area of the site.

No measurable thickness of Non-Aqueous Phase Liquid (NAPL) was observed within the monitoring well network during the six groundwater monitoring visits.

7. Ground Gas Results and Assessment

7.1 Ground Gas Results

Six ground gas monitoring visits were undertaken on 9th, 15th 23rd, 28th February and 9th and 14th March 2017 in all newly installed monitoring wells. No historical boreholes were identified during the site reconnaissance undertaken by WYG in 2016; therefore, the results of this gas assessment are solely based on boreholes installed during this investigation.

Monitoring visits were conducted during varying atmospheric conditions, as outlined below. It is considered that although monitoring was not undertaken during falling pressure, there was significant variation in atmospheric conditions to provide a good understanding of the ground gas regime.

- Rising after a period of significant fall in barometric pressure on 23rd and 28th February 2017,
- Steady Barometric Pressure: 9th February 2017; and,
- Rising Barometric Pressure: 15th February, 9th and 14th March 2017.

Tables 7.1 below summarises the peak gas concentrations recorded. The full results are also presented in Appendix E.

Table 7.1 Summary of Ground Gas Peak Concentrations

Location	Response Zone (m bgl) & Strata	Max. Methane Conc. %	Max. Carbon Dioxide Conc. %	Min. Oxygen conc. %	Max. Flow Rate (l/hr)	Water Level Range (m bgl)
BH102	1.0 – 3.8: NG – Sand & Gravel	<0.1	1.0	20.7	0.2	1.60 - 2.05
BH103	12.0 – 14.8: NG – Clay	<0.1	0.6	21.0	0.2	3.19 - 3.78
BH104	2.5 – 4.5: NG - Gravel	1.4	0.6	18.7	0.2	0.99 - 1.16
BH105	7.5 – 9.5: NG - Gravel	1.4	2.6	15.0	0.2	5.00 - 5.18
DS01	0.5 – 2.5: MG (Granular)	<0.1	0.7	20.7	0.2	1.05 - 1.38
DS02	0.5 – 1.5: MG (Granular and cohesive)	<0.1	0.4	20.8	0.2	0.84 - 2.00
DS03	0.5 – 3.0: MG (Granular)	<0.1	0.2	17.6	0.2	2.32 - Dry
DS04	0.5 – 1.0: MG (Granular)	<0.1	0.2	20.9	0.1	Dry
DS05	0.6 – 2.6: MG (Granular)	<0.1	0.3	19.6	0.2	Dry
DS06	1.5 – 2.0: MG (Granular)	<0.1	0.3	21.0	0.1	Dry
DS07	0.5 – 2.5: NG (Granular)	<0.1	0.3	21.0	0.2	1.61 - 1.81
DS09	0.5 – 2.5: NG (Granular)	<0.1	1.4	20.2	0.2	1.60 - 1.66
DS11	0.5 – 3.5: NG (Granular and cohesive)	<0.1	3.2	19.0	0.2	1.66 - 1.72

Location	Response Zone (m bgl) & Strata	Max. Methane Conc. %	Max. Carbon Dioxide Conc. %	Min. Oxygen conc. %	Max. Flow Rate (l/hr)	Water Level Range (m bgl)
DS14	1.0 – 4.0: MG (Granular)	0.7	3.9	6.1	0.2	1.44 - 1.72
DS17	1.0 – 4.0: MG (Granular and cohesive)	<0.1	7.5	3.6	0.2	Dry
DS20	2.0 – 5.0: MG (Cohesive)	37.9	38.0	0.1	0.4	Dry
DS22	0.5 – 5.0: MG (Granular)	<0.1	3.2	15.3	0.2	Dry
DS23	0.5 – 1.0: MG (Granular)	<0.1	0.3	20.8	0.2	0.20 - 0.32
DS24	0.5 – 1.0: MG (Granular)	<0.1	1.6	19.8	0.2	0.58 - 0.81
DS25	0.5 – 1.0: MG (Granular)	<0.1	0.7	21.0	0.2	0.55 - 1.05
DS26	0.5 – 5.0: MG (Granular)	<0.1	2.6	17.6	0.1	3.96 - 4.27
DS27	0.5 – 3.95: NG (Granular and cohesive)	<0.1	0.4	21.0	0.2	1.60 - 1.70

MG – Made Ground, NG Natural Ground.

In summary, the maximum methane concentration recorded during ground gas monitoring was 37.9% and the maximum carbon dioxide concentration was 30.0% in DS20. Low oxygen levels (minimum 0.1%) were recorded within borehole DS17 and DS20 during the monitoring visits undertaken. These locations are in Zone 4.

Outside Zone 4, significantly elevated methane and carbon dioxide were not detected, the maximum methane concentration being 1.4% (BH104, Zone 5) and carbon dioxide concentration 3.9% (DS14, Zone 2). Low oxygen levels (minimum 6.1%) were recorded within borehole DS14 located in Zone 2.

Significant flow rates were not reported during the monitoring period (max. 0.4l/hr in DS20, max. 0.2l/hr for the rest of the site).

Semi-quantitative analysis of concentrations of VOCs was obtained using a PID. The most elevated PID reading was reported on DS20 where values ranged between 28.4 – 38.8ppm. Black staining was observed in this location. Other PID readings of note were reported in Zone 2 (DS04 & DS05), Zone 4 (DS20 & DS22) and Zone 5 (DS14).

Concentrations of Carbon Monoxide were reported elevated within DS17 on occasions ranging from 20 – 22ppm. Concentrations of hydrogen sulphide were generally not reported above the detection limit (1ppm) throughout the monitoring visits undertaken with the exception of slightly elevated recordings of 2.0ppm and 1.0ppm in BH105.

The results of tests on the ground gas sample taken on 9th March 2017 from borehole DS20 identified concentrations of VOCs (toluene and styrene) above the laboratory limit of detection and also comprised nitrogen (48.2%), methane (22.31%), carbon dioxide (20.01%) and oxygen (9.5%).

7.2 Discussion of Previous Ground Gas Assessments

Previous ground gas assessments have been undertaken by Encia Consulting for the site and by Mouchel Parkman on the Tower Farm Landfill immediately south (reported by Encia, 2005). A summary of the previously monitored maximum gas concentrations for each Zone and the Characteristic Situation (CS) reported are summarised below:

- Zone 1 (Encia Zone A) - methane <0.1%, carbon dioxide 0.1%, flow 0.1l/h – CS1
- Zone 2 (Encia Zone B) - methane 0.4%, carbon dioxide 6.9%, flow 0.5l/h – CS2
- Zone 3 (Encia Zone C) - methane <0.1%, carbon dioxide 5.3%, flow 2.6l/h – CS1
- Zone 4 (Encia Zones E & F) - methane 0.2%, carbon dioxide 8.6%, flow 1.6/h – CS2
- Zone 5 (Encia Zone D) - methane 0.9%, carbon dioxide 5.3%, flow 0.2l/h – CS2
- Off site Tower Farm Lagoon/Landfill - methane 70.6%, carbon dioxide 44%, flow 14.9l/h – CS4.

Anecdotal information provided by the Environmental Protection Officer for Bury Council (20/01/17) indicated that gas mitigation for the proposed school in Zone 2 (Encia Zone B) included active gas mitigation measures (clean air blanket).

7.3 Ground Gas Assessment

Ground gas results have been assessed using the methodology described in the CIRIA C665 (2007), BS8585 (2015) and CL:AIRE RB17 (2012).

The CIRIA C665 (NHBC) assessment methodology is based on both volume percentages and volume flow rate of gases. In accordance with the CIRIA methodology, a conservative Gas Screening Value (GSV) has been calculated using a worst case scenario (i.e. highest gas concentration combined with highest flow rate). Where readings are not recorded above the instrument detection limit, the value of the instrument detection limit is used to calculate the GSV.

Based on the results of the ground gas monitoring outlined in Table 7.1, elevated gas concentrations are predominantly associated with Zone 4 - The CHP and Boiler House Landfill towards the southeast of the site and near to the off site landfills. The ground gas results also tie in to those previously recorded. Therefore, gas screening values have been determined separately for Zone 4.

7.3.1 Zones 1, 2, 3 and 5

Methane: 0.7% CH_4 x 0.2 l/hr = **0.0014 l/hr CH_4**

Carbon Dioxide: 3.9% CO_2 x 0.2 l/hr = **0.0078 l/hr CO_2**

Based on worst case peak gas concentrations and flow rates, Zones 1, 2, 3 and 5 are considered to be GREEN for future standard residential properties. In line with BS 8485 gas protection measures for methane and carbon dioxide would not be required for development, subject to confirmation by Local Authority Development Control.

This classification is based on the presumption that the ground gas source(s) associated with Zone 4 and off site landfills are mitigated as described below.

Further ground gas monitoring may be required to support detailed planning for the site but based on the data obtained to date, it is considered that Zones 1, 2, 3 and 5 could be developed for a residential end use.

Elevated PID results have been reported within Zones 1 – 3 which may be associated with a source of hydrocarbon contamination. These areas tie into visual and olfactory site investigation observations and previously identified areas of hydrocarbon contamination. It is recommended that the associated source be remediated and/or a vapour resistant membrane be included in any future buildings within these zones.

7.3.2 Zone 4

Methane: 37.9% CH_4 x 0.4 l/hr = **0.1516 l/hr CH_4**

Carbon Dioxide: 38.0% CO_2 x 0.4 l/hr = **0.1520 l/hr CO_2**

Based on worst case peak gas concentrations combined with flow rates and total ground gas volumes, Zone 4 is considered to be RED. In line with BS 8485 it may be considered that standard residential housing would not normally be acceptable without further gas risk assessment and/or possible remedial mitigation to reduce or remove the source of ground gas.

As detailed in the former Remediation Strategy (Section 6.14, Encia 2005) and during recent WYG correspondence with the Environmental Protection Officer for Bury Council (20/01/17), it was outlined

that prior to any development, a gas vent and leachate trench should be constructed to form a barrier between the site and the neighbouring landfills of East Lancashire Paper Mill and Tower Farm, south and southeast of the site respectively. A requirement to deal with the risk posed by these off site landfills was also included as a condition of a former planning permission. However, this would potential not address the risk posed by the Boiler House Landfill on site.

The former remediation strategy has proposed that, following further assessment, a 350m long, 10m deep hazardous gas/leachate collection trench (bentonite slurry wall and gas vent trench, continuous geo membrane barrier and virtual curtain vent system) may be required along the southern site boundary adjacent to the line of the former Bealey's Goit.

Should a gas barrier be created along the southern site boundary, this could potentially also leave a potential pathway to the southeast (Tower Farm Landfill) and an on-site gas source (Boiler Landfill and Made Ground in Zone 4) and may not address the combined risk from the on site landfilling .

At this stage, it is unclear whether the elevated ground gases reported in Zone 4 are associated with off site or on site sources; therefore, at this stage, it is recommended that the following options are suitable for development:

- Ground gas barrier along the southern and southeastern site boundary and/or
- Passive gas venting associated with Zone 4; or,
- Ground gas barrier along the line of the former sludge main or northern edge of Zone 4 (subject to further gas assessment and detailed design).

The above is based on the presumption that the majority of Zone 4 will be open space due to the ground gas risk.

Consideration should also be given to the presence of hydrocarbon vapours within Zone 4 and any gas mitigation measures designed for this purpose (post any soil/groundwater remediation).

8. Contamination Assessment

8.1 Assessment Methodology

8.1.1 Soils Contamination

Soil concentrations have been screened against WYG Tier 1 soil screening values (TSVs). These principally comprise LQM S4ULs, DEFRA with Contaminated Land: In Real Environments (CL:AIRE) published Category 4 Screening Levels (C4SLs). Contaminant concentrations below C4SLs are considered to pose an acceptably low risk to human health.

The derivation of TSVs is an ongoing development process and as such, methodologies and input parameter values may alter as new guidance is published. This may result in temporary inconsistencies in the TSVs and regular updates as research and development work progresses.

The screening value used and its source are colour coded for the above TSV sources on the soil screening sheet provided in Appendix F. An average Soil Organic Matter of 1% has been utilised in the assessment based on a conservative measure.

Contaminant concentrations below the TSVs are considered not to warrant further risk assessment. Concentrations of potential contaminants above the TSVs require further consideration of the potential pollutant linkages. It should be noted that exceedance of the TSVs does not necessarily mean that the site requires remediation.

In March 2014, DEFRA released a set of Category 4 Screening Levels (C4SLs) for a limited list of six substances (arsenic, benzene, benzo(a)pyrene, cadmium, chromium VI and lead). The C4SLs are considered suitable by DEFRA for use for Part 2A decisions and planning, i.e. change of use. The C4SL values are based around a principle of 'acceptably low risk' indicating that the site is suitable for the proposed use. In order to use benzo(a)pyrene as a surrogate marker of PAH the profile of the genotoxic PAHs relative to benzo(a)pyrene must be calculated and compared to the 'Culp Study'.

It is considered that at depths greater than 1m, the probability of human exposure via the direct contact pathways is significantly reduced, leaving inhalation of volatile compounds as the dominant pathway with regard to human health risks. Typically, volatile compounds only significantly affect the indoor inhalation pathway.

8.1.2 Statistical Analysis

Should exceedances of the TSV occur associated with soil samples that represent the top 1m of soil, for the proposed planning scenario, the CL:AIRE guidelines state that for each contaminant, the upper 95th

percentile of the mean measured concentration (95%UCL) should be calculated and this value should be compared to the TSV.

Maximum value tests are also performed in accordance with the method outlined in Annex 1 of CLR7. The objective of these tests is to decide whether the maximum concentration observed should be treated as an outlier or whether it can reasonably be considered to come from the same underlying population as the other samples.

Constituent non-detects are assigned a value equal to the reported analytical laboratory limit of detection, considered reasonably conservative in accordance with CLR principles or where a significant number of non-detects are reported CL:AIRE guidelines are utilised to limit over conservatism. Any identified outliers are excluded from the datasets used in calculation of the 95%UCL value.

Statistical analysis has been undertaken to gain a general understanding of the overall risk to human health but would be to be reassessment based on all available date specific to any detailed design.

For elevated Total Petroleum Hydrocarbon (TPH CWG) concentrations, assessment has been made with reference to the UK Approach for Evaluating Human Health Risks from Petroleum Hydrocarbons in Soils (Science Report P5-080/TR5), Environment Agency, 2005. This calculates the combined toxicological affects of the TPH fractions by calculation of a Hazard Index, which if greater than 1 may indicate a potential risk to human health.

8.1.3 Controlled Waters Contamination

The results of the groundwater and soil leachate analysis have been assessed by direct comparison against The River Basin Districts Typology, Standards and Groundwater threshold values Water Framework Directive (England and Wales) 2010. For the purposes of the assessment data has been compared against primarily Environment Quality Standard (EQS) River Waters or Freshwaters values – Type 7 to access the risk to surface waters due to the site's location in a sensitive area associated with these and the likelihood that shallow groundwater would provide baseflow to these. In the absence of EQS, UK Drinking Water Standard (DWS) screening values have been used.

The site is not considered to be in a sensitive location with regard to aquifer resources (Secondary A Aquifer, not in a source protection zone with no significant groundwater abstractions).

The screening value used and its source are colour coded for the above TSV sources on the groundwater screening sheet provided in Appendix F.

8.2 Soil Contamination Assessment

An assessment of the chemical results reported has been undertaken in accordance with the methodology described above. The soil results have been screened against published residential with plant uptake criteria which are considered the most appropriate for the proposed housing development . The determinands have been analysed as per the designated site zoning with determinands exceeding the applicable screening values outlined in tables below.

The benzo(a)pyrene results have been assessed using the C4SL screening values and in line with the methodology described above. The C4SL value for benzo(a)pyrene is 5mg/kg. The 'Culp' assessment is enclosed within Appendix F and indicates that the value of 5mg/kg would be appropriate to assess the risk from PAHs (excluding naphthalene) for the site.

The original chemical analysis results are included in Appendix C and Tier 1 Screening Values and assessment are included in Appendix F.

8.2.1 Zone 1 – Former Wilton Mill

Table 8.1a Zone 1 Summary of Soil Screening Exceedances

Determinand	TSV (mg/kg)	Total no. of tests	Conc. Range (mg/kg)	No. elevated above TSV	Location of exceedance
Arsenic	37	9	3.9–73.2	1	TP102 at 1.6m bgl (73.2 mg/kg)
Beryllium	1.7	9	1.0-2.1	6	TP101 at 0.5m bgl (1.7mg/kg) TP102 at 0.5m & 1.6m bgl (1.5 & 1.8 mg/kg) DS01 at 0.5m & 1.4m bgl (1.5 & ***1.4mg/kg***) DS02 at 0.9m bgl (2.1 mg/kg)
Lead	200	9	36-899	1	TP101 at 0.5m bgl (214 mg/kg) DS02 at 0.9m bgl (899 mg/kg)
Zinc	3700	9	51-3821	1	TP102 at 1.6m bgl (3821mg/kg)
Benzo(a)Pyrene	5	9	<0.04 – 75.48	4	TP101 at 0.5m bgl (5.64 mg/kg) TP102 at 0.5m bgl (6.67 mg/kg) DS02 at 0.5m bgl (5.31 mg/kg) at 0.7m bgl (75.48 mg/kg)
Naphthalene	2.3	9	<0.04-4.62	1	DS02 at 0.7m bgl (4.62 mg/kg)
Aromatic EC16-21	260	9	<7-954	2	DS01 at 1.4m bgl (***540 mg/kg***) DS02 at 0.7m bgl (954 mg/kg)
Aromatic EC21-35	1100	9	<7-4060	2	DS01 at 1.4m bgl (***1545 mg/kg***) DS02 at 0.7m bgl (4060 mg/kg)
Aromatic EC35-44	1100	9	<7-1591	3	DS02 at 0.7m bgl (1591 mg/kg)

Concentrations of VOCS (1,2,4-Trimethylbenzene) and SVOCS (2-Methylphenol, 2-methylnaphthalene, carbazole and dibenzofuran) were reported above the laboratory detection limit; screening criteria for these determinands are not available.

Asbestos containing material was encountered in four samples across Zone 1 including TP101 (0.5m bgl), TP102 (0.5m and 1.6m bgl) and DS01 (0.5m bgl). The asbestos was Chrysotile and Amosite in TP102. Asbestos quantification testing on TP102 (0.5m bgl) identified a Gravimetric and Phase Contrast Optical Microscopy (PCOM) mass of 0.045%.

Concentrations highlighted in (bold italics) in Table 8.1a above indicate those samples representing strata greater than 1m bgl. Specifically, the sample from 1.4m bgl in DS01 which corresponded to possible paper waste. These strata are unlikely to pose a significant exposure risk unless cut and fill activities occur; however, elevated concentrations were similar to those in strata less than 1m bgl.

Statistical analysis of the data in accordance with the methodology above has been undertaken. This determined that the Upper 95th percentage confidence level of concentrations was below the TSV (with no obvious outliers of the data set) for arsenic and naphthalene; therefore, these are not considered to pose a significant risk to human health. In the case of the lead, zinc and benzo(a)pyrene, it indicated that on removal of outliers (representing a potential localised source), there was not significant risk to human health. Table 8.1b summarises those potential contaminants that may pose a risk to human health after statistical analysis.

TPH Hazard Indices for TP101, TP102, DS01 and DS02 were indicated to pose a risk to human health.

Table 8.1b Zone 1 Summary of Statistical Analysis

Determinand	TSV (mg/kg)	US95	Outlier Present ?	Risk to Human Health
Beryllium	1.2	1.7	No	Yes – Made Ground
Lead	200	N/A	Yes	Yes – DS02 at 0.9m bgl (899mg/kg)
Zinc	3700	N/A	Yes	Yes – TP102 at 1.6m bgl (3821mg/kg)
Benzo(a)pyrene	5	N/A	Yes	Yes – DS02 at 0.7m bgl (75.5mg/kg)

8.2.2 Zone 2 – Former Paper Mill

Table 8.2a Zone 2 Summary of Soil Screening Exceedances

Determinand	TSV (mg/kg)	Total no. of tests	Conc. Range (mg/kg)	No. elevated above TSV	Location of exceedance
Arsenic	37	25	5-70	9	TP106 at 0.5m bgl (70 mg/kg). TP119 at 0.5m bgl (58.2 mg/kg) at 1.2m bgl (47.6 mg/kg) and at 2.50m bgl (***65 mg/kg***). TP120 at 0.5m bgl (39.7 mg/kg). TP123 at 1.5m bgl (47.1 mg/kg). TP124 at 1.2m bgl (43.2 mg/kg). DS03 at 1.7m bgl (***37.1 mg/kg***). DS05 at 0.5m bgl (39.7 mg/kg).
Beryllium	1.7	25	0.9-4.0	6	TP106 at 0.5m bgl (4 mg/kg). TP111 at 0.5m bgl (1.8 mg/kg). TP123 at 1.5m bgl (2.6 mg/kg). TP124 at 1.2m bgl (2.5 mg/kg). DS03 at 1.7m bgl (***1.9 mg/kg***). DS14 at 0.8m bgl (2.1 mg/ kg).
Lead	200	25	9-16820	13	BH101 at 0.2m bgl (225 mg/kg) and at 1.0m bgl (206 mg/kg). TP106 at 0.5m bgl (526 mg/kg). TP108 at 0.5m bgl (283 mg/kg) and at 2.0m bgl (***476 mg/kg***). TP111 at 0.5m bgl (219 mg/kg). TP113 at 1.2m bgl (500 mg/kg). TP124 at 0.2m bgl (944 mg/kg) and at 1.2m bgl (301 mg/kg). DS03 at 0.5m bgl (1484 mg/kg) and at 1.7m bgl (***16820 mg/kg***). DS04 at 0.5m bgl (1657 mg/kg). DS05 at 0.5m bgl (282 mg/kg).
Benzo(a)Pyrene	5	25	<0.04-20.58	3	TP106 at 0.5m bgl (10.56 mg/kg). TP110 at 0.2m bgl (28.58 mg/kg). TP113 at 1.2m bgl (7.25 mg/kg).
Naphthalene	2.3	25	<0.04-2.8	1	TP110 at 0.2m bgl (2.8 mg/kg).
Aromatic EC16-21	260	25	<7-469	1	TP113 at 1.2m bgl (469 mg/kg).
Aromatic EC21-35	1100	25	<7-1190	1	TP113 at 1.2m bgl (1190 mg/kg).
2,4 – Dinitrotoluene	1.5	8	<0.01-5.45	1	TP111 at 0.4m bgl (5445 µg/kg).

Concentrations of SVOCS (2-methylnaphthalene, carbazole and dibenzofuran) were reported above the laboratory detection limit; screening criteria for these determinands are not available.

Asbestos containing material was encountered in twenty samples across Zone 2 including BH101 (0.2m bgl), TP106 (0.5m bgl), TP108 (0.5m and 2.0m bgl), TP110 (0.2m and 1.8m bgl), TP111 (0.4m and 0.5m bgl), TP113 (1.2m bgl), TP119 (1.2m bgl), TP120 (0.5m bgl), TP121 (0.5m bgl), TP123 (1.5m bgl), TP124 (0.2m and 1.2m bgl), DS03 (0.5m bgl), DS04 (0.5m bgl), DS05 (0.5m bgl) and DS14 (0.8m bgl). The asbestos was Chrysotile with Amosite in TP111 and TP124 and Crocidolite in TP110. Asbestos quantification testing on TP124 (0.2m bgl) identified a Gravimetric and PCOM mass of 0.004%.

Concentrations highlighted in (bold italics) in Table 8.2a above indicate those samples representing strata greater than 1m bgl (1.5m bgl in TP123 corresponded to possible paper waste and from TP119 and TP120 possible hydrocarbons, black staining).This strata is unlikely to pose a significant exposure risk unless cut and fill activities occur; however, elevated concentrations were similar to those in strata less than 1m bgl.

Statistical analysis was carried out in accordance with the methodology above. This determined that the Upper 95th percentage confidence level of concentrations was below the TSV (with no obvious outliers of the date set) for arsenic and benzo(a)pyrene; therefore, these are not considered to pose a significant risk to human health. In the case of the lead and naphthalene, it indicated that on removal of outliers (representing a potential localised source), there was not significant risk to human health. Table 8.2b summarises those potential contaminants that may pose a risk to human health after statistical analysis.

TPH hazard index for TP113 indicates a risk to human health.

Table 8.2b Zone 2 Summary of Statistical Analysis

Determinand	TSV (mg/kg)	US95	Outlier Present ?	Risk to Human Health
Beryllium	1.2	1.6	Yes	Yes – Made Ground and Localised TP106 at 0.5m bgl (4mg/kg)
Lead	200	336	Yes	Yes – Made Ground
Naphthalene	2.3	-	Yes	Yes – Localised TP110 0.2m bgl (2.8mg/kg)
2,4 – Dinitrotoluene	1.5	-	Yes	Yes – Localised TP111 at 0.4m bgl (5.45mg/kg)

8.2.3 Zone 3 – Land North of Church Street

Table 8.3a Zone 3 Summary of Soil Screening Exceedances

Determinand	TSV (mg/kg)	Total no. of tests	Conc. Range (mg/kg)	No. elevated above TSV	Location of exceedance
Arsenic	37	11	4.1-129.9	4	DS27 at 0.3m bgl (124.9 mg/kg) HP6 at 0.6m bgl (84.8 mg/kg). HP7 at 0.7m bgl (40.5 mg/kg). HP8 0.5m bgl (129.9 mg/kg).
Beryllium	1.7	11	0.9-4.2	3	HP6 at 0.6m bgl (4.2 mg/kg). HP7 at 0.7m bgl (3.8 mg/kg). HP8 0.5m bgl (2.1 mg/kg).
Lead	200	11	8-618	3	DS27 at 0.3m bgl (311 mg/kg). HP6 at 0.6m bgl (583 mg/kg). HP8 0.5m bgl (618 mg/kg).
Benzo(a)Pyrene	5	11	<0.04-7.6	1	HP8 0.5m bgl (7.6 mg/kg).
EPH C16-C21	260	4	<10-322	1	HP8 0.5m bgl (322 mg/kg).

Concentrations of VOCS (1,2,4-Trimethylbenzene) and SVOCS (2-methylnaphthalene and dibenzofuran) were reported above the laboratory detection limit; screening criteria for these determinands are not available.

Asbestos containing material was encountered in five samples across Zone 3 including DS07 (0.2m bgl), DS27 (0.3m bgl), HP05 (0.4m bgl), HP06 (0.6m bgl), and HP08 (0.5m bgl). The asbestos was Chrysotile with only Amosite in HP5 and HP6.

Limited Made ground is present in the centre of the site where elevated potential contaminants were not reported. Elevated contaminants listed in Table 8.3a are located in the north and east of the zone where Made Ground is present. There are insufficient data to undertake statistical analysis due to limited site investigation access to these areas.

8.2.4 Zone 4 – CHP and Boiler House Landfill

Table 8.4a Zone 4 Summary of Soil Screening Exceedances

Determinand	TSV (mg/kg)	Total no. of tests	Conc. Range (mg/kg)	No. elevated above TSV	Location of exceedance
Arsenic	37	8	2.7-73.1	2	DS17 at 0.3m bgl (72.2 mg/kg). DS20 at 1.5m bgl (73.1 mg/kg).
Beryllium	1.7	8	<0.5-2.2	1	DS17 at 0.3m bgl (2.2 mg/kg).
Lead	200	8	<5-2166	2	TP130 at 1.5m bgl (495 mg/kg). DS17 at 0.3m bgl (2166 mg/kg).

Concentrations of VOCS (1,2,4-Trimethylbenzene) and SVOCS (2-methylnaphthalene, carbazole and dibenzofuran) were reported above the laboratory detection limit; screening criteria for these determinands are not available.

Asbestos containing material was encountered in seven samples across Zone 4 including TP127 (1.2m bgl), TP130 (1.5m bgl), DS17 (0.3m, 1.6m and 3.8m bgl), DS20 (1.5m bgl) and DS22 (0.3m bgl). The asbestos was Chrysotile with Amosite in TP130 and DS22 and Crocidolite in DS17 and DS22. Asbestos quantification testing on DS22 (0.3m bgl) identified a Gravimetric and PCOM mass of 0.141%.

Samples from strata representing greater than 1m bgl corresponded to possible paper waste in DS17. Other deeper samples did not report significantly elevated determinands other than asbestos as noted above.

Statistical analysis was carried out in accordance with the methodology above. This determined that the Upper 95th percentage confidence level of concentrations was below the TSV (with no obvious outliers of the date set) for arsenic; therefore, arsenic is not considered to pose a significant risk to human health. Table 8.4b summarises those potential contaminants that may pose a risk to human health after statistical analysis.

There were no significantly elevated TPH concentrations reported for this zone.

Table 8.4b Zone 4 Summary of Statistical Analysis

Determinand	TSV (mg/kg)	US95	Outlier Present ?	Risk to Human Health
Beryllium	1.2	1.5	No	Yes – Made Ground
Lead	200	293	No	Yes – Made Ground

8.2.5 Zone 5 – Former Reservoirs

Table 8.5a Zone 5 Summary of Soil Screening Exceedances

Determinand	TSV (mg/kg)	Total no. of tests	Conc. Range (mg/kg)	No. elevated above TSV	Location of exceedance
Arsenic	37	23	3.2-107	4	TP139 at 0.5m bgl (107 mg/kg). TP139 at 1.2m bgl (54.5 mg/kg). DS25 at 0.5m bgl (51.2 mg/kg).
Beryllium	1.7	23	<0.5-3.0	6	BH103 at 1.2m bgl (2.1 mg/kg). TP113 at 1.5m bgl (2.3 mg/kg). TP139 at 1.2m bgl (3.0 mg/kg). DS25 at 0.5m bgl (1.9 mg/kg). DS26 at 0.6m (1.8 mg/kg) and 1.8m bgl (2.3 mg/kg).
Lead	200	23	7-490	2	TP118 at 0.1m bgl (348 mg/kg). TP133 at 1.5m bgl (490 mg/kg).

Asbestos containing material was encountered in five samples across Zone 5 including TP118 (0.1m), TP133 (0.4m), TP139 (1.2m bgl), DS10HP (0.4m bgl) and DS25 (0.5m). The asbestos was classified as Chrysotile with Amosite and Crocidolite in TP118. Asbestos quantification testing on TP118 (0.1m bgl) identified a Gravimetric and PCOM mass of 0.155%.

Statistical analysis was carried out in accordance with the methodology above. This determined that the Upper 95th percentage confidence level of concentrations was below the TSV (with no obvious outliers of the date set) for arsenic and lead; therefore, these are not considered to pose a significant risk to human health. Table 8.5b summarises those potential contaminants that may pose a risk to human health after statistical analysis.

There were no significantly elevated TPH concentrations reported for this zone.

Table 8.5b Zone 5 Summary of Statistical Analysis

Determinand	TSV (mg/kg)	US95	Outlier Present?	Risk to Human Health
Beryllium	1.2	1.7	Yes	Yes – Made Ground

8.2.6 Stockpiles

Table 8.6a Summary of Soil Screening Exceedances in Stockpiled Soil

Determinand	TSV (mg/kg)	Total no. of tests	Conc. Range (mg/kg)	No. elevated above TSV	Location of exceedance
Lead	200	6	15-203	1	SP6 at 0.8m bgl (203 mg/kg)

Asbestos containing material was encountered in three samples obtained within the onsite stockpiles including SP4, SP5 and SP6. The asbestos was classified as a combination of Chrysotile with Amosite in SP6. Asbestos quantification testing on SP6 (0.8m bgl) identified a Gravimetric and PCOM mass of 0.004%.

There were no significantly elevated TPH concentrations reported for this zone.

8.2.7 Summary of Results

Overall, the following salient findings should be noted associated with the potential risk to human health:

- Elevated lead has been identified in the Made Ground of Zones 2, 3 and 4 with localised areas of elevated lead and zinc in Zone 1 and the stockpile of SP6.
- Elevated hydrocarbon contamination contaminants have been identified in Zone 1 and in the south and northeast of Zone 2.
- Statistically elevated arsenic and PAHs may not pose a significant risk to human health but are present in most Zones.
- Elevated beryllium is reported in the Made Ground site wide although this is marginal. Samples from natural ground indicate similar concentrations so it is considered that beryllium concentrations are associated with background levels at the site. The main exposure pathway is inhalation and it is assumed that any gardens would have a topsoil cover which would reduce the exposure to future residents.
- Asbestos has been encountered in the Made Ground site wide and in the stockpiles.

Drawing No. 006 illustrates the location of potential soil contaminants that may pose a risk to human health.

The elevated potential contaminants identified above are similar to those reported during previous investigation phases by others (arsenic, lead, chromium, benzo(a)pyrene and localised TPHs). The location of the elevated TPH in Zone 2 is at a similar location to formerly remediated areas, indicating that post remediation, a source of hydrocarbons may remain.

8.3 Controlled Waters Assessment

A Tier 1 assessment of the soil leachate, groundwater and surface water samples has been carried out using the aforementioned methodology and is summarised in the sections below.

In instances where the laboratory detection limit (LOD) exceeds the screening criteria, these determinands have been discounted from further consideration as they are not considered to be a risk to the receptors.

The original chemical analysis results are included in Appendix C and Tier 1 Screening Values and assessment are included in Appendix F.

Drawing No. 006 illustrates the location of significant groundwater exceedances.

8.3.1 Soil Leachate Assessment

A number of determinands analysed exceeded the Tier 1 screening values from Zones 1, 2 and 5 as outlined in Table 8.7 below. Previous investigations by others identified potentially leachable metals.

Overall, there are minimal potential leachable contaminants identified, potential impact on groundwater from the contaminants listed in Table 8.7 are discussed below. Potential alkaline and acidic leachable pH has been identified. An assessment in relation to aggressive ground conditions has been undertaken in Section 10.

Table 8.7 Summary of Soil Leachate Tier 1 Screening Exceedances

Determinand	TSV (µg/l)	Total no. of tests	Conc. Range (µg/l)	No. elevated above TSV	Location of exceedance
pH	<6 >9	11	4.73-12.69	5	Zone 1 - TP102 at 1.6m bgl (12.69) Zone 1 - TP108 at 0.5m bgl (10.64) Zone 2 - TP110 at 0.2m bgl (10.8) Zone 2 - TP119 at 0.5m bgl (4.73) Zone 5 - TP137 at 0.5m bgl (10.14)
Copper	1	11	<3 – 31	3	Zone 2 - TP108 at 0.5m bgl (12 µg/l) Zone 2 - TP119 at 0.5m bgl (6 µg/l) Zone 2 -TP121 at 0.5m bgl (31 µg/l)
Lead	14	11	<0.04 – 68.7	1	Zone 1 -TP102 at 1.6m bgl (68.7 µg/l)

8.3.2 Groundwater Assessment

Table 8.8 below summarises exceedances of the Tier 1 screening criteria from the initial monitoring event undertaken on 9th February 2017. The following salient points should be noted:

- Elevated metals were generally reported in BH105 associated with landfilled material in Zone 4.
- Elevated PAHs and TPH were generally reported in BH105 as above and DS01 (Zone 1) and DS14 (Zone 2) where evidence of hydrocarbon/organic contamination has been identified.
- Slightly elevated cyanide, ammonia and zinc were reported in various locations.
- Elevated TPH was reported in BH102; however, there was no obvious hydrocarbon source or Made Ground at this location.
- Due to limited access deeper groundwater wells to determine the potential on site migration of leachate from the adjacent landfill could not be installed to enable an assessment to be made for Zone 4; however, general shallow groundwater quality indicated elevated metals and organic potential contaminants.

No exceedances of the Tier 1 screening criteria from the second monitoring event undertaken on 9th March 2017 were identified within groundwater.

Table 8.8 Summary of Groundwater Tier 1 Screening Exceedances – 9th February 2017

Determinand	TSV (µg/l)	Total no. of tests	Conc. Range (µg/l)	No. elevated above TSV	Location of exceedance
Free Cyanide	1	6	<1-9	5	BH103 (7 µg/l), BH104 (2 µg/l), BH105 (5 µg/l), DS01 (9 µg/l) and DS14 (8 µg/l)
Total Cyanide	1	6	4-22	6	BH102 (4 µg/l), BH103 (10 µg/l), BH104 (7 µg/l), BH105 (22 µg/l), DS01 (16 µg/l) and DS14 (15 µg/l)
Ammoniacal Nitrogen as NH3	0.6	6	0.13-7.01	3	BH104 (7.01 mg/l), BH105 (5.45 mg/l), DS01 (2.56 mg/l)
Dissolved Aluminium	200	6	1.6-1123	1	BH105 (1123 µg/l)
Dissolved Copper	1	6	<3-155	1	BH105 (155 µg/l)
Total Chromium	50	6	<0.2-76.6	1	BH105 (76.6 µg/l)
Dissolved Iron	1000	6	8.7-2353	1	BH105 (2353 µg/l)
Dissolved Lead	14	6	<0.4-127.7	1	BH105 (127.7 µg/l)
Dissolved Nickel	34	6	<1.5-46.5	1	BH105 (46.5 µg/l)
Dissolved Selenium	10	6	<1.2-20.3	1	BH105 (20.3 µg/l)
Dissolved Zinc	10.9	6	<1.5-125.1	2	BH103 (15.2 µg/l) BH105 (125.1 µg/l)
Anthracene	0.1	6	<0.1-5.06	2	BH105 (0.16 µg/l) DS14 (5.06 µg/l)

Benzo(a)pyrene	0.27	6	<0.01-14.76	2	BH105 (0.65 µg/l) DS14 (14.76 µg/l)
Benzo(b)fluoranthene	0.017	6	<0.01-18.25	4	BH102 (0.04 µg/l), BH105 (0.81 µg/l), DS01 (0.03 µg/l), DS14 (18.25 µg/l)
Benzo(ghi)perylene	0.0082	6	<0.01-10.71	3	BH102 (0.02 µg/l), BH105 (0.41 µg/l), DS14 (10.71 µg/l)
Benzo(k)fluoranthene	0.017	6	<0.01-7.1	3	BH102 (0.02 µg/l), BH105 (0.32 µg/l), DS14 (7.1 µg/l)
Fluoranthene	0.12	6	<0.01-29.54	2	BH105 (1.38 µg/l), DS14 (29.54 µg/l)
Aliphatic C12-C16	10	6	<10-90	2	BH102 (90 µg/l), BH105 (70 µg/l)
Aliphatic C16-C21	10	6	<10-490	3	BH102 (490 µg/l), BH105 (200 µg/l), DS01 (110 µg/l)
Aliphatic C21-C35	10	6	<10-1510	3	BH102 (1510 µg/l), BH105 (1190 µg/l), DS01 (1390 µg/l)
Aromatic EC12-EC16	10	6	<10-50	1	DS01 (50 µg/l)
Aromatic EC16-EC21	0.27	6	<10-400	3	BH102 (80 µg/l), BH105 (20 µg/l), DS01 (400 µg/l)
Aromatic EC21-EC35	0.0082	6	<10-1570	3	BH102 (650 µg/l), BH105 (510 µg/l), DS01 (1570 µg/l)

8.3.3 Surface Water Assessment

Table 8.9 and Table 8.10 below summarise exceedances of the Tier 1 screening criteria from the monitoring events undertaken on 9th February and 9th March 2017. The following salient points should be noted:

- Despite elevated concentrations of some potential contaminants in the shallow groundwater, the majority were not detected in the surface water samples; apart from:
- Slightly elevated cyanide and zinc in Crow Tree Brook; however, this was similar to the upstream River Irwell sample (SW1).
- Slightly elevated copper was reported in Crow Tree Brook but not any other surface water samples.
- Elevated cyanide and ammonia are at similar concentrations in groundwater across the site; however, they are not reported to be significantly elevated in the groundwater.

Table 8.9 Summary of Surface Water Tier 1 Screening Exceedances – 9th February 2017

Determinand	TSV (µg/l)	Total no. of tests	Conc. Range (µg/l)	No. elevated above TSV	Location of exceedance
Total Cyanide	1	6	<1-2	2	SW1(2 µg/l), SW6 (2 µg/l)
Dissolved Copper	1	6	<3-4	1	SW6 (4 µg/l)
Dissolved Zinc	10.9	6	4.3-13.5	2	SW1(11.6 µg/l), SW2 (13.1 µg/l) SW6 (13.5 µg/l)

Table 8.10 Summary of Surface Water Tier 1 Screening Exceedances – 9th March 2017

Determinand	TSV (µg/l)	Total no. of tests	Conc. Range (µg/l)	No. elevated above TSV	Location of exceedance
Total Cyanide	1	2	<10-10	1	SW1(10 µg/l)

9. Refined Contamination Risk Assessment

9.1 Refined Conceptual Site Model (CSM)

Based on the ground investigation data, the CSM defined by the WYG 2016 Desk Study has been refined.

The site is underlain by Made Ground of varying composition and thickness generally consisting of sandy Gravel, gravelly Clay and Gravel of brick, concrete and ash. A concrete and brick base (probably associated with the former Paper Mill foundations) was encountered within a central site location (Zone 2). Stockpiles are present within Zone 2 and Made Ground is absent in the central part of Zone 3.

Ground conditions typical of landfill waste (ash, asbestos and silty white clay) were identified towards the southeast corner of the site (Zone 4), with findings of this investigation signifying the size and extent of the landfill is greater than originally reported. This Made Ground may be associated with elevated ground gases and vapours.

Evidence of organic clay associated with former reservoirs, filter beds and anecdotal evidence of 'sludge' deposited in Zone 5 was observed in addition to white clay associated with paper manufacture waste.

The Made Ground is in turn underlain by varying compositions of Clay, Sand, Gravel and Sand & Gravel (Secondary A Aquifer) proven to a depth of up to 14.82m bgl. Beneath this Mudstone bedrock comprising the Westphalian Coal Measures was identified (Secondary A Aquifer). Bedrock was encountered at shallow depths towards the west of the site (1.90m bgl in DS02) becoming deeper towards the east (14.82m in BH103).

Groundwater is present within the Made Ground and superficial deposits at varying depths across the site. The nearest surface water feature down hydraulic gradient to the site is the River Irwell immediately south of the site. Shallow groundwater flows south southwest towards the River Irwell. Two surface water culverts are also present on site discharging to the River Irwell.

Ground gases may be migrating onto the site from the Tower Farm Landfill immediately south and southeast of the site.

A diagrammatic CSM identifying potential contaminant sources as given below is provided as Drawing No. 007.

9.2 Potential On-Site Sources

Based on the site investigation data, on site sources of contamination are refined as:

- Zone 1 – Elevated lead, zinc, PAHs, TPH, asbestos and potentially leachable pH and lead in the Made Ground.
- Zone 2 – Elevated lead, hydrocarbons/SVOCs, asbestos, berylium and potentially leachable pH and copper in the Made Ground.
- Zone 3 – Elevated arsenic, lead, PAHs and asbestos in the Made Ground.
- Zone 4 – Elevated lead and asbestos in the Made Ground.
- Zone 5 – Asbestos and potentially leachable pH in the Made Ground.
- Shallow groundwater with elevated cyanide and ammonia generally across the site (excluding Zone 3).
- Shallow groundwater with elevated TPH in zone 1 (DS01)
- Shallow groundwater with elevated PAHs (DS14) and hydrocarbons (TP110 & TP120) in Zone 2.
- Shallow groundwater with elevated metals and PAHS/TPH in Zone 4 (BH105).
- Slightly elevated ground gases in Zone 1, 2, 3 and 5.
- Elevated ground gas identified in Zone 4 (DS17 & DS20)
- Elevated vapours in Zones 2 (DS04, DS05 & DS14) and Zone 4 (DS20 & DS22).

9.3 Potential Off-Site Sources

Based on the available information, it is considered that ground gas and vapours associated with the areas of historical land filling towards the south and south east of the site (East Lancashire Paper Mill Landfill and Tower Farm respectively) are a significant source of ground gases. Ground gases from Zone 4 could also affect Zones 2 and 5.

9.4 Contamination Pathways

Potential contamination pathways which are applicable for the proposed residential development are listed below:

- Dermal contact;
- Inhalation of vapours or dust;
- Ingestion of soils and dusts;
- Ingestion of home ground fruit and vegetables (and soil attached);

- Leaching to surface run-off drainage;
- Leaching to groundwater;
- Lateral and vertical migration of groundwater;
- Ground gas generation/ accumulation; and
- Migration along/ into service conduits, pipe work and along the in filled Bealey's Goit.

9.5 Contamination Receptors

Receptors that may be affected by potential contamination for the proposed future development are considered to be:

- Future site users (residential end use and users of open space);
- Construction/ maintenance workers;
- Surface Waters (on site culverts, on site reservoir and notably the River Irwell including ecological receptors);
- Secondary A Aquifers (Superficial deposits and bedrock);
- Future buildings and infrastructure.

9.6 Ground Contamination Risk Assessment

By considering the sources, pathways and receptors, a refined assessment of the environmental risk is made with reference to the significance and degree of the risk. This assessment is based on consideration of whether the source contamination can reach a receptor and hence whether it is of major or minor significance.

The risk assessment has been carried out by assessing the severity of the potential consequence, the sensitivity of the target and the likelihood of occurrence, based on the categories given below (Tables 9.1 to 9.3).

Table 9.1: Potential Hazard Severity Definition

Category	Definition
Severe	Acute risks to human health, catastrophic damage to buildings/property, major pollution of controlled waters
Medium	Chronic risk to human health, pollution of sensitive controlled waters, significant effects on sensitive ecosystems or species.
Mild	Pollution of non-sensitive waters, significant damage to buildings or structures
Minor	Requirement for protective equipment during site works to mitigate health effects, damage to non-sensitive ecosystems or species, minor damage to buildings or structures

The likelihood of an event (probability) takes into account both the presence of the hazard and target and the integrity of the pathway and has been assessed based on the categories given below.

Table 9.2: Probability of Risk Definition

Category	Definition
High likelihood	Pollutant linkage may be present, and risk is almost certain to occur in long term, or there is evidence of harm to the receptor
Likely	Pollutant linkage may be present, and it is probable that the risk will occur over the long term
Low likelihood	Pollutant linkage may be present, and there is a possibility of the risk occurring, although there is no certainty that it will do so
Unlikely	Pollutant linkage may be present, but the circumstances under which harm would occur are improbable

The potential severity of the risk and the probability of the risk occurring have been combined in accordance with the following matrix in order to give a level of risk for each potential hazard.

Table 9.3: Level of Risk for Potential Hazard Definition

		Potential Severity			
		Severe	Medium	Mild	Minor
Probability of Risk	High Likelihood	High	High	Moderate	Low/ Moderate
	Likely	High	Moderate	Low/Moderate	Low
	Low Likelihood	Moderate	Low/Moderate	Low	Low
	Unlikely	Low/Moderate	Low	Low	Low

9.7 Summary of Refined Risk Assessment

The risk assessments for each Zone are summarised as Tables 9.4a to 9.4e below. The risk assessment is based on the currently notified development proposals. In summary, overall, the zones pose the following risks:

- Zone 1 – **Moderate**, primarily associated the risk to future residential human health, and the River Irwell.
- Zone 2 (including Stockpiles) – **Moderate**, primarily associated the risk to future residential human health, River Irwell and inhalation of vapours.
- Zone 3 – **Low to Moderate**, primarily associated with the risk to residential future human health where Made Ground is present.

- Zone 4 – **Moderate to High**, high being associated with ground gases and moderate with future human health for both a residential and open space end use.
- Zone 5 – **Low to Moderate**, primarily associated with risk to future residential human health.

Table 9.4a - Refined Contamination Risk Assessment – Zone 1

Source	Pathway	Receptor	Severity	Probability	Risk	Comments
Elevated lead, zinc, PAHs, TPH, asbestos and potentially leachable pH and lead in the Made Ground	Dermal contact, ingestion of soil/home produce and/or inhalation of vapours or dust	Human Health – Future site users	Medium	Likely	Moderate	The risk rating is based on the identified contaminants and the likelihood that future residents would be exposed to these within mitigation. It is considered that the risk can be reduced through remediation of organic contamination and provision of a hardstanding or soil cover system.
	Leaching and lateral and vertical migration	Controlled Waters - Secondary A Aquifers	Mild	Low	Low to Moderate	The risk is based on limited potential contaminants identified in the groundwater, apart from associated with hydrocarbons as assessed below.
		Controlled Waters – River Irwell	Medium	Low	Low to Moderate	
Shallow groundwater with elevated cyanide and ammonia	Leaching and lateral and vertical migration of groundwater	Controlled Waters – River Irwell	Medium	Unlikely	Low	Although slightly elevated in groundwater from BH105, there was no significantly elevated in any surface water sample.
Shallow ground water impacted with metals and hydrocarbons	Leaching and lateral and vertical migration of groundwater	Controlled Waters – River Irwell	Medium	Low	Low to Moderate	The risk is based on the proximity of the Zone to the River Irwell and groundwater flow direction. No significant hydrocarbons were reported in the soils or in the surface water samples.
	Migration	Human Health – future water supply pipelines	Medium	Likely	Moderate	Due to the presence of hydrocarbons noted, mitigation of future pipelines is recommended to reduce the risk to low.
Ground gases and vapours	Generation and migration / accumulation of ground gases/vapours	Human Health – Future Site Users	Medium (asphyxiation)	Likely	Moderate	Elevated ground gases were not reported, although vapours may be present which would require remediation of the source or a vapour membrane for future buildings.
		Future Buildings and installations	Medium (explosion)	Likely	Moderate	

Table 9.4b - Refined Contamination Risk Assessment – Zone 2 including Stockpiles

Source	Pathway	Receptor	Severity	Probability	Risk	Comments
Elevated lead, hydrocarbons/SVOCs, asbestos, beryllium and potentially leachable pH and copper in the Made Ground. Elevated lead and asbestos in stockpiles	Dermal contact, ingestion of soil/home produce and/or inhalation of vapours or dust	Human Health – Future site users	Medium	Likely	Moderate	The risk rating is based on the identified contaminants and the likelihood that future residents would be exposed to these within mitigation. It is considered that the risk can be reduced through remediation of organic contamination and provision of a hardstanding or soil cover system. Reuse of stockpiles material would be required mitigation due to the presence of lead and asbestos.
	Leaching and lateral and vertical migration	Controlled Waters - Secondary A Aquifers	Mild	Low	Low	The risk is based on limited potential contaminants identified in the groundwater, apart from associated with hydrocarbons as assessed below.
		Controlled Waters – River Irwell	Medium	Low	Low to Moderate	
Shallow groundwater with elevated cyanide and ammonia	Leaching and lateral and vertical migration of groundwater	Controlled Waters – River Irwell	Medium	Unlikely	Low	Although slightly elevated in groundwater from DS14, there was no significantly elevated in any surface water sample.
Potential free product and shallow ground water impacted with hydrocarbons	Leaching and lateral and vertical migration of groundwater	Controlled Waters – River Irwell	Medium	Likely	Moderate	The risk is based on the potential presence of hydrocarbon free product and the proximity of the Zone to the River Irwell and groundwater flow direction. No significant hydrocarbons were reported in the surface water samples.
	Migration	Human Health – future water supply pipelines	Medium	Likely	Moderate	Due to the presence of hydrocarbons noted, mitigation of future pipelines is recommended to reduce the risk to low.
Ground gases and vapours including off site gas source	Generation and migration / accumulation of ground gases/vapours	Human Health – Future Site Users	Medium (asphyxiation)	Likely	Moderate	Elevated ground gases were not reported, although vapours may be present which would require remediation of the source or a vapour membrane for future buildings. The area may be at risk from an off site gas source (Zone 4 and off site landfills along Bealeys Goit), although none were reported during monitoring.
		Future Buildings and installations	Medium (explosion)	Likely	Moderate	

Table 9.4c - Refined Contamination Risk Assessment – Zone 3

Source	Pathway	Receptor	Severity	Probability	Risk	Comments
Elevated arsenic, lead, PAHs and asbestos in the Made Ground.	Dermal contact, ingestion of soil/home produce and/or inhalation of vapours or dust	Human Health – Future site users	Medium	Low	Low to Moderate	The risk rating is based on the identified contaminants and the likelihood that future residents would be exposed to these within mitigation. There is limited Made Ground but where Made Ground is present elevated potential contaminants occur. It is considered that the risk can be reduced through remediation of organic contamination and provision of a hardstanding or soil cover system.
	Leaching and lateral and vertical migration	Controlled Waters - Secondary A Aquifers	Mild	Low	Low	The risk is based on limited potential mobile contaminants identified in the soil and groundwater.
		Controlled Waters – River Irwell	Medium	Unlikely	Low	
Ground gases and vapours	Generation and migration / accumulation of ground gases/vapours	Human Health – Future Site Users	Medium (asphyxiation)	Low	Low to Moderate	Elevated ground gases or vapours were not reported.
		Future Buildings and installations	Medium (explosion)	Low	Low to Moderate	

Table 9.4d - Refined Contamination Risk Assessment – Zone 4

Source	Pathway	Receptor	Severity	Probability	Risk	Comments
Elevated lead and asbestos in the Made Ground.	Dermal contact, ingestion of soil/home produce and/or inhalation of vapours or dust	Human Health – Future site users	Medium	Low	Low to Moderate	The risk rating is based on the identified contaminants and the likelihood that future residents would be exposed to these within mitigation. It is considered that this area would not generally be subject to residential development; however the type and concentration of the contaminants identified could still pose a risk for public open space. Dependant on the actual use of any open space, the risk may be lower or require refinement and/or a soil cover system.
	Leaching and lateral and vertical migration	Controlled Waters - Secondary A Aquifers	Mild	Likely	Low	The risk is based on potential contaminants identified in the groundwater as assessed below.
		Controlled Waters – River Irwell	Medium	Low	Low to Moderate	
Shallow groundwater with elevated cyanide and ammonia	Leaching and lateral and vertical migration of groundwater	Controlled Waters – River Irwell	Medium	Unlikely	Low	Although slightly elevated in groundwater from DS14, there was no significantly elevated in any surface water sample.
Potential free product and shallow ground water impacted with hydrocarbons	Leaching and lateral and vertical migration of groundwater	Controlled Waters – River Irwell	Medium	Likely	Moderate	The risk is based on the potential presence of hydrocarbon free product and the proximity of the Zone to the River Irwell and groundwater flow direction. No significant hydrocarbons were reported in the surface water samples.
	Migration	Human Health – future water supply pipelines	Medium	Likely	Moderate	Due to the presence of hydrocarbons noted, mitigation of future pipelines is recommended to reduce the risk to low.
Ground gases and vapours including off site sources	Generation and migration / accumulation of ground gases/vapours	Human Health – Future Site Users	Medium (asphyxiation)	High	High	Elevated ground gases and vapours were reported, which may require remediation of the source or a vapour membrane for future buildings. Significant off site gas sources may also be present.
		Future Buildings and installations	Medium (explosion)	High	High	

Table 9.4e - Refined Contamination Risk Assessment – Zone 5

Source	Pathway	Receptor	Severity	Probability	Risk	Comments
Asbestos and potentially leachable pH in the Made Ground	Dermal contact, ingestion of soil/home produce and/or inhalation of vapours or dust	Human Health – Future site users	Medium	Low	Low to Moderate	The risk rating is based on the limited identified contaminants and the likelihood that future residents would be exposed to asbestos, which would require mitigation via hardstanding and/or a soil cover system.
	Leaching and lateral and vertical migration	Controlled Waters - Secondary A Aquifers	Mild	Likely	Low	The risk is based on limited potential contaminants identified in the groundwater.
		Controlled Waters – River Irwell	Medium	Unlikely	Low	
Shallow groundwater with elevated cyanide and ammonia	Leaching and lateral and vertical migration of groundwater	Controlled Waters – River Irwell	Medium	Unlikely	Low	Although slightly elevated in groundwater from DS14, there was no significantly elevated in any surface water sample.
Ground gases and vapours including off site gas source	Generation and migration / accumulation of ground gases/vapours	Human Health – Future Site Users	Medium (asphyxiation)	Low	Low to Moderate	The area may be at risk from an off site gas source (Zone 4), although none were reported during monitoring.
		Future Buildings and installations	Medium (explosion)	Low	Low to Moderate	

10. Geotechnical Assessment

The history of the site and the ground conditions encountered present geotechnical constraints and complexities for new developments. The following assessment is preliminary only; further investigations are likely to be necessary to enable this assessment to be refined and developers may wish to consult specialist contractors when considering feasible solutions to the site specific geotechnical conditions.

10.1 Proposed Development

The proposed development is likely to be residential and for the purposes of this assessment it has been assumed that the units will be low rise structures (e.g. not exceeding three storeys).

10.2 Geotechnical Ground Conditions Encountered

A summary of the ground conditions associated with the assessments given in Section 10.3 are provided in Table 10.1 overleaf**.**

Table 10.1 – Summary Characterisation of Encountered Ground Conditions by Zone

Zone	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
Exploratory Locations	TP101, TP102, TP103, DS01, DS02	Includes TP106, TP108, TP101, TP111, TP112, TP113, TP119, TP123, TP124, DS03, DS04, DS05, DS06, DS14	TP114, TP115, TP116, BH102, DS07, DS27	TP127, BH105, TP128, TP130, DS20, DS22	Includes P117, TP118, TP133, TP134, TP135, TP136, TP137, TP138, TP139, TP140, DS09, DS10, DS11, DS23, DS24, DS25, BH103, BH104
Made Ground	MG inclusive of brick, concrete, clinker and mudstone. Ranges from 1.6 – 3.0m (thicker by TP101 & TP102). Obstruction at 2.70m bgl in TP101 caused termination	Generally encountered up to depths of 3.0m bgl (both granular and cohesive). Described as clayey sandy angular to sub-angular gravel of brick and concrete. Locally ash, plastic, glass, metal scraps, ceramic fragments, SST, MST, tile, coal, clinker, wood, paper, wire and masonry. Ranges from GL to **2.0 – 3.6m bgl**. Largest thickness located at DS14. Premature termination of holes occurred due to obstructions while attempting to penetrate DS04 at 1.65m bgl; DS06 at 2.0m bgl and TP110 at 1.90m bgl. Further concrete hardstanding was encountered in TP108 indicating the presence of a relic buried foundation across this central position.	**Very thin** coverings of Made Ground as brick paving and of sandstone capping.	Made ground up to a depth bored in BH105 of **8.0m bgl.** Described as soft to firm slightly sandy very gravelly clay or clayey silt. On occasion, thin organic peat bands and white portions of clay were encountered. Material is extremely soft with SPT values less than 3 from 3.9m to 7.4m bgl.	Encountered in TP117 and TP115 to **1.0m and 0.2m bgl**. DS26 encountered hardstanding. Intact concrete with the inclusion of soft clays, gravel of ash, brick and clinker.
Alluvium / Organic Clay	DS01 encountered very soft clay including peat horizons from **1.6m to 2.80m bgl**	N / A	N / A	N / A	N / A

Zone	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
Exploratory Locations	TP101, TP102, TP103, DS01, DS02	Includes TP106, TP108, TP101, TP111, TP112, TP113, TP119, TP123, TP124, DS03, DS04, DS05, DS06, DS14	TP114, TP115, TP116, BH102, DS07, DS27	TP127, BH105, TP128, TP130, DS20, DS22	Includes P117, TP118, TP133, TP134, TP135, TP136, TP137, TP138, TP139, TP140, DS09, DS10, DS11, DS23, DS24, DS25, BH103, BH104
Glaciofluvial Gravels / Clays	N / A	At locations of DS03 and DS14 adjacent to River Irwell have encountered soft and very soft glacio-clays.	Sandy slightly clayey gravel and occasional bands of gravelly slightly clayey sand. Range from ground level to **1.80m to 2.80m bgl.**	Loose Sand and Gravel encountered from 8.8m bgl and proven to **9.9m bgl.**	Encountered to depths of 3.0 (not proven) and 1.7m bgl. BH103 and BH104, were sunk and encountered glaciofluvial sands and gravels to **4.4m to 4.6m bgl.** Further underlain by firm to stiff becoming very stiff tills to depth of 12.0m and 13.5m bgl.
Glacial Till	Stiff clay from **1.6m bgl** (TP103)	Encountered from depths of **2.0m to 3.6m bgl**. GT described as firm becoming stiff slightly sandy gravelly clay, underlain by clayey gravel. Stiffer clays are encountered from 2.30m bgl at TP113 depth not proven.	BH2 identifies firm becoming stiff very sandy clay. Probeholes encounter soft to firm clays from **1.8m to 4.3m bgl** becoming firm with depth to 5.9m bgl. Medium dense slightly clayey sand from 2.10m bgl to 2.80m bgl to 5.90m bgl to 8.20m bgl.	Stiff gravelly clay to c.13.40m bgl.	DS09 & DS011 encountered soft clay to **0.6m bgl to 0.9m bgl. To 2.6m bgl to 3.5m bgl.** Firm to stiff becoming very stiff tills to depth of **12.0 & 13.5m bgl.**
Solid Mudstone	Weathered mudstone noted at **2.7m bgl** (TP103) Sandy sub-angular to rounded fine to coarse GRAVEL from 2.80 in DS01.	N / A	laminated mudstone competent from a depth of 9.8m bgl. A completely weathered mudstone silty clay matrix from **8.2m bgl** is reported in BH102.		From review BH103 appears to have encountered completely weathered mudstone from **12.60m to 14.80m bgl** (not proven). BH104 has encountered grey mudstone at **13.50m bgl** indicated to be competent upon review of SPT penetration and refusal of test.

10.3 Foundations

10.3.1 Zone 1

Standard shallow strip footings are not appropriate for this zone. Trench fill footings may be feasible in some areas of the zone, where competent soils lie relatively close to surface, but short term stability of open trenches through granular Made Ground deposits may be an issue. Vibro stone or concrete columns could be feasible in some areas, e.g. where Made Ground and/or soft natural soils extend to more than 2 to 3m depth. In places, the Made Ground contains cobble sized or possibly larger particles that may impede the installation of columns. Piles may be a more robust solution, though they would be relatively short, or not warranted at all, in some parts of the zone.

10.3.2 Zone 2

Over this large zone, Made Ground of differing makeup, consistency and thickness has been identified.

A key geotechnical constraint highlighted on the Drawing A090070-193 008 is the presence of relic foundations or other obstructions, noted on the exploratory hole records as:

- BH101 – EOH at 2.00m bgl – Terminated due to Obstruction.
- BH101A – EOH at 3.00m bgl – Terminated due to Obstruction.
- DS04 – EOH at 1.65m bgl – Terminated due to below Ground Obstruction.
- DS05 – EOH at 2.85m bgl – Terminated due to Refusal.
- DS06 – EOH at 2.00m bgl – Terminated due to Obstruction.
- TP110 – 1.90m bgl - Made Ground: Concrete Foundation.

The in-ground obstructions prevented the exploratory holes from proving suitably competent natural ground and this has constrained the geotechnical assessment for this zone.

Standard shallow strip footings and trench fill footings are not likely to be appropriate for this zone. As with Zone 1, vibro stone or concrete columns may be feasible for some areas but difficulties may be experienced with their installation due to the density of in-ground obstructions. Piles may be a more robust solution for this zone more generally, although pre-boring may be needed at some pile positions to clear obstructions, or some pile positions may have to be moved. Alternatively, a general turn-over of the Made Ground and removal of significant obstructions may be considered, as this would enable

the Made Ground to be re-engineered (subject to any necessary remediation of unacceptable contamination) to a standard whereby solutions other than piles could be considered.

10.3.3 Zone 3

This zone is characterised by a thinner cover of Made Ground and the presence of sandy gravel at relatively shallow depth. Conventional shallow strip footings, stepped down where necessary to reach a suitable competent bearing layer, are likely to be feasible in this zone.

10.3.4 Zone 4

Development of residential units in this zone may not be possible for other than geotechnical reasons. However, if development solutions can be found for this zone, piles are likely to be the only feasible foundation solution.

10.3.5 Zone 5

For the purposes of a geotechnical review Zone 5 can be split into the following sub zones:

West of Cricket Ground

Exploratory boreholes include DS09, DS10HP, DS11 and DS26 along with trial excavations of TP117 and TP118. From a review of this information it may be likely that trench fill techniques may be employed as a suitable foundation solution. With stiff clay encountered at 1.7m bgl in TP118 and coarse sand and mudstone / sandstone gravel to 1.40m bgl.

However, if low density sands are encountered it may prove more appropriate to stone columns to lengths of 3 to 4m long.

East of Cricket Ground

From a review, of BH103 and BH104 it is likely that a deep trench fill solutions will be suitable with slightly clayey fine to coarse sand and gravel encountered from 2.4m and 2.9m bgl respectively. Through filling up with lean concrete mix to 1.0m bgl (Conventional depth).

South of Cricket Ground

The existing reservoir is understood to be retained as part of the development. No new construction will occur in this area.

10.4 Floor Slabs

Floor slab arrangements may be dependent on other factors such a requirement for ground gas/vapour protection. However, suspended slabs may be required due to the thickness of Made Ground that typically covers the site. Ground bearing slabs are more likely to be feasible within Zone 3, or for other areas where the Made Ground has been turned over and re-engineered. The requirements of organisations such as NHBC should be followed.

10.5 Pavements

In-situ CBR or Plate Load testing is recommended for a more detailed assessment of pavement foundation conditions. Currently, some exploratory holes encountered soft clay at shallow depth and low CBR values (estimated as 3% or less) may apply for this situation. It is possible that some means of subgrade improvement may be needed for such areas. However, the majority of the site may be underlain at shallow depth by granular materials. Higher CBR values are likely to apply for this condition and, subject to suitable preparation of the subgrade (by proof rolling, removal of unacceptable material and soft spots etc.) conventional pavement construction may be feasible for the most part.

10.6 Temporary Excavations and Groundwater

Groundwater was encountered at a variety of depths including within 1m of ground level. At the levels recorded, groundwater is likely to be a de-stabilising factor for excavations carried out through the granular Made Ground and natural soils. Appropriate measures should be considered for controlling water ingress into excavations and for maintaining their stability.

10.7 Soakaway Viability

To date, soakaway testing has not been carried out due to the stage of proposed development design. In-situ tests should be conducted to confirm the feasibility of soakaways for surface water management. Where the Made Ground or natural soils at shallow depth are predominantly granular, soakaways may be a feasible solution. However, the use of soakaways will increase infiltration and this may result in increased mobility of certain in-ground contaminants. This should be carefully evaluated before a decision to use soakaways is taken.

10.8 Sub-Surface Concrete

The sulphate concentrations and pH values recorded within the Made Ground and natural ground for soil and groundwater results are detailed below. These have been used to determine the Aggressive Chemical Environment for Concrete classification in accordance with BRE Special Digest 1 (2005).

10.8.1 Zone 1 – Former Wilton Mill

Table 10.3 Sulphate and pH concentrations

Stratum	Type	No. of tests	pH	Characteristic pH	Sulphate (mg/l)	Characteristic Sulphate Value (mg/l)
Made Ground	2:1 Water/Soil Extract	11	7.7-12.19	8.01	5.0-192	200*
Natural Ground Groundwater	Sulphate	1	7.34	7.34	121.3	100*

*rounded to the nearest 100mg/l

In accordance with BRE Special Digest 1 (2005), the above results indicate a design classification of DS-1 and an ACEC class of AC-1 for the Made Ground and Groundwater below the proposed Zone 1 development area.

10.8.2 Zone 2 – Former Paper Mill

Table 10.4 Sulphate and pH concentrations

Stratum	Type	No. of tests	pH	Characteristic pH	Sulphate (mg/l)	Characteristic Sulphate Value (mg/l)
Made Ground	2:1 Water/Soil Extract	28	7.73-11.61	7.90	14.1-410.1	300*
Natural Ground Groundwater	Sulphate	1	7.54	7.54	195.6	200*

*rounded to the nearest 100mg/l

In accordance with BRE Special Digest 1 (2005), the above results indicate a design classification of DS-1 and an ACEC class of AC-1 for the Made Ground and Groundwater below the proposed Zone 2 development area.

10.8.3 Zone 3 – Land North of Church Street

Table 10.5 Sulphate and pH concentrations

Stratum	Type	No. of tests	pH	Characteristic pH	Sulphate (mg/l)	Characteristic Sulphate Value (mg/l)
Made Ground	2:1 Water/Soil Extract	6	6.55-7.88	6.55	6.4-70.6	100*
Natural Ground	2:1 Water/Soil Extract	10	7.03-8.32	7.10	3-32	100*
Natural Ground Groundwater	Sulphate	1	7.47	7..47	75.1	100*

*rounded to the nearest 100mg/l

In accordance with BRE Special Digest 1 (2005), the above results indicate a design classification of DS-1 and an ACEC class of AC-1 for the Made Ground, Natural Ground and Groundwater below the proposed Zone 3 development area.

10.8.4 Zone 4 – CHP and Boiler House Landfill

Table 10.6 Sulphate and pH concentrations

Stratum	Type	No. of tests	pH	Characteristic pH	Sulphate (mg/l)	Characteristic Sulphate Value (mg/l)
Made Ground	2:1 Water/Soil Extract	14	7.38-8.77	7.54	12.5-620	400*
Natural Ground Groundwater	Sulphate	1	8.75	8.75	26.9	100*

*rounded to the nearest 100mg/l

In accordance with BRE Special Digest 1 (2005), the above results indicate a design classification of DS-1 and an ACEC class of AC-1 for the Made Ground and Groundwater below the proposed Zone 4 development area.

10.8.5 Zone 5 – Former Reservoirs

Table 10.7 Sulphate and pH concentrations

Stratum	Type	No. of tests	pH	Characteristic pH	Sulphate (mg/l)	Characteristic Sulphate Value (mg/l)
Made Ground	2:1 Water/Soil Extract	19	4.43-10.91	5.26	1.5-425.2	400*
Natural Ground	2:1 Water/Soil Extract	9	4.5-8.21	5.36	9-349	300*
Natural Ground Groundwater	Sulphate	2	7.09-7.31	7.2	51.7-127.9	100*

*rounded to the nearest 100mg/l

In accordance with BRE Special Digest 1 (2005), the above results indicate a design classification of DS-1 and an ACEC class of AC-3z for the Made Ground, Natural Ground and Groundwater below the proposed Zone 5 development area.

11. Conclusions, Recommendations and Development Constraints

11.1.1 Conclusions and Recommendations

Overall, the site poses a **low to moderate** risk to most receptors, with a **moderate** risk to future human health and a **high** risk associated with ground gases in the southeast (Zone 4).

A moderate risk associate with in-ground potential contaminants including metals, organic contamination and asbestos) were associated with the Made Ground to varying extents across the majority of the southern part of the site. It is considered that overall, a moderate risk is posed to future residential end users which would require mitigation of hardstanding and/or a soil cover system to reduce the risk to low. Dependant on the use of Zone 5, a soil cover system for public open space may also be required.

Hydrocarbon contamination of soils and potentially shallow groundwater in Zones 1, 2 and 4 poses a moderate risk to the River Irwell. Remediation is required to lower the risk posed. In addition, the risk to future residents from vapours should be mitigated.

The majority of the site has been classified as Green (NHBC) and new buildings would not require mitigation measures subject to Local Authority approval; however, due to the potential risk from off site gas sources, it is recommended that DPM are at least 2000g (lapped and tapped) with the provision of the gas vent trench in the southeast associated with the risk from the Tower Farm Landfill.

Significantly elevated ground gases were reported in Zone 4, which would pose a high risk and preclude development of residential properties. Should this area be proposed as open space, it may require passive venting dependant on the location of the gas trench to address the on site landfill source.

Overall, it is considered that the site is suitable for residential development subject to remediation/mitigation:

- Remediation of hydrocarbons and potentially use of a vapour membrane in future structures as required in specific zones.
- Soil cover system for residential gardens and areas of landscaping/open space.
- Residential building DPM should be 2000g DPM lapped and tapped.

- A ground gas/leachate cut off trench and possibly some passive gas vents should be constructed in the southwest of the associated with the off-site landfill sources and on site landfill source (Boiler landfill – Zone 4).

- New potable water supplies would require mitigation.

Details of the above should be included in a remediation strategy to discharge anticipated land contamination planning conditions.

This report should be submitted to the Local Planning Authority for onward transmission to the Contaminated Land Officer and the Environment Agency.

The recommended foundation solutions for Zone 3 would be conventional shallow strip footings, Zones 1, 2 and 5 possible trench fill, vibro stone or concrete columns and Zone 4 piles. Foundation solutions are constrained by Made Ground, soft natural soils and in-ground obstructions etc. Due to the presence of former in ground structures in Zone 2, a site turnover and re-engineering could be undertaken. Excavations may need temporary support with provision for groundwater management. In accordance with BRE Special Digest 1 (2005), a design classification for concrete of DS-1 and an ACEC class of AC-1 for the Made Ground and Natural Ground has been derived with an ACEC class of AC-3z in Zone 5.

In order to discharge additional contaminated land planning conditions linked with the planning application for the development, completion of a Remediation Strategy and Validation Report will be required.

11.1.2 Refined Development Constraints

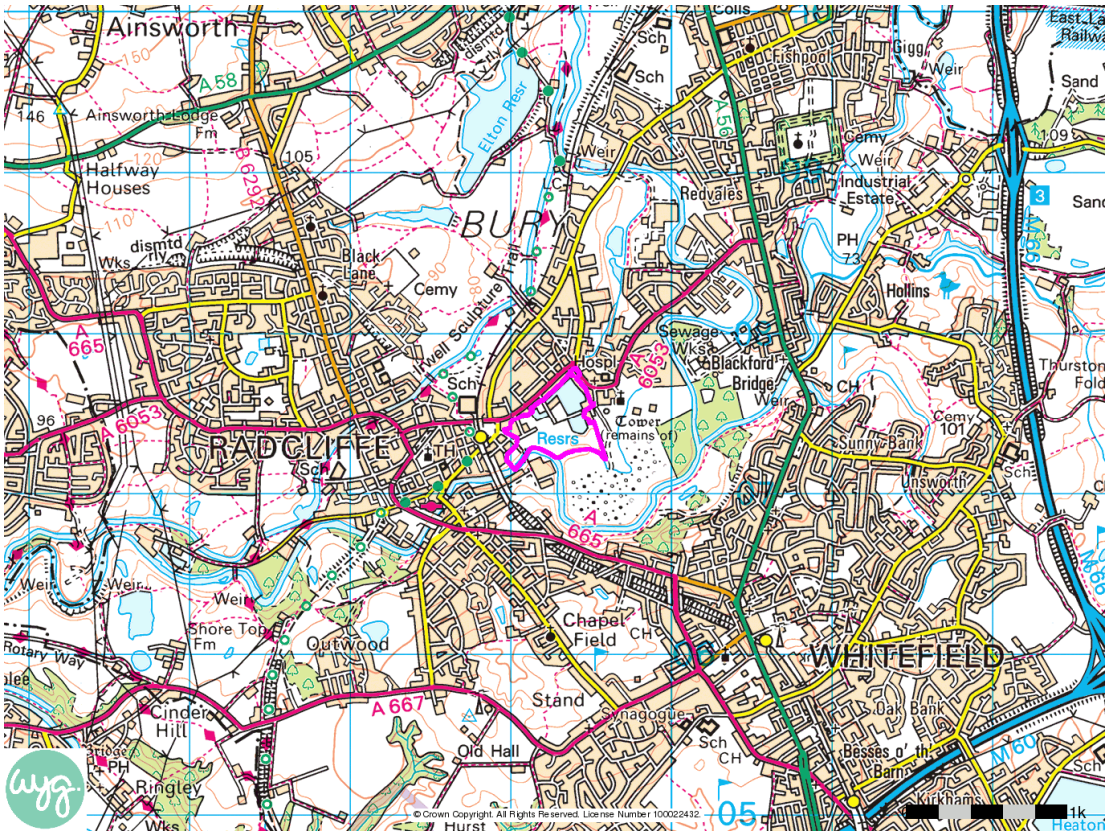
The following potential development constraints have been refined:

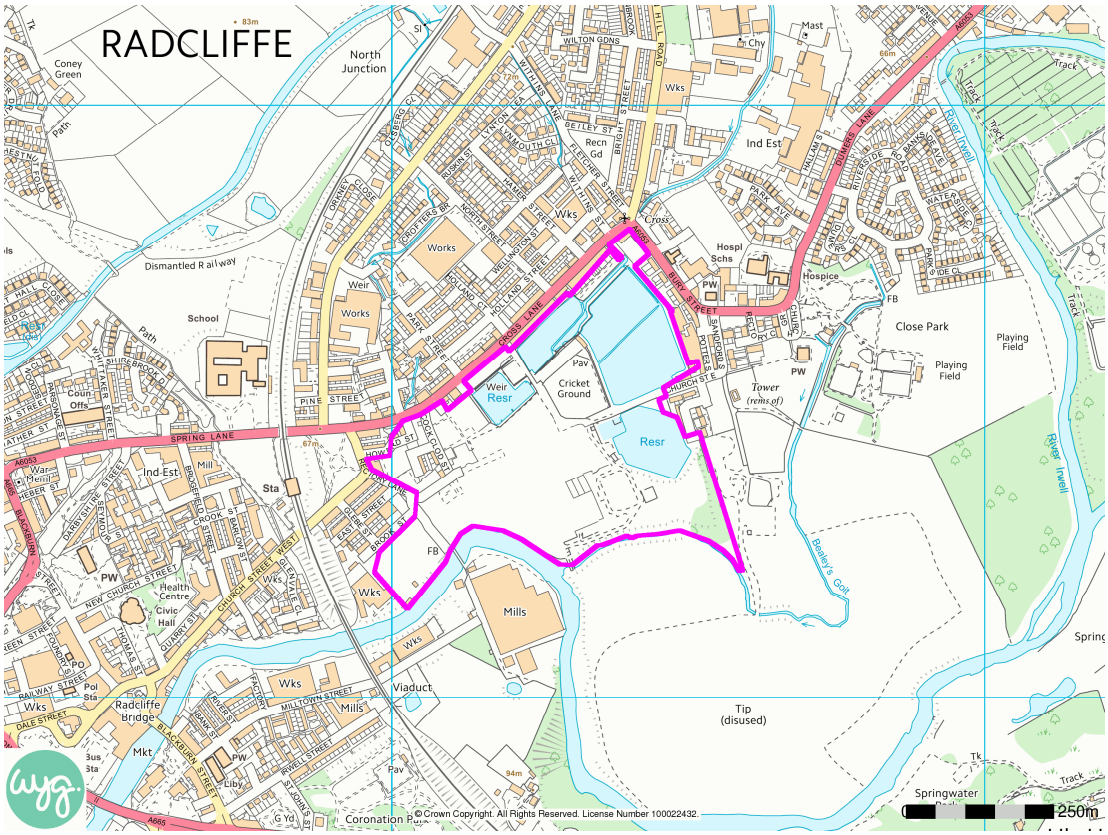
- Requirement for gas/leachate trench/collection system associated with off-site landfill.
- Limited potential for residential development in Zone 4 due to ground gases, potential planning restrictions in the vicinity of a landfill and easement from any installed gas system.
- Soil cover system for residential/open space development required across the southern part of the site (Zones 1, 2 and 4) and potentially where Made Ground is present in the northwest (Zone 3).
- Upgrade of DPM including vapour resistance in Zones 1 and 2 as required.
- Remediation of hydrocarbon contamination of soils and groundwater in Zones 1 and 2.
- Presence of in-ground asbestos across the majority of the Made Ground.
- Significant thickness of Made Ground and landfilling in places.

- Likely presence of existing foundations / slabs and other below ground structures.
- Possible shallow groundwater table with loose and soft clays, notably towards the south of the site adjacent to the River Irwell.
- Abnormal foundation solutions for each zone are as detailed in Section 10.3. Inclusive of trench fill, stone columns, piles and/or re-engineered ground where deemed necessary dependant on Zone.
- Aggressive ground conditions for concrete in Zone 5.
- The Mersey Valley Sludge Pipelines (Current and redundant).
- Existing culverts (Hutchinson's Goit and Crow Tree Farm Brook) crossing the site.
- Development easement associated with The River Irwell retaining wall and flood alleviation.
- Areas of existing building infrastructure (including Cross Mill)
- Areas of stockpiled waste (contain asbestos and elevated lead) associated within historical groundwork at the site.
- Two unidentified wells which need locating and decommissioning (dependant on masterplan).
- Potential for waste excavated soils to attract a premium for disposal due to presence of asbestos, hydrocarbons and organic content.

A Revised development Constraints Plan based on the ground investigation findings is included as Figure 008.

Drawings





Key: Site Boundary

Quay West at MediaCity UK
Trafford Wharf Road
Salford Quays
Manchester M17 1HH

Tel: 0161 872 3223
Fax: 0161 872 3192
E-mail enquiries @wyg.com

Environmental Consultancy
Ground Technologies & Investigation

Project: East Lancashire Paper Mill

Client: Homes and Communities Agency

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Figure 1 – Site Location Plan

Project No: A090070-193

Date: June 2017

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N

WORKS
SW3 (Upstream River Irwell)
TP136
TP138
TP135
DS25
TP137
TP139
TP134
DS10HP
DS24
HP03
STANDING WATER
HP06
DS26
BH104
TP140
TP133
TP117
CRICKET GROUND
DS23
DS11
DS09
BH103
TP118
TP115
BH102
TP116
DS27
TP114
RESERVOIR
TP123
SW4 (Onsite Reservoir)
HP07
DS07
TP13
TP119
TP124
HP08
BH101A
TP121
DS06
BH101
TP112
SP04
BH105
HP03
DS22
TP108
SP06
TP120
TP128
DS17
TP127
SP05
TP111
TP130
TP106
SP03
DS03
DS04
STANDING WATER
SP01
SP02
TP110
HP04
DS20
DS05
DS14
TP103
DS02
RIVER IRWELL
SW6 (Crow Tree Farm Brook Outfall)
SW5 (Downstream Hutchinsons Goit Outfall (Assumed))
DS01
TP102
SW1 (Upstream River Irwell)
TP101
SW2 (Downstream River Irwell)
UPSTREAM
DOWNSTREAM

0 12.5 25 37.5 50 62.5 m
SCALE 1:1250

KEY

SITE BOUNDARY

AREAS OF NO INTRUSIVE ACCESS INCLUDING:
- ON-SITE RESERVOIR
- STANDING WATER
- DENSE VEGETATION
- CRICKET FACILITY
- SLUDGE PIPELINE
- BUILDINGS / ROADWAYS / UTILITIES

ZONES

ZONE 1: FORMER WITTON MILL

ZONE 2: FORMER PAPER MILL BUILDING

ZONE 3: LAND NORTH OF CHURCH STREET

ZONE 4: CMP & BOILER HOUSE LANDFILL

ZONE 5: FORMER RESERVOIRS

WYG SITE INVESTIGATION

CABLE PERCUSSION BOREHOLE

WINDOW SAMPLE

TRIAL PIT

STOCKPILE SAMPLE

HAND PIT

SURFACE WATER SAMPLE

REV	DESCRIPTION	BY	CHK	APP	DATE

Client:

HOMES & COMMUNITIES AGENCY

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e-mail: enviro@wyg.com

Project: A090070-193

EAST LANCASHIRE PAPER MILL, PHASE 2 GEO-ENVIRONMENTAL GROUND INVESTIGATION

Drawing Title:

EXPLORATORY HOLE LOCATION PLAN

Scale @ A1	Drawn	Date	Checked	Date	Approved	Date
1:1,250	CM	JUNE 17	DB	15.06.17	KE	15.06.17

Project No.	Office	Type	Drawing No.	Revision
A090070-193	MAN	N	002	

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N

WORKS

STANDING WATER

CRICKET GROUND

RESERVOIR

STANDING WATER

Exploratory Hole Reference	Description
DS26	Ash Fill Throughout. PID - 11.4ppm (1.9m), PID - 12.4ppm (2.8m), PID - 11.4ppm (2.8m), PID - 13.2ppm (3.3m), PID - 10.2ppm (4.0m)

Exploratory Hole Reference	Description
HP05	Plastic Deposits

Exploratory Hole Reference	Description
TP117	Black Staining

Exploratory Hole Reference	Description
HP06	Ash & Glass Deposits

Exploratory Hole Reference	Description
TP118	Black Staining

Exploratory Hole Reference	Description
TP124	Ash, Clinker & Glass Deposits

Exploratory Hole Reference	Description
TP119	Black Staining
	Metal, Pottery & Coal Deposits

Exploratory Hole Reference	Description
TP113	Hydrocarbon Odours

Exploratory Hole Reference	Description
TP121	Glass & Metal Deposits

Exploratory Hole Reference	Description
BH101A	Glass & Metal Deposits

Exploratory Hole Reference	Description
HP07	Ash, Glass & Coal Deposits

Exploratory Hole Reference	Description
HP08	Glass & Coal Deposits

Exploratory Hole Reference	Description
DS06	Timber Deposits

Exploratory Hole Reference	Description
TP108	Glass, Plastic, Timber & Metal Deposits. PID - 10.0ppm (0.4m)

Exploratory Hole Reference	Description
TP106	White Paper Waste

Exploratory Hole Reference	Description
DS03	Ash Waste, Plastic & Glass Deposits

Exploratory Hole Reference	Description
DS04	Glass & Metal Deposits

Exploratory Hole Reference	Description
TP103	Ash

Exploratory Hole Reference	Description
DS02	Ash & Coal Deposits

Exploratory Hole Reference	Description
TP102	White Paper Waste
	Ash

Exploratory Hole Reference	Description
DS01	Paper Waste

Exploratory Hole Reference	Description
TP101	Kiln Waste, Ash Waste & Coal Deposits

Exploratory Hole Reference	Description
TP110	Hydrocarbon Sheen. PID - 18.0ppm (1.8m)

Exploratory Hole Reference	Description
DS05	Tile & Coal Deposits

Exploratory Hole Reference	Description
TP111	Ash/Clinker & Metal Deposits. PID - 18.0ppm (0.4m), PID - 38.0ppm (0.5m), PID - 56.0ppm (1.5m)

Exploratory Hole Reference	Description
DS14	Ash & Coal Deposits. PID - 11.4ppm (3.7m)

Exploratory Hole Reference	Description
BH101	Glass & Metal Deposits

Exploratory Hole Reference	Description
TP120	Hydrocarbon Odours
	Pottery, Metal, Glass, Plastic & Coal Deposits

Exploratory Hole Reference	Description
TP138	Black Staining

Exploratory Hole Reference	Description
TP137	Black Staining

Exploratory Hole Reference	Description
TP139	Black Staining

Exploratory Hole Reference	Description
TP134	Black Staining

Exploratory Hole Reference	Description
TP133	Black Staining

Exploratory Hole Reference	Description
BH103	Glass & Metal Deposits

Exploratory Hole Reference	Description
TP123	White Paper Waste
	Ash/Clinker & Glass Deposits

Exploratory Hole Reference	Description
TP127	White Paper Waste
	Ash, Clinker & Coal Deposits

Exploratory Hole Reference	Description
BH105	Paper Waste, Timber & Glass Deposits

Exploratory Hole Reference	Description
TP128	Ash Deposits Throughout

Exploratory Hole Reference	Description
DS22	Paper Waste Throughout
	Ash & Tile Deposits

Exploratory Hole Reference	Description
HP03	Glass & Coal Deposits

Exploratory Hole Reference	Description
DS17	Paper Waste & Metal Deposits. PID - 12.2ppm (0.8m), PID - 15.3ppm (1.6m), PID - 14.3ppm (2.0m), PID - 16.8ppm (2.5m), PID - 12.3ppm (2.7m), PID - 16.9ppm (3.8m),

Exploratory Hole Reference	Description
DS20	Black Silts Throughout. PID - 13.8ppm (2.5m)

Exploratory Hole Reference	Description
TP130	Coal, Timber & Metal Deposits

Exploratory Hole Reference	Description
HP04	Timber, Coal & Metal Deposits

0 12.5 25 37.5 50 62.5 m

SCALE 1:1250

KEY

SITE BOUNDARY

AREAS OF NO INTRUSIVE ACCESS INCLUDING:
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WYG SITE INVESTIGATION

CABLE PERCUSSION BOREHOLE

WINDOW SAMPLE

TRIAL PIT

STOCKPILE SAMPLE

HAND PIT

SURFACE WATER SAMPLE

VISUAL & OLFACTORY EVIDENCE OF CONTAMINATION

HYDROCARBONS

PAPER WASTE

ASH / CLINKER DEPOSITS & OTHER POTENTIAL CONTAMINANTS

REV	DESCRIPTION	BY	CHK	APP	DATE

Client:

HOMES & COMMUNITIES AGENCY

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Project: A090070-193

EAST LANCASHIRE PAPER MILL, PHASE 2 GEO-ENVIRONMENTAL GROUND INVESTIGATION

Drawing Title:

VISUAL & OLFACTORY EVIDENCE OF CONTAMINATION

Scale @ A1	Drawn Date	Checked Date	Approved Date
1:1,250	CM JUNE 17	DB 15.06.17	KE 15.0617

Project No.	Office	Type	Drawing No.	Revision
A090070-193	MAN	N	003	

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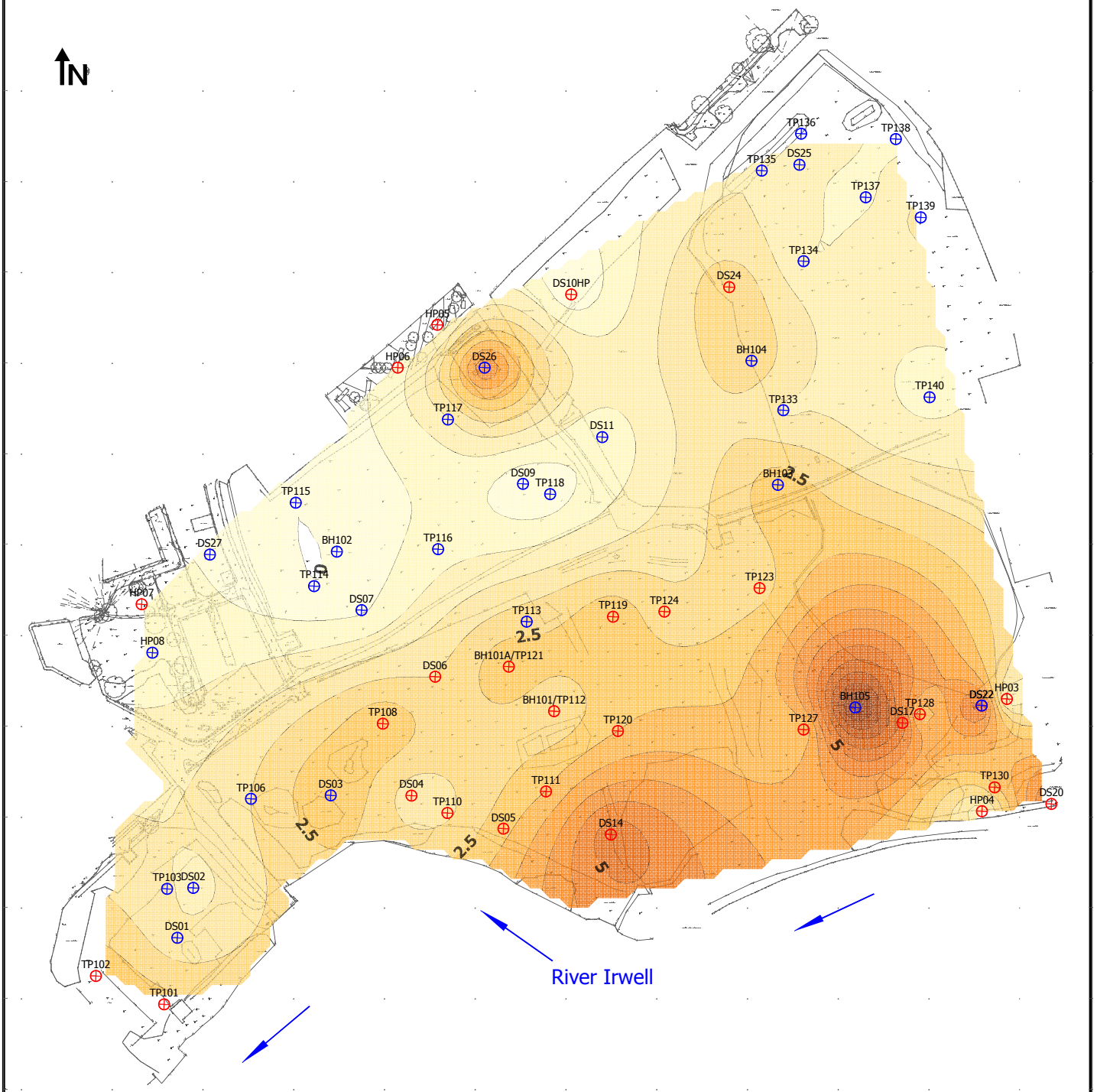
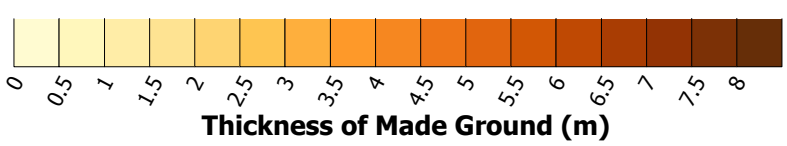
Figure 004 - Thickness of Made Ground





Boreholes where the extent of Made Ground was proven:

Boreholes where the extent of Made Ground was NOT proven:

Project: East Lancashire Paper Mill

Project Number: A090070-193

Client: Homes & Communities Agency

Produced using Surfer (version 8) - Kriging method.

WYG Environment
GrayWestonMediaCity.uk
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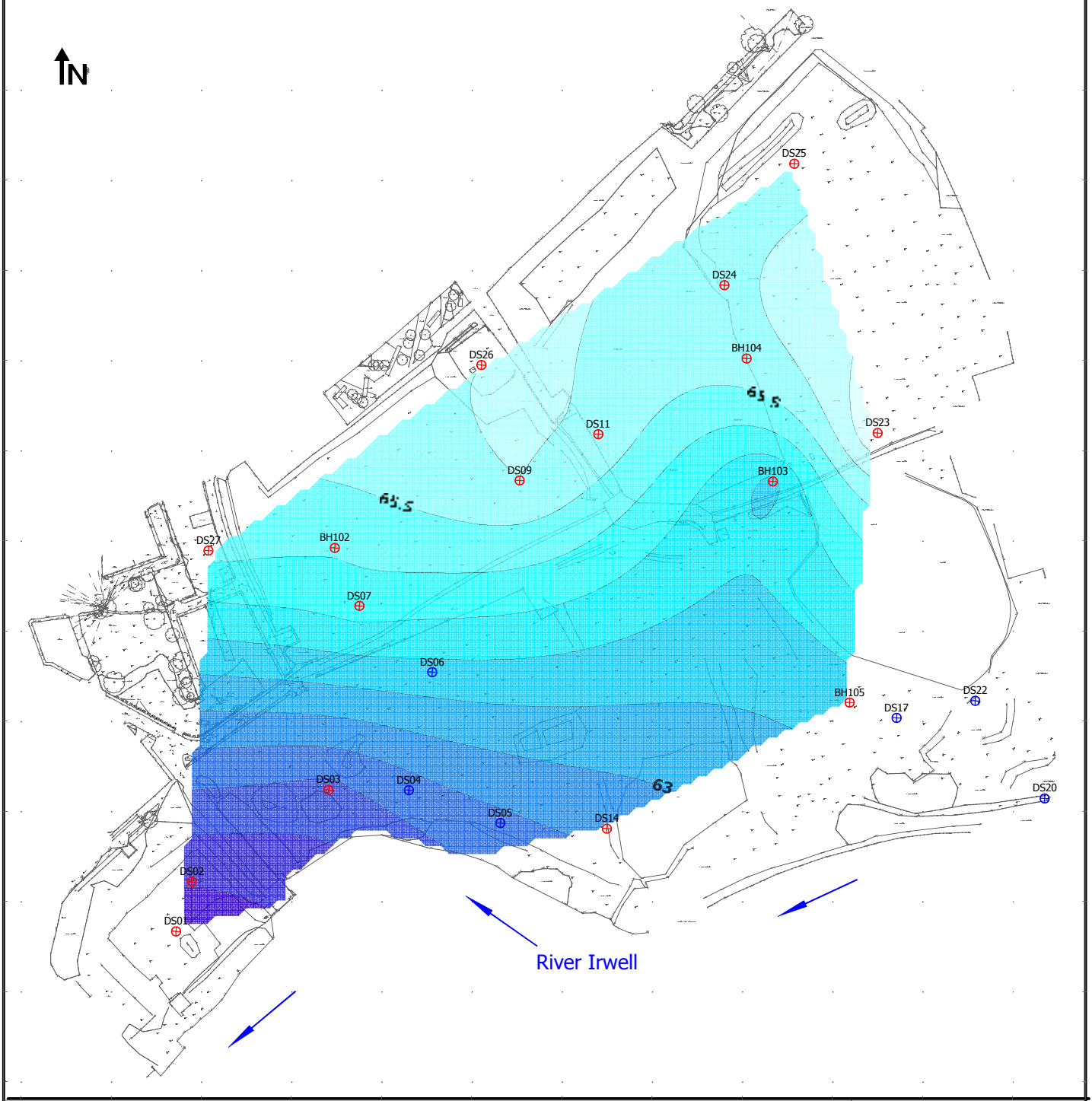
Drawing 005a - Groundwater Levels: Visit 1



67 66.5 66 65.5 65 64.5 64 63.5 63 62.5 62 61.5 61 60.5

Groundwater Elevation (mAOD)

Note:

Boreholes indicated as ⊕ highlight locations where the response zone is above the water table.

Project: East Lancashire Paper Mill

Project Number: A090070-193

Client: Homes & Communities Agency

Produced using Surfer (version 8) - Kriging method.

Boreholes providing source data indicated by: ⊕

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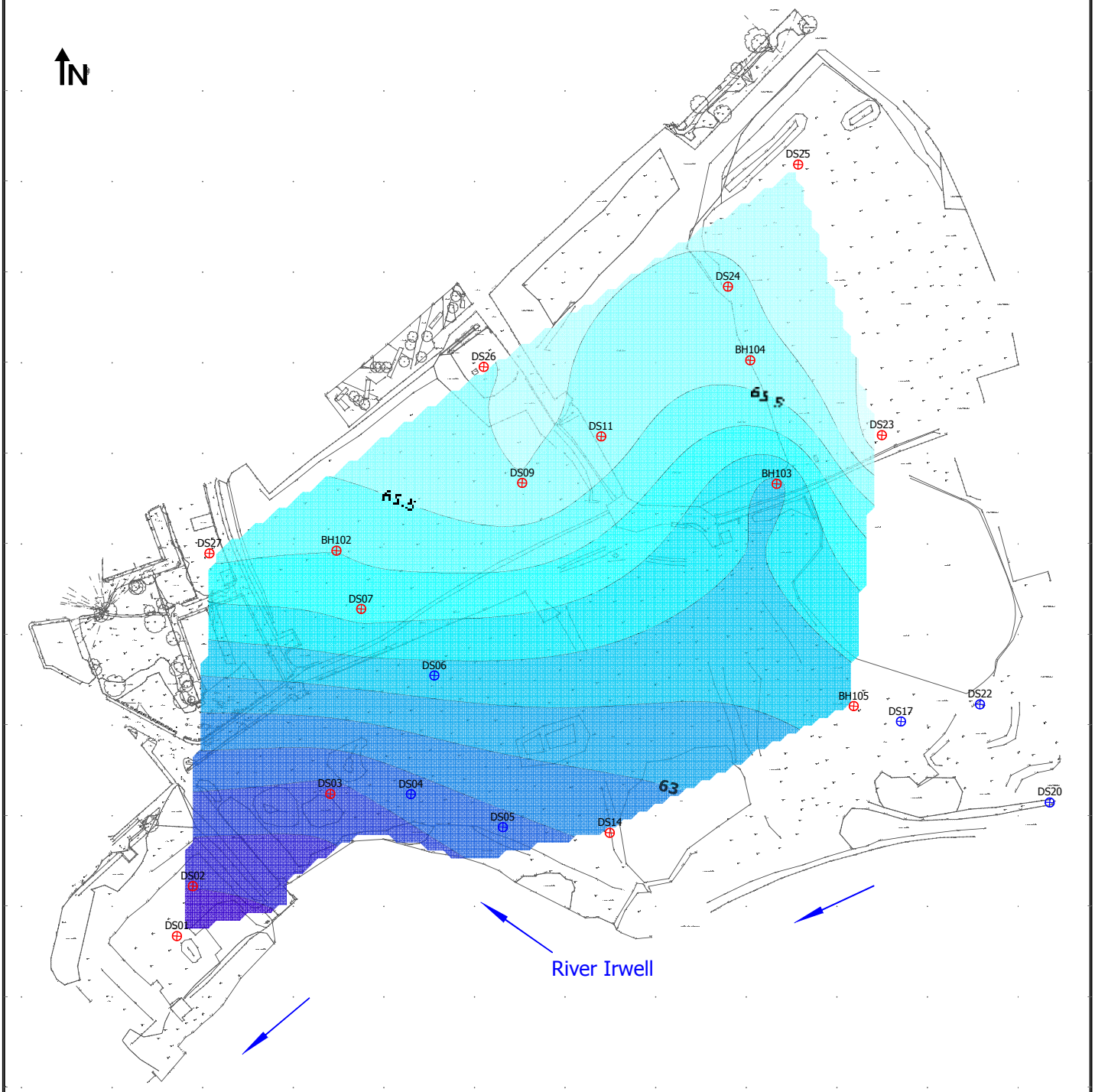
Drawing 005b - Groundwater Levels: Visit 2



67 66.5 66 65.5 65 64.5 64 63.5 63 62.5 62 61.5 61 60.5

Groundwater Elevation (mAOD)

Note:

Boreholes indicated as ⊕ highlight locations where the response zone is above the water table.

Project: East Lancashire Paper Mill

Project Number: A090070-193

Client: Homes & Communities Agency

Produced using Surfer (version 8) - Kriging method.

Boreholes providing source data indicated by: ⊕

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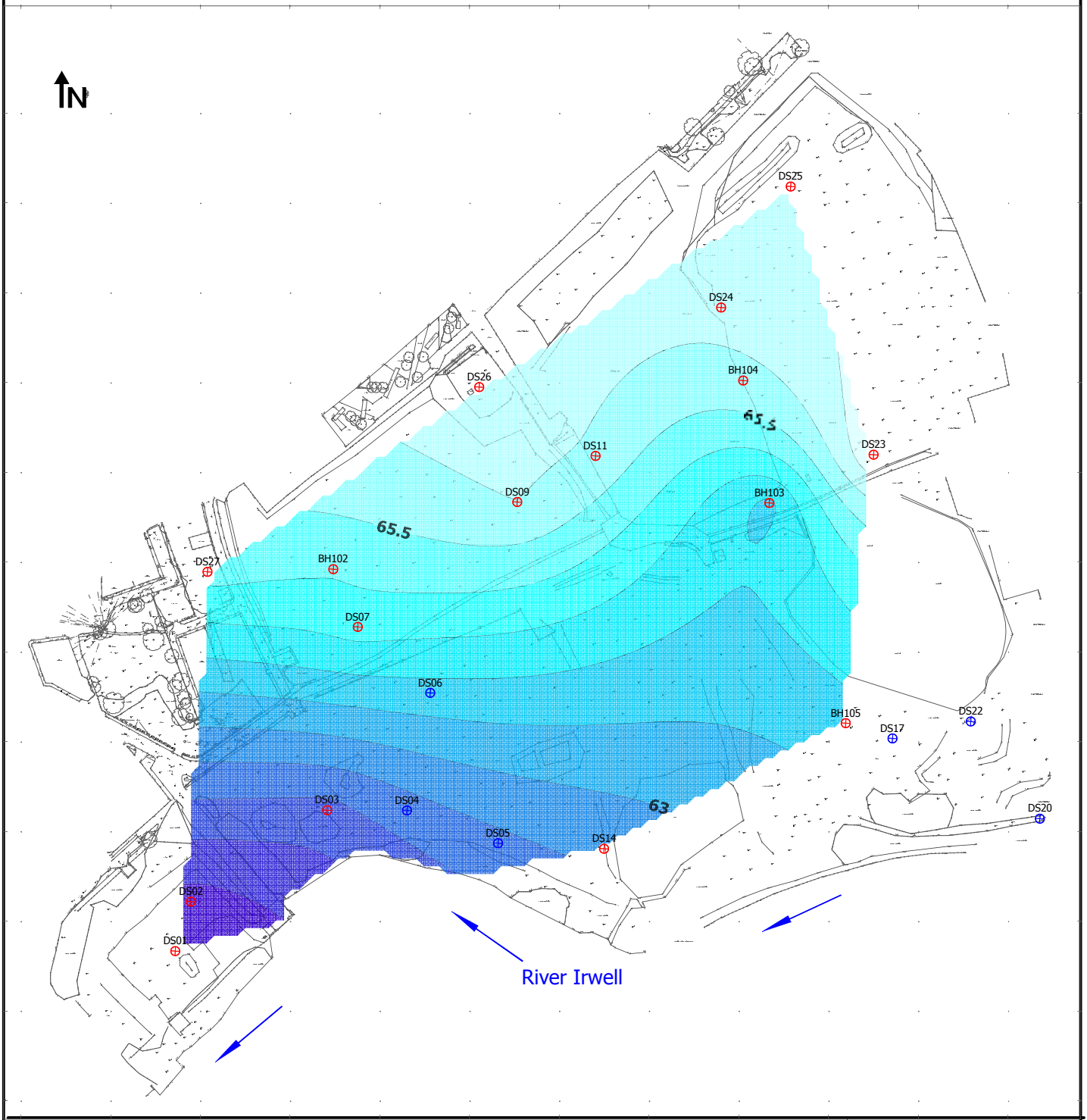
Drawing 005c - Groundwater Levels: Visit 3



67 66.5 66 65.5 65 64.5 64 63.5 63 62.5 62 61.5 61 60.5

Groundwater Elevation (mAOD)

Note:

Boreholes indicated as ⊕ highlight locations where the response zone is above the water table.

Project: East Lancashire Paper Mill

Project Number: A090070-193

Client: Homes & Communities Agency

Produced using Surfer (version 8) - Kriging method.

Boreholes providing source data indicated by: ⊕

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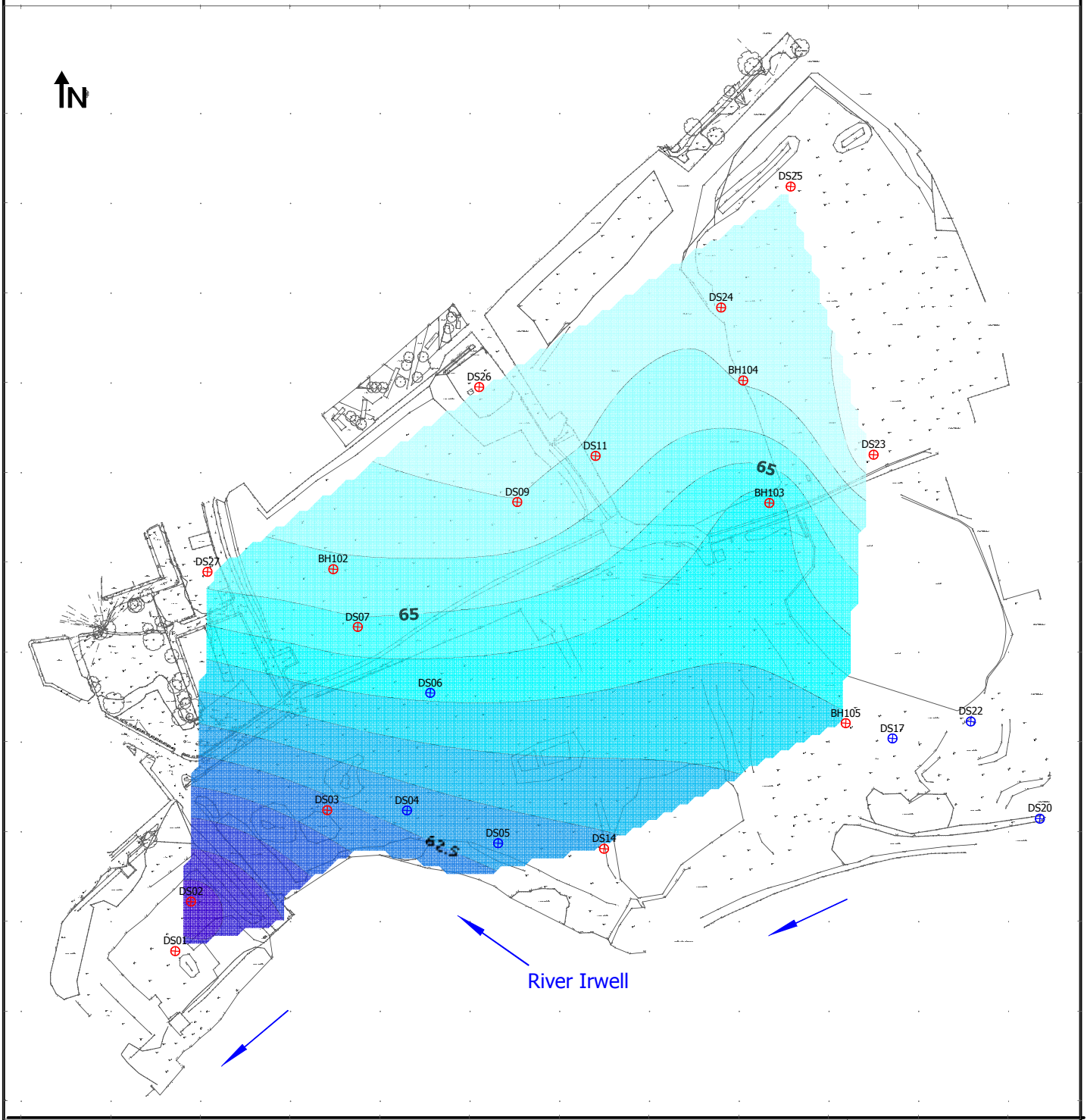
Drawing 005d - Groundwater Levels: Visit 4



67 66.5 66 65.5 65 64.5 64 63.5 63 62.5 62 61.5 61 60.5 60

Groundwater Elevation (mAOD)

Note:

Boreholes indicated as ⊕ highlight locations where the response zone is above the water table.

Project: East Lancashire Paper Mill

Project Number: A090070-193

Client: Homes & Communities Agency

Produced using Surfer (version 8) - Kriging method.

Boreholes providing source data indicated by: ⊕

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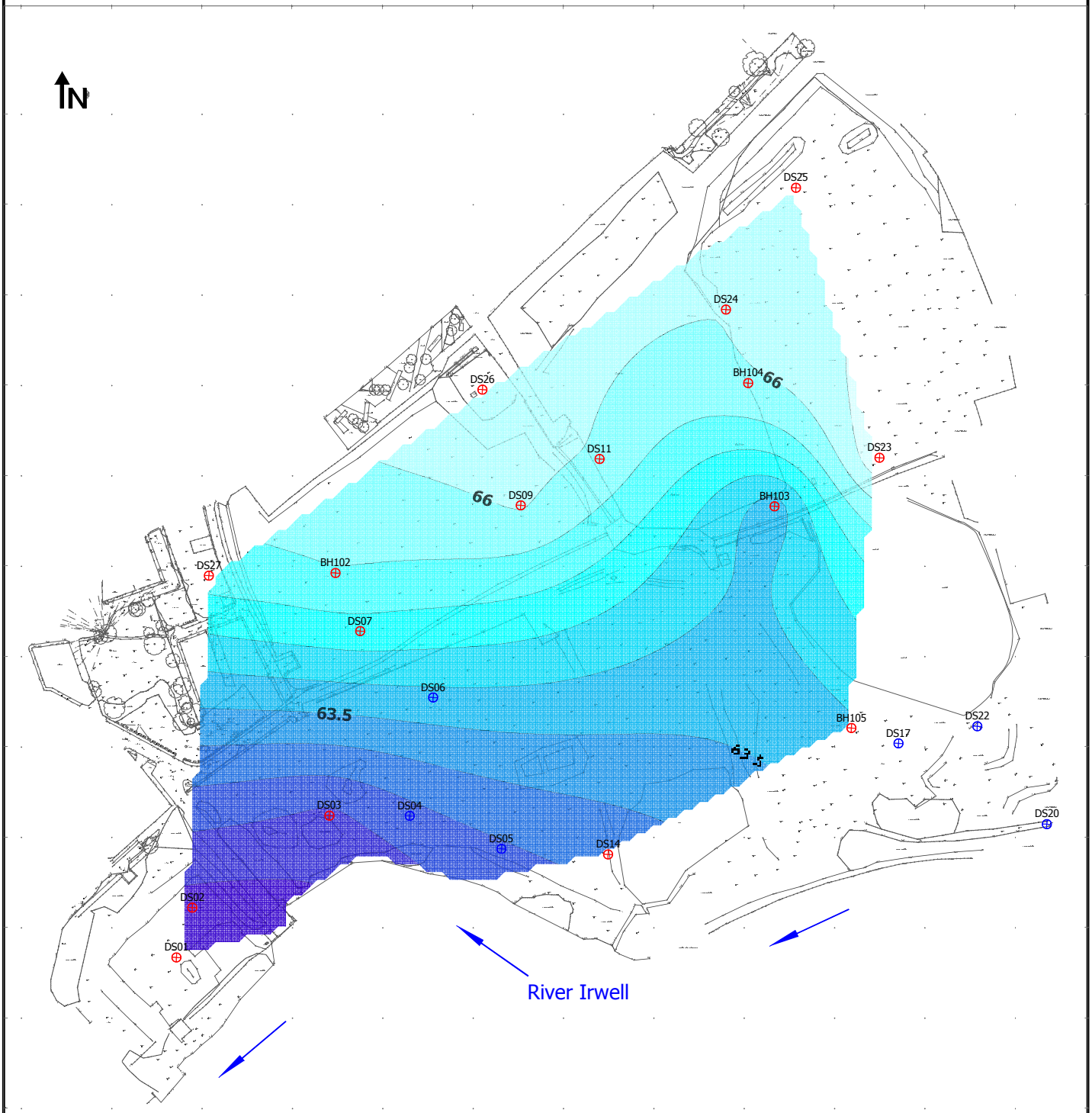
email: enviro.manchester@wyg.com

Drawing 005e - Groundwater Levels: Visit 5



67 66.5 66 65.5 65 64.5 64 63.5 63 62.5 62 61.5 61

Groundwater Elevation (mAOD)

Note:

Boreholes indicated as ⊕ highlight locations where the response zone is above the water table.

Project: East Lancashire Paper Mill

Project Number: A090070-193

Client: Homes & Communities Agency

Produced using Surfer (version 8) - Kriging method.

Boreholes providing source data indicated by: ⊕

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Trafford Wharf Road
Trafford Park
Manchester
M17 1HH

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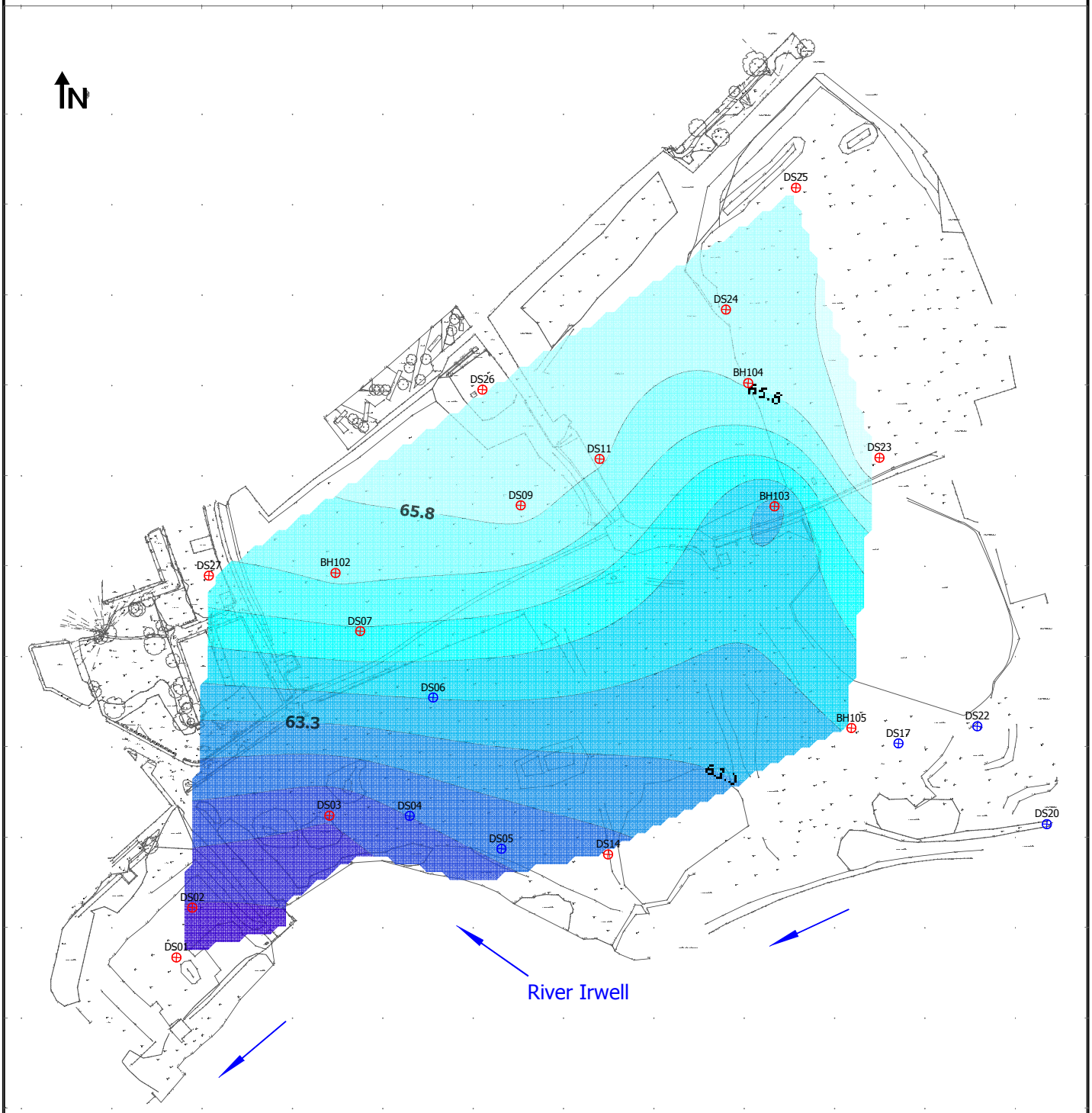
FAX: 0161 872 8195

email: environment@wyg.com

Drawing 005f - Groundwater Levels: Visit 6



66.8 66.3 65.8 65.3 64.8 64.3 63.8 63.3 62.8 62.3 61.8 61.3 60.8

Groundwater Elevation (mAOD)

Note:

Boreholes indicated as ⊕ highlight locations where the response zone is above the water table.

Project: East Lancashire Paper Mill

Project Number: A090070-193

Client: Homes & Communities Agency

Produced using Surfer (version 8) - Kriging method.

Boreholes providing source data indicated by: ⊕

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Trafford Wharf Road
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Manchester
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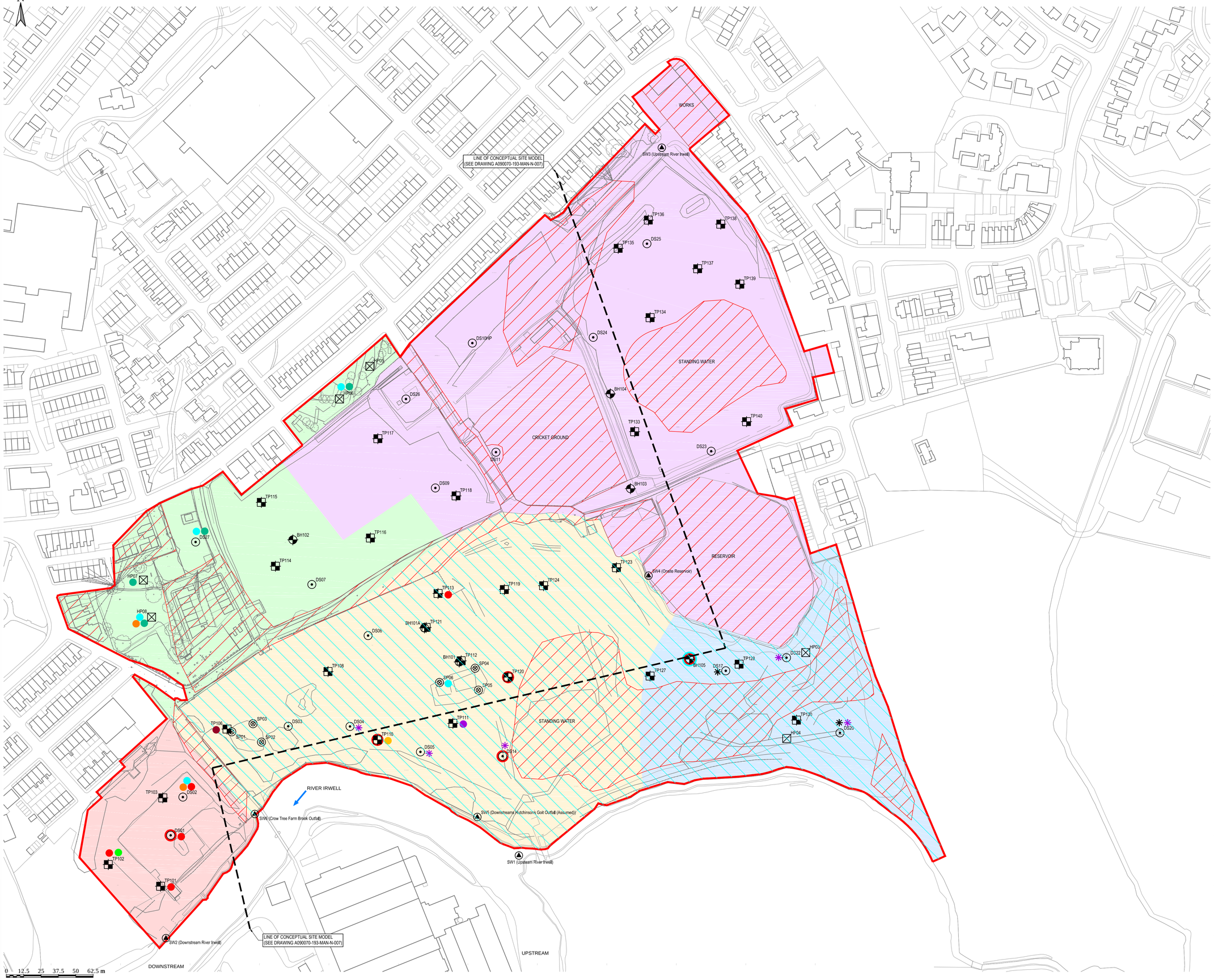
TEL: 0161 872 7564
FAX: 0161 872 8195

email: environment@wyg.com



DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS

KEY

SITE BOUNDARY

AREAS OF NO INTRUSIVE ACCESS INCLUDING:
- ON-SITE RESERVOIR
- STANDING WATER
- DENSE VEGETATION
- CRICKET FACILITY
- SLUDGE PIPELINE
- BUILDINGS / ROADWAYS / UTILITIES

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ZONE 1: FORMER WITTON MILL

ZONE 2: FORMER PAPER MILL BUILDING

ZONE 3: LAND NORTH OF CHURCH STREET

ZONE 4: CMP & BOILER HOUSE LANDFILL

ZONE 5: FORMER RESERVOIRS

WYG SITE INVESTIGATION

CABLE PERCUSSION BOREHOLE

WINDOW SAMPLE

TRIAL PIT

STOCKPILE SAMPLE

HAND PIT

SURFACE WATER SAMPLE

POTENTIAL CONTAMINANT SOURCES

POTENTIAL HYDROCARBON IMPACTED GROUNDWATER

ELEVATED METALS ON GROUNDWATER

ELEVATED PID READINGS DURING GAS MONITORING

ELEVATED GROUND GASES

SVOC (LOCALISED)

LEAD (LOCALISED)

ZINC (LOCALISED)

BENZO(A)PYRENE (LOCALISED)

TPH (LOCALISED)

NAPHTHALENE (LOCALISED)

ARSENIC (LOCALISED)

BERYLIUM (LOCALISED)

ELEVATED LEAD ACROSS MADE GROUND

NOTE:
ASBESTOS REPORTED IN THE MADE GROUND ACROSS THE WHOLE SITE AND STOCKPILE (SP4, SP5, SP6)

REV	DESCRIPTION	BY	CHK	APP	DATE

Client:

HOMES & COMMUNITIES AGENCY

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e-mail: enviro@wyg.com

Project: A090070-193

EAST LANCASHIRE PAPER MILL,
PHASE 2 GEO-ENVIRONMENTAL
GROUND INVESTIGATION

Drawing Title:

LOCATIONS OF POTENTIAL
CONTAMINANT SOURCES

Scale @ A1	Drawn	Date	Checked	Date	Approved	Date
1:1,250	CM	JUNE 17	DB	15.06.17		

Project No.	Office	Type	Drawing No.	Revision
A090070-193	MAN	N	006	

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KEY

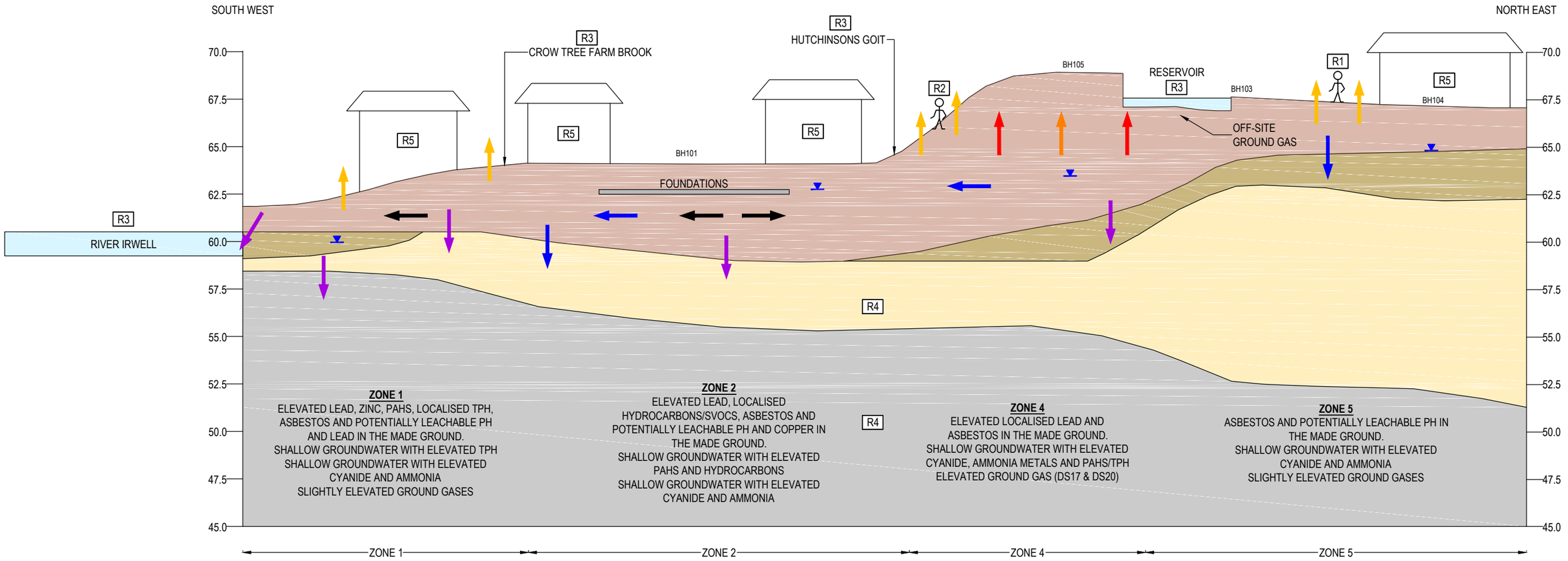
- MADE GROUND
- SAND & GRAVEL
- CLAY
- BEDROCK

PATHWAYS

- GROUND GAS GENERATION / ACCUMULATION
- DERMAL CONTACT / INGESTION OF SOILS / DUSTS / INGESTION OF HOME GROWN FRUIT & VEGETABLES (SOIL ATTACHED)
- LATERAL & VERTICAL MIGRATION OF GROUNDWATER
- INHALATION OF VAPOURS / DUST
- LEACHING TO SURFACE RUN-OFF DRAINAGE / GROUNDWATER
- MIGRATION ALONG / INTO SERVICE CONDUITS, PIPE WORK & ALONG THE INFILLED BEALEY'S GOIT

RECEPTORS

- R1 FUTURE SITE USERS (RESIDENTIAL END USE & USERS OF OPEN SPACE)
- R2 CONSTRUCTION / MAINTENANCE WORKERS
- R3 SURFACE WATERS (ON-SITE CULVERTS (CROW TREE FARM BROOK & HUTCHINSONS GOIT), ON-SITE RESERVOIR & RIVER IRWELL INCLUDING ECOLOGY)
- R4 SECONDARY A AQUIFER (SUPERFICIAL DEPOSITS & BEDROCK)
- R5 FUTURE BUILDINGS & INFRASTRUCTURE



REV	DESCRIPTION	BY	CHK	APP	DATE

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Client: HOMES & COMMUNITIES AGENCY

Project: A090070-193
EAST LANCASHIRE PAPER MILL
PHASE 2 GEO ENVIRONMENTAL GROUND INVESTIGATION

Drawing Title: REVISED SCHEMATIC CONCEPTUAL SITE MODEL

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
N.T.S	CM	JUNE 17	DB	15.06.17	KE	15.06.17

Project No.	Office	Type	Drawing No.	Revision
A090070-193	MAN	N	007	

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DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS

N

HUTCHINSON'S GOIT (OVERFLOW)

STANDING WATER

RESERVOIR

STANDING WATER

BOILER HOUSE LANDFILL

ELEVATED GROUND GAS REQUIREMENT FOR GAS/LEACHATE TRENCH ASSOCIATED WITH OFF SITE LANDFILLS TO THE EAST & SOUTH

TOWER FARM LANDFILL

FORMER COTTON MILL

RIVER IRWELL

CROWTREES FARM BROOK (CULVERTED)

BEALEYS GOIT (INFILLED)

RADCLIFFE PAPER MILL LANDFILL/ TOWER LANDFILL

RIVER IRWELL RETAINING WALL

ESS

ESS

1893

1893

1893

Station Works

Windsor Court

Hoyles Court

Ginghan Court

Gorsi House

Garage

Works

Radcliffe Hall C of E Methodist Controlled Primary School

Radcliffe Close Methodist School

Radcliffe Close Methodist Church

Bealey Community Hospital

Bury Hospice

Bury Street Mill

Radcliffe Church House

The Rectory

St Mary's Church

Car Park

Bowling Green

Tower (remains of)

Depot

Reservoir

Cricket Ground

Footbridge

Sluice

Weir

Tank

Shelter

Posts

Pylon

Club

PH

Gas Sta.

Cross (site of)

Lych Gate

Beaury's Gut

Hutchinson's Goit

River Irwell

KEY

- SITE BOUNDARY
- ZONE 1: FORMER WITTON MILL
- ZONE 2: FORMER PAPER MILL BUILDING
- ZONE 3: LAND NORTH OF CHURCH STREET
- ZONE 4: CMP & BOILER HOUSE LANDFILL
- ZONE 5: FORMER RESERVOIRS
- STOCKPILES
- 1893 WELLS TAKEN FROM PREVIOUS ENCID REPORT & STATUS UNKNOWN
- CIRCULAR UNKNOWN FEATURE
- APPROXIMATE LOCATION OF SLUDGE MAIN WITH 7m EASEMENT
- KNOWN ROUTE OF CULVERT / WATERCOURSE
- ASSUMED ROUTE OF CULVERT
- RETAINING WALL
- RESERVOIR
- TEMPORARY STANDING WATER
- AREAS OF EXISTING BUILDING INFRASTRUCTURE
- FLY TIPPED WASTE
- APPROXIMATE LOCATION OF HISTORICAL GASOMETER
- INVESTIGATED DURING GI. WHITE PAPERMILL WASTE
- ESS ELECTRICITY SUBSTATION
- AREA REQUIRES MITIGATION HARDSTANDING / SOIL COVER SYSTEM FOR SOFT LANDSCAPING
- AREA REQUIRES HYDROCARBON REMEDIATION & VAPOUR RESISTANT MEMBRANE FOR FUTURE HOUSING
- IN-GROUND CONCRETE OBSTRUCTIONS ENCOUNTERED DURING GI.

NOTES:

1. PLAN DOES NOT SHOW ECOLOGY, CONSTRAINTS ASSOCIATED WITH SERVICES AND FLOODING.
2. EXCLUDES COAL MINING HAZARDS.
3. ZONE 4 LIMITED POTENTIAL FOR RESIDENTIAL DEVELOPMENT DUE TO LANDFILL.
4. IN-GROUND ASBESTOS PRESENT ACROSS THE WHOLE SITE.
5. EXCLUDES GEOTECHNICAL FOUNDATION CONSTRAINTS

0 25 50 75 100 125 m

SCALE 1:2500

REV	DESCRIPTION	BY	CHK	APP	DATE

Client:

HOMES & COMMUNITIES AGENCY

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Project: A090070-193

EAST LANCASHIRE PAPER MILL
PRELIMINARY GROUND INVESTIGATION REPORT

Drawing Title:

GROUND RELATED DEVELOPMENT CONSTRAINTS PLAN (REVISED POST SITE INVESTIGATION)

Scale @ A1 1:1250	Drawn Date CM JUNE 17	Checked Date DB 15.06.17	Approved Date KE 15.06.17	
Project No. A090070-193	Office LDS	Type N	Drawing No. 008	Revision

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Appendices

Appendix A – Report Conditions

APPENDIX A - REPORT CONDITIONS
GROUND INVESTIGATION

This report is produced solely for the benefit of the **Homes and Communities Agency** and no liability is accepted for any reliance placed on it by any other party unless specifically agreed in writing otherwise.

This report refers, within the limitations stated, to the condition of the site at the time of the inspections. No warranty is given as to the possibility of future changes in the condition of the site.

This report is based on a visual site inspection, reference to accessible referenced historical records, information supplied by those parties referenced in the text and preliminary discussions with local and Statutory Authorities. Some of the opinions are based on unconfirmed data and information and are presented as the best that can be obtained without further extensive research. Where ground contamination is suspected but no physical site test results are available to confirm this, the report must be regarded as initial advice only, and further assessment should be undertaken prior to activities related to the site. Where test results undertaken by others have been made available these can only be regarded as a limited sample. The possibility of the presence of contaminants, perhaps in higher concentrations, elsewhere on the site cannot be discounted.

Whilst confident in the findings detailed within this report because there are no exact UK definitions of these matters, being subject to risk analysis, we are unable to give categoric assurances that they will be accepted by Authorities or Funds etc. without question as such bodies often have unpublished, more stringent objectives. This report is prepared for the proposed uses stated in the report and should not be used in a different context without reference to WYG Environment Planning Transport Ltd. In time improved practices or amended legislation may necessitate a re-assessment.

The assessment of ground conditions within this report is based upon the findings of the study undertaken. We have interpreted the ground conditions in between locations on the assumption that conditions do not vary significantly. However, no investigation can inspect each and every part of the site and therefore changes or variances in the physical and chemical site conditions as described in this report cannot be discounted.

The report is limited to those aspects of land contamination specifically reported on and is necessarily restricted and no liability is accepted for any other aspect especially concerning gradual or sudden pollution incidents. The opinions expressed cannot be absolute due to the limitations of time and resources imposed by the agreed brief and the possibility of unrecorded previous use and abuse of the site and adjacent sites. The report concentrates on the site as defined in the report and provides an opinion on surrounding sites. If migrating pollution or contamination (past or present) exists further extensive research will be required before the effects can be better determined.

Appendix B – Exploratory Hole Logs and Photo Plates

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379243.56	Northing:	407358.36
Level:	64.90mAOD	Depth:	2.00m
Logger:	DB	Type:	CP
		Inclination:	90°

Status: FINAL

Borehole Number: **BH101**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Drilling Progress by Time				
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Date	Time	Depth (m)	Casing (m)	Water (m)
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-	2.00	200	17/01	13:00	0.00	0.00	
1.20	2.00	Cable Percussion	Cable Percussion	PB Drilling	2.00	150			17/01	16:00	2.00	2.00	

Scale:	1:50
Checked By:	DB
Approved By:	RAJ
Start Date:	17/01/2017
Finish Date:	17/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Dark brown and grey cobbly sandy angular and subangular fine to coarse GRAVEL including brick, concrete and breeze block.						0.00 - 0.30	B1	
						0.20	ES1	PID 0.20m, 0.0ppm
MADE GROUND: Dark grey sandy fine to medium angular and subangular GRAVEL including brick, concrete, glass and metal.		0.30	64.60			0.30 - 1.20	B2	
						1.00	ES2	PID 1.00m, 0.0ppm
From 1.10m to 1.20m bgl thin concrete base.						1.20 - 1.65	B3	SPT(C) 1.20m, N=37 (1,3/7,5,13,12)
EOH at 2.00m - Terminated due to suspected concrete obstruction		2.00	62.90					SPT(C) 2.00m, 50 (25 for 85mm/50 for 5mm)

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Groundwater not observed.
2. Upon completion exploratory hole backfilled with arisings.
3. TP112 was relocated to this location to investigate further.

Chiselling

From (m)	To (m)	Time (mins)
1.40	1.80	75

Water Added

From (m)	To (m)

Hammer Information

Serial No.	Energy Ratio %
PBD10	78

Groundwater

Strike (m)	Casing (m)	Sealed (m)	Time (min)	Rose To (m)	Remarks

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379218.57	Northing:	407382.85
Level:	64.26mAOD	Depth:	3.00m
Logger:	LD	Type:	CP
		Inclination:	90°

Status: FINAL

Borehole Number: **BH101A**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Drilling Progress by Time				
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Date	Time	Depth (m)	Casing (m)	Water (m)
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-	3.00	200	25/01	12:00	0.00	0.00	
1.20	3.00	Cable Percussion	Cable Percussion	PB Drilling	3.00	150			25/01	16:00	3.00	3.00	

Scale: 1:50
Checked By: DB
Approved By: RAJ
Start Date: 25/01/2017
Finish Date: 25/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Vegetation over MADE GROUND: Dark greyish brown sandy clayey angular and subangular fine to coarse GRAVEL with high cobble content. Gravel and cobbles are brick, concrete, rare clinker, glass and metal scrap.								
At 1.20m bgl slightly clayey.								
MADE GROUND: CONCRETE.		1.70	62.56					
MADE GROUND: Brick masonry.		1.90	62.36					
MADE GROUND: Concrete / Compacted concrete and brick.		2.00	62.26					
MADE GROUND: Compacted brick and concrete.		2.80	61.46					
EOH at 3.00m - Terminated due to suspected concrete		3.00	61.26					SPT(C) 3.00m, 50 (25 for 0mm/50 for 10mm)

Observations / Remarks

1. TP121 was relocated to this location to break out the concrete prior to drilling.
2. Concrete obstruction at 3.00m bgl resulting in hole termination.
3. Upon completion exploratory hole backfilled with arisings.

Chiselling		
From (m)	To (m)	Time (mins)
3.00	3.00	30

Water Added	
From (m)	To (m)

Hammer Information	
Serial No.	Energy Ratio %
PBD10	78

Groundwater					
Strike (m)	Casing (m)	Sealed (m)	Time (min)	Rose To (m)	Remarks

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379123.85	Northing:	407446.25
Level:	67.06mAOD	Depth:	10.95m
Logger:	LD	Type:	CP
		Inclination:	90°

Status: FINAL

Borehole Number: **BH102**

Sheet 1 of 2

Method, Plant and Crew					Diameter		Casing	
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-	9.80	200
1.20	10.95	Cable Percussion	Cable Percussion	PB Drilling	10.95	150		

Drilling Progress by Time				
Date	Time	Depth (m)	Casing (m)	Water (m)
16/01	10:30	0.00	0.00	
16/01	16:00	7.00	7.00	4.5
17/01	08:30	7.00	7.00	3.0
17/01	12:00	10.95	9.80	

Scale:	1:50
Checked By:	DB
Approved By:	RAJ
Start Date:	16/01/2017
Finish Date:	16/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over TOPSOIL: Dark brown clayey fine to coarse SAND with rootlets.		0.05	67.00			0.00 - 1.20	B1	
Brown and orange very sandy cobbly subrounded and rounded fine to coarse GRAVEL including sandstone.						0.20	ES2	PID 0.20m, 0.0ppm
Brown and grey sandy slightly clayey subangular to subrounded fine to medium GRAVEL with pockets of clay.		1.20	65.86			1.20	ES3	SPT(C) 1.20m, N=12 (3,3/3,3,3,3)
						1.20 - 1.65	B4	PID 1.20m, 0.0ppm
Medium dense brown very sandy subangular and subrounded fine to coarse GRAVEL.		1.50	65.56					
						2.00 - 2.45	B5	SPT(C) 2.00m, N=16 (3,3/3,4,4,5)
						3.00 - 3.45	B6	SPT(C) 3.00m, N=17 (9,5/4,5,5,3)
Firm becoming stiff orangish brown very sandy CLAY.		3.80	63.26			3.80	D7	
						4.00 - 4.45	B8	SPT(S) 4.00m, N=17 (4,4/4,4,4,5)
						5.00 - 5.45	U9	Ublows=70 Recovery=70%
						5.45 - 5.70	D10	
						5.90	D11	
Medium dense brown slightly clayey SAND.		5.90	61.16			6.00 - 6.45	B12	SPT(S) 6.00m, N=26 (4,5/5,6,7,8)
						7.00	D13	
						7.50 - 7.95	B14	SPT(S) 7.50m, N=27 (4,4/5,6,8,8)
Dark brown reddish brown fine grained silty CLAY. (Weathered mudstone bedrock)		8.20	58.86			8.20	D15	
						9.00 - 9.45	B16	SPT(S) 9.00m, N=24 (4,5/5,6,6,7)
Weak reddish brown thinly laminated MUDSTONE.		9.80	57.26			9.80	D17	

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 3.80m bgl.

Chiselling		
From (m)	To (m)	Time (mins)
2.80	3.00	30

Water Added	
From (m)	To (m)

Hammer Information	
Serial No.	Energy Ratio %
PBD10	78

Groundwater					
Strike (m)	Casing (m)	Sealed (m)	Time (min)	Rose To (m)	Remarks
2.80	-	-	20	2.40	
6.20	-	-	20	5.60	
7.40	-	-	20	7.40	

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379123.85	Northing:	407446.25
Level:	67.06mAOD	Depth:	10.95m
Logger:	LD	Type:	CP
		Inclination:	90°

Status: FINAL

Borehole Number: **BH102**

Sheet 2 of 2

Method, Plant and Crew					Diameter		Casing	
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-	9.80	200
1.20	10.95	Cable Percussion	Cable Percussion	PB Drilling	10.95	150		

Drilling Progress by Time				
Date	Time	Depth (m)	Casing (m)	Water (m)
16/01	10:30	0.00	0.00	
16/01	16:00	7.00	7.00	4.5
17/01	08:30	7.00	7.00	3.0
17/01	12:00	10.95	9.80	

Scale: 1:50
Checked By: DB
Approved By: RAJ
Start Date: 16/01/2017
Finish Date: 16/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Weak reddish brown thinly laminated MUDSTONE.						10.50 - 10.95	D18	SPT(S) 10.50m, 50 (10,11/50 for 190mm)
EOH at 10.95m - Achieved target depth. Borehole terminated on bedrock		10.95	56.10					

11 12 13 14 15 16 17 18 19 20

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 3.80m bgl.

Chiselling		
From (m)	To (m)	Time (mins)
10.20	10.50	30

Water Added	
From (m)	To (m)

Hammer Information	
Serial No.	Energy Ratio %
PBD10	78

Groundwater					
Strike (m)	Casing (m)	Sealed (m)	Time (min)	Rose To (m)	Remarks

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379366.82	Northing:	407483.11
Level:	67.38mAOD	Depth:	14.82m
Logger:	LD	Type:	CP
		Inclination:	90°

Status: FINAL

Borehole Number: **BH103**

Sheet 1 of 2

Method, Plant and Crew					Diameter		Casing	
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-	3.00	200
1.20	14.82	Cable Percussion	Cable Percussion	PB Drilling	14.82	150	14.80	150

Drilling Progress by Time				
Date	Time	Depth (m)	Casing (m)	Water (m)
18/01	08:30	0.00	0.00	
18/01	16:00	12.00	12.00	
19/01	08:30	12.00	12.00	7.0
19/01	12:00	14.82	14.80	5.4

Scale: 1:50
Checked By: DB
Approved By: RAJ
Start Date: 18/01/2017
Finish Date: 18/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Dark brown slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse brick, concrete, metal and glass. Rootlets to 0.40m.						0.00 - 1.20	B1	
						0.50	ES2	
						1.20	ES3	SPT(C) 1.20m, N=27 (2,7/3,3,9,12)
						1.20 - 1.65	B4	
						2.00 - 2.45	B5	SPT(C) 2.00m, N=8 (1,2/2,1,2,3)
Medium dense brown slightly clayey fine to coarse SAND and GRAVEL. Gravel is subangular to rounded fine to coarse mudstone and sandstone.		2.90	64.48			2.90	D6	
						3.00 - 3.45	B7	SPT(C) 3.00m, N=16 (2,3/3,4,4,5)
						4.00 - 4.45	B8	SPT(C) 4.00m, N=22 (11,10/9,5,5,3)
Firm greyish brown slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse mudstone.		4.40	62.98			4.40	D9	
						4.50 - 4.95	U10	Ublows=60 Recovery=70%
						4.95 - 5.20	D11	
Very stiff greyish brown slightly gravelly CLAY. Gravel is fine and medium subrounded mudstone and rare coal.		6.00	61.38			6.00 - 6.45	B12	SPT(S) 6.00m, N=43 (10,11/11,10,11,11)
						7.00	D13	
						7.50 - 7.95	B14	SPT(S) 7.50m, N=44 (9,10/11,12,11,10)
						8.50	D15	
						9.00 - 9.45	B16	SPT(S) 9.00m, N=36 (6,7/8,9,9,10)
						10.00	D17	

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 14.80m bgl.

Chiselling		
From (m)	To (m)	Time (mins)
1.60	1.90	45

Water Added	
From (m)	To (m)

Hammer Information	
Serial No.	Energy Ratio %
PBD10	78

Groundwater					
Strike (m)	Casing (m)	Sealed (m)	Time (min)	Rose To (m)	Remarks
1.80	-	-	20	1.20	

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379366.82	Northing:	407483.11
Level:	67.38mAOD	Depth:	14.82m
Logger:	LD	Type:	CP
		Inclination:	90°

Status: FINAL

Borehole Number: **BH103**

Sheet 2 of 2

Method, Plant and Crew					Diameter		Casing	
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-	3.00	200
1.20	14.82	Cable Percussion	Cable Percussion	PB Drilling	14.82	150	14.80	150

Drilling Progress by Time				
Date	Time	Depth (m)	Casing (m)	Water (m)
18/01	08:30	0.00	0.00	
18/01	16:00	12.00	12.00	
19/01	08:30	12.00	12.00	7.0
19/01	12:00	14.82	14.80	5.4

Scale:	1:50
Checked By:	DB
Approved By:	RAJ
Start Date:	18/01/2017
Finish Date:	18/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Very stiff greyish brown slightly gravelly CLAY. Gravel is fine and medium subrounded mudstone and rare coal.						10.50 - 10.95	B18	SPT(S) 10.50m, N=40 (7,7/9,10,10,11)
						11.50	D19	
Brown slightly sandy clayey angular fine to coarse GRAVEL with various lithologies. High cobble content. Pockets of firm grey clay.		12.00	55.38			12.00 - 12.45	B20	SPT(C) 12.00m, 50 (25 for 80mm/50 for 30mm)
Very stiff greyish brown slightly sandy gravelly CLAY. Gravel is subangular to rounded fine to coarse mudstone.		12.60	54.78			12.60	D21	
						13.00	D22	
						13.50 - 13.95	B23	
EOH at 14.82m - Achieved target depth. Boreholes terminated on bedrock		14.82	52.56					SPT(C) 14.80m, 50 (25 for 0mm/50 for 20mm)

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 14.80m bgl.

Chiselling

From (m)	To (m)	Time (mins)
12.40	12.60	45
14.80	14.82	60

Water Added

From (m)	To (m)

Hammer Information

Serial No.	Energy Ratio %
PBD10	78

Groundwater

Strike (m)	Casing (m)	Sealed (m)	Time (min)	Rose To (m)	Remarks
12.00	-	-	20	10.40	

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379352.30	Northing:	407551.37
Level:	66.94mAOD	Depth:	13.77m
Logger:	LD	Type:	CP
		Inclination:	90°

Status: FINAL

Borehole Number: **BH104**

Sheet 1 of 2

Method, Plant and Crew					Diameter		Casing	
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-	7.50	200
1.20	13.77	Cable Percussion	Cable Percussion	PB Drilling	13.77	150	12.00	150

Drilling Progress by Time				
Date	Time	Depth (m)	Casing (m)	Water (m)
20/01	08:30	0.00	0.00	
20/01	16:00	9.50	9.00	7.0
23/01	08:30	9.50	9.00	6.2
23/01	13:00	13.77	12.00	12.5

Scale:	1:50
Checked By:	DB
Approved By:	RAJ
Start Date:	20/01/2017
Finish Date:	20/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Dark grey clayey angular fine to coarse brick, concrete and mudstone GRAVEL.						0.00 - 1.00	B1	
						0.50	ES2	
						1.00 - 1.20	B3	
						1.20 - 1.65	B4	SPT(C) 1.20m, N=9 (2,2/2,2,2,3)
						1.50	ES5	
MADE GROUND: Soft grey slightly silty slightly sandy very gravelly CLAY. Gravel is fine and medium subangular to rounded mudstone and rare coal. *From 1.90m to 1.95m bgl black staining.*		1.90	65.04			1.90	D6	
						2.00 - 2.45	U7	Ublows=100 Recovery=0%
Dense orangish brown fine to coarse SAND and angular to subrounded fine to coarse GRAVEL of various lithologies. High cobble content.		2.40	64.54			2.40 - 2.85	B8	SPT(C) 2.40m, N=38 (4,5/9,9,10,10)
						3.00 - 3.45	B9	SPT(C) 3.00m, N=33 (6,7/7,8,9,9)
						4.00 - 4.45	B10	SPT(C) 4.00m, N=43 (7,8/10,10,10,13)
Firm greyish brown slightly gravelly slightly sandy CLAY. Gravel is fine and medium subangular mudstone. Some cobbles.		4.60	62.34			4.60	D11	Ublows=100 Recovery=90%
						4.60 - 5.05	U12	
						5.05	D13	
						6.00 - 6.45	B14	SPT(S) 6.00m, 50 (5,5/50 for 80mm)
Dense greenish brown slightly sandy clayey fine to coarse angular to subrounded GRAVEL various lithologies. High cobble content.		7.50	59.44			7.50 - 7.95	B15	SPT(C) 7.50m, N=44 (8,10/10,11,11,12)
						8.50	D16	
						9.00 - 9.45	B17	SPT(C) 9.00m, 50 (25 for 70mm/50 for 85mm)
Stiff greyish brown slightly sandy gravelly CLAY. Gravel is angular and subangular fine to coarse various lithologies.		9.50	57.44			9.50	D18	
						10.00	D19	

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 4.50m bgl.

Chiselling

From (m)	To (m)	Time (mins)
2.20	2.60	30
6.00	6.75	45
8.10	8.20	30

Water Added

From (m)	To (m)

Hammer Information

Serial No.	Energy Ratio %
PBD10	78

Groundwater

Strike (m)	Casing (m)	Sealed (m)	Time (min)	Rose To (m)	Remarks
2.20	-	-	20	0.80	

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**	Location Details		Status	Borehole Number
Location: **Radcliffe**	Easting: 379352.30	Northing: 407551.37	FINAL	**BH104**
Client: **Homes & Communities Agency**	Level: 66.94mAOD	Depth: 13.77m		Sheet 2 of 2
	Logger: LD	Type: CP		
		Inclination: 90°		

Method, Plant and Crew					Diameter		Casing		Drilling Progress by Time				
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Date	Time	Depth (m)	Casing (m)	Water (m)
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-	7.50	200	20/01	08:30	0.00	0.00	
1.20	13.77	Cable Percussion	Cable Percussion	PB Drilling	13.77	150	12.00	150	20/01	16:00	9.50	9.00	7.0
									23/01	08:30	9.50	9.00	6.2
									23/01	13:00	13.77	12.00	12.5

Scale:	1:50
Checked By:	DB
Approved By:	RAJ
Start Date:	20/01/2017
Finish Date:	20/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing		
						Depth (m)	Ref	Tests / Results
						10.50 - 10.95	U20	Ublows=120 Recovery=0%
						11.50	D21	
From 12.00m bgl very stiff with high cobble content of sandstone.						12.00 - 12.45	B22	SPT(S) 12.00m, 50 (25 for 85mm/50 for 115mm)
						13.00	D23	
Grey weathered MUDSTONE.		13.50	53.44			13.50	D24	SPT(S) 13.50m, 50 (25 for 125mm/50 for 145mm)
EOH at 13.77m - Achieved target depth. Borehole terminated on bedrock.		13.77	53.17					

11 12 13 14 15 16 17 18 19 20

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 4.50m bgl.

Chiselling

From (m)	To (m)	Time (mins)
12.80	13.00	30
13.30	13.50	45

Water Added

From (m)	To (m)

Hammer Information

Serial No.	Energy Ratio %
PBD10	78

Groundwater

Strike (m)	Casing (m)	Sealed (m)	Time (min)	Rose To (m)	Remarks

Project Number

A090070-193

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379409.37	Northing:	407360.46
Level:	68.93mAOD	Depth:	13.42m
Logger:	LD	Type:	CP
		Inclination:	90°

Status: FINAL

Borehole Number: **BH105**

Sheet 1 of 2

Method, Plant and Crew					Diameter		Casing	
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-	7.50	200
1.20	13.42	Cable Percussion	Cable Percussion	PB Drilling	13.42	150	10.00	150

Drilling Progress by Time				
Date	Time	Depth (m)	Casing (m)	Water (m)
23/01	14:00	0.00	0.00	
23/01	16:00	2.45	2.00	
24/01	08:30	2.45	2.00	
24/01	16:00	12.45	10.00	
25/01	08:30	12.45	10.00	
25/01	11:00	13.42	10.00	

Scale: 1:50
Checked By: DB
Approved By: RAJ
Start Date: 23/01/2017
Finish Date: 23/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Dark greyish brown firm slightly sandy very gravelly CLAY. Gravel is angular fine to coarse brick, concrete, rare clinker, timber and glass.						0.00 - 1.20	B1	
						1.20 - 1.65	B2	SPT(C) 1.20m, N=10 (1,1/2,2,4,2)
						2.00 - 2.45	B3	SPT(C) 2.00m, N=18 (2,3/3,6,7,2)
						3.00 - 3.45	B4	SPT(C) 3.00m, N=18 (3,4/4,5,5,4)
No recovery / Very soft material		3.90	65.03			4.00 - 4.45	B5	SPT(C) 4.00m, N=0 (0,0/0,0,0,0)
MADE GROUND: Dark greyish brown very clayey angular to subrounded fine to coarse GRAVEL of concrete, brick and mudstone.		4.70	64.23			5.00 - 5.45	B6	SPT(C) 5.00m, N=2 (1,0/1,0,0,1)
						5.60	D7	
MADE GROUND: Soft grey mottled black slightly sandy clayey SILT with bands of white clay (Possible paper waste sludge).		5.70	63.23			6.00 - 6.45	B8	SPT(S) 6.00m, N=2 (1,1/0,1,0,1)
						7.00	D9	
MADE GROUND: Dark brown slightly gravelly slightly silty slightly sandy CLAY with thin peat bands throughout. Rare white clay (Possible paper waste sludge).		7.40	61.53	▼		7.40	D10	
						7.50 - 7.95	U11	Ublows=20 Recovery=100%
Loose brown fine to coarse SAND and subangular to rounded fine to coarse GRAVEL of various lithologies.		8.00	60.93			8.00	B12	
						9.00 - 9.45	B13	SPT(C) 9.00m, N=5 (2,2/2,1,1,1)
		9.90	59.03			9.90	D14	

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 9.50m bgl.

Chiselling			Water Added		Hammer Information	
From (m)	To (m)	Time (mins)	From (m)	To (m)	Serial No.	Energy Ratio %
					PBD10	78

Groundwater					
Strike (m)	Casing (m)	Sealed (m)	Time (min)	Rose To (m)	Remarks
7.50	-	-	20	7.50	

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379409.37	Northing:	407360.46
Level:	68.93mAOD	Depth:	13.42m
Logger:	LD	Type:	CP
		Inclination:	90°

Status: FINAL

Borehole Number: **BH105**

Sheet 2 of 2

Method, Plant and Crew					Diameter		Casing	
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-	7.50	200
1.20	13.42	Cable Percussion	Cable Percussion	PB Drilling	13.42	150	10.00	150

Drilling Progress by Time				
Date	Time	Depth (m)	Casing (m)	Water (m)
23/01	14:00	0.00	0.00	
23/01	16:00	2.45	2.00	
24/01	08:30	2.45	2.00	
24/01	16:00	12.45	10.00	
25/01	08:30	12.45	10.00	
25/01	11:00	13.42	10.00	

Scale: 1:50
Checked By: DB
Approved By: RAJ
Start Date: 23/01/2017
Finish Date: 23/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Stiff greyish brown gravelly CLAY. Gravel is subangular to rounded fine to coarse mudstone. Occasional cobble of mudstone.						10.50 - 10.95	U15	Ublows=120 Recovery=80%
						10.95 - 11.20	D16	
						12.00 - 12.45	D17	SPT(S) 12.00m, N=32 (4,5/6,7,8,11)
EOH at 13.42m - Achieved target depth. Borehole terminated on bedrock.		13.42	55.51					SPT(C) 13.40m, 50 (25 for 0mm/50 for 20mm)

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 9.50m bgl.

Chiselling

From (m)	To (m)	Time (mins)
13.30	13.40	60

Water Added

From (m)	To (m)

Hammer Information

Serial No.	Energy Ratio %
PBD10	78

Groundwater

Strike (m)	Casing (m)	Sealed (m)	Time (min)	Rose To (m)	Remarks

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379035.87	Northing:	407233.55
Level:	62.01mAOD	Depth:	3.50m
Logger:	DB	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS01**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale:	1:25
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By:	DB
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-			2.30	-	-	2.30	20		Approved By:	RAJ
1.20	3.50	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	3.50	-									Start Date:	24/01/2017
															Finish Date:	24/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE.						0.00 - 1.00	B1	
MADE GROUND: Orange, brown and grey very sandy cobbly angular and subangular fine to coarse GRAVEL including brick and concrete		0.40	61.61			0.50	ES2	PID 0.50m, 4.8ppm
MADE GROUND: Orange and dark brown slightly gravelly SAND. Gravel is angular fine to coarse brick.		0.70	61.31			1.00	ES4	PID 1.00m, 7.2ppm
						1.20 - 1.65	D3	SPT(S) 1.20m, N=1 (1,1/1,0,0,0)
MADE GROUND: Dark brown, black very sandy clayey GRAVEL of ash and brick with rare white cream clay.		1.30	60.71			1.40	ES5	PID 1.40m, 7.7ppm
Very soft light brown and orange sandy CLAY.		1.60	60.41					PID 1.70m, 2.8ppm
Soft becoming firm dark brown, black and grey very sandy organic CLAY including peat horizons.		1.80	60.21			1.80 - 2.00	D7	
						2.00 - 2.45	D6	SPT(S) 2.00m, N=11 (1,0/0,3,4,4)
Very soft dark grey with black speckling silty CLAY		2.20	59.81	▼				
Very dense orange, brown and reddish brown sandy subangular to rounded fine to coarse mudstone GRAVEL.		2.80	59.21			3.00 - 3.45	D8	SPT(S) 3.00m, 50 (3,6/50 for 150mm)
Refusal - Suspected bedrock.		3.45	58.56					
EOH at 3.50m - Terminated on bedrock		3.50	58.51					

1 2 3 4 5

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 2.50m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	
2.00	3.00	77	100	

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379044.69	Northing:	407261.08
Level:	62.14mAOD	Depth:	3.50m
Logger:	DB	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS02**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-			1.40	-	-	1.40	20	Perched	
1.20	3.50	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	3.50	-									

Scale: 1:25
Checked By: DB
Approved By: RAJ
Start Date: 24/01/2017
Finish Date: 24/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE.						0.00 - 1.00	B1	
MADE GROUND: Brown and cream very gravelly medium and coarse SAND. Gravel is subrounded and rounded fine and medium.		0.40	61.74			0.50	ES2	PID 0.50m, 1.9ppm
MADE GROUND: Black and infrequent grey sandy angular and subangular fine and medium GRAVEL including ash, clinker and coal.		0.60	61.54			0.60	ES3	PID 0.70m, 4.5ppm
MADE GROUND: Soft mottled brown grey and purple slightly sandy gravelly CLAY.		0.80	61.34			0.90	ES4	PID 0.90m, 2.1ppm
						1.20 - 1.65	D5	SPT(S) 1.20m, N=6 (1,0/0,3,1,2) PID 1.20m, 2.3ppm
Light cream and brown sandy slightly clayey angular to subrounded fine to coarse GRAVEL.		1.30	60.84					PID 1.50m, 1.9ppm
Weak reddish brown including orange and infrequent black slightly clayey weathered MUDSTONE.		1.60	60.54					
Weak reddish brown, purple and orange thinly laminated MUDSTONE including infrequent sand banding.		1.90	60.24			2.00 - 2.45	D6	SPT(S) 2.00m, N=18 (1,4/4,4,5,5) PID 2.20m, 2.0ppm
						3.00 - 3.45	D7	SPT(S) 3.00m, 50 (8,13/50 for 255mm)
EOH at 3.50m - Terminated on bedrock.		3.50	58.64					

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 1.50m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	
2.00	3.00	77	100	

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379120.50	Northing:	407312.04
Level:	64.21mAOD	Depth:	5.45m
Logger:	DB	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS03**

Sheet 1 of 2

Method, Plant and Crew					Diameter		Casing		Groundwater					
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-			3.00	-	-	3.00	20	
1.20	5.45	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	5.45	-								

Scale:	1:25
Checked By:	DB
Approved By:	RAJ
Start Date:	23/01/2017
Finish Date:	23/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Dark brown clayey fine to coarse SAND with rootlets.		0.05	64.16			0.00 - 1.00	B1	
MADE GROUND: Brown, dark grey and orange very sandy cobbly subangular and angular, coarse to fine GRAVEL including brick, concrete, plastic and glass.						0.50	ES2	PID 0.50m, 0.8ppm
						1.20 - 1.65	D3	SPT(S) 1.20m, N=13 (3,3/3,2,4,4)
MADE GROUND: Dark brown and grey slightly clayey sandy angular to subangular fine to coarse GRAVEL including brick and concrete.		1.50	62.71			1.70	ES4	PID 1.70m, 5.2ppm
MADE GROUND: Brown, orange and grey angular to subangular fine and medium GRAVEL including brick and concrete.		2.00	62.21			2.00 - 2.45	D5	SPT(S) 2.00m, N=8 (2,2/2,2,2,2)
						2.20	ES6	PID 2.20m, 6.7ppm
MADE GROUND: Dark black and grey very clayey angular and subangular fine and medium including ash and concrete.		2.40	61.81			2.70	ES7	PID 2.70m, 9.4ppm
Soft dark grey including frequent light grey very silty organic CLAY.		3.00	61.21	▼		3.00 - 3.45	D8	SPT(S) 3.00m, N=4 (1,1/1,1,1,1) PID 3.00m, 8.2ppm
								SPT(S) 4.00m, N=4 (1,1/1,1,1,1)
Soft light grey and orange very silty CLAY.		4.20	60.01			4.20	D9	
Continued on Next Page		5.00	59.21			5.00 - 5.45	D10	

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 3.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	80	
2.00	3.00	77	100	
3.00	4.00	67	100	
4.00	5.00	57	100	

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379120.50	Northing:	407312.04
Level:	64.21mAOD	Depth:	5.45m
Logger:	DB	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS03**

Sheet 2 of 2

Method, Plant and Crew					Diameter		Casing		Groundwater					
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-			3.00	-	-	3.00	20	
1.20	5.45	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	5.45	-								

Scale: 1:25
Checked By: DB
Approved By: RAJ
Start Date: 23/01/2017
Finish Date: 23/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Dark grey medium and coarse SAND.								
EOH at 5.45m - Achieved target depth		5.45	58.76					

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 3.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379164.96	Northing:	407311.90
Level:	64.21mAOD	Depth:	1.65m
Logger:	DB	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS04**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Exacvated	PB Drilling	1.20	-								
1.20	1.65	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	1.65	-								

Scale:	1:25
Checked By:	DB
Approved By:	RAJ
Start Date:	23/01/2017
Finish Date:	23/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Dark brown clayey fine to coarse SAND with rootlets.		0.05	64.16					
MADE GROUND: Brown, orange and grey very sandy angular and subangular fine to coarse cobbly GRAVEL including brick, glass, concrete and metal sharps						0.50 0.50	B1 ES2	PID 0.50m, 0.9ppm
						1.00	ES3	PID 1.00m, 1.4ppm
								SPT(S) 1.20m, 50 (10,14/50 for 170mm)
EOH at 1.65m - Terminated due to below ground obstruction		1.65	62.56					

Observations / Remarks

1. Groundwater not observed.
2. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 1.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	1.65	87	0	

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379215.67	Northing:	407293.63
Level:	64.90mAOD	Depth:	2.85m
Logger:	DB	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS05**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater					
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-								
1.20	2.85	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	2.85	-								

Scale:	1:25
Checked By:	DB
Approved By:	RAJ
Start Date:	26/01/2017
Finish Date:	26/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Dark brown clayey fine to coarse SAND with rootlets. MADE GROUND: Dark brown with frequent grey and red very sandy angular and subangular fine to coarse GRAVEL including concrete, brick and tile fragments.		0.05	64.85			0.00 - 1.00	B1	
						0.50	ES2	PID 0.50m, 0.4ppm
								PID 0.90m, 0.2ppm
						1.20 - 1.65	D3	SPT(S) 1.20m, N=34 (4,6/5,8,10,11)
MADE GROUND: Dark grey and brown slightly sandy cobbly angular and subangular fine to coarse GRAVEL including concrete.		1.30	63.60					
						1.50	ES4	PID 1.50m, 5.6ppm
MADE GROUND: Dark brown, grey and red slightly clayey slightly sandy GRAVEL comprising brick, concrete and sandstone fragments. Minor coal traces.		1.60	63.30					
						2.00 - 2.45	D5	SPT(S) 2.00m, N=8 (3,2/2,2,2,2)
						2.20	ES6	PID 2.20m, 4.4ppm
						2.60	D7	SPT(S) 2.60m, 50 (4,9/50 for 145mm)
EOH at 2.85m - Terminated due to refusal		2.85	62.05					

1 2 3 4 5

Observations / Remarks

1. Groundwater not observed.
2. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 2.60m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	
2.00	2.60	77	100	

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379177.97	Northing:	407377.33
Level:	64.62mAOD	Depth:	2.00m
Logger:	DB	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS06**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-								
1.20	2.00	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	2.00	-								

Scale:	1:25
Checked By:	DB
Approved By:	RAJ
Start Date:	25/01/2017
Finish Date:	25/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Dark brown clayey fine to coarse SAND with rootlets.		0.05	64.57					
MADE GROUND: Dark brown, red and black sandy angular and subangular fine to coarse cobbly GRAVEL including brick and concrete.						0.10 - 1.00	B1	
						0.40	ES2	PID 0.40m, 0.0ppm
								PID 0.90m, 0.0ppm
						1.20 - 1.65	D3	SPT(S) 1.20m, N=63 (12,12/15,15,14,19)
MADE GROUND: Reddish brown sandy angular and subangular fine to coarse GRAVEL comprising brick, concrete and wood.		1.30	63.32			1.30	ES4	
								PID 1.50m, 0.0ppm
EOH at 2.00m - Terminated due to concrete obstruction		2.00	62.62					

Observations / Remarks

1. Groundwater not observed.
2. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 2.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379137.47	Northing:	407414.09
Level:	66.51mAOD	Depth:	4.50m
Logger:	DB	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS07**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-			1.80	-	-	1.80	20	
1.20	4.50	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	4.50	-								

Scale:	1:25
Checked By:	DB
Approved By:	RAJ
Start Date:	24/01/2017
Finish Date:	24/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over TOPSOIL: Soft dark brown very sandy CLAY.						0.20	ES2	PID 0.20m, 0.0ppm
		0.40	66.11					
Light brown, orange and grey very sandy subrounded and rounded fine to coarse GRAVEL comprising predominantly sandstone.						0.50 0.50	B1 ES3	
								PID 0.80m, 0.0ppm
								SPT(C) 1.20m, N=16 (3,2/3,3,4,6) PID 1.20m, 0.0ppm
		1.40	65.11					
Medium dense orange and grey including infrequent dark red slightly sandy clayey angular to subrounded fine to coarse GRAVEL.						1.50	D4	PID 1.50m, 0.0ppm
		1.80	64.71					
Light brown and orange sandy slightly cobbly subangular to rounded fine to coarse GRAVEL.								SPT(C) 2.00m, N=10 (4,3/2,2,3,3) PID 2.00m, 0.0ppm
		2.10	64.41					
Medium dense orange and grey slightly gravelly clayey SAND.						2.40	D5	
								PID 2.50m, 0.0ppm
		2.80	63.71					
Soft to firm reddish grey sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine mixed mudstone and sandstone.						3.00 - 3.45	D6	SPT(S) 3.00m, N=9 (1,1/1,1,3,4)
								PID 3.40m, 0.0ppm
						4.00 - 4.45	D7	SPT(S) 4.00m, 60 (10,15/60 for 220mm)
		4.30	62.21					
Firm to stiff dark brown and grey slightly sandy very gravelly CLAY. Gravel is angular to subrounded fine to coarse mixed lithologies.								
		4.50	62.01					
EOH at 4.50m - Terminated due to stiff clay								

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 2.50m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	
2.00	3.00	77	80	
3.00	4.00	67	60	

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379226.41	Northing:	407483.60
Level:	67.65mAOD	Depth:	5.45m
Logger:	DB	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS09**

Sheet 1 of 2

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale:	1:25
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By:	DB
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-			1.80	-	-	1.80	20		Approved By:	RAJ
1.20	5.45	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	5.45	-									Start Date:	25/01/2017
															Finish Date:	25/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over TOPSOIL: Soft dark brown very sandy CLAY.		0.05	67.60			0.00 - 1.00	B1	
Soft becoming firm brown, dark grey and orange gravelly CLAY including roots.						0.30	ES2	PID 0.30m, 2.4ppm
Orange and brown very clayey sandy angular to subrounded fine to coarse cobbly GRAVEL.		0.40	67.25			0.70	ES3	PID 0.70m, 2.8ppm
						1.20 - 1.65	D4	SPT(S) 1.20m, N=23 (4,6/5,6,6,6) 1 PID 1.20m, 3.7ppm
Medium dense dark brown, grey, orange and black very sandy angular and subangular fine to coarse GRAVEL of sandstone.		1.40	66.25					PID 1.90m, 7.5ppm
						2.00 - 2.45	D5	SPT(S) 2.00m, N=15 (1,4/4,3,4,4) 2
								PID 2.50m, 6.1ppm
Soft becoming firm dark reddish brown including infrequent cream sandy gravelly CLAY. Gravel is angular to rounded fine to coarse mixed lithologies.		2.60	65.05					PID 2.90m, 0.8ppm
						3.00 - 3.45	D6	SPT(S) 3.00m, N=15 (2,3/3,4,4,4) 3
Loose dark brown very silty clayey medium and fine SAND.		3.50	64.15			4.00 - 4.45	D7	SPT(S) 4.00m, N=9 (2,2/2,2,2,3) 4
Dark brown medium and coarse SAND.		4.60	63.05					
Continued on Next Page		5.00	62.65			5.00 - 5.45	D8	SPT(S) 5.00m, 50 (25 for 75mm/50 for 0mm) 5

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 2.50m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	
2.00	3.00	77	70	
3.00	4.00	67	90	
4.00	5.00	57	90	

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379226.41	Northing:	407483.60
Level:	67.65mAOD	Depth:	5.45m
Logger:	DB	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS09**

Sheet 2 of 2

Method, Plant and Crew					Diameter		Casing		Groundwater					
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-			1.80	-	-	1.80	20	
1.20	5.45	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	5.45	-								

Scale: 1:25
Checked By: DB
Approved By: RAJ
Start Date: 25/01/2017
Finish Date: 25/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Dark grey angular and subangular fine to coarse cobbly GRAVEL.		5.10	62.55					
EOH at 5.45m - Terminated due to refusal								

6
7
8
9
10

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 2.50m bgl.

Sampling Runs				
From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information	
Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379252.99 Northing: 407587.86 Level: 67.54mAOD Depth: 0.60m Logger: DB Type: IP	Status FINAL	Pit Number **DS10** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions m m	Orientation: ° Shoring: None Stability: Stable Plant: Hand Excavated	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB Approved By: RAJ Start Date: 01/02/2017 Finish Date:
		0.50	0.50	20		

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over TOPSOIL: Soft dark brown very sandy CLAY.		0.05	67.48					
Brown and orange very clayey slightly gravelly SAND.						0.40	ES1	
Orange and brown slightly cobbly sandy subrounded fine to coarse GRAVEL.		0.50	67.04					
EOH at 0.60m - Terminated due to compact gravels and groundwater resting at 0.50m bgl.		0.60	66.94					

1

2

Observations / Remarks

1. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	372270.00	Northing:	407509.35
Level:	67.57mAOD	Depth:	5.45m
Logger:	DB	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS11**

Sheet 1 of 2

Method, Plant and Crew					Diameter		Casing		Groundwater					
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-			2.00	-	-	2.00	20	
1.20	5.45	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	5.45	-								

Scale: 1:25
Checked By: DB
Approved By: RAJ
Start Date: 25/01/2017
Finish Date: 25/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Soft dark brown very sandy CLAY.		0.05	67.52					
MADE GROUND: Soft dark brown and black sandy slightly gravelly CLAY.						0.20	ES2	PID 0.20m, 0.0ppm
						0.20 - 0.70	B1	
MADE GROUND: Soft dark brown, black and cream very gravelly CLAY including brick.		0.30	67.27					
						0.50	ES3	PID 0.50m, 0.8ppm
Soft reddish brown gravelly sandy CLAY.		0.60	66.97					
Brown cream and orange very sandy subrounded and rounded fine to coarse GRAVEL.		0.90	66.67			0.90	ES4	PID 0.90m, 0.0ppm
								1
Medium dense brown and orange very gravelly medium to coarse SAND. Gravel is subangular to rounded fine to coarse of various lithologies.		1.20	66.37			1.20 - 1.65	D5	SPT(S) 1.20m, N=15 (1,6/5,4,3,3)
								PID 1.50m, 0.6ppm
Medium dense brown, cream and orange very sandy angular to subrounded fine to coarse cobbly GRAVEL. Cobbles typically rounded and subrounded, fine in size.		1.80	65.77			2.00 - 2.45	D6	SPT(S) 2.00m, N=5 (1,1/1,1,1,2)
								2
								PID 2.20m, 0.8ppm
Very loose brown slightly sandy subangular to subrounded fine to coarse sandstone GRAVEL, becoming angular and subangular fine to coarse at depth.		2.60	64.97			3.00 - 3.45	D7	SPT(S) 3.00m, N=4 (1,0/0,1,1,2)
								3
								SPT(C) 4.00m, N=0 (1,0/0,0,0,0)
								4
								SPT(C) 5.00m, N=12 (3,3/2,4,3,3)
								5

Continued on Next Page

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 3.50m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	
2.00	3.00	77	60	
3.00	4.00	67	40	
4.00	5.00	57	50	

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	372270.00	Northing:	407509.35
Level:	67.57mAOD	Depth:	5.45m
Logger:	DB	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS11**

Sheet 2 of 2

Method, Plant and Crew					Diameter		Casing		Groundwater					
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-			2.00	-	-	2.00	20	
1.20	5.45	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	5.45	-								

Scale: 1:25
Checked By: DB
Approved By: RAJ
Start Date: 25/01/2017
Finish Date: 25/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
EOH at 5.45m - Achieved target depth		5.45	62.12					

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 3.50m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379274.79	Northing:	407290.50
Level:	64.32mAOD	Depth:	5.45m
Logger:	DB	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS14**

Sheet 1 of 2

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale:	1:25
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By:	DB
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-			4.00	-	-	4.00	20		Approved By:	RAJ
1.20	5.45	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	5.45	-									Start Date:	26/01/2017
															Finish Date:	26/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Soft dark brown very sandy CLAY.		0.05	64.27			0.00 - 0.40	B1	
MADE GROUND: Dark grey and black angular and subangular fine to coarse GRAVEL comprising ash including rare brick fragments.						0.20	ES2	PID 0.20m, 0.2ppm
MADE GROUND: Soft very sandy light grey, cream and orange slightly gravelly CLAY.		0.40	63.92			0.50	ES3	PID 0.50m, 0.4ppm
MADE GROUND: Black angular and subangular fine to coarse GRAVEL ash including orange brick fragments.		0.60	63.72			0.80	ES4	PID 0.80m, 1.2ppm
						1.20 - 1.65	D5	SPT(S) 1.20m, N=23 (1,1/3,5,4,11)
MADE GROUND: Brown, dark grey and black very clayey angular to subrounded fine to coarse GRAVEL including ash, brick. Clay commonly occurring in gravel sized fragments including coal content.		1.30	63.02			1.50	ES6	PID 1.50m, 1.4ppm
MADE GROUND: Dark grey and black angular and subangular fine and medium GRAVEL ash.		1.70	62.62			1.80	ES8	PID 1.80m, 1.7ppm
MADE GROUND: Brown, dark grey, black and orange sandy angular and subangular fine to coarse cobbly GRAVEL including brick and concrete.		2.00	62.32			2.00 - 2.45	D7	SPT(S) 2.00m, N=17 (4,3/5,6,3,3)
						2.50	ES10	PID 2.50m, 2.2ppm
						3.00 - 3.45	D9	SPT(S) 3.00m, N=10 (5,5/4,3,2,1)
MADE GROUND: Very soft brown gravelly very sandy CLAY.		3.60	60.72			3.70	ES12	PID 3.70m, 11.4ppm
MADE GROUND: Very soft dark grey / black SILT.		4.00	60.32	▼		4.00 - 4.45	D11	SPT(S) 4.00m, N=4 (1,2/1,1,1,1)
MADE GROUND: Very loose black very sandy angular fine and medium GRAVEL of ash.		4.60	59.72			5.00 - 5.45	D13	SPT(S) 5.00m, N=4 (1,1/1,1,1,1) PID 5.00m, 5.6ppm

Continued on Next Page

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 4.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	
2.00	3.00	77	90	
3.00	4.00	67	80	
4.00	5.00	57	80	

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379274.79	Northing:	407290.50
Level:	64.32mAOD	Depth:	5.45m
Logger:	DB	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS14**

Sheet 2 of 2

Method, Plant and Crew					Diameter		Casing		Groundwater					
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-			4.00	-	-	4.00	20	
1.20	5.45	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	5.45	-								

Scale: 1:25
Checked By: DB
Approved By: RAJ
Start Date: 26/01/2017
Finish Date: 26/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
EOH at 5.45m - Achieved target depth		5.45	58.87					

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Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 4.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379435.40	Northing:	407351.98
Level:	69.18mAOD	Depth:	5.45m
Logger:	DB	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS17**

Sheet 1 of 2

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale:	1:25
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By:	DB
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-			4.30	-	-	4.30	20		Approved By:	RAJ
1.20	5.45	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	5.45	-									Start Date:	30/01/2017
															Finish Date:	30/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results	
MADE GROUND: Brown slightly clayey sandy angular and subangular fine to coarse GRAVEL including brick and roots.						0.20 - 1.00	B1		
						0.30	ES2	PID 0.30m, 8.8ppm	
MADE GROUND: Dark grey and cream sandy angular and subangular fine to coarse GRAVEL comprising concrete.		0.40	68.78			0.50	ES4	PID 0.50m, 9.7ppm	
MADE GROUND: Black, brown and dark grey sandy angular and subangular fine to coarse GRAVEL comprising brick, concrete and ash.		0.60	68.58			0.80	ES6	PID 0.80m, 12.2ppm	1
						1.20 - 1.65	D3	SPT(S) 1.20m, N=2 (1,1/1,0,0,1)	
MADE GROUND: Soft silvey grey / charcoal grey (laminated) very sandy and grainy texture CLAY. (Possible industrial waste sludge.)		1.30	67.88			1.60	ES8	PID 1.60m, 15.3ppm	
MADE GROUND: Dark brown and black angular and subangular fine to coarse GRAVEL including brick and ash.		1.70	67.48			2.00 - 2.45	D5	SPT(S) 2.00m, N=13 (3,7/5,4,2,2) PID 2.00m, 14.3ppm	2
MADE GROUND: Brown and dark grey sandy angular and subangular fine to coarse GRAVEL including ash, clinker and metal.		2.50	66.68					PID 2.70m, 12.3ppm	
						3.00 3.00 - 3.45	ES10 D7	SPT(S) 3.00m, N=1 (1,1/1,0,0,0)	3
MADE GROUND: Soft creamish white CLAY (Possible industrial waste sludge).		3.70	65.48			3.80	ES12	PID 3.80m, 16.9ppm	
MADE GROUND: Dark grey, black and brown angular and subangular fine to coarse GRAVEL of ash.		4.00	65.18			4.00 - 4.45	D9	SPT(S) 4.00m, N=2 (1,0/1,0,1,0)	4
								PID 4.20m, 16.8ppm	
MADE GROUND: Soft creamish white CLAY (possible industrial waste sludge).		4.30	64.88						
MADE GROUND: Black angular and subangular fine and medium GRAVEL of ash.		4.60	64.58						
						5.00 - 5.45	D11	SPT(S) 5.00m, N=14 (1,1/6,5,2,1)	5

Continued on Next Page

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 4.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	90	
2.00	3.00	77	90	
3.00	4.00	67	30	
4.00	5.00	57	80	

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379435.40	Northing:	407351.98
Level:	69.18mAOD	Depth:	5.45m
Logger:	DB	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS17**

Sheet 2 of 2

Method, Plant and Crew					Diameter		Casing		Groundwater					
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-			4.30	-	-	4.30	20	
1.20	5.45	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	5.45	-								

Scale: 1:25
Checked By: DB
Approved By: RAJ
Start Date: 30/01/2017
Finish Date: 30/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
EOH at 5.45m - Achieved target depth		5.45	63.73					

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 4.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379517.58	Northing:	407307.31
Level:	76.31mAOD	Depth:	5.45m
Logger:	LD	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS20**

Sheet 1 of 2

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale:	1:25
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By:	DB
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-									Approved By:	RAJ
1.20	5.45	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	5.45	-									Start Date:	27/01/2017
															Finish Date:	27/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Grass over soft brown sandy very gravelly CLAY. Gravel is angular fine to coarse brick, concrete and mudstone.						0.50 0.50 - 1.00	ES1 B2	
At 0.50m bgl becomes dark brown slightly sandy.								
MADE GROUND: Soft grey mottled black very sandy CLAY / SILT. Rare organic matter.		0.80	75.51			1.20	D3	SPT(S) 1.20m, N=5 (1,1/1,1,1,2)
						1.50	ES4	PID 1.50m, 8.4ppm
						2.00	D5	SPT(S) 2.00m, N=0 (1,0/0,0,0,0)
						2.50	ES6	PID 2.50m, 13.8ppm
						3.00	D7	SPT(S) 3.00m, N=0 (1,1/0,0,0,0)
At 3.80m bgl becomes black slightly sandy.								
						4.00	D8	SPT(S) 4.00m, N=1 (1,1/1,0,0,0)
						5.00	D9	SPT(S) 5.00m, N=4 (1,1/1,1,1,1)

Continued on Next Page

Observations / Remarks

1. Groundwater not observed.
2. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 5.0m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	
2.00	3.00	77	100	
3.00	4.00	67	80	
4.00	5.00	67	70	

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379517.58	Northing:	407307.31
Level:	76.31mAOD	Depth:	5.45m
Logger:	LD	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS20**

Sheet 2 of 2

Method, Plant and Crew					Diameter		Casing		Groundwater					
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-								
1.20	5.45	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	5.45	-								

Scale:	1:25
Checked By:	DB
Approved By:	RAJ
Start Date:	27/01/2017
Finish Date:	27/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
EOH at 5.45m - Achieved target depth		5.45	70.86					

Observations / Remarks

1. Groundwater not observed.
2. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 5.0m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379479.10	Northing:	407361.42
Level:	71.15mAOD	Depth:	5.45m
Logger:	DB	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS22**

Sheet 1 of 2

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale:	1:25
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By:	DB
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-									Approved By:	RAJ
1.20	5.45	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	5.45	-									Start Date:	30/01/2017
															Finish Date:	30/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results	
MADE GROUND: Black and dark grey slightly sandy angular and subangular fine to coarse GRAVEL including brick.						0.00 - 1.00	B1		
						0.30	ES3	PID 0.30m, 0.0ppm	
MADE GROUND: Brown, cream and grey slightly sandy angular and subangular fine to coarse GRAVEL including concrete, tile and brick fragments.		0.40	70.75						
								PID 0.90m, 4.8ppm	1
						1.20 - 1.65	D2	SPT(S) 1.20m, N=4 (1,1/1,1,1,1)	
						1.50	ES5	PID 1.50m, 5.9ppm	
						2.00 - 2.45	D4	SPT(S) 2.00m, N=7 (1,1/2,2,1,2)	2
								PID 2.20m, 4.8ppm	
At 2.60m bgl including brick debris (cobbles).									
								PID 2.90m, 2.3ppm	
						3.00 - 3.45	D6	SPT(S) 3.00m, N=19 (1,5/8,5,3,3)	3
From 3.40m to 3.50m bgl brick cobbles.									
MADE GROUND: Black and charcoal grey angular and subangular fine and medium GRAVEL of ash kiln/clinker debris with some white clay		3.50	67.65						
								PID 3.80m, 2.1ppm	
						3.90	ES7		
						4.00 - 4.45	D8	SPT(S) 4.00m, N=0 (1,0/0,0,0,0)	4
								PID 4.10m, 4.2ppm	
MADE GROUND: Brown and black very gravelly SAND. Gravel is angular and subangular fine coal fragments.		4.80	66.35						
						5.00	ES9	SPT(S) 5.00m, N=2 (1,0/1,0,1,0) PID 5.00m, 4.0ppm	5

Continued on Next Page

Observations / Remarks

1. Groundwater not observed.
2. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 5.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	
2.00	3.00	77	70	
3.00	4.00	67	70	
4.00	5.00	57	40	

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379479.10	Northing:	407361.42
Level:	71.15mAOD	Depth:	5.45m
Logger:	DB	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS22**

Sheet 2 of 2

Method, Plant and Crew					Diameter		Casing		Groundwater					
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-								
1.20	5.45	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	5.45	-								

Scale:	1:25
Checked By:	DB
Approved By:	RAJ
Start Date:	30/01/2017
Finish Date:	30/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
EOH at 5.45m - Achieved target depth		5.45	65.70					

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Observations / Remarks

1. Groundwater not observed.
2. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 5.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379424.94 Northing: 407510.02 Level: 67.22mAOD Depth: 1.30m Logger: LD Type: IP	Status FINAL	Pit Number **DS23** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
m	Shoring:					Approved By: RAJ
m	Stability:					Start Date: 27/01/2017
	Plant: Hand Excavated					Finish Date: 27/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Dark brownish grey slightly sandy very gravelly CLAY. Gravel is fine to coarse angular brick and concrete.						0.40	D1	
						0.50	ES2	
Orangish brown fine to coarse SAND.		1.00	66.22					1
EOH at 1.30m - Terminated due to proximity of unknown service.,		1.30	65.92					2

Observations / Remarks

1. Groundwater not observed.
2. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 1.00m bgl.

Project Number

A090070-193

Project: **East Lancashire Paper Mill**	Location Details	Status	Borehole Number
Location: **Radcliffe**	Easting: 379340.02 Northing: 407591.98	FINAL	**DS24**
Client: **Homes & Communities Agency**	Level: 66.73mAOD Depth: 2.45m		Sheet 1 of 1
	Logger: LD Type: WLS		
	Inclination: 90°		

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:25
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: DB
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-			1.50	-	-	1.50	20		Approved By: RAJ
1.20	2.45	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	2.45	-									Start Date: 27/01/2017
															Finish Date: 27/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Soft black and grey mottled slightly sandy silty CLAY.								
MADE GROUND: Medium dense orangish brown SAND and GRAVEL. Gravel is subangular to rounded fine to coarse mudstone, sandstone and rare concrete.		0.15	66.58			0.50	ES1	PID 0.50m, 1.8ppm
						1.20	D2	SPT(S) 1.20m, N=18 (4,4/4,4,5,5)
At 1.80m bgl becomes grey.						2.00	D3	SPT(S) 2.00m, N=20 (1,5/5,5,5,5)
EOH at 2.45m - Achieved target depth		2.45	64.28					

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4
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Observations / Remarks	Sampling Runs					Hammer Information	
1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 1.00m bgl.	From (m)	To (m)	Diam (mm)	Recovery %	Remarks	Serial No.	Energy Ratio %
	1.20	2.00	97	60		PBDWS03	110
						Project Number	
						A090070-193	

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379378.70	Northing:	407659.40
Level:	66.85mAOD	Depth:	2.45m
Logger:	LD	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS25**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater					
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.00	Inspection Pit	Hand Excavated	PB Drilling	1.00	-			1.80	-	-	1.80	20	
1.00	2.45	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	2.45	-								

Scale:	1:25
Checked By:	DB
Approved By:	RAJ
Start Date:	27/01/2017
Finish Date:	27/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Orangish brown clayey SAND and GRAVEL. Gravel is angular to subrounded fine to coarse mudstone, sandstone and rare brick.						0.50	ES1	
						1.00	D2	SPT(S) 1.00m, N=13 (2,3/3,3,3,4)
Loose greyish brown sandy angular to subrounded fine to coarse GRAVEL of various lithologies.		1.10	65.75					
								SPT(S) 2.00m, N=6 (2,1/1,1,2,2)
EOH at 2.45m - Terminated due to obstruction		2.45	64.40					

1 2 3 4 5

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 1.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.00	2.00	97	40	

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379205.21	Northing:	407547.62
Level:	70.25mAOD	Depth:	5.45m
Logger:	DB	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS26**

Sheet 1 of 2

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale:	1:25
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By:	DB
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-			4.70	-	-	4.70	20		Approved By:	RAJ
1.20	5.45	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	5.45	-									Start Date:	25/01/2017
															Finish Date:	25/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results	
MADE GROUND: CONCRETE.									
MADE GROUND: Soft light brown and black very gravelly CLAY including brick, concrete and rootlets.		0.40	69.85			0.50	B1	PID 0.50m, 4.2ppm	
						0.60	ES2		
MADE GROUND: Dark grey and black slightly sandy angular and subangular fine and medium GRAVEL comprising predominantly of ash.		0.90	69.35					PID 0.90m, 4.8ppm	
						1.00	ES4		1
						1.20 - 1.65	D3	SPT(S) 1.20m, N=0 (1,1/0,0,0,0)	
								PID 1.40m, 7.3ppm	
						1.80	ES6		
								PID 1.90m, 11.4ppm	
MADE GROUND: Cream and orange fine to medium SAND.		2.00	68.25			2.00 - 2.45	D5	SPT(S) 2.00m, N=4 (2,1/1,1,1,1)	2
MADE GROUND: Grey and black fine and medium GRAVEL including ash and brick.		2.30	67.95					PID 2.30m, 12.4ppm	
MADE GROUND: Cream and orange gravelly SAND including infrequent pockets of ash.		2.50	67.75						
						2.80	ES8	PID 2.80m, 11.4ppm	
MADE GROUND: Black angular and subangular fine and medium ash SAND and GRAVEL including coal fragments.		3.00	67.25			3.00 - 3.45	D7	SPT(S) 3.00m, N=4 (1,1/1,1,1,1)	3
MADE GROUND: Cream and orange very sandy angular and subangular fine to coarse GRAVEL.		3.00	67.25					PID 3.30m, 13.2ppm	
MADE GROUND: Black slightly sandy angular and subangular fine and medium GRAVEL including ash and clinker.		4.00	66.25			4.00 - 4.45	D9	SPT(S) 4.00m, N=25 (5,4/7,6,6,6) PID 4.00m, 10.2ppm	4
Medium dense brown and orange angular to subrounded fine to coarse GRAVEL.		4.70	65.55	▼		5.00 - 5.45	D10	SPT(S) 5.00m, N=17 (5,4/4,3,5,5)	5

Continued on Next Page

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 5.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	
2.00	3.00	77	100	
3.00	4.00	67	100	
4.00	5.00	57	100	

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**

Location: **Radcliffe**

Client: **Homes & Communities Agency**

Location Details			
Easting:	379205.21	Northing:	407547.62
Level:	70.25mAOD	Depth:	5.45m
Logger:	DB	Type:	WLS
		Inclination:	90°

Status: FINAL

Borehole Number: **DS26**

Sheet 2 of 2

Method, Plant and Crew					Diameter		Casing		Groundwater					
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-			4.70	-	-	4.70	20	
1.20	5.45	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	5.45	-								

Scale: 1:25
Checked By: DB
Approved By: RAJ
Start Date: 25/01/2017
Finish Date: 25/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
EOH at 5.45m - Achieved target depth		5.45	64.80					

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 5.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number: **A090070-193**

Project: **East Lancashire Paper Mill**	Location Details	Status	Borehole Number
Location: **Radcliffe**	Easting: 379053.83 Northing: 407444.69	FINAL	**DS27**
Client: **Homes & Communities Agency**	Level: 66.82mAOD Depth: 3.95m		Sheet 1 of 1
	Logger: DB Type: WLS		
	Inclination: 90°		

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:25
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: DB
0.00	1.20	Inspection Pit	Hand Excavated	PB Drilling	1.20	-			2.50	-	-	2.50	20		Approved By: RAJ
1.20	3.95	Dynamic Windowless Sampling	Dynamic Sampling	PB Drilling	3.95	-									Start Date: 30/01/2017
															Finish Date: 30/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Brick paving / sandstone cobbles.						0.00 - 1.00	B1	
MADE GROUND: Dark brown and grey very cobbly gravely SAND. Gravel is rounded to subangular fine to coarse including sandstone.		0.10	66.72					
						0.30	ES2	PID 0.30m, 0.2ppm
Cream and orange very gravelly slightly clayey fine to coarse SAND.		0.40	66.42					
Medium dense orange and cream subrounded and subangular fine to coarse sandy GRAVEL, becoming angular and subangular fine to coarse with depth.		0.45	66.37			0.50	ES3	PID 0.50m, 0.6ppm
						1.20 - 1.65	D4	SPT(S) 1.20m, N=17 (5,6/6,4,4,3)
								PID 1.40m, 1.1ppm
Soft to firm greyish brown very sandy CLAY.		1.80	65.02					
Firm brownish grey slightly cobbly very sandy CLAY. Cobbles commonly subrounded to angular.		2.00	64.82					SPT(S) 2.00m, N=9 (3,3/3,2,2,2) PID 2.00m, 0.4ppm
								PID 2.50m, 1.7ppm
								SPT(S) 3.00m, N=9 (2,2/2,2,2,3)
						3.50 - 3.95	D5	
								PID 3.90m, 0.8ppm
EOH at 3.95m - Terminated due to refusal		3.95	62.87					

Observations / Remarks

1. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 3.95m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	
2.00	3.00	77	100	

Hammer Information

Serial No.	Energy Ratio %
PBDWS03	110

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379492.97 Northing: 407365.10 Level: 70.98mAOD Depth: 1.00m Logger: LD Type: IP	Status FINAL	Pit Number **HP03** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
m	Shoring: None					Approved By: RAJ
m	Stability: Stable					Start Date: 26/01/2017
	Plant: Hand Excavated					Finish Date: 26/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Black clayey angular fine to coarse GRAVEL of brick, concrete, mudstone and ash.								
MADE GROUND: Black and grey slightly clayey sandy angular fine to coarse GRAVEL. High cobble content. Gravel and cobbles brick, concrete, clinker, rare glass and coal.		0.10	70.88					
From 0.30m to 0.35m bgl pocket of reddish brown sand and gravel.						0.50	ES1	
EOH at 1.00m - Achieved target depth		1.00	69.98					1
								2

Observations / Remarks

1. Groundwater not observed.
2. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379479.29 Northing: 407303.28 Level: 70.89mAOD Depth: 1.00m Logger: LD Type: IP	Status FINAL	Pit Number **HP04** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
m	Shoring: None					Approved By: RAJ
m	Stability: Stable					Start Date: 26/01/2017
	Plant: Hand Excavated					Finish Date: 26/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Black very gravelly CLAY with high cobble content. Gravel is angular and subangular brick, concrete, timber, rare coal and metal scrap. Cobbles are angular brick and concrete.						0.50	ES1	
EOH at 1.00m - Achieved target depth		1.00	69.89					1
								2

Observations / Remarks

1. Groundwater not observed.
2. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379179.25 Northing: 407571.15 Level: 69.58mAOD Depth: 0.50m Logger: DB Type: IP	Status FINAL	Pit Number **HP05** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
m	Shoring: None					Approved By: RAJ
m	Stability: Stable					Start Date: 01/02/2017
	Plant: Hand Excavated					Finish Date:

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Soft dark brown sandy CLAY.								
MADE GROUND: Dark brown grey and red very cobbly very clayey GRAVEL of brick, concrete and plastic. Concrete at 0.50m bgl.		0.05	69.53			0.40	ES1	
EOH at 0.50m - Terminated due to obstruction		0.50	69.08					

Observations / Remarks

1. Groundwater not observed.
2. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379157.40 Northing: 407547.68 Level: 69.16mAOD Depth: 0.80m Logger: DB Type: IP	Status FINAL	Pit Number **HP06** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
m	Shoring: None					Approved By: RAJ
m	Stability: Stable					Start Date: 01/02/2017
	Plant: Hand Excavated					Finish Date:

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Soft dark brown sandy CLAY.								
MADE GROUND: Slightly dark brown very gravelly sandy CLAY including brick and concrete fragments.		0.05	69.11			0.30	ES1	
MADE GROUND: Dark black brown and grey slightly sandy angular and subangular fine and medium GRAVEL of ash, brick and glass.		0.40	68.76			0.60	ES2	
EOH at 0.80m - Terminated due to obstruction		0.80	68.36					

Observations / Remarks

1. Groundwater not observed.
2. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379016.29 Northing: 407417.35 Level: 65.69mAOD Depth: 1.00m Logger: DB Type: IP	Status FINAL	Pit Number **HP07** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
m	Shoring: None					Approved By: RAJ
m	Stability: Stable					Start Date: 01/02/2017
	Plant: Hand Excavated					Finish Date:

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Soft dark brown sandy CLAY.								
MADE GROUND: Dark brown slightly clayey gravelly SAND including rootlets, glass shards and concrete/brick fragments.		0.05	65.64			0.20	ES1	
MADE GROUND: Orange and brown very gravelly medium to coarse SAND. Gravel is angular and subangular fine and medium brick fragments.		0.30	65.39					
MADE GROUND: Dark grey brown black and infrequent red slightly sandy cobbly GRAVEL. Gravel is angular and subangular fine and medium brick, ash and clinker with rare coal fragments. Cobbles are angular and subangular brick.		0.50	65.19			0.70	ES2	
EOH at 1.00m - Achieved target depth		1.00	64.69					1
								2

Observations / Remarks

1. Groundwater not observed.
2. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379022.18 Northing: 407390.64 Level: 65.33mAOD Depth: 1.00m Logger: DB Type: IP	Status FINAL	Pit Number **HP08** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
m	Shoring: None					Approved By: RAJ
m	Stability: Stable					Start Date: 01/02/2017
	Plant: Hand Excavated					Finish Date:

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Soft dark brown sandy CLAY.								
MADE GROUND: Dark brown black and grey very clayey sandy GRAVEL comprisings angular to subangular fine to coarse sandstone, brick and glass debris. Infrequent coal traces.		0.05	65.28			0.50	ES1	
Orange and brown clayey very gravelly CLAY. Gravel is rounded to subrounded fine to coarse sandstone.		0.60	64.73					
EOH at 1.00m - Achieved target depth		1.00	64.33					1
								2

Observations / Remarks

1. Groundwater not observed.
2. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379286.51 Northing: 407219.01 Level: 59.29mAOD Depth: 1.00m Logger: LD Type: IP	Status FINAL	Pit Number **SP1** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
0.60m / 1.00m	Shoring: None					Approved By: RAJ
	Stability: Stable					Start Date: 25/01/2017
	Plant: Wheeled Hydraulic Excavator					Finish Date: 25/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Grey very clayey slightly sandy angular fine to coarse GRAVEL of brick, concrete and rare coal. High cobble content of brick.						0.00 - 1.00	B3	
						0.20	ES1	
						0.80	ES2	
EOH at 1.00m - Achieved target depth		1.00	58.29					1
								2

Observations / Remarks

1. Trial Pit into side of stockpile.
2. Groundwater not observed.
3. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379032.51 Northing: 407159.53 Level: 62.55mAOD Depth: 1.00m Logger: LD Type: IP	Status FINAL	Pit Number **SP2** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
0.60m / 1.00m	Shoring: None					Approved By: RAJ
	Stability: Stable					Start Date: 25/01/2017
	Plant: Wheeled Hydraulic Excavator					Finish Date: 25/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Grey very clayey slightly sandy angular fine to coarse GRAVEL of brick, concrete and rare coal. High cobble content of concrete.						0.20	ES1	
						0.80	ES2	
EOH at 1.00m - Achieved target depth		1.00	61.55					1
								2

Observations / Remarks

1. Trial Pit into side of stockpile.
2. Groundwater not observed.
3. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379389.36 Northing: 407728.54 Level: 68.49mAOD Depth: 1.00m Logger: LD Type: IP	Status FINAL	Pit Number **SP3** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
0.60m / 1.00m	Shoring: None					Approved By: RAJ
	Stability: Stable					Start Date: 25/01/2017
	Plant: Wheeled Hydraulic Excavator					Finish Date: 25/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Greyish brown very clayey slightly sandy angular fine to coarse GRAVEL of brick, concrete and rare coal. High cobble content of concrete.						0.20	ES1	
						0.80	ES2	
EOH at 1.00m - Achieved target depth		1.00	67.49					1
								2

Observations / Remarks

1. Trial Pit into side of stockpile.
2. Groundwater not observed.
3. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379379.81 Northing: 407420.45 Level: 65.43mAOD Depth: 1.00m Logger: LD Type: IP	Status FINAL	Pit Number **SP4** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions 0.60m 1.00m	Orientation: ° Shoring: None Stability: Stable Plant: Wheeled Hydraulic Excavator	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB Approved By: RAJ Start Date: 29/01/2017 Finish Date: 29/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Greyish dark brown sandy angular fine to coarse GRAVEL of brick, concrete with rare coal, clinker and metal. High cobble content of concrete and brick.						0.20	ES1	
						0.80	ES2	
EOH at 1.00m - Achieved target depth		1.00	64.43					1
								2

Observations / Remarks

1. Trial Pit into side of stockpile.
2. Groundwater not observed.
3. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379256.60 Northing: 407246.76 Level: 61.79mAOD Depth: 1.00m Logger: None Type: IP	Status FINAL	Pit Number **SP5** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
0.60m / 1.00m	Shoring: None					Approved By: RAJ
	Stability: Stable					Start Date: 29/01/2017
	Plant: Wheeled Hydraulic Excavator					Finish Date: 29/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Greyish dark brown sandy angular fine to coarse GRAVEL of brick, concrete with rare coal, clinker and metal. High cobble content of concrete and brick.						0.20	ES1	
						0.80	ES2	
EOH at 1.00m - Achieved target depth		1.00	60.79					1
								2

Observations / Remarks

1. Trial Pit into side of stockpile.
2. Groundwater not observed.
3. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379096.42 Northing: 407248.91 Level: 62.30mAOD Depth: 1.00m Logger: LD Type: IP	Status FINAL	Pit Number **SP6** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
0.60m / 1.00m	Shoring: None					Approved By: RAJ
	Stability: Stable					Start Date: 29/01/2017
	Plant: Wheeled Hydraulic Excavator					Finish Date: 29/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Greyish dark brown sandy angular fine to coarse GRAVEL of brick, concrete with rare coal, clinker and metal. High cobble content of concrete and brick.						0.20	ES1	
						0.80	ES2	
EOH at 1.00m - Achieved target depth		1.00	61.30					1
								2

Observations / Remarks

1. Trial Pit into side of stockpile.
2. Groundwater not observed.
3. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379028.64 Northing: 407196.92 Level: 62.27mAOD Depth: 2.70m Logger: LD Type: TP	Status FINAL	Pit Number **TP101** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:25
Pit Dimensions	Orientation: 90°	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
1.00m / 2.00m	Shoring: None					Approved By: RAJ
	Stability: Stable					Start Date: 24/01/2017
	Plant: Wheeled Hydraulic Excavator					Finish Date: 24/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Grey slightly sandy clayey angular to subrounded fine to coarse brick, concrete and clinker.						0.20	D1	
						0.50	ES2	
MADE GROUND: Firm brown gravelly CLAY. Gravel is angular brick.		0.55	61.72					
MADE GROUND: Black and grey angular GRAVEL of clinker, slag, ash, coal and brick.		0.70	61.57			0.70 - 2.70	B3	
EOH at 2.70m - Terminated due to concrete obstruction.		2.70	59.57					

Observations / Remarks

1. Groundwater not observed.
2. Ground broke out from 0.7m to 2.7m bgl. Unable to continue due to depth of compacted / fused material.
3. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 378991.02 Northing: 407212.57 Level: 64.78mAOD Depth: 3.00m Logger: LD Type: TP	Status FINAL	Pit Number **TP102** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:25
Pit Dimensions	Orientation: 15°	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
0.60m / 1.50m	Shoring: None					Approved By: RAJ
	Stability: Stable					Start Date: 24/01/2017
	Plant: Wheeled Hydraulic Excavator					Finish Date: 24/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Brown slightly clayey sandy angular fine to coarse brick, concrete and rare clinker.						0.20	D1	
						0.50	ES2	
Loose brick masonry at 0.7m - 0.8m bgl.								
MADE GROUND: Black angular fine to coarse clinker, brick and concrete GRAVEL with ash.		0.80	63.98			0.80 - 1.20	B3	
Pocket of ash and white paper waste at 1.6m bgl.						1.60	ES4	
MADE GROUND: Reddish brown slightly clayey very sandy GRAVEL. Gravel is angular to rounded fine to coarse brick, concrete and rare clinker.		1.70	63.08			2.00 - 2.50	B5	
From 2.50m to 2.80m bgl concrete cobbles.						2.50	ES6	
						2.80	D7	
EOH at 3.00m - Achieved target depth		3.00	61.78					

Observations / Remarks

1. Groundwater not observed.
2. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379030.26 Northing: 407260.52 Level: 62.09mAOD Depth: 2.80m Logger: LD Type: TP	Status FINAL	Pit Number **TP103** Sheet 1 of 1	

Hole Information		Groundwater				Scale: 1:25
Pit Dimensions 1.00m 2.00m	Orientation: 0° Shoring: None Stability: Stable Plant: Wheeled Hydraulic Excavator	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB Approved By: RAJ Start Date: 25/01/2017 Finish Date: 25/01/2017
		1.50	1.50	20	Perched Water	

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Concrete hard standing.								
MADE GROUND: Brown very soft slightly gravelly very sandy CLAY. Gravel is angular to subrounded fine to coarse mudstone and rare brick.		0.30	61.79			0.40 0.50	D1 ES2	
MADE GROUND: Black / grey soft slightly gravelly sandy CLAY. Gravel is angular to subrounded fine to coarse brick.		0.60	61.49			0.60 - 1.60	B3	HV 0.80m, (p)=30 kPa (r)=12 kPa
						1.20	ES4	
Stiff light brown with red and yellow mottled CLAY.		1.60	60.49			1.80 2.00 - 2.70	D5 B6	
At 2.50m bgl reddish grey, hard.								HV 2.50m, (p)=120+ kPa (r)=69 kPa
Grey clayey angular and subangular fine to coarse mudstone GRAVEL (Weathered Mudstone).		2.70	59.39					
EOH at 2.80m - Achieved target depth		2.80	59.29					

1 2 3 4 5

Observations / Remarks

1. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379076.46 Northing: 407310.09 Level: 64.24mAOD Depth: 3.00m Logger: LD Type: TP	Status FINAL	Pit Number **TP106** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:25
Pit Dimensions	Orientation: 10°	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
0.60m / 1.50m	Shoring: None					Approved By: RAJ
	Stability: Stable					Start Date: 25/01/2017
	Plant: Wheeled Hydraulic Excavator					Finish Date: 25/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Brown clayey sandy angular to subrounded fine to coarse GRAVEL of brick, concrete, mudstone, rare clinker and white soft clay (Possible paper waste sludge)						0.20	D1	
MADE GROUND: Black soft sandy gravelly CLAY. Gravel is angular fine to coarse brick, concrete, clinker and pockets of grey and red clay. Rare white hard clay (Possible paper waste sludge)		0.30	63.94			0.50 0.50 - 1.50	ES2 B3	
						1.50	ES4	
Brown firm becoming stiff slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse mudstone.		2.00	62.24			2.00 - 2.70	B5	
						2.50	ES6	HV 2.50m, (p)=120+ kPa (r)=60 kPa
Reddish brown and grey clayey GRAVEL (Weathered bedrock).		2.70	61.54			2.80	D7	
EOH at 3.00m - Achieved target depth		3.00	61.24					

Observations / Remarks

1. Groundwater not observed.
2. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379149.16 Northing: 407351.48 Level: 64.20mAOD Depth: 3.00m Logger: LD Type: TP	Status FINAL	Pit Number **TP108** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:25
Pit Dimensions	Orientation: 340°	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
1.00m / 2.00m	Shoring: None	0.70	0.70	20	Seepage	Approved By: RAJ
	Stability: Stable					Start Date: 20/01/2017
	Plant: Wheeled Hydraulic Excavator					Finish Date: 20/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Dark brown clayey fine to coarse SAND and angular fine to coarse GRAVEL of brick and rare glass, plastic and clinker. Occasional concrete boulder.						0.00 - 0.70	B3	
						0.40	D1	PID 0.40m, 10.0ppm
						0.50	ES2	
MADE GROUND: Concrete / hardstanding - mixed with masonry.		0.70	63.50					
MADE GROUND: Dark brown slightly clayey very sandy angular fine to coarse GRAVEL of brick and concrete with rare timber and metal wiring. High cobble content of brick and concrete.		1.80	62.40			2.00 2.00 2.00 - 3.00	D4 ES5 B6	PID 2.00m, 0.0ppm
EOH at 3.00m - Achieved target depth		3.00	61.20					

Observations / Remarks

1. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379184.74 Northing: 407302.30 Level: 64.09mAOD Depth: 1.90m Logger: LD Type: TP	Status FINAL	Pit Number **TP110** Sheet 1 of 1

Hole Information		Groundwater			
Pit Dimensions 0.60m 1.50m	Orientation: 270° Shoring: None Stability: Unstable from 0.50m to 1.90m bgl Plant: Wheeled Hydraulic Excavator	Strike (m)	Rose To (m)	After (mins)	Remarks
		1.80	1.80	20	Seepage

Scale: 1:25
Checked By: DB
Approved By: RAJ
Start Date: 18/01/2017
Finish Date: 18/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Brown slightly clayey sandy gravelly COBBLES. Gravel and cobbles are angular brick and concrete.						0.20	ES1	PID 0.20m, 2.0ppm
						0.50 - 1.00	B2	
						1.50	D3	
At 1.80m bgl hydrocarbon sheen on water.						1.80	ES4	PID 1.80m, 18.0ppm
MADE GROUND: Concrete.		1.90	62.19					
EOH at 1.90m - Terminated due to concrete obstruction		1.90	62.19					

Observations / Remarks

1. Upon completion exploratory hole backfilled with arisings.

Project Number
A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379239.05 Northing: 407314.12 Level: 64.05mAOD Depth: 3.00m Logger: LD Type: TP	Status FINAL	Pit Number **TP111** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:25
Pit Dimensions	Orientation: 270°	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
0.60m / 1.50m	Shoring: None	0.40	0.40	20	Seepage	Approved By: RAJ
	Stability: Stable					Start Date: 18/01/2017
	Plant: Wheeled Hydraulic Excavator					Finish Date: 18/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Firm brown slightly sandy gravelly CLAY. Gravel is angular fine to coarse brick and concrete.						0.30	D1	
MADE GROUND: Black slightly clayey fine to coarse SAND and GRAVEL. Gravel is angular to subrounded fine to coarse brick, concrete, metal scrap and clinker. High cobble content of brick and concrete. Occasional pockets of stiff grey clay.		0.40	63.65			0.40 0.50 0.50 - 1.50	ES2 ES3 B4	PID 0.40m, 18.0ppm PID 0.50m, 38.0ppm
						1.50	ES5	PID 1.50m, 56.0ppm
						2.00	D6	
						2.50 - 3.00	B7	
EOH at 3.00m - Achieved target depth		3.00	61.05					

Observations / Remarks

1. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill**	Location Details		Status	Pit Number
Location: **Radcliffe**	Easting: 379228.37	Northing: 407407.66	FINAL	**TP113**
Client: **Homes & Communities Agency**	Level: 64.52mAOD	Depth: 2.50m		Sheet 1 of 1
	Logger: LD	Type: TP		

Hole Information		Groundwater			
Pit Dimensions: 1.50m × 0.60m	Orientation: 0°	Strike (m)	Rose To (m)	After (mins)	Remarks
	Shoring: None	0.50	0.50	20	
	Stability: Unstable from 0.30m to 2.00m bgl				
	Plant: Wheeled Hydraulic Excavator				

Scale:	1:25
Checked By:	DB
Approved By:	RAJ
Start Date:	17/01/2017
Finish Date:	17/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Firm greyish brown slightly sandy very gravelly CLAY. Gravel is angular fine to coarse brick and concrete. High cobble content of angular concrete and brick with occasional slabs. Pockets of very stiff clay.						0.20	D2	
From 0.50m to 2.40m bgl very strong hydrocarbon odour.						0.50 0.50 - 1.00	ES1 B3	
						1.20	ES4	
						1.50	D5	
						1.80 - 2.40	B6	
At 2.00m bgl slightly gravelly.								
Very stiff greyish brown slightly slightly gravelly CLAY. Gravel is subangular to rounded fine to coarse mudstone, sandstone and rare coal.		2.30	62.22			2.30 - 2.50	D7	HV 2.40m, (p)=120+ kPa (r)=38 kPa
EOH at 2.50m - Terminated due to instability		2.50	62.02					

Observations / Remarks

1. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379111.30 Northing: 407427.27 Level: 66.34mAOD Depth: 2.00m Logger: LD Type: TP	Status FINAL	Pit Number **TP114** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:25
Pit Dimensions 0.60m 1.50m	Orientation: 10° Shoring: None Stability: Unstable from 0.50 to 2.00m bgl. Plant: Wheeled Hydraulic Excavator	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB Approved By: RAJ Start Date: 16/01/2017 Finish Date: 16/01/2017
		2.00	1.80	20		

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over brown slightly clayey fine to coarse SAND and subangular to rounded fine to coarse sandstone and mudstone GRAVEL. High cobble content of subangular to rounded sandstone and mudstone.						0.30	D	
						0.50 0.50 - 1.00	ES1 B2	
						1.20	ES3	
1.60m bgl pockets of fine to coarse SAND.						1.50 1.50 - 2.00	D4 B5	
EOH at 2.00m - Terminated due to collapse		2.00	64.34			2.00	ES6	

Observations / Remarks

1. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379101.17 Northing: 407473.25 Level: 67.07mAOD Depth: 2.50m Logger: LD Type: TP	Status FINAL	Pit Number **TP115** Sheet 1 of 1

Hole Information

Pit Dimensions		
0.60m / 1.50m	Orientation:	270°
	Shoring:	None
	Stability:	Unstable from 2.00 to 2.50m bgl.
	Plant:	Wheeled Hydraulic Excavator

Groundwater

Strike (m)	Rose To (m)	After (mins)	Remarks
2.40	2.20	20	

Scale:	1:25
Checked By:	DB
Approved By:	RAJ
Start Date:	20/01/2017
Finish Date:	20/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over orangish brown slightly clayey fine to coarse SAND and angular to subrounded fine to coarse GRAVEL of various lithologies. High cobble content of subrounded to rounded mudstone.						0.20	D1	
						0.50 0.50 - 1.50	ES2 B3	PID 0.50m, 0.0ppm
						2.00 - 2.50	B4	
EOH at 2.50m - Terminated due to collapse		2.50	64.57					

Observations / Remarks

1. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379179.66 Northing: 407447.61 Level: 67.24mAOD Depth: 3.00m Logger: LD Type: TP	Status FINAL	Pit Number **TP116** Sheet 1 of 1

Hole Information		Groundwater			
Pit Dimensions	Orientation: 290°	Strike (m)	Rose To (m)	After (mins)	Remarks
0.60m / 1.50m	Shoring: None Stability: Stable Plant: Wheeled Hydraulic Excavator	2.10	2.00	20	

Scale:	1:25
Checked By:	DB
Approved By:	RAJ
Start Date:	16/01/2017
Finish Date:	16/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Orangish brown slightly clayey fine to coarse SAND and subangular to rounded fine to coarse GRAVEL of sandstone and mudstone . High cobble content of sandstone and mudstone subangular to rounded. Rare asphalt.						0.20 - 0.80	B1	
						0.50	ES2	PID 0.50m, 0.8ppm
Brown fine to coarse SAND and fine to coarse subangular to rounded GRAVEL of sandstone and mudstone. High cobble content. Cobbles mudstone and sandstone subangular to rounded.		0.80	66.44			1.00	D3	
						1.20	ES4	PID 1.20m, 0.0ppm
						1.50 - 2.00	B5	
Firm to stiff grey gravelly sandy CLAY. Gravel is subangular to rounded fine to coarse sandstone and mudstone. Pockets of sand and gravel.		2.30	64.94			2.40	D6	
						2.50 - 3.00	B7	HV 2.50m, (p)=84 kPa (r)=38 kPa
EOH at 3.00m - Achieved target depth		3.00	64.24					

Observations / Remarks

1. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill**	Location Details		Status	Pit Number
Location: **Radcliffe**	Easting: 379185.03	Northing: 407519.07	FINAL	**TP117**
Client: **Homes & Communities Agency**	Level: 68.04mAOD	Depth: 3.00m		Sheet 1 of 1
	Logger: LD	Type: TP		

Hole Information		Groundwater			
Pit Dimensions	Orientation: 270°	Strike (m)	Rose To (m)	After (mins)	Remarks
0.60m / 1.50m	Shoring: None Stability: Unstable from 2.50 to 3.00m bgl. Plant: Wheeled Hydraulic Excavator	2.50	2.40	20	

Scale:	1:25
Checked By:	DB
Approved By:	RAJ
Start Date:	17/01/2017
Finish Date:	17/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Vegetation over MADE GROUND: Firm brown slightly sandy gravelly CLAY. Gravel is angular fine to coarse brick, clinker and concrete. High cobble content of angular concrete and brick.						0.20	D1	
						0.50 0.50 - 1.00	ES2 B3	PID 0.50m, 0.0ppm
MADE GROUND: Orangish brown slightly gravelly fine to coarse SAND and fine to coarse angular to subrounded fine to coarse mudstone and sandstone with rare clinker.		1.00	67.04			1.00 - 1.40	B5	
						1.20	ES4	PID 1.20m, 0.0ppm
Brown fine to coarse SAND and fine to coarse subangular to rounded mudstone and sandstone GRAVEL. Occasional black speckling on some cobbles. Medium cobble content.		1.40	66.64			1.50 1.50	D6 ES7	PID 1.50m, 0.0ppm
						2.00 - 2.50	B8	
2.50m bgl becomes greyish brown, high cobble content.						2.50 - 3.00	B9	
EOH at 3.00m - Achieved target depth		3.00	65.04					

Observations / Remarks

1. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379241.29 Northing: 407477.90 Level: 67.39mAOD Depth: 3.00m Logger: LD Type: TP	Status FINAL	Pit Number **TP118** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:25
Pit Dimensions	Orientation: 10°	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
0.60m / 1.50m	Shoring: None	1.60	0.00	0	Seepage	Approved By: RAJ
	Stability: Stable					Start Date: 17/01/2017
	Plant: Wheeled Hydraulic Excavator					Finish Date: 17/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Black firm slightly gravelly CLAY. Gravel is angular fine to coarse brick and concrete.						0.10 0.10	D2 ES1	
Orangish brown slightly clayey fine to coarse SAND and GRAVEL. Gravel is subangular to rounded fine to coarse mudstone and sandstone.		0.20	67.19			0.20 - 1.00	B3	
1.00 to 1.10m bgl black staining. *1.10m bgl becomes greyish brown with high cobble content.*						1.00	ES4	
				▼		1.50	D5	
Stiff grey slightly gravelly sandy silty CLAY. Gravel is fine to coarse subrounded mudstone. Frequent pockets of fine to coarse SAND.		1.70	65.69					HV 1.80m, (p)=120 kPa (r)=39 kPa
						2.00	D6	
At 1.8, 2.4 and 2.7m bgl: High strength.								HV 2.40m, (p)=120 kPa (r)=39 kPa
						2.50 - 3.00	B7	
2.70m bgl very sandy.								HV 2.70m, (p)=102 kPa (r)=32 kPa
EOH at 3.00m - Achieved target depth		3.00	64.39					

Observations / Remarks

1. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379276.05 Northing: 407410.48 Level: 64.90mAOD Depth: 3.00m Logger: LD Type: TP	Status FINAL	Pit Number **TP119** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:25
Pit Dimensions	Orientation: 90°	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
0.60m / 1.50m	Shoring: None					Approved By: RAJ
	Stability: Stable					Start Date:
	Plant: Wheeled Hydraulic Excavator					Finish Date:

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Vegetation over MADE GROUND: Greyish brown slightly clayey fine to coarse SAND and fine to coarse angular GRAVEL of brick, concrete with rare coal, metal scrap and pottery.						0.20	D1	
						0.50 0.50 - 1.00	ES2 B3	
						1.20	ES4	
						1.50 - 2.00	B5	
MADE GROUND: Grey soft becoming firm, slightly silty slightly gravelly CLAY. Gravel is fine to coarse subangular to rounded mudstone and rare brick. *2.30 to 2.80m bgl black staining.* *2.50m bgl frequent pockets of silty grey fine to coarse SAND.*		2.30	62.60			2.40 2.50 2.50 - 3.00	D7 ES6 B8	HV 2.50m, (p)=62 kPa (r)=27 kPa
EOH at 3.00m - Achieved target depth		3.00	61.90					

Observations / Remarks

1. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379278.74 Northing: 407347.42 Level: 63.42mAOD Depth: 3.00m Logger: LD Type: TP	Status FINAL	Pit Number **TP120** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:25
Pit Dimensions	Orientation: 0°	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
0.60m / 1.50m	Shoring: None	2.70	2.60	20		Approved By: RAJ
	Stability: Stable					Start Date: 18/01/2017
	Plant: Wheeled Hydraulic Excavator					Finish Date: 18/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Firm greyish brown slightly sandy gravelly CLAY. Gravel is angular fine to coarse brick, concrete, pottery, metal scrap, glass, coal and rare plastic. High cobble content contains of brick and concrete. *0.30m bgl becomes dark grey occasional black staining*						0.20	D1	
						0.50 0.50 - 1.00	ES2 B3	
						1.50 1.50	D4 ES5	
						2.00	D6	
MADE GROUND: Soft grey sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse brick and mudstone. Medium cobble content. *2.30 to 2.50m bgl black staining on clay.*		2.30	61.12			2.30 - 2.60	B7	HV 2.40m, (p)=36 kPa (r)=17 kPa
MADE GROUND: Grey brown clayey fine to coarse SAND and GRAVEL. Gravel is subangular to rounded fine to coarse. High cobble content mudstone and sandstone. *2.60m bgl hydrocarbon sheen, slight odour.* *2.80m bgl pockets of soft grey clay.*		2.60	60.82			2.80 2.80	D8 ES9	HV 2.80m, (p)=45 kPa (r)=23 kPa
EOH at 3.00m - Achieved target depth		3.00	60.42					

Observations / Remarks

1. Upon completion exploratory hold backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379219.75 Northing: 407383.22 Level: 64.29mAOD Depth: 3.00m Logger: LD Type: TP	Status FINAL	Pit Number **TP121** Sheet 1 of 1	

Hole Information		Groundwater				Scale: 1:25
Pit Dimensions 1.00m 2.00m	Orientation: 270° Shoring: None Stability: Unstable from 1.00m to 1.70m bgl Plant: Wheeled Hydraulic Excavator	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB Approved By: RAJ Start Date: 20/01/2017 Finish Date: 20/01/2017
		1.60	1.60	20	Seepage	

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Vegetation over MADE GROUND: Dark greyish brown sandy clayey angular to subangular fine to coarse GRAVEL with high cobble content. Gravel and cobbles are brick, concrete, with rare clinker, glass and metal scrap.						0.00 - 1.00	B1	
						0.50	ES2	
At 1.20m bgl slightly clayey.						1.20	D3	
						1.50	ES4	
MADE GROUND: CONCRETE.		1.70	62.59					
MADE GROUND: Brick masonry.		1.90	62.39					
MADE GROUND: Concrete / brick. Difficult to identify due to water ingress.		2.00	62.29					
EOH at 3.00m - Terminated due to pit dimensions.		3.00	61.29					

Observations / Remarks

1. Upon completion exploratory hole backfilled with arisings.
2. Ground broken out from 1.7m to 3.0m bgl. Unable to identify from 2.0m bgl due to water ingress.

Project Number
A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379356.76 Northing: 407426.24 Level: 67.11mAOD Depth: 3.00m Logger: LD Type: TP	Status FINAL	Pit Number **TP123** Sheet 1 of 1	

Hole Information		Groundwater				Scale: 1:25
Pit Dimensions 0.60m 1.50m	Orientation: 25° Shoring: None Stability: Stable Plant: Wheeled Hydraulic Excavator	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB Approved By: RAJ Start Date: 25/01/2017 Finish Date: 25/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Grey angular fine to coarse limestone GRAVEL.								
MADE GROUND: Black sandy angular fine to coarse brick, coal, concrete, clinker, glass GRAVEL with medium cobble content of angular brick and clinker.		0.20	66.92			0.50 0.50 - 1.50	ES1 B2	
At 1.00m bgl small pockets of white clay (Possible paper waste sludge)						1.50	ES3	
						2.00	D4	
Soft black organic slightly silty CLAY with occasional organic matter.		2.20	64.92			2.40	D5	
At 2.5m bgl: low strength.						2.50 2.50 - 3.00	ES7 B6	HV 2.50m, (p)=38 kPa (r)=27 kPa
EOH at 3.00m - Achieved target depth		3.00	64.11					

Observations / Remarks

1. Groundwater not observed.
2. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379304.28 Northing: 407413.27 Level: 65.98mAOD Depth: 2.10m Logger: LD Type: TP	Status FINAL	Pit Number **TP124** Sheet 1 of 1

Hole Information		Groundwater			
Pit Dimensions 0.60m × 1.50m	Orientation: ° Shoring: None Stability: Unstable from 0.90m to 2.00m bgl Plant: Wheeled Hydraulic Excavator	Strike (m)	Rose To (m)	After (mins)	Remarks
		1.60	1.50	20	

Scale: 1:25
Checked By: DB
Approved By: RAJ
Start Date: 17/01/2017
Finish Date: 17/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Firm brown slightly sandy slightly gravelly CLAY. Gravel is angular fine to coarse brick with roots and rootlets.						0.20 0.20	D2 ES1	
MADE GROUND: Greyish black slightly clayey fine to coarse SAND and angular fine to coarse GRAVEL. Gravel is brick, clinker, concrete and glass.		0.40	65.58			0.50 - 1.00	B3	
At 1.60m bgl metal scraps.						1.20	ES4	
						1.50 - 2.00	B5	
						1.80	ES6	
EOH at 2.10m - Terminated due to water ingress and instability		2.10	63.88					

Observations / Remarks

1. Upon completion exploratory hole backfilled with arisings.

Project Number
A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379380.97 Northing: 407348.23 Level: 68.54mAOD Depth: 3.00m Logger: LD Type: TP	Status FINAL	Pit Number **TP127** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:25
Pit Dimensions	Orientation: 0°	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
0.60m / 1.50m	Shoring: None					Approved By: RAJ
	Stability: Stable					Start Date: 25/01/2017
	Plant: Wheeled Hydraulic Excavator					Finish Date: 25/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Trees and vegetation over MADE GROUND: Dark brown slightly gravelly CLAY. Gravel is angular fine to coarse brick.		0.10	68.44			0.20 0.20	D2 ES1	
MADE GROUND: Firm grey clayey SILT.						0.50 - 1.00	B3	
MADE GROUND: Very soft black pseudo fibrous PEAT. *At 1.20m bgl pockets of white clay (Possible paper waste sludge)*		1.00	67.54			1.10 1.20	D4 ES5	
MADE GROUND: Orangish brown and black fine to coarse SAND and fine to coarse angular to subrounded GRAVEL of brick, concrete, coal clinker with some ash.		1.40	67.14			1.50	D6	
						2.00 - 3.00	B7	
EOH at 3.00m - Achieved target depth		3.00	65.54					

Observations / Remarks

1. Groundwater not observed.
2. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379445.04 Northing: 407356.78 Level: 68.96mAOD Depth: 3.00m Logger: LD Type: TP	Status FINAL	Pit Number **TP128** Sheet 1 of 1	

Hole Information			Groundwater			
Pit Dimensions	Orientation: 0°		Strike (m)	Rose To (m)	After (mins)	Remarks
0.60m / 1.50m	Shoring: None Stability: Stable Plant: Wheeld Hydraulic Excavator					

Scale:	1:25
Checked By:	DB
Approved By:	RAJ
Start Date:	26/01/2017
Finish Date:	26/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Brown slightly sandy gravelly CLAY with roots and rootlets. Gravel is angular brick.								
MADE GROUND: Grey soft slightly sandy clayey SILT.		0.15	68.81			0.20	D1	
MADE GROUND: Dark brown slightly sandy amorphous PEAT. Occasional pockets of angular fine and medium gravel of brick and ash.		0.40	68.56			0.50	ES2	
						1.00	D3	
MADE GROUND: Soft grey slightly sandy clayey SILT.		1.20	67.76			1.20 - 2.20	B4	
						1.50	ES5	
MADE GROUND: Blackish brown sandy angular fine to coarse GRAVEL of clinker, brick and concrete with ash.		2.20	66.76			2.50 2.50 - 3.00	ES7 B6	
EOH at 3.00m - Achieved target depth		3.00	65.96					

Observations / Remarks

1. Groundwater not observed.
2. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379486.28 Northing: 407316.51 Level: 72.89mAOD Depth: 3.00m Logger: LD Type: TP	Status FINAL	Pit Number **TP130** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:25
Pit Dimensions	Orientation: 70°	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
0.60m / 1.50m	Shoring: None					Approved By: RAJ
	Stability: Stable					Start Date: 26/01/2017
	Plant: Wheeled Hydraulic Excavator					Finish Date: 26/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Brown firm slightly sandy gravelly CLAY. High cobble content. Gravel and cobbles are angular brick and concrete.						0.20	D2	
						0.50	ES1	
MADE GROUND: Stiff grey with pockets of reddish brown slightly sandy very gravelly CLAY. Gravel is angular brick, concrete and rare clinker.		0.60	72.29			1.00 - 2.00	B4	
						1.50	ES3	
MADE GROUND: Black clayey sandy angular fine to coarse brick, clinker, concrete GRAVEL with timber, coal and metal. High cobble content of brick and concrete.		2.00	70.89			2.00 - 3.00	B5	
EOH at 3.00m - Achieved target depth		3.00	69.89					

Observations / Remarks

1. Groundwater not observed.
2. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379369.82 Northing: 407524.11 Level: 67.01mAOD Depth: 3.00m Logger: LD Type: TP	Status FINAL	Pit Number **TP133** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:25
Pit Dimensions	Orientation: 10°	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
0.60m × 1.50m	Shoring: None	2.80	2.80	20		Approved By: RAJ
	Stability: Stable					Start Date: 19/01/2017
	Plant: Wheeled Hydraulic Excavator					Finish Date: 19/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Soft greyish brown slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse brick, concrete and mudstone. High cobble content of angular brick and concrete.						0.00 - 1.00	B2	
						0.40	ES1	PID 0.40m, 0.0ppm
						1.20	D3	
Soft greyish brown slightly gravelly sandy CLAY. Gravel is subangular to rounded mudstone. Black staining on clay. *From 1.40m to 2.50m bgl: Organic clay.*		1.40	65.61			1.50	ES4	HV 1.50m, (p)=31 kPa (r)=16 kPa
						1.50 - 2.50	B5	PID 1.50m, 0.0ppm
								HV 2.00m, (p)=37 kPa (r)=23 kPa
From 2.50m bgl becoming very sandy with frequent pockets of grey fine to coarse sand.						2.80	D6	
EOH at 3.00m - Achieved target depth		3.00	64.01					

Observations / Remarks

1. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379380.98 Northing: 407606.21 Level: 66.42mAOD Depth: 1.50m Logger: LD Type: TP	Status FINAL	Pit Number **TP134** Sheet 1 of 1	

Hole Information		Groundwater			
Pit Dimensions 0.60m 1.50m	Orientation: 30° Shoring: None Stability: Unstable from 0.40m to 1.50m bgl Plant: Wheeled Hydraulic Excavator	Strike (m)	Rose To (m)	After (mins)	Remarks
		1.20	1.00	20	Fast

Scale: 1:25
Checked By: DB
Approved By: RAJ
Start Date: 19/01/2017
Finish Date: 19/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Dark brown slightly gravelly sandy CLAY. Gravel is angular to subangular fine to coarse mudstone and brick.						0.20	D1	
MADE GROUND: Brown clayey SAND and GRAVEL. Gravel is subangular to rounded fine to coarse mudstone. Pockets of stiff grey sandy clay.		0.30	66.12			0.50 0.50 - 1.00	ES3 B2	
Stiff dark grey slightly sandy slightly gravelly CLAY. Some black staining.		1.00	65.42			1.10	D5	HV 1.00m, (p)=78 kPa (r)=34 kPa
Greyish brown fine to coarse SAND and angular to subrounded fine to coarse GRAVEL of mudstone and sandstone. High cobble content.		1.15	65.27			1.10 1.20 - 1.50	ES4 B6	
EOH at 1.50m - Terminated due to instability		1.50	64.92					

Observations / Remarks

1. Upon completion exploratory hole backfilled with arisings.

Project Number
A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379357.99 Northing: 407656.11 Level: 66.95mAOD Depth: 1.50m Logger: LD Type: TP	Status FINAL	Pit Number **TP135** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:25
Pit Dimensions	Orientation: 0°	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
0.60m / 1.50m	Shoring: None					Approved By: RAJ
	Stability: Stable					Start Date: 19/01/2017
	Plant: Wheeled Hydraulic Excavator					Finish Date: 19/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass and vegetation over MADE GROUND: Soft brown gravelly sandy CLAY. Gravel is subangular to rounded fine to coarse various lithologies including rare brick, roots and rootlets.						0.20 0.20	D1 ES2	PID 0.20m, 0.0ppm
						0.50 - 1.50	B3	
						1.00	ES4	PID 1.00m, 0.0ppm
EOH at 1.50m - Achieved target depth		1.50	65.45					

Observations / Remarks

1. Groundwater not observed.
2. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379379.70 Northing: 407676.46 Level: 67.06mAOD Depth: 1.50m Logger: LD Type: TP	Status FINAL	Pit Number **TP136** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:25
Pit Dimensions	Orientation: 0°	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
0.60m / 1.50m	Shoring: None					Approved By: RAJ
	Stability: Stable					Start Date: 19/01/2017
	Plant: Wheeled Hydraulic Excavator					Finish Date: 19/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass and vegetation over MADE GROUND: Soft brown gravelly sandy CLAY. Gravel is subangular to rounded fine to coarse various lithologies including rare brick, roots and rootlets.						0.00 - 1.00	B2	
						0.20	ES1	PID 0.20m, 0.0ppm
						1.40	ES3	PID 1.40m, 0.0ppm
EOH at 1.50m - Achieved target depth		1.50	65.56			1.50	D4	

Observations / Remarks

1. Groundwater not observed.
2. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379415.17 Northing: 407641.44 Level: 66.64mAOD Depth: 1.70m Logger: LD Type: TP	Status FINAL	Pit Number **TP137** Sheet 1 of 1

Hole Information		Groundwater			
Pit Dimensions 0.60m / 1.50m	Orientation: 0° Shoring: None Stability: Unstable from 1.00m to 1.70m bgl Plant: Wheeled Hydraulic Excavator	Strike (m)	Rose To (m)	After (mins)	Remarks
		1.30	1.00	20	

Scale: 1:25
Checked By: DB
Approved By: RAJ
Start Date: 19/01/2017
Finish Date: 19/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Firm brown slightly sandy gravelly CLAY. Gravel is subangular to rounded fine to coarse mudstone with rare brick and concrete.						0.20	D1	
						0.50 0.50 - 0.90	ES2 B3	
From 0.88m to 0.90m bgl black clay.								
Greyish brown slightly clayey sandy very gravelly COBBLES. Gravel and cobbles are angular to rounded various lithologies.		0.90	65.74			1.00 1.00 - 1.70	ES4 B5	
EOH at 1.70m - Terminated due to water ingress and instability		1.70	64.94					

Observations / Remarks

1. Upon completion exploratory hole backfilled with arisings.

Project Number
A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379431.82 Northing: 407673.52 Level: 67.40mAOD Depth: 2.40m Logger: LD Type: TP	Status FINAL	Pit Number **TP138** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:25
Pit Dimensions	Orientation: 0°	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB
0.60m / 1.50m	Shoring: None Stability: Unstable from 2.00m to 2.40m bgl Plant: Wheeled Hydraulic Excavator	2.00	1.80	20		Approved By: RAJ Start Date: 19/01/2017 Finish Date: 19/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over MADE GROUND: Firm greyish brown sandy gravelly CLAY. Gravel is is angular to subangular fine to coarse brick, mudstone and concrete.						0.20	ES1	PID 0.20m, 0.0ppm
From 0.50m to 0.90m bgl black staining.						0.50	D2	
Orangish brown slightly clayey fine to coarse SAND and angular to subrounded fine to coarse mudstone and sandstone GRAVEL. High cobble content.		0.90	66.50			1.00 1.00 - 1.80	ES4 B3	PID 1.00m, 0.0ppm
Greyish brown slightly sandy very gravelly COBBLES. Gravel and cobbles are subrounded to rounded various lithologies.		1.80	65.60	▼		1.80 - 2.40	B5	
EOH at 2.40m - Terminated due to water ingress and instability		2.40	65.00					

Observations / Remarks

1. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379445.56 Northing: 407360.34 Level: 67.06mAOD Depth: 2.80m Logger: LD Type: TP	Status FINAL	Pit Number **TP139** Sheet 1 of 1	

Hole Information		Groundwater				Scale: 1:25
Pit Dimensions 0.60m 1.50m	Orientation: 0° Shoring: None Stability: Stable Plant: Wheeled Hydraulic Excavator	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: DB Approved By: RAJ Start Date: 19/01/2017 Finish Date: 19/01/2017
		2.20	1.90	20		

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Grass over orangish brown slightly gravelly sandy CLAY. Gravel is subangular to rounded fine to coarse mudstone and rare brick.						0.20	D1	
						0.50	ES2	
MADE GROUND: Soft black slightly sandy slightly gravelly CLAY. Gravel is angular to subrounded fine to medium brick and mudstone. Rare shelly and organic matter.		0.60	66.46			0.70 - 1.70	B4	
						0.80	D3	
								HV 1.00m, (p)=37 kPa (r)=19 kPa
						1.20	ES5	
Soft greyish brown very sandy CLAY. Rare organic matter.		1.70	65.36			1.80	D6	
Grey slightly clayey sandy gravelly COBBLES. Gravel and cobbles are subangular to rounded of various lithologies.		2.20	64.86			2.20 - 2.80	B7	
EOH at 2.80m - Achieved target depth		2.80	64.26					

Observations / Remarks

1. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-193

Project: **East Lancashire Paper Mill** Location: **Radcliffe** Client: **Homes & Communities Agency**	Location Details Easting: 379450.37 Northing: 407531.36 Level: 66.56mAOD Depth: 2.00m Logger: LD Type: TP	Status FINAL	Pit Number **TP140** Sheet 1 of 1

Hole Information		Groundwater			
Pit Dimensions 0.60m × 1.50m	Orientation: 45° Shoring: None Stability: Unstable from 0.9m to 2.00m bgl Plant: Wheeled Hydraulic Excavator	Strike (m)	Rose To (m)	After (mins)	Remarks
		1.80	1.70	20	

Scale: 1:25
Checked By: DB
Approved By: RAJ
Start Date: 26/01/2017
Finish Date: 26/01/2017

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Grass over MADE GROUND: Dark brown slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse brick and mudstone.		0.10	66.46			0.20	D1	
MADE GROUND: Brownish green slightly sandy gravelly CLAY. Gravel is angular to subrounded fine to coarse mudstone with rare brick and concrete.						0.50	ES2	HV 0.50m, (p)=120 kPa (r)=64 kPa
Brown sandy GRAVEL and COBBLES. Gravel and cobbles are subangular to rounded of various lithologies.		0.80	65.76			1.00 - 2.00	B3	
EOH at 2.00m - Terminated due to instability		2.00	64.56					

Observations / Remarks

1. Upon completion exploratory hole backfilled with arisings.

Project Number
A090070-193

Photo Plate No. 01: TP 101 Arisings

Photo Plate No. 02: TP 101

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Trial Pit Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No. 03: TP 102 Arisings

Photo Plate No.04 : TP102

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Photo Plate No.05 : TP 103 Arisings

Photo Plate No.06 : TP 103

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Photo Plate No.07 : TP 106 Arisings

Photo Plate No.08 : TP 106

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Photo Plate No.09 : TP 108 Arisings

Photo Plate No.10 : TP 108

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Photo Plate No.11 : TP 110 Arisings

Photo Plate No.12 : TP 110

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Photo Plate No.13 : TP 111 Arisings

Photo Plate No.14 : TP 111

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Photo Plate No.15 : TP 112 Arisings

Photo Plate No.16 : TP 112

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Photo Plate No.17 : TP 113 Arisings

Photo Plate No.18 : TP 113

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Photo Plate No.19 : TP114 arisings

Photo Plate No.20 : TP 114

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Photo Plate No.21 : TP 115

Photo Plate No.22 : TP 115

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Photo Plate No.23 : TP 116 Arisings

Photo Plate No.24 : TP 116

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Photo Plate No.25 : TP 117 Arisings

Photo Plate No.26 : TP 117

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Trial Pit Photo Plates

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Photo Plate No.27 : TP 118 Arisings

Photo Plate No.28 : TP 118

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Trial Pit Photo Plates

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Photo Plate No.29 : TP 119 Arisings

Photo Plate No.30 : TP 119

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Trial Pit Photo Plates

Project No.: A090070-193

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Photo Plate No.31 : TP 120 Arisings

Photo Plate No.32 : TP 120

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Trial Pit Photo Plates

Project No.: A090070-193

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Photo Plate No.33 : TP 121 Arisings

Photo Plate No.34 : TP 121

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Trial Pit Photo Plates

Project No.: A090070-193

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Photo Plate No.35 : TP 123

Photo Plate No.36 : TP 123

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Trial Pit Photo Plates

Project No.: A090070-193

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Photo Plate No.37 : TP 124 Arisings

Photo Plate No.38 : TP 124

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Trial Pit Photo Plates

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Photo Plate No.39 : TP 127

Photo Plate No.40 : TP 127

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Manchester M17 1HH

Tel: 0161 872 3223
Fax: 0161 872 3192
E-mail enquiries @wyg.com

Environmental Consultancy
Ground Technologies & Investigation

Project : East Lancashire Paper Mill

Client: Homes & Communities Agency

Trial Pit Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No.41 : TP 128

Photo Plate No.42 : TP 128

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Project : East Lancashire Paper Mill

Client: Homes & Communities Agency

Trial Pit Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No.43 : TP 130

Photo Plate No.44 : TP 130

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Project : East Lancashire Paper Mill

Client: Homes & Communities Agency

Trial Pit Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No.45 : TP 133 Arisings

Photo Plate No.46 : TP 133

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Project : East Lancashire Paper Mill

Client: Homes & Communities Agency

Trial Pit Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No.47 : TP 134 Arisings

Photo Plate No.48 : TP 134

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Project : East Lancashire Paper Mill

Client: Homes & Communities Agency

Trial Pit Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No.49 : TP 135 Arisings

Photo Plate No.50 : TP 135

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Trafford Park,
Manchester M17 1HH

Tel: 0161 872 3223
Fax: 0161 872 3192
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Project : East Lancashire Paper Mill

Client: Homes & Communities Agency

Trial Pit Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No.51 : TP 136 Arisings

Photo Plate No.52 : TP 136

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Trial Pit Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No.53 : TP 137 Arisings

Photo Plate No.54 : TP 137

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Client: Homes & Communities Agency

Trial Pit Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No.55 : TP138 Arisings

Photo Plate No.56 : TP138

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Project : East Lancashire Paper Mill

Client: Homes & Communities Agency

Trial Pit Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No.57 : TP 139 Arisings

Photo Plate No.58 : TP 139

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Project : East Lancashire Paper Mill

Client: Homes & Communities Agency

Trial Pit Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No.59 : TP 140 Arisings

Photo Plate No.60 : TP 140

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Ground Technologies & Investigation

Project : East Lancashire Paper Mill

Client: Homes & Communities Agency

Trial Pit Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No. 01: DS01

Photo Plate No. 02: DS02

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Project : East Lancashire Paper Mill

Client: Homes & Communities Agency

Dynamic Sample Borehole Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No. 03: DS03

Photo Plate No. 04: DS04

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Ground Technologies & Investigation

Project : East Lancashire Paper Mill

Client: Homes & Communities Agency

Dynamic Sample Borehole Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No. 05: DS05

Photo Plate No. 06: DS06

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Client: Homes & Communities Agency

Dynamic Sample Borehole Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No. 07: DS07

Photo Plate No. 08: DS09

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Client: Homes & Communities Agency

Dynamic Sample Borehole Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No. 09: DS11

Photo Plate No. 10: DS14

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Dynamic Sample Borehole Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No. 11: DS17

Photo Plate No. 12: DS22

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Dynamic Sample Borehole Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No. 13: DS26

Photo Plate No. 14: DS27

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Dynamic Sample Borehole Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No. 01: SP1 Arisings

Photo Plate No. 02: SP1

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Client: Homes & Communities Agency

Stockpile Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No. 03: SP2 Arisings

Photo Plate No. 04: SP2

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Ground Technologies & Investigation

Project : East Lancashire Paper Mill

Client: Homes & Communities Agency

Stockpile Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No. 05: SP3 Arisings

Photo Plate No. 06: SP3

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Ground Technologies & Investigation

Project : East Lancashire Paper Mill

Client: Homes & Communities Agency

Stockpile Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No. 07: SP4 Arisings

Photo Plate No. 08: SP4

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Project : East Lancashire Paper Mill

Client: Homes & Communities Agency

Stockpile Photo Plates

Project No.: A090070-193

Date: March 2017

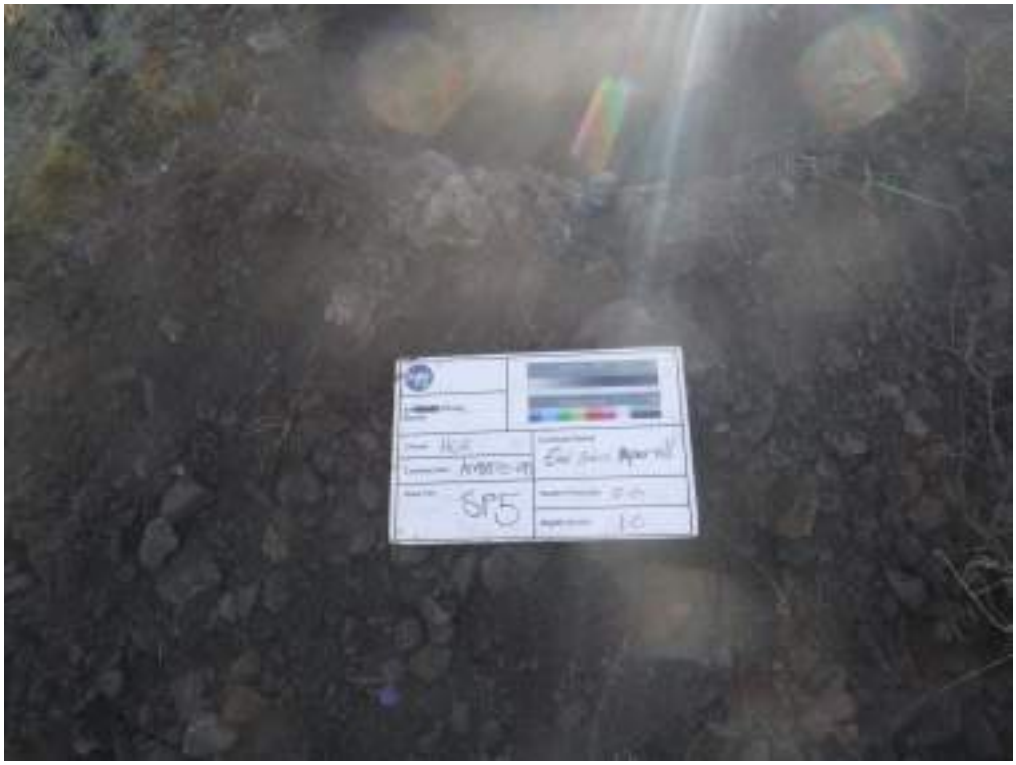

Photo Plate No. 09: SP5 Arisings

Photo Plate No. 10: SP5

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Ground Technologies & Investigation

Project : East Lancashire Paper Mill

Client: Homes & Communities Agency

Stockpile Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No. 11: SP6 Arisings

Photo Plate No. 12: SP6

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Environmental Consultancy
Ground Technologies & Investigation

Project : East Lancashire Paper Mill

Client: Homes & Communities Agency

Stockpile Photo Plates

Project No.: A090070-193

Date: March 2017

Appendix C – Geo-chemical Laboratory Test Results

Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

WYG
Quay West at MediaCityUK
Trafford Wharf Road
Trafford Park
Manchester
M17 1HH

Attention :	Kathryn Ellis
Date :	8th March, 2017
Your reference :	A090070-193
Our reference :	Test Report 17/2576 Batch 1
Location :	East Lancashire Paper Mill
Date samples received :	18th January, 2017
Status :	Final report
Issue :	2

Fifteen samples were received for analysis on 18th January, 2017 of which eleven were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-2	3-4	5-6	11-12	15-17	18-20	21-23	24-26	27-29	30-32	LOD/LOR	Units	Method No.
Sample ID	BH102	BH102	TP114	TP116	TP117	TP117	TP117	TP118	TP118	TP113			
Depth	0.20	1.30	0.50	0.50	0.50	1.20	1.50	0.10	1.00	0.50			
COC No / misc													
Containers	V J	V J	V J	V J	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	16/01/2017 13:00	16/01/2017 13:30	16/01/2017 14:00	16/01/2017 15:30	17/01/2017 10:00	17/01/2017 11:00	17/01/2017 12:00	17/01/2017 13:00	17/01/2017 13:20	17/01/2017 14:30			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017			
Aluminium	-	-	-	-	-	-	-	-	-	10050	<50	mg/kg	TM30/PM15
Arsenic #M	4.1	5.2	5.2	25.3	33.9	6.9	4.0	-	5.6	8.9	<0.5	mg/kg	TM30/PM15
Arsenic	-	-	-	-	-	-	-	29.8	-	-	<0.5	mg/kg	TM30/PM62
Barium #M	-	-	-	-	-	-	-	-	-	134	<1	mg/kg	TM30/PM15
Beryllium	1.2	0.9	1.2	1.0	1.4	0.9	1.0	-	1.1	1.1	<0.5	mg/kg	TM30/PM15
Beryllium	-	-	-	-	-	-	-	1.5	-	-	<0.5	mg/kg	TM30/PM62
Cadmium #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	-	0.2	<0.1	<0.1	mg/kg	TM30/PM15
Cadmium	-	-	-	-	-	-	-	0.1	-	-	<0.1	mg/kg	TM30/PM62
Chromium #M	43.0	55.4	59.2	55.3	57.6	45.9	52.4	-	42.6	36.7	<0.5	mg/kg	TM30/PM15
Chromium	-	-	-	-	-	-	-	34.4	-	-	<0.5	mg/kg	TM30/PM62
Copper #M	6	7	8	9	69	8	7	-	7	27	<1	mg/kg	TM30/PM15
Copper	-	-	-	-	-	-	-	92	-	-	<1	mg/kg	TM30/PM62
Iron	-	-	-	-	-	-	-	-	-	26200	<20	mg/kg	TM30/PM15
Lead #M	8	8	8	10	104	9	7	-	11	34	<5	mg/kg	TM30/PM15
Lead	-	-	-	-	-	-	-	348	-	-	<5	mg/kg	TM30/PM62
Mercury #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Mercury	-	-	-	-	-	-	-	<0.1	-	-	<0.1	mg/kg	TM30/PM62
Nickel #M	29.9	20.0	29.9	26.9	28.9	23.7	27.3	-	29.7	27.0	<0.7	mg/kg	TM30/PM15
Nickel	-	-	-	-	-	-	-	28.7	-	-	<0.7	mg/kg	TM30/PM62
Selenium #M	2	1	<1	1	<1	2	1	-	2	1	<1	mg/kg	TM30/PM15
Selenium	-	-	-	-	-	-	-	1	-	-	<1	mg/kg	TM30/PM62
Sulphur as S	-	-	-	-	-	-	-	-	-	0.08	<0.01	%	TM30/PM15
Vanadium	22	19	30	24	30	21	20	-	22	23	<1	mg/kg	TM30/PM15
Vanadium	-	-	-	-	-	-	-	32	-	-	<1	mg/kg	TM30/PM62
Water Soluble Boron #M	0.2	0.2	0.2	0.2	0.4	0.3	0.2	-	0.3	0.5	<0.1	mg/kg	TM74/PM32
Water Soluble Boron	-	-	-	-	-	-	-	0.6	-	-	<0.1	mg/kg	TM74/PM61
Zinc #M	70	46	61	65	119	68	56	-	60	67	<5	mg/kg	TM30/PM15
Zinc	-	-	-	-	-	-	-	134	-	-	<5	mg/kg	TM30/PM62

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	11-12	15-17	18-20	21-23	24-26	27-29	30-32	LOD/LOR	Units	Method No.
Sample ID	BH102	BH102	TP114	TP116	TP117	TP117	TP117	TP118	TP118	TP113			
Depth	0.20	1.30	0.50	0.50	0.50	1.20	1.50	0.10	1.00	0.50			
COC No / misc													
Containers	V J	V J	V J	V J	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	16/01/2017 13:00	16/01/2017 13:30	16/01/2017 14:00	16/01/2017 15:30	17/01/2017 10:00	17/01/2017 11:00	17/01/2017 12:00	17/01/2017 13:00	17/01/2017 13:20	17/01/2017 14:30			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017			
PAH MS													
Naphthalene #M	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Acenaphthene #M	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #M	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #M	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.18	<0.03	0.04	<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Fluoranthene #M	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.42	<0.03	0.06	<0.03	mg/kg	TM4/PM8
Pyrene #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.36	<0.03	0.06	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.20	<0.06	<0.06	<0.06	mg/kg	TM4/PM8
Chrysene #M	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.25	<0.02	<0.02	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	0.36	<0.07	<0.07	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.20	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.11	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.11	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
PAH 16 Total	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	2.2	<0.6	<0.6	<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.26	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.10	<0.02	<0.02	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	115	117	112	114	113	115	113	110	113	109	<0	%	TM4/PM8
VOC TICs	-	-	-	ND	ND	-	-	-	ND	-		None	TM15/PM10
Methyl Tertiary Butyl Ether #M	-	-	-	<6	<6	-	-	-	<6	-	<6	ug/kg	TM15/PM10
Benzene #M	-	-	-	<5	<5	-	-	-	<5	-	<5	ug/kg	TM15/PM10
Toluene #M	-	-	-	<3	<3	-	-	-	<3	-	<3	ug/kg	TM15/PM10
Ethylbenzene #M	-	-	-	<3	<3	-	-	-	<3	-	<3	ug/kg	TM15/PM10
p/m-Xylene #M	-	-	-	<4	<4	-	-	-	<4	-	<4	ug/kg	TM15/PM10
o-Xylene #M	-	-	-	<4	<4	-	-	-	<4	-	<4	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	-	-	-	105	88	-	-	-	104	-	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	-	-	-	113	75	-	-	-	111	-	<0	%	TM15/PM10
SVOC TICs	-	-	-	ND	ND	-	-	-	ND	-		None	TM16/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

J E Sample No.	1-2	3-4	5-6	11-12	15-17	18-20	21-23	24-26	27-29	30-32	LOD/LOR	Units	Method No.
Sample ID	BH102	BH102	TP114	TP116	TP117	TP117	TP117	TP118	TP118	TP113			
Depth	0.20	1.30	0.50	0.50	0.50	1.20	1.50	0.10	1.00	0.50			
COC No / misc													
Containers	V J	V J	V J	V J	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	16/01/2017 13:00	16/01/2017 13:30	16/01/2017 14:00	16/01/2017 15:30	17/01/2017 10:00	17/01/2017 11:00	17/01/2017 12:00	17/01/2017 13:00	17/01/2017 13:20	17/01/2017 14:30			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017			
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	<7	<7	<7	<7	<7	<7	<7	<7	15	<7	mg/kg	TM5/PM16
>C21-C35 #M	<7	<7	<7	<7	<7	<7	<7	22	<7	115	<7	mg/kg	TM5/PM16
>C35-C44	<7	<7	<7	<7	<7	<7	<7	<7	<7	63	<7	mg/kg	TM5/PM16
Total aliphatics C5-44	<26	<26	<26	<26	<26	<26	<26	<26	<26	193	<26	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM16
>EC16-EC21 #	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
>EC21-EC35 #	<7	<7	<7	<7	<7	<7	<7	53	<7	50	<7	mg/kg	TM5/PM16
>EC35-EC44	<7	<7	<7	<7	<7	<7	<7	29	<7	39	<7	mg/kg	TM5/PM16
Total aromatics C5-44	<26	<26	<26	<26	<26	<26	<26	82	<26	89	<26	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-44)	<52	<52	<52	<52	<52	<52	<52	82	<52	282	<52	mg/kg	TM5/TM36/PM12/PM16
MTBE #	<5	<5	<5	-	-	<5	<5	<5	-	<5	<5	ug/kg	TM31/PM12
Benzene #	<5	<5	<5	-	-	<5	<5	<5	-	<5	<5	ug/kg	TM31/PM12
Toluene #	<5	<5	<5	-	-	<5	<5	<5	-	<5	<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5	<5	-	-	<5	<5	<5	-	<5	<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	<5	<5	-	-	<5	<5	<5	-	<5	<5	ug/kg	TM31/PM12
o-Xylene #	<5	<5	<5	-	-	<5	<5	<5	-	<5	<5	ug/kg	TM31/PM12
Phenol #M	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	TM26/PM21
Monoethylene glycol	-	-	-	-	-	-	-	-	-	<10	<10	mg/kg	TM24/PM8
Propylene glycol	-	-	-	-	-	-	-	-	-	<10	<10	mg/kg	TM24/PM8
Diethylene glycol	-	-	-	-	-	-	-	-	-	<10	<10	mg/kg	TM24/PM8
Triethylene glycol	-	-	-	-	-	-	-	-	-	<10	<10	mg/kg	TM24/PM8
Thiodiglycol	-	-	-	-	-	-	-	-	-	<10	<10	mg/kg	TM24/PM8
Natural Moisture Content	7.2	11.3	7.7	9.6	16.8	10.4	8.7	-	6.7	17.4	<0.1	%	PM4/PM0
Natural Moisture Content	-	-	-	-	-	-	-	22.8	-	-	<0.1	%	PM4/PM0
Ammoniacal Nitrogen as N	-	-	-	-	-	-	-	-	-	<0.6	<0.6	mg/kg	TM38/PM20
Bromide	-	-	-	-	-	-	-	-	-	<0.3	<0.3	mg/kg	TM27/PM20
Chloride #M	-	-	-	-	-	-	-	-	-	29	<2	mg/kg	TM38/PM20

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-2	3-4	5-6	11-12	15-17	18-20	21-23	24-26	27-29	30-32	LOD/LOR	Units	Method No.
Sample ID	BH102	BH102	TP114	TP116	TP117	TP117	TP117	TP118	TP118	TP113			
Depth	0.20	1.30	0.50	0.50	0.50	1.20	1.50	0.10	1.00	0.50			
COC No / misc													
Containers	V J	V J	V J	V J	V J T	V J T	V J T	V J T	V J T	V J T			
Sample Date	16/01/2017 13:00	16/01/2017 13:30	16/01/2017 14:00	16/01/2017 15:30	17/01/2017 10:00	17/01/2017 11:00	17/01/2017 12:00	17/01/2017 13:00	17/01/2017 13:20	17/01/2017 14:30			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017			
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Ortho Phosphate as PO4	-	-	-	-	-	-	-	-	-	<0.3	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #M	8	22	6	7	30	35	19	-	9	165	<3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext)	-	-	-	-	-	-	-	0.0052	-	-	<0.0015	g/l	TM38/PM60
Free Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
Total Cyanide #M	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
Fraction Organic Carbon	0.001	0.003	0.002	0.002	0.028	0.006	0.001	NDP	<0.001	0.020	<0.001	None	TM21/PM24
Elemental Sulphur	-	-	-	-	-	-	-	-	-	34_{AA}	<1	mg/kg	TM108/PM114
Formaldehyde (water soluble)	-	-	-	-	-	-	-	-	-	30.9	<0.5	mg/kg	TM51/PM112
pH #M	7.03	7.16	7.35	7.77	7.87	7.62	7.92	8.06	8.21	9.31	<0.01	pH units	TM73/PM11
Sample Type	Sand	Clayey Sand	Sand	Sand	Clay	Clayey Sand	Clayey Sand	NDP	Loamy Sand	Clayey Sand		None	PM13/PM0
Sample Colour	Medium Brown	Medium Brown	Medium Brown	Medium Brown	Dark Brown	Dark Brown	Dark Brown	NDP	Medium Brown	Dark Brown		None	PM13/PM0
Other Items	stones	stones	stones	stones & large piece of clinker	Stones, Vegetation, roots, loam	Stones	Stones	NDP	NA	stones & roots		None	PM13/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	33-35										Please see attached notes for all abbreviations and acronyms		
Sample ID	TP113												
Depth	1.20												
COC No / misc													
Containers	V J T												
Sample Date	17/01/2017 14:40												
Sample Type	Soil												
Batch Number	1												
Date of Receipt	18/01/2017												
											LOD/LOR	Units	Method No.
Aluminium	-										<50	mg/kg	TM30/PM15
Arsenic #M	-										<0.5	mg/kg	TM30/PM15
Arsenic	18.2										<0.5	mg/kg	TM30/PM62
Barium #M	-										<1	mg/kg	TM30/PM15
Beryllium	-										<0.5	mg/kg	TM30/PM15
Beryllium	1.5										<0.5	mg/kg	TM30/PM62
Cadmium #M	-										<0.1	mg/kg	TM30/PM15
Cadmium	1.6										<0.1	mg/kg	TM30/PM62
Chromium #M	-										<0.5	mg/kg	TM30/PM15
Chromium	49.3										<0.5	mg/kg	TM30/PM62
Copper #M	-										<1	mg/kg	TM30/PM15
Copper	123										<1	mg/kg	TM30/PM62
Iron	-										<20	mg/kg	TM30/PM15
Lead #M	-										<5	mg/kg	TM30/PM15
Lead	500										<5	mg/kg	TM30/PM62
Mercury #M	-										<0.1	mg/kg	TM30/PM15
Mercury	0.8										<0.1	mg/kg	TM30/PM62
Nickel #M	-										<0.7	mg/kg	TM30/PM15
Nickel	48.0										<0.7	mg/kg	TM30/PM62
Selenium #M	-										<1	mg/kg	TM30/PM15
Selenium	1										<1	mg/kg	TM30/PM62
Sulphur as S	-										<0.01	%	TM30/PM15
Vanadium	-										<1	mg/kg	TM30/PM15
Vanadium	61										<1	mg/kg	TM30/PM62
Water Soluble Boron #M	-										<0.1	mg/kg	TM74/PM32
Water Soluble Boron	1.2										<0.1	mg/kg	TM74/PM61
Zinc #M	-										<5	mg/kg	TM30/PM15
Zinc	306										<5	mg/kg	TM30/PM62

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	33-35										Please see attached notes for all abbreviations and acronyms		
Sample ID	TP113												
Depth	1.20												
COC No / misc													
Containers	V J T												
Sample Date	17/01/2017 14:40												
Sample Type	Soil												
Batch Number	1										LOD/LOR	Units	Method No.
Date of Receipt	18/01/2017												
PAH MS													
Naphthalene #M	0.13										<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.59										<0.03	mg/kg	TM4/PM8
Acenaphthene #M	0.63										<0.05	mg/kg	TM4/PM8
Fluorene #M	0.92										<0.04	mg/kg	TM4/PM8
Phenanthrene #M	24.14										<0.03	mg/kg	TM4/PM8
Anthracene #	6.36										<0.04	mg/kg	TM4/PM8
Fluoranthene #M	39.93 AA										<0.03	mg/kg	TM4/PM8
Pyrene #	25.44										<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	11.32										<0.06	mg/kg	TM4/PM8
Chrysene #M	11.42										<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	13.44										<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	7.25										<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	4.29										<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.70										<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	3.49										<0.04	mg/kg	TM4/PM8
PAH 16 Total	150.1										<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	9.68										<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	3.76										<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	113										<0	%	TM4/PM8
VOC TICs	ND											None	TM15/PM10
Methyl Tertiary Butyl Ether #M	<6										<6	ug/kg	TM15/PM10
Benzene #M	<5										<5	ug/kg	TM15/PM10
Toluene #M	8										<3	ug/kg	TM15/PM10
Ethylbenzene #M	<3										<3	ug/kg	TM15/PM10
p/m-Xylene #M	7										<4	ug/kg	TM15/PM10
o-Xylene #M	<4										<4	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	94										<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	81										<0	%	TM15/PM10
SVOC TICs	See Attached											None	TM16/PM8

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	33-35										Please see attached notes for all abbreviations and acronyms		
Sample ID	TP113												
Depth	1.20												
COC No / misc													
Containers	V J T												
Sample Date	17/01/2017 14:40												
Sample Type	Soil												
Batch Number	1										LOD/LOR	Units	Method No.
Date of Receipt	18/01/2017												
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1										<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1										<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1										<0.1	mg/kg	TM36/PM12
>C10-C12 #M	3.8										<0.2	mg/kg	TM5/PM16
>C12-C16 #M	30										<4	mg/kg	TM5/PM16
>C16-C21 #M	117										<7	mg/kg	TM5/PM16
>C21-C35 #M	1085										<7	mg/kg	TM5/PM16
>C35-C44	1127										<7	mg/kg	TM5/PM16
Total aliphatics C5-44	2363										<26	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7 #	<0.1										<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1										<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1										<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2										<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	20										<4	mg/kg	TM5/PM16
>EC16-EC21 #	469										<7	mg/kg	TM5/PM16
>EC21-EC35 #	1190										<7	mg/kg	TM5/PM16
>EC35-EC44	984										<7	mg/kg	TM5/PM16
Total aromatics C5-44	2663										<26	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-44)	5026										<52	mg/kg	TM5/TM36/PM12/PM16
MTBE #	-										<5	ug/kg	TM31/PM12
Benzene #	-										<5	ug/kg	TM31/PM12
Toluene #	-										<5	ug/kg	TM31/PM12
Ethylbenzene #	-										<5	ug/kg	TM31/PM12
m/p-Xylene #	-										<5	ug/kg	TM31/PM12
o-Xylene #	-										<5	ug/kg	TM31/PM12
Phenol #M	<0.01										<0.01	mg/kg	TM26/PM21
Monoethylene glycol	-										<10	mg/kg	TM24/PM8
Propylene glycol	-										<10	mg/kg	TM24/PM8
Diethylene glycol	-										<10	mg/kg	TM24/PM8
Triethylene glycol	-										<10	mg/kg	TM24/PM8
Thiodiglycol	-										<10	mg/kg	TM24/PM8
Natural Moisture Content	-										<0.1	%	PM4/PM0
Natural Moisture Content	34.8										<0.1	%	PM4/PM0
Ammoniacal Nitrogen as N	-										<0.6	mg/kg	TM38/PM20
Bromide	-										<0.3	mg/kg	TM27/PM20
Chloride #M	-										<2	mg/kg	TM38/PM20

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

J E Sample No.	33-35												
Sample ID	TP113												
Depth	1.20												
COC No / misc													
Containers	V J T												
Sample Date	17/01/2017 14:40												
Sample Type	Soil												
Batch Number	1												
Date of Receipt	18/01/2017												
Hexavalent Chromium #	<0.3										<0.3	mg/kg	TM38/PM20
Ortho Phosphate as PO4	-										<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #M	-										<3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext)	0.4101										<0.0015	g/l	TM38/PM60
Free Cyanide	<0.5										<0.5	mg/kg	TM89/PM45
Total Cyanide #M	<0.5										<0.5	mg/kg	TM89/PM45
Fraction Organic Carbon	NDP										<0.001	None	TM21/PM24
Elemental Sulphur	-										<1	mg/kg	TM108/PM114
Formaldehyde (water soluble)	-										<0.5	mg/kg	TM51/PM112
pH #M	8.97										<0.01	pH units	TM73/PM11
Sample Type	NDP											None	PM13/PM0
Sample Colour	NDP											None	PM13/PM0
Other Items	NDP											None	PM13/PM0

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	15-17										Please see attached notes for all abbreviations and acronyms		
Sample ID	TP117												
Depth	0.50												
COC No / misc													
Containers	V J T												
Sample Date	17/01/2017 10:00												
Sample Type	Soil												
Batch Number	1										LOD/LOR	Units	Method No.
Date of Receipt	18/01/2017												
Dissolved Arsenic #	<0.9										<0.9	ug/l	TM30/PM14
Dissolved Boron #	<12										<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.03										<0.03	ug/l	TM30/PM14
Dissolved Chromium #	0.5										<0.2	ug/l	TM30/PM14
Dissolved Copper #	<3										<3	ug/l	TM30/PM14
Dissolved Lead #	<0.4										<0.4	ug/l	TM30/PM14
Dissolved Nickel #	0.2										<0.2	ug/l	TM30/PM14
Dissolved Selenium #	<1.2										<1.2	ug/l	TM30/PM14
Dissolved Zinc #	5										<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	<0.01										<0.01	ug/l	TM61/PM38
Sulphate as SO4 #	3.54										<0.05	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	0.06										<0.03	mg/l	TM38/PM0
Total Cyanide #	<0.005										<0.005	mg/l	TM89/PM0
pH	7.85										<0.01	pH units	TM73/PM0

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

SVOC Report : **Solid**

J E Sample No.	11-12	15-17	27-29	33-35							LOD/LOR	Units	Method No.
Sample ID	TP116	TP117	TP118	TP113									
Depth	0.50	0.50	1.00	1.20									
COC No / misc													
Containers	V J	V J T	V J T	V J T									
Sample Date	16/01/2017 15:30	17/01/2017 10:00	17/01/2017 13:20	17/01/2017 14:40									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	18/01/2017	18/01/2017	18/01/2017	18/01/2017									
SVOC MS													
Phenols													
2-Chlorophenol #M	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
2-Methylphenol	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
2-Nitrophenol	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
2,4-Dichlorophenol #M	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
2,4-Dimethylphenol	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
2,4,5-Trichlorophenol	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
2,4,6-Trichlorophenol	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
4-Chloro-3-methylphenol	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
4-Methylphenol	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
4-Nitrophenol	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
Pentachlorophenol	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
Phenol #M	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
PAHs													
2-Chloronaphthalene #M	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
2-Methylnaphthalene #M	<10	<10	<10	120							<10	ug/kg	TM16/PM8
Phthalates													
Bis(2-ethylhexyl) phthalate	<100	<100	<100	5128							<100	ug/kg	TM16/PM8
Butylbenzyl phthalate	<100	<100	<100	<100							<100	ug/kg	TM16/PM8
Di-n-butyl phthalate	<100	<100	<100	<100							<100	ug/kg	TM16/PM8
Di-n-Octyl phthalate	<100	<100	<100	<100							<100	ug/kg	TM16/PM8
Diethyl phthalate	<100	<100	<100	<100							<100	ug/kg	TM16/PM8
Dimethyl phthalate #M	<100	<100	<100	<100							<100	ug/kg	TM16/PM8
Other SVOCs													
1,2-Dichlorobenzene	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
1,2,4-Trichlorobenzene #M	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
1,3-Dichlorobenzene	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
1,4-Dichlorobenzene	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
2-Nitroaniline	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
2,4-Dinitrotoluene	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
2,6-Dinitrotoluene	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
3-Nitroaniline	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
4-Bromophenylphenylether #M	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
4-Chloroaniline	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
4-Chlorophenylphenylether	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
4-Nitroaniline	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
Azobenzene	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
Bis(2-chloroethoxy)methane	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
Bis(2-chloroethyl)ether	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
Carbazole	<10	<10	<10	1471							<10	ug/kg	TM16/PM8
Dibenzofuran #M	<10	<10	<10	340							<10	ug/kg	TM16/PM8
Hexachlorobenzene	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
Hexachlorobutadiene #M	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
Hexachlorocyclopentadiene	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
Hexachloroethane	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
Isophorone #M	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
N-nitrosodi-n-propylamine #M	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
Nitrobenzene #M	<10	<10	<10	<10							<10	ug/kg	TM16/PM8
Surrogate Recovery 2-Fluorobiphenyl	113	107	109	95							<0	%	TM16/PM8
Surrogate Recovery p-Terphenyl-d14	114	115	110	104							<0	%	TM16/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

VOC Report : **Solid**

J E Sample No.	11-12	15-17	27-29	33-35							LOD/LOR	Units	Method No.
Sample ID	TP116	TP117	TP118	TP113									
Depth	0.50	0.50	1.00	1.20									
COC No / misc													
Containers	V J	V J T	V J T	V J T									
Sample Date	16/01/2017 15:30	17/01/2017 10:00	17/01/2017 13:20	17/01/2017 14:40									
Sample Type	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1									
Date of Receipt	18/01/2017	18/01/2017	18/01/2017	18/01/2017									
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2							<2	ug/kg	TM15/PM10
Methyl Tertiary Butyl Ether #M	<6	<6	<6	<6							<6	ug/kg	TM15/PM10
Chloromethane #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
Vinyl Chloride	<2	<2	<2	<2							<2	ug/kg	TM15_A/PM10
Bromomethane	<1	<1	<1	<1							<1	ug/kg	TM15/PM10
Chloroethane #M	<6	<6	<6	<6							<6	ug/kg	TM15/PM10
Trichlorofluoromethane #M	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #M	<6	<6	<6	<6							<6	ug/kg	TM15/PM10
Dichloromethane (DCM) #	<30	63	<30	<30							<30	ug/kg	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
1,1-Dichloroethane #M	<6	<6	<6	<6							<6	ug/kg	TM15/PM10
cis-1-2-Dichloroethene #M	<7	<7	<7	<7							<7	ug/kg	TM15/PM10
2,2-Dichloropropane	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
Bromochloromethane #M	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
Chloroform #M	<5	<5	<5	<5							<5	ug/kg	TM15/PM10
1,1,1-Trichloroethane #M	<5	<5	<5	<5							<5	ug/kg	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
Carbon tetrachloride #M	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
1,2-Dichloroethane #M	<5	<5	<5	<5							<5	ug/kg	TM15/PM10
Benzene #M	<5	<5	<5	<5							<5	ug/kg	TM15/PM10
Trichloroethene (TCE) #M	<5	<5	<5	<5							<5	ug/kg	TM15/PM10
1,2-Dichloropropane #M	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
Dibromomethane #M	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
Bromodichloromethane #M	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
cis-1-3-Dichloropropene	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
Toluene #M	<3	<3	<3	8							<3	ug/kg	TM15/PM10
trans-1-3-Dichloropropene	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
1,1,2-Trichloroethane #M	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
1,3-Dichloropropane #M	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
Dibromochloromethane #M	<5	<5	<5	<5							<5	ug/kg	TM15/PM10
1,2-Dibromoethane #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
Chlorobenzene #M	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
1,1,1,2-Tetrachloroethane #M	<5	<5	<5	<5							<5	ug/kg	TM15/PM10
Ethylbenzene #M	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
p/m-Xylene #M	<4	<4	<4	7							<4	ug/kg	TM15/PM10
o-Xylene #M	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
Styrene	<3	<3	<3	<3							<3	ug/kg	TM15_A/PM10
Bromoform	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
1,1,2,2-Tetrachloroethane #M	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
Bromobenzene	<2	<2	<2	<2							<2	ug/kg	TM15/PM10
1,2,3-Trichloropropane #M	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
Propylbenzene #	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
2-Chlorotoluene	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
4-Chlorotoluene	<3	<3	<3	<3							<3	ug/kg	TM15/PM10
tert-Butylbenzene #	<5	<5	<5	<5							<5	ug/kg	TM15/PM10
1,2,4-Trimethylbenzene #	<6	<6	<6	<6							<6	ug/kg	TM15/PM10
sec-Butylbenzene #	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
4-Isopropyltoluene #	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
1,3-Dichlorobenzene #M	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
1,4-Dichlorobenzene #	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
n-Butylbenzene #	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
1,2-Dichlorobenzene #M	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
1,2-Dibromo-3-chloropropane #	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
1,2,4-Trichlorobenzene #	<7	<7	<7	<7							<7	ug/kg	TM15/PM10
Hexachlorobutadiene	<4	<4	<4	<4							<4	ug/kg	TM15/PM10
Naphthalene	<27	<27	<27	66							<27	ug/kg	TM15/PM10
1,2,3-Trichlorobenzene #	<7	<7	<7	<7							<7	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	105	88	104	94							<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	113	75	111	81							<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Job number: 17/2576
Sample number: 34
Sample identity: TP113
Sample depth: 1.20
Sample Type: Soil
Units: ug/kg

Method: **SVOC**
Matrix: **Solid**

Note: Only samples with TICs (if requested) are reported. If TICs were requested but no compounds found they are not reported.

CAS No.	Tentative Compound Identification	Retention Time (minutes)	% Match	Concentration
128-37-0	Butylated Hydroxytoluene	8.923	98	2282
140-66-9	Phenol, 4-(1,1,3,3-tetramethylbutyl)-	10.131	80	2529
132-65-0	Dibenzothiophene	10.179	86	2968
2531-84-2	Phenanthrene, 2-methyl-	10.881	97	7357
832-69-9	Phenanthrene, 1-methyl-	10.930	96	1100
203-64-5	4H-Cyclopenta[def]phenanthrene	10.960	89	6613
84-65-1	9,10-Anthracenedione	11.110	96	1202
612-94-2	Naphthalene, 2-phenyl-	11.160	92	2259
5737-13-3	Cyclopenta(def)phenanthrenone	11.469	83	2603
243-42-5	Benzo[b]naphtho[2,3-d]furan	11.967	96	3896
2381-21-7	Pyrene, 1-methyl-	12.117	97	2843
33543-31-6	Fluoranthene, 2-methyl-	12.217	96	6279
479-79-8	11H-Benzo[a]fluoren-11-one	13.081	95	6433
198-55-0	Perylene	15.010	95	7313
502-73-8	16-Hentriacontanone	16.845	86	25107

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/2576	1	BH102	0.20	2	27/01/2017	**General Description (Bulk Analysis)**	Soil/Stones
					27/01/2017	**Asbestos Fibres**	NAD
					27/01/2017	**Asbestos Fibres (2)**	NAD
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos ACM (2)**	NAD
					27/01/2017	**Asbestos Type**	NAD
					27/01/2017	**Asbestos Type (2)**	NAD
					27/01/2017	**Asbestos Level Screen**	NAD
17/2576	1	BH102	1.30	4	26/01/2017	**General Description (Bulk Analysis)**	Soil/Stones
					26/01/2017	**Asbestos Fibres**	NAD
					26/01/2017	**Asbestos Fibres (2)**	NAD
					26/01/2017	**Asbestos ACM**	NAD
					26/01/2017	**Asbestos ACM (2)**	NAD
					26/01/2017	**Asbestos Type**	NAD
					26/01/2017	**Asbestos Type (2)**	NAD
					26/01/2017	**Asbestos Level Screen**	NAD
17/2576	1	TP114	0.50	6	26/01/2017	**General Description (Bulk Analysis)**	soil/stones
					26/01/2017	**Asbestos Fibres**	NAD
					26/01/2017	**Asbestos Fibres (2)**	NAD
					26/01/2017	**Asbestos ACM**	NAD
					26/01/2017	**Asbestos ACM (2)**	NAD
					26/01/2017	**Asbestos Type**	NAD
					26/01/2017	**Asbestos Type (2)**	NAD
					26/01/2017	**Asbestos Level Screen**	NAD
17/2576	1	TP116	0.50	12	26/01/2017	**General Description (Bulk Analysis)**	soil/stones
					26/01/2017	**Asbestos Fibres**	NAD
					26/01/2017	**Asbestos Fibres (2)**	NAD
					26/01/2017	**Asbestos ACM**	NAD
					26/01/2017	**Asbestos ACM (2)**	NAD
					26/01/2017	**Asbestos Type**	NAD
					26/01/2017	**Asbestos Type (2)**	NAD
					26/01/2017	**Asbestos Level Screen**	NAD
17/2576	1	TP117	0.50	16	26/01/2017	**General Description (Bulk Analysis)**	Soil/Stones
					26/01/2017	**Asbestos Fibres**	NAD
					26/01/2017	**Asbestos Fibres (2)**	NAD

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/2576	1	TP117	0.50	16	26/01/2017	**Asbestos ACM**	NAD
					26/01/2017	**Asbestos ACM (2)**	NAD
					26/01/2017	**Asbestos Type**	NAD
					26/01/2017	**Asbestos Type (2)**	NAD
					26/01/2017	**Asbestos Level Screen**	NAD
17/2576	1	TP117	1.20	19	26/01/2017	**General Description (Bulk Analysis)**	Soil/Stones
					26/01/2017	**Asbestos Fibres**	NAD
					26/01/2017	**Asbestos Fibres (2)**	NAD
					26/01/2017	**Asbestos ACM**	NAD
					26/01/2017	**Asbestos ACM (2)**	NAD
					26/01/2017	**Asbestos Type**	NAD
					26/01/2017	**Asbestos Type (2)**	NAD
					26/01/2017	**Asbestos Level Screen**	NAD
17/2576	1	TP117	1.50	22	26/01/2017	**General Description (Bulk Analysis)**	Soil/Stones
					26/01/2017	**Asbestos Fibres**	NAD
					26/01/2017	**Asbestos Fibres (2)**	NAD
					26/01/2017	**Asbestos ACM**	NAD
					26/01/2017	**Asbestos ACM (2)**	NAD
					26/01/2017	**Asbestos Type**	NAD
					26/01/2017	**Asbestos Type (2)**	NAD
					26/01/2017	**Asbestos Level Screen**	NAD
17/2576	1	TP118	0.10	25	26/01/2017	**General Description (Bulk Analysis)**	Soil/Stones
					26/01/2017	**Asbestos Fibres**	Fibre Bundles
					26/01/2017	**Asbestos Fibres (2)**	Fibre Bundles
					26/01/2017	**Asbestos Fibres (3)**	Fibre Bundles
					26/01/2017	**Asbestos ACM**	Insulation Debris
					26/01/2017	**Asbestos ACM (2)**	NAD
					26/01/2017	**Asbestos ACM (3)**	NAD
					26/01/2017	**Asbestos Type**	Chrysotile
					26/01/2017	**Asbestos Type (2)**	Crocidolite
					26/01/2017	**Asbestos Type (3)**	Amosite
					26/01/2017	**Asbestos Level Screen**	Asbestos level cannot be determined at this stage of analysis
					08/03/2017	**Asbestos Gravimetric Quantification**	0.146 (mass %)
					08/03/2017	**Asbestos PCOM Quantification (Fibres)**	0.009 (mass %)
					08/03/2017	**Asbestos Gravimetric & PCOM Total**	0.155 (mass %)
17/2576	1	TP118	1.00	28	27/01/2017	**General Description (Bulk Analysis)**	Soil/Stones
					27/01/2017	**Asbestos Fibres**	NAD
					27/01/2017	**Asbestos Fibres (2)**	NAD
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos ACM (2)**	NAD
					27/01/2017	**Asbestos Type**	NAD
					27/01/2017	**Asbestos Type (2)**	NAD
					27/01/2017	**Asbestos Level Screen**	NAD
17/2576	1	TP113	0.50	31	27/01/2017	**General Description (Bulk Analysis)**	Soil/Stones
					27/01/2017	**Asbestos Fibres**	NAD
					27/01/2017	**Asbestos Fibres (2)**	NAD
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos ACM (2)**	NAD

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/2576	1	TP113	0.50	31	27/01/2017	**Asbestos Type**	NAD
					27/01/2017	**Asbestos Type (2)**	NAD
					27/01/2017	**Asbestos Level Screen**	NAD
17/2576	1	TP113	1.20	34	26/01/2017	**General Description (Bulk Analysis)**	soil/stones
					26/01/2017	**Asbestos Fibres**	Fibre Bundles
					26/01/2017	**Asbestos ACM**	NAD
					26/01/2017	**Asbestos Type**	Chrysotile
					26/01/2017	**Asbestos Level Screen**	<0.1%

Client Name: WYG **Matrix : Solid**
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
17/2576	1	TP118	0.10	24-26	Asbestos detected in sample
17/2576	1	TP113	1.20	33-35	Asbestos detected in sample

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 17/2576						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/2576

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x2 Dilution

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.			AD	Yes
TM24	Determination of Glycols by GC-MS	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.	Yes	Yes	AR	Yes
TM27	Modified US EPA method 9056.Determination of water soluble anions using Dionex (Ion-Chromatography).	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes		AR	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AD	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM60	As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid.			AR	Yes
TM51	Formaldehyde determination by reaction with Ammonium Ions and acetylacetone which is analysed spectrophotometrically.	PM112	As received soils are extracted with deionised water in a 4:1 ratio			AR	Yes
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes	Yes	AD	Yes
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM61	As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP.			AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM0	No preparation is required.	Yes		AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.			AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes	Yes	AR	Yes
TM108	Determination of Elemental Sulphur by Reversed Phase High Performance Liquid Chromatography with Ultra Violet spectroscopy.	PM114	End over end extraction of dried and crushed soil samples for organic analysis. The solvent mix varies depending on analysis required			AD	Yes
NONE	No Method Code	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.				
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.			AR	
TM15_A	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

Exova Jones Environmental

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Trafford Wharf Road
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Manchester
M17 1HH

Attention :	Kathryn Ellis
Date :	8th March, 2017
Your reference :	A090070-193
Our reference :	Test Report 17/2576 Batch 2
Location :	East Lancashire Paper Mill
Date samples received :	20th January, 2017
Status :	Final report
Issue :	2

Seventeen samples were received for analysis on 20th January, 2017 of which thirteen were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	39-41	42-43	48-50	51-53	54-56	57-59	63-65	69-71	72-73	74-75	LOD/LOR	Units	Method No.
Sample ID	TP112	TP112	TP110	TP110	TP111	TP111	TP120	TP120	TP119	TP119			
Depth	0.20	1.00	0.20	1.80	0.40	0.50	0.50	2.80	0.50	1.20			
COC No / misc													
Containers	V J T	V J	V J T	V J T	V J T	V J T	V J T	V J T	V J	V J			
Sample Date	17/01/2017	17/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	17/01/2017	17/01/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	2	2	2	2	2	2	2	2	2	2			
Date of Receipt	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017			
Aluminium	-	-	7109	-	4055	-	9117	-	-	-	<50	mg/kg	TM30/PM62
Arsenic #M	-	-	-	-	-	-	-	5.4	58.2	-	<0.5	mg/kg	TM30/PM15
Arsenic	28.5	31.0	10.6	10.5	5.0	26.2	39.7	-	-	47.6	<0.5	mg/kg	TM30/PM62
Barium	-	-	168	-	77	-	223	-	-	-	<1	mg/kg	TM30/PM62
Beryllium	-	-	-	-	-	-	-	1.1	1.2	-	<0.5	mg/kg	TM30/PM15
Beryllium	1.4	1.2	1.0	0.9	0.9	1.8	1.4	-	-	1.0	<0.5	mg/kg	TM30/PM62
Cadmium #M	-	-	-	-	-	-	-	0.1	<0.1	-	<0.1	mg/kg	TM30/PM15
Cadmium	0.5	0.7	0.4	0.3	0.2	0.2	<0.1	-	-	0.2	<0.1	mg/kg	TM30/PM62
Chromium #M	-	-	-	-	-	-	-	42.3	51.9	-	<0.5	mg/kg	TM30/PM15
Chromium	21.4	24.7	14.1	16.9	6.9	18.9	31.3	-	-	29.2	<0.5	mg/kg	TM30/PM62
Copper #M	-	-	-	-	-	-	-	6	37	-	<1	mg/kg	TM30/PM15
Copper	119	86	50	62	26	125	183	-	-	63	<1	mg/kg	TM30/PM62
Iron	-	-	21438	-	8775	-	29383	-	-	-	<20	mg/kg	TM30/PM62
Lead #M	-	-	-	-	-	-	-	9	105	-	<5	mg/kg	TM30/PM15
Lead	225	206	144	166	18	219	182	-	-	172	<5	mg/kg	TM30/PM62
Mercury #M	-	-	-	-	-	-	-	<0.1	<0.1	-	<0.1	mg/kg	TM30/PM15
Mercury	0.1	0.3	0.4	0.7	<0.1	0.2	<0.1	-	-	<0.1	<0.1	mg/kg	TM30/PM62
Nickel #M	-	-	-	-	-	-	-	26.4	29.9	-	<0.7	mg/kg	TM30/PM15
Nickel	32.2	30.5	16.5	18.6	18.3	46.0	31.3	-	-	22.0	<0.7	mg/kg	TM30/PM62
Selenium #M	-	-	-	-	-	-	-	1	1	-	<1	mg/kg	TM30/PM15
Selenium	<1	<1	<1	1	<1	1	1	-	-	1	<1	mg/kg	TM30/PM62
Sulphur as S	-	-	0.09	-	0.04	-	0.15	-	-	-	<0.01	%	TM30/PM62
Vanadium	-	-	-	-	-	-	-	25	26	-	<1	mg/kg	TM30/PM15
Vanadium	34	28	20	24	18	41	29	-	-	26	<1	mg/kg	TM30/PM62
Water Soluble Boron #M	-	-	-	-	-	-	-	0.7	0.6	-	<0.1	mg/kg	TM74/PM32
Water Soluble Boron	0.8	1.0	1.6	1.2	0.2	1.1	1.2	-	-	0.7	<0.1	mg/kg	TM74/PM61
Zinc #M	-	-	-	-	-	-	-	57	99	-	<5	mg/kg	TM30/PM15
Zinc	193	165	127	183	33	180	136	-	-	116	<5	mg/kg	TM30/PM62

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	39-41	42-43	48-50	51-53	54-56	57-59	63-65	69-71	72-73	74-75	LOD/LOR	Units	Method No.
Sample ID	TP112	TP112	TP110	TP110	TP111	TP111	TP120	TP120	TP119	TP119			
Depth	0.20	1.00	0.20	1.80	0.40	0.50	0.50	2.80	0.50	1.20			
COC No / misc													
Containers	V J T	V J	V J T	V J T	V J T	V J T	V J T	V J T	V J	V J			
Sample Date	17/01/2017	17/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	17/01/2017	17/01/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	2	2	2	2	2	2	2	2	2	2			
Date of Receipt	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017			
PAH MS													
Naphthalene #M	0.13	0.58	2.80 AB	0.29	<0.04	0.16	<0.04	<0.04	<0.04	0.06	<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.05	0.09	0.68 AB	0.06	<0.03	0.08	<0.03	<0.03	0.11	0.05	<0.03	mg/kg	TM4/PM8
Acenaphthene #M	0.19	3.48	11.85 AB	0.57	<0.05	0.11	<0.05	<0.05	0.07	0.10	<0.05	mg/kg	TM4/PM8
Fluorene #M	0.16	2.10	7.11 AB	0.28	<0.04	0.06	<0.04	<0.04	0.05	0.07	<0.04	mg/kg	TM4/PM8
Phenanthrene #M	2.06	14.56	71.93 AB	3.21	0.06	1.31	0.20	0.03	0.67	0.75	<0.03	mg/kg	TM4/PM8
Anthracene #	0.47	3.00	16.71 AB	0.77	<0.04	0.30	0.06	<0.04	0.20	0.21	<0.04	mg/kg	TM4/PM8
Fluoranthene #M	3.80	11.62	86.66 AB	5.47	0.14	3.13	0.40	0.06	1.71	1.62	<0.03	mg/kg	TM4/PM8
Pyrene #	3.17	9.29	65.16 AB	4.32	0.12	2.90	0.35	0.05	1.39	1.24	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	1.54	3.74	34.85 AB	2.15	0.12	1.98	0.19	<0.06	0.70	0.59	<0.06	mg/kg	TM4/PM8
Chrysene #M	1.80	3.94	34.14 AB	2.44	0.08	2.39	0.22	0.02	0.83	0.67	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	2.67	5.71	50.84 AB	3.96	0.14	5.57	0.31	<0.07	1.35	1.07	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	1.40	3.55	28.58 AB	2.26	0.08	2.97	0.20	<0.04	0.87	0.67	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	0.78	1.81	19.10 AB	1.36	<0.04	2.32	0.14	<0.04	0.53	0.36	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.12	0.25	3.07 AB	0.24	<0.04	0.38	<0.04	<0.04	0.07	0.05	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.87	1.80	16.11 AB	1.27	<0.04	2.27	0.11	<0.04	0.43	0.35	<0.04	mg/kg	TM4/PM8
Coronene	-	-	-	-	<0.04	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
PAH 16 Total	19.2	65.5	449.6 AB	28.7	0.7	25.9	2.2	<0.6	9.0	7.9	<0.6	mg/kg	TM4/PM8
PAH 17 Total	-	-	-	-	0.74	-	-	-	-	-	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	1.92	4.11	36.60 AB	2.85	0.10	4.01	0.22	<0.05	0.97	0.77	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.75	1.60	14.24 AB	1.11	0.04	1.56	0.09	<0.02	0.38	0.30	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	101	98	116 AB	117	116	128	127	123	123	103	<0	%	TM4/PM8
VOC TICs	-	-	ND	-	ND	-	ND	ND	-	-		None	TM15/PM10
Methyl Tertiary Butyl Ether #M	-	-	<6	-	<6	-	<6	<6	-	-	<6	ug/kg	TM15/PM10
Benzene #M	-	-	<5	-	<5	-	<5	<5	-	-	<5	ug/kg	TM15/PM10
Toluene #M	-	-	4	-	<3	-	<3	<3	-	-	<3	ug/kg	TM15/PM10
Ethylbenzene #M	-	-	<3	-	<3	-	<3	<3	-	-	<3	ug/kg	TM15/PM10
p/m-Xylene #M	-	-	<4	-	<4	-	5	<4	-	-	<4	ug/kg	TM15/PM10
o-Xylene #M	-	-	<4	-	<4	-	<4	<4	-	-	<4	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	-	-	101	-	103	-	101	101	-	-	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	-	-	85	-	98	-	81	87	-	-	<0	%	TM15/PM10
SVOC TICs	-	-	See Attached	-	ND	-	See Attached	ND	-	-		None	TM16/PM8
Mineral Oil (C10-C40)	-	-	-	-	<30	-	-	-	-	-	<30	mg/kg	TM5/PM16

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	39-41	42-43	48-50	51-53	54-56	57-59	63-65	69-71	72-73	74-75	LOD/LOR	Units	Method No.
Sample ID	TP112	TP112	TP110	TP110	TP111	TP111	TP120	TP120	TP119	TP119			
Depth	0.20	1.00	0.20	1.80	0.40	0.50	0.50	2.80	0.50	1.20			
COC No / misc													
Containers	V J T	V J	V J T	V J T	V J T	V J T	V J T	V J T	V J	V J			
Sample Date	17/01/2017	17/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	17/01/2017	17/01/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	2	2	2	2	2	2	2	2	2	2			
Date of Receipt	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017			
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	<4	<4	5	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	14	21	31	<7	12	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
>C21-C35 #M	124	151	151	306	<7	112	<7	<7	<7	13	<7	mg/kg	TM5/PM16
>C35-C44	75	91	55	97	<7	47	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
Total aliphatics C5-44	199	256	227	439	<26	171	<26	<26	<26	<26	<26	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	<0.2	1.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	8	10	<4	13	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM16
>EC16-EC21 #	46	66	18	73	<7	11	<7	<7	17	23	<7	mg/kg	TM5/PM16
>EC21-EC35 #	234	243	121	308	<7	129	36	<7	50	82	<7	mg/kg	TM5/PM16
>EC35-EC44	200	202	48	91	<7	110	<7	<7	<7	70	<7	mg/kg	TM5/PM16
Total aromatics C5-44	488	521	187	487	<26	250	36	<26	67	175	<26	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-44)	687	777	414	926	<52	421	<52	<52	67	175	<52	mg/kg	TM5/TM36/PM12/PM16
MTBE #	<5	<5	-	<5	-	<5	-	-	<5	<5	<5	ug/kg	TM31/PM12
Benzene #	<5	<5	-	<5	-	<5	-	-	<5	<5	<5	ug/kg	TM31/PM12
Toluene #	<5	6	-	<5	-	<5	-	-	<5	<5	<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5	-	<5	-	<5	-	-	<5	<5	<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	<5	-	<5	-	<5	-	-	<5	<5	<5	ug/kg	TM31/PM12
o-Xylene #	<5	<5	-	<5	-	<5	-	-	<5	<5	<5	ug/kg	TM31/PM12
PCB 77	-	-	-	-	<5	-	-	-	-	-	<5	ug/kg	TM16/PM8
PCB 81	-	-	-	-	<5	-	-	-	-	-	<5	ug/kg	TM16/PM8
PCB 105	-	-	-	-	<5	-	-	-	-	-	<5	ug/kg	TM16/PM8
PCB 114	-	-	-	-	<5	-	-	-	-	-	<5	ug/kg	TM16/PM8
PCB 118	-	-	-	-	<5	-	-	-	-	-	<5	ug/kg	TM16/PM8
PCB 123	-	-	-	-	<5	-	-	-	-	-	<5	ug/kg	TM16/PM8
PCB 126	-	-	-	-	<5	-	-	-	-	-	<5	ug/kg	TM16/PM8
PCB 156	-	-	-	-	<5	-	-	-	-	-	<5	ug/kg	TM16/PM8
PCB 157	-	-	-	-	<5	-	-	-	-	-	<5	ug/kg	TM16/PM8
PCB 167	-	-	-	-	<5	-	-	-	-	-	<5	ug/kg	TM16/PM8
PCB 169	-	-	-	-	<5	-	-	-	-	-	<5	ug/kg	TM16/PM8
PCB 189	-	-	-	-	<5	-	-	-	-	-	<5	ug/kg	TM16/PM8
Total 12 PCBs	-	-	-	-	<60	-	-	-	-	-	<60	ug/kg	TM16/PM8
PCB 28 #	-	-	-	-	<5	-	-	-	-	-	<5	ug/kg	TM17/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	39-41	42-43	48-50	51-53	54-56	57-59	63-65	69-71	72-73	74-75	LOD/LOR	Units	Method No.
Sample ID	TP112	TP112	TP110	TP110	TP111	TP111	TP120	TP120	TP119	TP119			
Depth	0.20	1.00	0.20	1.80	0.40	0.50	0.50	2.80	0.50	1.20			
COC No / misc													
Containers	V J T	V J	V J T	V J T	V J T	V J T	V J T	V J T	V J	V J			
Sample Date	17/01/2017	17/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	17/01/2017	17/01/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	2	2	2	2	2	2	2	2	2	2			
Date of Receipt	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017			
PCB 52 #	-	-	-	-	<5	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 101 #	-	-	-	-	<5	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 118 #	-	-	-	-	<5	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 138 #	-	-	-	-	<5	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 153 #	-	-	-	-	<5	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 180 #	-	-	-	-	<5	-	-	-	-	-	<5	ug/kg	TM17/PM8
Total 7 PCBs #	-	-	-	-	<35	-	-	-	-	-	<35	ug/kg	TM17/PM8
Phenol #M	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	TM26/PM21
Monoethylene glycol	-	-	<10	-	<10	-	<10	-	-	-	<10	mg/kg	TM24/PM8
Propylene glycol	-	-	<10	-	<10	-	<10	-	-	-	<10	mg/kg	TM24/PM8
Diethylene glycol	-	-	<10	-	<10	-	<10	-	-	-	<10	mg/kg	TM24/PM8
Triethylene glycol	-	-	<10	-	<10	-	<10	-	-	-	<10	mg/kg	TM24/PM8
Thiodiglycol	-	-	<10	-	<10	-	<10	-	-	-	<10	mg/kg	TM24/PM8
Natural Moisture Content	-	-	-	-	-	-	-	14.6	15.1	-	<0.1	%	PM4/PM0
Natural Moisture Content	17.0	15.2	8.6	16.4	50.0	21.4	24.4	-	-	16.0	<0.1	%	PM4/PM0
Ammoniacal Nitrogen as N	-	-	<0.6	-	<0.6	-	8.6	-	-	-	<0.6	mg/kg	TM38/PM20
Bromide	-	-	<0.3	-	<0.3	-	<0.3	-	-	-	<0.3	mg/kg	TM27/PM60
Chloride	-	-	<2	-	<2	-	16	-	-	-	<2	mg/kg	TM38/PM60
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #M	-	-	-	-	-	-	-	47	134	-	<3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext)	0.0281	0.0457	0.0330	0.0452	0.2511	0.2751	0.2478	-	-	0.0992	<0.0015	g/l	TM38/PM60
Free Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
Total Cyanide #M	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	-	-	-	-	NDP	-	-	-	-	-	<0.02	%	TM21/PM24
Fraction Organic Carbon	NDP	NDP	NDP	NDP	NDP	NDP	NDP	0.004	0.023	NDP	<0.001	None	TM21/PM24
ANC at pH4	-	-	-	-	2.67	-	-	-	-	-	<0.03	mol/kg	TM77/PM0
ANC at pH7	-	-	-	-	0.82	-	-	-	-	-	<0.03	mol/kg	TM77/PM0
Elemental Sulphur	-	-	<2 AA	-	<2 AA	-	15 AA	-	-	-	<1	mg/kg	TM108/PM8
Formaldehyde (water soluble)	-	-	20.6	-	22.4	-	26.7	-	-	-	<0.5	mg/kg	TM51/PM112
Loss on Ignition #	-	-	-	-	NDP	-	-	-	-	-	<1.0	%	TM22/PM0
pH #M	8.87	11.61	11.13	11.34	8.39	9.64	9.39	7.73	7.89	8.08	<0.01	pH units	TM73/PM11
Sample Type	NDP	NDP	NDP	NDP	NDP	NDP	NDP	Loamy Sand	Clayey Sand	NDP		None	PM13/PM0
Sample Colour	NDP	NDP	NDP	NDP	NDP	NDP	NDP	Dark Brown	Dark Brown	NDP		None	PM13/PM0
Other Items	NDP	NDP	NDP	NDP	NDP	NDP	NDP	stones	stones	NDP		None	PM13/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	76-77	78-80	81-83									
Sample ID	TP119	TP124	TP124									
Depth	2.50	0.20	1.20									
COC No / misc												
Containers	V J	V J T	V J T									
Sample Date	17/01/2017	17/01/2017	17/01/2017									
Sample Type	Soil	Soil	Soil									
Batch Number	2	2	2									
Date of Receipt	20/01/2017	20/01/2017	20/01/2017									

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
Aluminium	-	-	-								<50	mg/kg	TM30/PM62
Arsenic #M	65.0	-	-								<0.5	mg/kg	TM30/PM15
Arsenic	-	30.7	43.2								<0.5	mg/kg	TM30/PM62
Barium	-	-	-								<1	mg/kg	TM30/PM62
Beryllium	1.1	-	-								<0.5	mg/kg	TM30/PM15
Beryllium	-	1.6	2.5								<0.5	mg/kg	TM30/PM62
Cadmium #M	<0.1	-	-								<0.1	mg/kg	TM30/PM15
Cadmium	-	0.5	0.3								<0.1	mg/kg	TM30/PM62
Chromium #M	38.3	-	-								<0.5	mg/kg	TM30/PM15
Chromium	-	33.5	21.5								<0.5	mg/kg	TM30/PM62
Copper #M	37	-	-								<1	mg/kg	TM30/PM15
Copper	-	166	179								<1	mg/kg	TM30/PM62
Iron	-	-	-								<20	mg/kg	TM30/PM62
Lead #M	103	-	-								<5	mg/kg	TM30/PM15
Lead	-	944	301								<5	mg/kg	TM30/PM62
Mercury #M	<0.1	-	-								<0.1	mg/kg	TM30/PM15
Mercury	-	<0.1	<0.1								<0.1	mg/kg	TM30/PM62
Nickel #M	14.5	-	-								<0.7	mg/kg	TM30/PM15
Nickel	-	31.0	53.0								<0.7	mg/kg	TM30/PM62
Selenium #M	1	-	-								<1	mg/kg	TM30/PM15
Selenium	-	2	1								<1	mg/kg	TM30/PM62
Sulphur as S	-	-	-								<0.01	%	TM30/PM62
Vanadium	26	-	-								<1	mg/kg	TM30/PM15
Vanadium	-	37	63								<1	mg/kg	TM30/PM62
Water Soluble Boron #M	1.3	-	-								<0.1	mg/kg	TM74/PM32
Water Soluble Boron	-	0.2	0.5								<0.1	mg/kg	TM74/PM61
Zinc #M	81	-	-								<5	mg/kg	TM30/PM15
Zinc	-	168	185								<5	mg/kg	TM30/PM62

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

J E Sample No.	76-77	78-80	81-83	LOD/LOR	Units	Method No.
Sample ID	TP119	TP124	TP124			
Depth	2.50	0.20	1.20			
COC No / misc						
Containers	V J	V J T	V J T			
Sample Date	17/01/2017	17/01/2017	17/01/2017			
Sample Type	Soil	Soil	Soil			
Batch Number	2	2	2			
Date of Receipt	20/01/2017	20/01/2017	20/01/2017			
PAH MS						
Naphthalene #M	<0.04	0.23	0.25	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	0.08	0.16	<0.03	mg/kg	TM4/PM8
Acenaphthene #M	<0.05	1.64	0.97	<0.05	mg/kg	TM4/PM8
Fluorene #M	<0.04	0.84	0.73	<0.04	mg/kg	TM4/PM8
Phenanthrene #M	<0.03	8.53	6.18	<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	1.94	1.41	<0.04	mg/kg	TM4/PM8
Fluoranthene #M	<0.03	11.29	6.84	<0.03	mg/kg	TM4/PM8
Pyrene #	<0.03	9.06	5.27	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	<0.06	3.64	2.48	<0.06	mg/kg	TM4/PM8
Chrysene #M	<0.02	4.82	2.38	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	<0.07	7.32	4.60	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04	4.43	2.81	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	<0.04	2.67	1.81	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	0.49	0.29	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	2.52	1.53	<0.04	mg/kg	TM4/PM8
Coronene	-	-	-	<0.04	mg/kg	TM4/PM8
PAH 16 Total	<0.6	59.5	37.7	<0.6	mg/kg	TM4/PM8
PAH 17 Total	-	-	-	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	<0.05	5.27	3.31	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	<0.02	2.05	1.29	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	128	124	126	<0	%	TM4/PM8
VOC TICs	ND	-	-		None	TM15/PM10
Methyl Tertiary Butyl Ether #M	<6	-	-	<6	ug/kg	TM15/PM10
Benzene #M	<5	-	-	<5	ug/kg	TM15/PM10
Toluene #M	<3	-	-	<3	ug/kg	TM15/PM10
Ethylbenzene #M	<3	-	-	<3	ug/kg	TM15/PM10
p/m-Xylene #M	<4	-	-	<4	ug/kg	TM15/PM10
o-Xylene #M	<4	-	-	<4	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	101	-	-	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	95	-	-	<0	%	TM15/PM10
SVOC TICs	ND	-	-		None	TM16/PM8
Mineral Oil (C10-C40)	-	-	-	<30	mg/kg	TM5/PM16

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	76-77	78-80	81-83									
Sample ID	TP119	TP124	TP124									
Depth	2.50	0.20	1.20									
COC No / misc												
Containers	V J	V J T	V J T									
Sample Date	17/01/2017	17/01/2017	17/01/2017									
Sample Type	Soil	Soil	Soil									
Batch Number	2	2	2									
Date of Receipt	20/01/2017	20/01/2017	20/01/2017									

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1	<0.1	<0.1								<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1	<0.1	<0.1								<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1	<0.1								<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	<0.2	<0.2								<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	<4	<4								<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	11	<7								<7	mg/kg	TM5/PM16
>C21-C35 #M	<7	55	<7								<7	mg/kg	TM5/PM16
>C35-C44	<7	<7	<7								<7	mg/kg	TM5/PM16
Total aliphatics C5-44	<26	66	<26								<26	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7 #	<0.1	<0.1	<0.1								<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	<0.1	<0.1								<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1	<0.1	<0.1								<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	<0.2								<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	5	5								<4	mg/kg	TM5/PM16
>EC16-EC21 #	<7	58	28								<7	mg/kg	TM5/PM16
>EC21-EC35 #	<7	185	89								<7	mg/kg	TM5/PM16
>EC35-EC44	<7	165	29								<7	mg/kg	TM5/PM16
Total aromatics C5-44	<26	413	151								<26	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-44)	<52	479	151								<52	mg/kg	TM5/TM36/PM12/PM16
MTBE #	-	<5	<5								<5	ug/kg	TM31/PM12
Benzene #	-	<5	<5								<5	ug/kg	TM31/PM12
Toluene #	-	<5	<5								<5	ug/kg	TM31/PM12
Ethylbenzene #	-	<5	<5								<5	ug/kg	TM31/PM12
m/p-Xylene #	-	<5	<5								<5	ug/kg	TM31/PM12
o-Xylene #	-	<5	<5								<5	ug/kg	TM31/PM12
PCB 77	-	-	-								<5	ug/kg	TM16/PM8
PCB 81	-	-	-								<5	ug/kg	TM16/PM8
PCB 105	-	-	-								<5	ug/kg	TM16/PM8
PCB 114	-	-	-								<5	ug/kg	TM16/PM8
PCB 118	-	-	-								<5	ug/kg	TM16/PM8
PCB 123	-	-	-								<5	ug/kg	TM16/PM8
PCB 126	-	-	-								<5	ug/kg	TM16/PM8
PCB 156	-	-	-								<5	ug/kg	TM16/PM8
PCB 157	-	-	-								<5	ug/kg	TM16/PM8
PCB 167	-	-	-								<5	ug/kg	TM16/PM8
PCB 169	-	-	-								<5	ug/kg	TM16/PM8
PCB 189	-	-	-								<5	ug/kg	TM16/PM8
Total 12 PCBs	-	-	-								<60	ug/kg	TM16/PM8
PCB 28 #	-	-	-								<5	ug/kg	TM17/PM8

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

J E Sample No.	76-77	78-80	81-83								LOD/LOR	Units	Method No.
Sample ID	TP119	TP124	TP124										
Depth	2.50	0.20	1.20										
COC No / misc													
Containers	V J	V J T	V J T										
Sample Date	17/01/2017	17/01/2017	17/01/2017										
Sample Type	Soil	Soil	Soil										
Batch Number	2	2	2										
Date of Receipt	20/01/2017	20/01/2017	20/01/2017										
PCB 52 #	-	-	-								<5	ug/kg	TM17/PM8
PCB 101 #	-	-	-								<5	ug/kg	TM17/PM8
PCB 118 #	-	-	-								<5	ug/kg	TM17/PM8
PCB 138 #	-	-	-								<5	ug/kg	TM17/PM8
PCB 153 #	-	-	-								<5	ug/kg	TM17/PM8
PCB 180 #	-	-	-								<5	ug/kg	TM17/PM8
Total 7 PCBs #	-	-	-								<35	ug/kg	TM17/PM8
Phenol #M	<0.01	<0.01	<0.01								<0.01	mg/kg	TM26/PM21
Monoethylene glycol	-	-	-								<10	mg/kg	TM24/PM8
Propylene glycol	-	-	-								<10	mg/kg	TM24/PM8
Diethylene glycol	-	-	-								<10	mg/kg	TM24/PM8
Triethylene glycol	-	-	-								<10	mg/kg	TM24/PM8
Thiodiglycol	-	-	-								<10	mg/kg	TM24/PM8
Natural Moisture Content	28.4	-	-								<0.1	%	PM4/PM0
Natural Moisture Content	-	16.8	26.6								<0.1	%	PM4/PM0
Ammoniacal Nitrogen as N	-	-	-								<0.6	mg/kg	TM38/PM20
Bromide	-	-	-								<0.3	mg/kg	TM27/PM60
Chloride	-	-	-								<2	mg/kg	TM38/PM60
Hexavalent Chromium #	<0.3	<0.3	<0.3								<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #M	386	-	-								<3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext)	-	0.0141	0.0187								<0.0015	g/l	TM38/PM60
Free Cyanide	<0.5	<0.5	<0.5								<0.5	mg/kg	TM89/PM45
Total Cyanide #M	<0.5	1.1	0.6								<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	-	-	-								<0.02	%	TM21/PM24
Fraction Organic Carbon	0.002	NDP	NDP								<0.001	None	TM21/PM24
ANC at pH4	-	-	-								<0.03	mol/kg	TM77/PM0
ANC at pH7	-	-	-								<0.03	mol/kg	TM77/PM0
Elemental Sulphur	-	-	-								<1	mg/kg	TM108/PM8
Formaldehyde (water soluble)	-	-	-								<0.5	mg/kg	TM51/PM112
Loss on Ignition #	-	-	-								<1.0	%	TM22/PM0
pH #M	8.15	8.44	8.38								<0.01	pH units	TM73/PM11
Sample Type	Clay	NDP	NDP									None	PM13/PM0
Sample Colour	Medium Brown	NDP	NDP									None	PM13/PM0
Other Items	stones	NDP	NDP									None	PM13/PM0

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	48-50	54-56	72-73								LOD/LOR	Units	Method No.
Sample ID	TP110	TP111	TP119										
Depth	0.20	0.40	0.50										
COC No / misc													
Containers	V J T	V J T	V J										
Sample Date	18/01/2017	18/01/2017	17/01/2017										
Sample Type	Soil	Soil	Soil										
Batch Number	2	2	2										
Date of Receipt	20/01/2017	20/01/2017	20/01/2017										
Dissolved Arsenic #	1.5	<0.9	12.3								<0.9	ug/l	TM30/PM14
Dissolved Boron #	26	14	35								<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.03	<0.03	<0.03								<0.03	ug/l	TM30/PM14
Dissolved Chromium #	4.8	<0.2	0.5								<0.2	ug/l	TM30/PM14
Dissolved Copper #	<3	<3	6								<3	ug/l	TM30/PM14
Dissolved Lead #	<0.4	<0.4	<0.4								<0.4	ug/l	TM30/PM14
Dissolved Nickel #	<0.2	<0.2	1.1								<0.2	ug/l	TM30/PM14
Dissolved Selenium #	<1.2	<1.2	<1.2								<1.2	ug/l	TM30/PM14
Dissolved Zinc #	<3	<3	4								<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	<0.01	<0.01	0.02								<0.01	ug/l	TM61/PM38
Sulphate as SO4 #	18.68	66.44	22.80								<0.05	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	0.04	<0.03	0.10								<0.03	mg/l	TM38/PM0
Total Cyanide #	<0.005	<0.005	<0.005								<0.005	mg/l	TM89/PM0
pH	10.80	8.02	4.73								<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

SVOC Report : **Solid**

J E Sample No.	48-50	54-56	63-65	69-71	76-77								
Sample ID	TP110	TP111	TP120	TP120	TP119								
Depth	0.20	0.40	0.50	2.80	2.50						Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J								
Sample Date	18/01/2017	18/01/2017	18/01/2017	18/01/2017	17/01/2017								
Sample Type	Soil	Soil	Soil	Soil	Soil								
Batch Number	2	2	2	2	2								
Date of Receipt	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017								
SVOC MS											LOD/LOR	Units	Method No.
Phenols													
2-Chlorophenol #M	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
2-Methylphenol	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
2-Nitrophenol	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
2,4-Dichlorophenol #M	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
2,4-Dimethylphenol	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
2,4,5-Trichlorophenol	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
2,4,6-Trichlorophenol	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
4-Chloro-3-methylphenol	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
4-Methylphenol	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
4-Nitrophenol	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
Pentachlorophenol	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
Phenol #M	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
PAHs													
2-Chloronaphthalene #M	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
2-Methylnaphthalene #M	153	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
Phthalates													
Bis(2-ethylhexyl) phthalate	<100	<100	<100	<100	<100						<100	ug/kg	TM16/PM8
Butylbenzyl phthalate	<100	<100	<100	<100	<100						<100	ug/kg	TM16/PM8
Di-n-butyl phthalate	<100	<100	<100	<100	<100						<100	ug/kg	TM16/PM8
Di-n-Octyl phthalate	<100	<100	<100	<100	<100						<100	ug/kg	TM16/PM8
Diethyl phthalate	<100	<100	<100	<100	<100						<100	ug/kg	TM16/PM8
Dimethyl phthalate #M	<100	<100	<100	<100	<100						<100	ug/kg	TM16/PM8
Other SVOCs													
1,2-Dichlorobenzene	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
1,2,4-Trichlorobenzene #M	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
1,3-Dichlorobenzene	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
1,4-Dichlorobenzene	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
2-Nitroaniline	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
2,4-Dinitrotoluene	<10	5445	<10	<10	<10						<10	ug/kg	TM16/PM8
2,6-Dinitrotoluene	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
3-Nitroaniline	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
4-Bromophenylphenylether #M	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
4-Chloroaniline	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
4-Chlorophenylphenylether	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
4-Nitroaniline	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
Azobenzene	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
Bis(2-chloroethoxy)methane	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
Bis(2-chloroethyl)ether	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
Carbazole	172	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
Dibenzofuran #M	144	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
Hexachlorobenzene	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
Hexachlorobutadiene #M	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
Hexachlorocyclopentadiene	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
Hexachloroethane	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
Isophorone #M	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
N-nitrosodi-n-propylamine #M	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
Nitrobenzene #M	<10	<10	<10	<10	<10						<10	ug/kg	TM16/PM8
Surrogate Recovery 2-Fluorobiphenyl	120	98	98	85	105						<0	%	TM16/PM8
Surrogate Recovery p-Terphenyl-d14	129	117	120	99	109						<0	%	TM16/PM8

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

VOC Report : **Solid**

J E Sample No.	48-50	54-56	63-65	69-71	76-77						LOD/LOR	Units	Method No.
Sample ID	TP110	TP111	TP120	TP120	TP119								
Depth	0.20	0.40	0.50	2.80	2.50								
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J								
Sample Date	18/01/2017	18/01/2017	18/01/2017	18/01/2017	17/01/2017								
Sample Type	Soil	Soil	Soil	Soil	Soil								
Batch Number	2	2	2	2	2								
Date of Receipt	20/01/2017	20/01/2017	20/01/2017	20/01/2017	20/01/2017								
VOC MS													
Dichlorodifluoromethane	<2	<2	<2	<2	<2						<2	ug/kg	TM15/PM10
Methyl Tertiary Butyl Ether #M	<6	<6	<6	<6	<6						<6	ug/kg	TM15/PM10
Chloromethane #	<3	<3	<3	<3	<3						<3	ug/kg	TM15/PM10
Vinyl Chloride	<2	<2	<2	<2	<2						<2	ug/kg	TM15_A/PM10
Bromomethane	<1	<1	<1	<1	<1						<1	ug/kg	TM15/PM10
Chloroethane #M	<6	<6	<6	<6	<6						<6	ug/kg	TM15/PM10
Trichlorofluoromethane #M	<3	<3	<3	<3	<3						<3	ug/kg	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #M	<6	<6	<6	<6	<6						<6	ug/kg	TM15/PM10
Dichloromethane (DCM) #	40	62	<30	<30	<30						<30	ug/kg	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3	<3	<3						<3	ug/kg	TM15/PM10
1,1-Dichloroethane #M	<6	<6	<6	<6	<6						<6	ug/kg	TM15/PM10
cis-1-2-Dichloroethene #M	<7	<7	<7	<7	<7						<7	ug/kg	TM15/PM10
2,2-Dichloropropane	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
Bromochloromethane #M	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
Chloroform #M	<5	<5	<5	<5	<5						<5	ug/kg	TM15/PM10
1,1,1-Trichloroethane #M	<5	<5	<5	<5	<5						<5	ug/kg	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3	<3	<3						<3	ug/kg	TM15/PM10
Carbon tetrachloride #M	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
1,2-Dichloroethane #M	<5	<5	<5	<5	<5						<5	ug/kg	TM15/PM10
Benzene #M	<5	<5	<5	<5	<5						<5	ug/kg	TM15/PM10
Trichloroethene (TCE) #M	<5	<5	<5	<5	<5						<5	ug/kg	TM15/PM10
1,2-Dichloropropane #M	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
Dibromomethane #M	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
Bromodichloromethane #M	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
cis-1-3-Dichloropropene	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
Toluene #M	4	<3	<3	<3	<3						<3	ug/kg	TM15/PM10
trans-1-3-Dichloropropene	<3	<3	<3	<3	<3						<3	ug/kg	TM15/PM10
1,1,2-Trichloroethane #M	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3	<3	<3						<3	ug/kg	TM15/PM10
1,3-Dichloropropane #M	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
Dibromochloromethane #M	<5	<5	<5	<5	<5						<5	ug/kg	TM15/PM10
1,2-Dibromoethane #	<3	<3	<3	<3	<3						<3	ug/kg	TM15/PM10
Chlorobenzene #M	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
1,1,1,2-Tetrachloroethane #M	<5	<5	<5	<5	<5						<5	ug/kg	TM15/PM10
Ethylbenzene #M	<3	<3	<3	<3	<3						<3	ug/kg	TM15/PM10
p/m-Xylene #M	<4	<4	5	<4	<4						<4	ug/kg	TM15/PM10
o-Xylene #M	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
Styrene	<3	<3	<3	<3	<3						<3	ug/kg	TM15_A/PM10
Bromoform	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
Isopropylbenzene #	<3	<3	<3	<3	<3						<3	ug/kg	TM15/PM10
1,1,2,2-Tetrachloroethane #M	<3	<3	<3	<3	<3						<3	ug/kg	TM15/PM10
Bromobenzene	<2	<2	<2	<2	<2						<2	ug/kg	TM15/PM10
1,2,3-Trichloropropane #M	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
Propylbenzene #	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
2-Chlorotoluene	<3	<3	<3	<3	<3						<3	ug/kg	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3	<3	<3						<3	ug/kg	TM15/PM10
4-Chlorotoluene	<3	<3	<3	<3	<3						<3	ug/kg	TM15/PM10
tert-Butylbenzene #	<5	<5	<5	<5	<5						<5	ug/kg	TM15/PM10
1,2,4-Trimethylbenzene #	<6	<6	<6	<6	<6						<6	ug/kg	TM15/PM10
sec-Butylbenzene #	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
4-Isopropyltoluene #	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
1,3-Dichlorobenzene #M	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
1,4-Dichlorobenzene #	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
n-Butylbenzene #	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
1,2-Dichlorobenzene #M	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
1,2-Dibromo-3-chloropropane #	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
1,2,4-Trichlorobenzene #	<7	<7	<7	<7	<7						<7	ug/kg	TM15/PM10
Hexachlorobutadiene	<4	<4	<4	<4	<4						<4	ug/kg	TM15/PM10
1,2,3-Trichlorobenzene #	<7	<7	<7	<7	<7						<7	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	101	103	101	101	101						<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	85	98	81	87	95						<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Job number: 17/2576
Sample number: 49
Sample identity: TP110
Sample depth: 0.20
Sample Type: Soil
Units: ug/kg

Method: **SVOC**
Matrix: **Solid**

Note: Only samples with TICs (if requested) are reported. If TICs were requested but no compounds found they are not reported.

CAS No.	Tentative Compound Identification	Retention Time (minutes)	% Match	Concentration
90-12-0	Naphthalene, 1-methyl-	7.687	91	219
112-95-8	Eicosane	9.962	94	262
1921-70-6	Pentadecane, 2,6,10,14-tetramethyl-	10.010	80	273
832-64-4	Phenanthrene, 4-methyl-	10.881	95	439
203-64-5	4H-Cyclopenta[def]phenanthrene	10.960	85	539
2531-84-2	Phenanthrene, 2-methyl-	10.990	96	422
2381-21-7	Pyrene, 1-methyl-	12.217	96	1068
198-55-0	Perylene	15.010	93	1696

Job number: 17/2576
Sample number: 64
Sample identity: TP120
Sample depth: 0.50
Sample Type: Soil
Units: ug/kg

Method: **SVOC**
Matrix: **Solid**

Note: Only samples with TICs (if requested) are reported. If TICs were requested but no compounds found they are not reported.

CAS No.	Tentative Compound Identification	Retention Time (minutes)	% Match	Concentration
10544-50-0	Cyclic octaatomic sulfur	11.439	93	511

Mass of sample taken (kg) =	NDP	Moisture Content Ratio (%) =	48.2
Mass of dry sample (kg) =	0.175	Dry Matter Content Ratio (%) =	67.5
Particle Size <4mm =	>95%		

JEFL Job No	**17/2576**				**Landfill Waste Acceptance Criteria Limits**		
Sample No	**56**						
Client Sample No	**TP111**				**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**0.40**						
Sample Date	**18/01/2017**						
Batch No	**2**						
Solid Waste Analysis							
Total Organic Carbon (%)	NDP				3	5	6
Loss on Ignition (%)	NDP				-	-	10
Sum of BTEX (mg/kg)	<0.019				6	-	-
Sum of 7 PCBs (mg/kg)	<0.035				1	-	-
Mineral Oil (mg/kg)	<30				500	-	-
PAH Sum of 17(mg/kg)	0.74				100	-	-
pH (pH Units)	8.39				-	>6	-
ANC to pH 7 (mol/kg)	0.82				-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	2.67				-	to be evaluated	to be evaluated
Eluate Analysis	**Conc^{n} in 2:1 eluate**	**Conc^{n} in 8:1 eluate**	**2:1 conc^{n} leached**	**Cumulative 10:1 conc^{n} leached**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg**		
	C_2	**C_8**	**A_2**	**A_{2-10}**			
	mg/l		**mg/kg**		**mg/kg**		
Arsenic	NDP	NDP	NDP	NDP	0.5	2	25
Barium	NDP	NDP	NDP	NDP	20	100	300
Cadmium	NDP	NDP	NDP	NDP	0.04	1	5
Chromium	NDP	NDP	NDP	NDP	0.5	10	70
Copper	NDP	NDP	NDP	NDP	2	50	100
Mercury	NDP	NDP	NDP	NDP	0.01	0.2	2
Molybdenum	NDP	NDP	NDP	NDP	0.5	10	30
Nickel	NDP	NDP	NDP	NDP	0.4	10	40
Lead	NDP	NDP	NDP	NDP	0.5	10	50
Antimony	NDP	NDP	NDP	NDP	0.06	0.7	5
Selenium	NDP	NDP	NDP	NDP	0.1	0.5	7
Zinc	NDP	NDP	NDP	NDP	4	50	200
Chloride	NDP	NDP	NDP	NDP	800	15000	25000
Fluoride	NDP	NDP	NDP	NDP	10	150	500
Sulphate as SO4	NDP	NDP	NDP	NDP	1000	20000	50000
Total Dissolved Solids	NDP	NDP	NDP	NDP	4000	60000	100000
Phenol	NDP	NDP	NDP	NDP	1	-	-
Dissolved Organic Carbon	NDP	NDP	NDP	NDP	500	800	1000

Leachate Information		
Date Prepared	25/01/2017	25/01/2017
pH (pH Units)	NDP	NDP
Conductivity (µS/cm)	NDP	NDP
Temperature (°C)	NDP	NDP
Volume Leachant (Litres)	NDP	NDP
Volume of Eluate VE1 (Litres)	NDP	

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/2576	2	TP112	0.20	40	31/01/2017	**General Description (Bulk Analysis)**	Soil/Stone
					31/01/2017	**Asbestos Fibres**	Fibre Bundles
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos Type**	Chrysotile
					31/01/2017	**Asbestos Level Screen**	Asbestos level cannot be determined at this stage of analysis
17/2576	2	TP112	1.00	43	31/01/2017	**General Description (Bulk Analysis)**	Soil/Stone
					31/01/2017	**Asbestos Fibres**	Fibre Bundles
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos Type**	Chrysotile
					31/01/2017	**Asbestos Level Screen**	<0.1%
17/2576	2	TP110	0.20	49	27/01/2017	**General Description (Bulk Analysis)**	soil-stones
					27/01/2017	**Asbestos Fibres**	Fibre Bundles
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos Type**	Chrysotile
					27/01/2017	**Asbestos Level Screen**	<0.1%
17/2576	2	TP110	1.80	52	27/01/2017	**General Description (Bulk Analysis)**	soil-stones
					27/01/2017	**Asbestos Fibres**	Fibre Bundles
					27/01/2017	**Asbestos Fibres (2)**	Fibre Bundles
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos ACM (2)**	NAD
					27/01/2017	**Asbestos Type**	Chrysotile
					27/01/2017	**Asbestos Type (2)**	Crocidolite
					27/01/2017	**Asbestos Level Screen**	<0.1%
17/2576	2	TP111	0.40	55	27/01/2017	**General Description (Bulk Analysis)**	chalk-stones
					27/01/2017	**Asbestos Fibres**	Free Fibres
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos Type**	Chrysotile
					27/01/2017	**Asbestos Level Screen**	<0.1%
17/2576	2	TP111	0.50	58	27/01/2017	**General Description (Bulk Analysis)**	soil/stones
					27/01/2017	**Asbestos Fibres**	Fibre Bundles
					27/01/2017	**Asbestos Fibres (2)**	Fibre Bundles
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos ACM (2)**	NAD
					27/01/2017	**Asbestos Type**	Chrysotile

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/2576	2	TP111	0.50	58	27/01/2017	**Asbestos Type (2)**	Amosite
					27/01/2017	**Asbestos Level Screen**	<0.1%
17/2576	2	TP120	0.50	64	27/01/2017	**General Description (Bulk Analysis)**	soil-stones
					27/01/2017	**Asbestos Fibres**	Fibre Bundles
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos Type**	Chrysotile
					27/01/2017	**Asbestos Level Screen**	<0.1%
17/2576	2	TP120	2.80	70	27/01/2017	**General Description (Bulk Analysis)**	soil-stones
					27/01/2017	**Asbestos Fibres**	NAD
					27/01/2017	**Asbestos Fibres (2)**	NAD
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos ACM (2)**	NAD
					27/01/2017	**Asbestos Type**	NAD
					27/01/2017	**Asbestos Type (2)**	NAD
					27/01/2017	**Asbestos Level Screen**	NAD
17/2576	2	TP119	0.50	73	27/01/2017	**General Description (Bulk Analysis)**	soil/stones
					27/01/2017	**Asbestos Fibres**	NAD
					27/01/2017	**Asbestos Fibres (2)**	NAD
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos ACM (2)**	NAD
					27/01/2017	**Asbestos Type**	NAD
					27/01/2017	**Asbestos Type (2)**	NAD
					27/01/2017	**Asbestos Level Screen**	NAD
17/2576	2	TP119	1.20	75	27/01/2017	**General Description (Bulk Analysis)**	soil/stones
					27/01/2017	**Asbestos Fibres**	Fibre Bundles
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos Type**	Chrysotile
					27/01/2017	**Asbestos Level Screen**	<0.1%
17/2576	2	TP119	2.50	77	27/01/2017	**General Description (Bulk Analysis)**	soil/stones
					27/01/2017	**Asbestos Fibres**	NAD
					27/01/2017	**Asbestos Fibres (2)**	NAD
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos ACM (2)**	NAD
					27/01/2017	**Asbestos Type**	NAD
					27/01/2017	**Asbestos Type (2)**	NAD
					27/01/2017	**Asbestos Level Screen**	NAD
17/2576	2	TP124	0.20	79	27/01/2017	**General Description (Bulk Analysis)**	soil-stones
					27/01/2017	**Asbestos Fibres**	Fibre Bundles
					27/01/2017	**Asbestos Fibres (2)**	Fibre Bundles
					27/01/2017	**Asbestos ACM**	Insulation Debris
					27/01/2017	**Asbestos ACM (2)**	NAD
					27/01/2017	**Asbestos Type**	Chrysotile
					27/01/2017	**Asbestos Type (2)**	Amosite
					27/01/2017	**Asbestos Level Screen**	Asbestos level cannot be determined at this stage of analysis
					08/03/2017	**Asbestos Gravimetric Quantification**	0.003 (mass %)
					08/03/2017	**Asbestos PCOM Quantification (Fibres)**	0.001 (mass %)
					08/03/2017	**Asbestos Gravimetric & PCOM Total**	0.004 (mass %)

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/2576	2	TP124	1.20	82	27/01/2017	**General Description (Bulk Analysis)**	soil/stones
					27/01/2017	**Asbestos Fibres**	Fibre Bundles
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos Type**	Chrysotile
					27/01/2017	**Asbestos Level Screen**	<0.1%

Client Name: WYG **Matrix : Solid**
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
17/2576	2	TP112	0.20	39-41	Asbestos detected in sample
17/2576	2	TP112	1.00	42-43	Asbestos detected in sample
17/2576	2	TP110	0.20	48-50	Asbestos detected in sample
17/2576	2	TP110	1.80	51-53	Asbestos detected in sample
17/2576	2	TP111	0.40	54-56	Asbestos detected in sample
17/2576	2	TP111	0.50	57-59	Asbestos detected in sample
17/2576	2	TP120	0.50	63-65	Asbestos detected in sample
17/2576	2	TP119	1.20	74-75	Asbestos detected in sample
17/2576	2	TP124	0.20	78-80	Asbestos detected in sample
17/2576	2	TP124	1.20	81-83	Asbestos detected in sample

Client Name: WYG **Matrix : CEN 10:1 2-Batch**
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
17/2576	2	TP111	0.40	54-56	Insufficient sample for test

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 17/2576						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/2576

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x2 Dilution
AB	x5 Dilution

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM20	Modified BS 1377-3: 1990/USEPA 160.3 Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.			AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.			AD	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM22	Modified USEPA 160.4. Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (450°C)	PM0	No preparation is required.	Yes		AD	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM24	Determination of Glycols by GC-MS	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.	Yes	Yes	AR	Yes
TM27	Modified US EPA method 9056.Determination of water soluble anions using Dionex (Ion-Chromatography).	PM60	As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid.			AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.			AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes		AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.			AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.			AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM60	As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid.			AR	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM51	Formaldehyde determination by reaction with Ammonium Ions and acetylacetone which is analysed spectrophotometrically.	PM112	As received soils are extracted with deionised water in a 4:1 ratio			AR	Yes
TM60	Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR).	PM0	No preparation is required.			AR	Yes
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	Yes
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes	Yes	AD	Yes
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM61	As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP.			AR	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM77	Modified DDCEN/TS method 15364:2006. Determination of Acid Neutralization Capacity by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	No
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM0	No preparation is required.	Yes		AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.			AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes	Yes	AR	Yes
TM108	Determination of Elemental Sulphur by Reversed Phase High Performance Liquid Chromatography with Ultra Violet spectroscopy.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.			AR	Yes
NONE	No Method Code	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.				
NONE	No Method Code	PM18	Modified method EN 12457-3. As received solid samples are leached with water in a 2:1 water to solid ratio for 6 hours, the same aliquot of solid is then re-leached with water in an 8:1 water to solid ratio for 18 hours, the moisture content of the sample is included in the ratio. This preparation produces two eluates.			AR	Yes
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.			AR	
TM15_A	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

Exova Jones Environmental

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WYG
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Attention :	Kathryn Ellis
Date :	3rd February, 2017
Your reference :	A090070-193
Our reference :	Test Report 17/2576 Batch 3
Location :	East Lancashire Paper Mill
Date samples received :	21st January, 2017
Status :	Final report
Issue :	1

Sixteen samples were received for analysis on 21st January, 2017 of which twelve were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Phil Sommerton BSc
Project Manager

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	87-89	90-92	93-94	95-97	100-101	102-103	107-108	109-111	112-113	116-117	LOD/LOR	Units	Method No.
Sample ID	TP133	TP133	TP134	TP134	TP135	TP136	TP137	TP137	TP138	TP139			
Depth	0.40	1.50	0.50	1.10	1.00	0.20	0.50	1.00	0.20	0.50			
COC No / misc													
Containers	V J T	V J T	V J	V J T	V J	V J	V J	V J T	V J	V J			
Sample Date	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	3	3	3	3	3	3	3	3	3	3			
Date of Receipt	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017			
Aluminium	-	-	-	-	-	-	11880	-	-	-	<50	mg/kg	TM30/PM15
Aluminium	10345	-	-	-	-	-	-	-	-	-	<50	mg/kg	TM30/PM62
Arsenic #M	-	53.7	19.4	6.6	15.4	22.6	15.6	10.2	18.0	107.0	<0.5	mg/kg	TM30/PM15
Arsenic	17.9	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	TM30/PM62
Barium #M	-	-	-	-	-	-	106	-	-	-	<1	mg/kg	TM30/PM15
Barium	130	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Beryllium	-	2.3	1.0	0.9	1.0	1.3	1.0	0.8	1.2	1.5	<0.5	mg/kg	TM30/PM15
Beryllium	1.1	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	TM30/PM62
Cadmium #M	-	0.9	<0.1	<0.1	<0.1	0.1	<0.1	0.2	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Cadmium	0.1	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM62
Chromium #M	-	89.8	68.5	43.5	50.7	51.9	48.2	69.5	65.4	55.4	<0.5	mg/kg	TM30/PM15
Chromium	33.5	-	-	-	-	-	-	-	-	-	<0.5	mg/kg	TM30/PM62
Copper #M	-	274 AB	3	22	17	25	26	9	43	28	<1	mg/kg	TM30/PM15
Copper	62	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Iron	-	-	-	-	-	-	28330	-	-	-	<20	mg/kg	TM30/PM15
Iron	27306	-	-	-	-	-	-	-	-	-	<20	mg/kg	TM30/PM62
Lead #M	-	490	9	37	23	38	45	10	89	34	<5	mg/kg	TM30/PM15
Lead	125	-	-	-	-	-	-	-	-	-	<5	mg/kg	TM30/PM62
Mercury #M	-	1.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Mercury	<0.1	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM30/PM62
Nickel #M	-	59.2	18.5	16.5	31.7	35.2	22.0	29.2	29.1	31.8	<0.7	mg/kg	TM30/PM15
Nickel	21.1	-	-	-	-	-	-	-	-	-	<0.7	mg/kg	TM30/PM62
Selenium #M	-	3	1	2	2	2	2	<1	2	2	<1	mg/kg	TM30/PM15
Selenium	1	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Sulphur	-	-	-	-	-	-	0.03	-	-	-	<0.01	%	TM30/PM15
Sulphur	0.05	-	-	-	-	-	-	-	-	-	<0.01	%	TM30/PM62
Vanadium	-	44	16	28	24	25	24	16	28	25	<1	mg/kg	TM30/PM15
Vanadium	24	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM30/PM62
Water Soluble Boron #M	-	1.8	0.3	0.7	0.2	0.3	0.4	0.3	0.5	0.4	<0.1	mg/kg	TM74/PM32
Water Soluble Boron	0.9	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM74/PM61
Zinc #M	-	320	41	77	77	115	82	81	99	117	<5	mg/kg	TM30/PM15
Zinc	99	-	-	-	-	-	-	-	-	-	<5	mg/kg	TM30/PM62

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	87-89	90-92	93-94	95-97	100-101	102-103	107-108	109-111	112-113	116-117	LOD/LOR	Units	Method No.
Sample ID	TP133	TP133	TP134	TP134	TP135	TP136	TP137	TP137	TP138	TP139			
Depth	0.40	1.50	0.50	1.10	1.00	0.20	0.50	1.00	0.20	0.50			
COC No / misc													
Containers	V J T	V J T	V J	V J T	V J	V J	V J	V J T	V J	V J			
Sample Date	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	3	3	3	3	3	3	3	3	3	3			
Date of Receipt	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017			
PAH MS													
Naphthalene #M	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Acenaphthene #M	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #M	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #M	0.62	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.05	<0.03	<0.03	mg/kg	TM4/PM8
Anthracene #	0.16	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Fluoranthene #M	1.08	<0.03	0.05	<0.03	0.08	0.05	<0.03	<0.03	0.07	0.07	<0.03	mg/kg	TM4/PM8
Pyrene #	0.80	<0.03	0.05	<0.03	0.09	0.05	<0.03	<0.03	0.06	0.06	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.40	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	mg/kg	TM4/PM8
Chrysene #M	0.42	<0.02	0.04	<0.02	0.06	0.03	<0.02	<0.02	0.05	0.05	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	0.70	<0.07	<0.07	<0.07	0.09	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.45	<0.04	<0.04	<0.04	0.06	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	0.26	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.06	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.24	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Coronene	-	-	<0.04	-	-	-	-	-	-	-	<0.04	mg/kg	TM4/PM8
PAH 16 Total	5.3	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	<0.6	mg/kg	TM4/PM8
PAH 17 Total	-	-	<0.64	-	-	-	-	-	-	-	<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.50	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.20	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	128	125	126	127	125	122	129	115	116	100	<0	%	TM4/PM8
Mineral Oil (C10-C40)	-	-	<30	-	-	-	-	-	-	-	<30	mg/kg	TM5/PM16
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1 SV	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	<7	<7	<7	<7	<7	<7	<7	<7	46	<7	mg/kg	TM5/PM16
>C21-C35 #M	<7	<7	<7	<7	<7	<7	<7	<7	<7	180	<7	mg/kg	TM5/PM16
>C35-C44	<7	<7	<7	<7	<7	<7	<7	<7	<7	108	<7	mg/kg	TM5/PM16
Total aliphatics C5-44	<26	<26	<26	<26	<26	<26	<26	<26	<26	334	<26	mg/kg	TM5/TM36/PM16

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	87-89	90-92	93-94	95-97	100-101	102-103	107-108	109-111	112-113	116-117	LOD/LOR	Units	Method No.
Sample ID	TP133	TP133	TP134	TP134	TP135	TP136	TP137	TP137	TP138	TP139			
Depth	0.40	1.50	0.50	1.10	1.00	0.20	0.50	1.00	0.20	0.50			
COC No / misc													
Containers	V J T	V J T	V J	V J T	V J	V J	V J	V J T	V J	V J			
Sample Date	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	3	3	3	3	3	3	3	3	3	3			
Date of Receipt	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017			
TPH CWG													
Aromatics													
>C5-EC7 #	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	mg/kg	TM5/PM16
>EC16-EC21 #	8	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
>EC21-EC35 #	52	76	<7	45	<7	10	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
>EC35-EC44	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	<7	mg/kg	TM5/PM16
Total aromatics C5-44	60	76	<26	45	<26	<26	<26	<26	<26	<26	<26	mg/kg	TM5/TM36/PM16
Total aliphatics and aromatics(C5-44)	60	76	<52	<52	<52	<52	<52	<52	<52	334	<52	mg/kg	TM5/TM36/PM16
MTBE #	<5	<5 SV	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
Benzene #	<5	<5 SV	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
Toluene #	<5	<5 SV	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5 SV	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	<5 SV	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
o-Xylene #	<5	<5 SV	<5	<5	<5	<5	<5	<5	<5	<5	<5	ug/kg	TM31/PM12
PCB 28 #	-	-	<5	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 52 #	-	-	<5	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 101 #	-	-	<5	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 118 #	-	-	<5	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 138 #	-	-	<5	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 153 #	-	-	<5	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
PCB 180 #	-	-	<5	-	-	-	-	-	-	-	<5	ug/kg	TM17/PM8
Total 7 PCBs #	-	-	<35	-	-	-	-	-	-	-	<35	ug/kg	TM17/PM8
Phenol #M	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	TM26/PM21
Natural Moisture Content	-	93.2	-	25.0	11.5	14.1	20.2	9.3	19.8	20.1	<0.1	%	PM4/PM0
Natural Moisture Content	17.8	-	-	-	-	-	-	-	-	-	<0.1	%	PM4/PM0
Ammoniacal Nitrogen as N	<0.6	-	-	-	-	-	<0.6	-	-	-	<0.6	mg/kg	TM38/PM20
Bromide	-	-	-	-	-	-	<0.3	-	-	-	<0.3	mg/kg	TM27/PM20
Bromide	<0.3	-	-	-	-	-	-	-	-	-	<0.3	mg/kg	TM27/PM60
Chloride #M	-	-	-	-	-	-	3	-	-	-	<2	mg/kg	TM38/PM20
Chloride	2	-	-	-	-	-	-	-	-	-	<2	mg/kg	TM38/PM60
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Ortho Phosphate as PO4	-	-	-	-	-	-	<0.3	-	-	-	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #M	-	83	215	349	50	36	169	96	134	298	<3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext)	0.1159	-	-	-	-	-	-	-	-	-	<0.0015	g/l	TM38/PM60

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	87-89	90-92	93-94	95-97	100-101	102-103	107-108	109-111	112-113	116-117	LOD/LOR	Units	Method No.
Sample ID	TP133	TP133	TP134	TP134	TP135	TP136	TP137	TP137	TP138	TP139			
Depth	0.40	1.50	0.50	1.10	1.00	0.20	0.50	1.00	0.20	0.50			
COC No / misc													
Containers	V J T	V J T	V J	V J T	V J	V J	V J	V J T	V J	V J			
Sample Date	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	3	3	3	3	3	3	3	3	3	3			
Date of Receipt	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017	21/01/2017			
Free Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
Total Cyanide #M	<0.5	3.7	<0.5	0.8	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	-	-	0.38	-	-	-	-	-	-	-	<0.02	%	TM21/PM24
Fraction Organic Carbon	NDP	0.049	-	0.004	0.005	0.006	0.003	0.002	0.006	0.006	<0.001	None	TM21/PM24
ANC at pH4	-	-	<0.03	-	-	-	-	-	-	-	<0.03	mol/kg	TM77/PM0
ANC at pH7	-	-	NDP	-	-	-	-	-	-	-	<0.03	mol/kg	TM77/PM0
Elemental Sulphur	-	-	-	-	-	-	13_{AA}	-	-	-	<1	mg/kg	TM108/PM114
Elemental Sulphur	4_{AA}	-	-	-	-	-	-	-	-	-	<1	mg/kg	TM108/PM8
Loss on Ignition #	-	-	2.5	-	-	-	-	-	-	-	<1.0	%	TM22/PM0
pH #M	8.24	7.33	6.37	6.26	5.10	5.76	5.76	6.21	6.08	4.43	<0.01	pH units	TM73/PM11
Sample Type	NDP	Clay	Sand	Clay	Clayey Sand	Clayey Sand	Sandy Loam	Clayey Sand	Clayey Sand	Clayey Sand		None	PM13/PM0
Sample Colour	NDP	Dark Brown	Medium Brown	Medium Brown	Medium Brown	Medium Brown	Medium Brown	Medium Brown	Medium Brown	Medium Brown		None	PM13/PM0
Other Items	NDP	NA	NA	roots	roots & stones	roots & stones	stones	stones	stones	stones & roots		None	PM13/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	118-120	123-124									LOD/LOR	Units	Method No.
Sample ID	TP139	BH103											
Depth	1.20	1.20											
COC No / misc													
Containers	V J T	V J											
Sample Date	19/01/2017	18/01/2017											
Sample Type	Soil	Soil											
Batch Number	3	3											
Date of Receipt	21/01/2017	21/01/2017											
Aluminium	-	-									<50	mg/kg	TM30/PM15
Aluminium	-	-									<50	mg/kg	TM30/PM62
Arsenic #M	-	12.7									<0.5	mg/kg	TM30/PM15
Arsenic	54.5	-									<0.5	mg/kg	TM30/PM62
Barium #M	-	-									<1	mg/kg	TM30/PM15
Barium	-	-									<1	mg/kg	TM30/PM62
Beryllium	-	2.1									<0.5	mg/kg	TM30/PM15
Beryllium	3.0	-									<0.5	mg/kg	TM30/PM62
Cadmium #M	-	<0.1									<0.1	mg/kg	TM30/PM15
Cadmium	1.4	-									<0.1	mg/kg	TM30/PM62
Chromium #M	-	55.9									<0.5	mg/kg	TM30/PM15
Chromium	60.9	-									<0.5	mg/kg	TM30/PM62
Copper #M	-	46									<1	mg/kg	TM30/PM15
Copper	114	-									<1	mg/kg	TM30/PM62
Iron	-	-									<20	mg/kg	TM30/PM15
Iron	-	-									<20	mg/kg	TM30/PM62
Lead #M	-	84									<5	mg/kg	TM30/PM15
Lead	200	-									<5	mg/kg	TM30/PM62
Mercury #M	-	<0.1									<0.1	mg/kg	TM30/PM15
Mercury	<0.1	-									<0.1	mg/kg	TM30/PM62
Nickel #M	-	27.2									<0.7	mg/kg	TM30/PM15
Nickel	63.4	-									<0.7	mg/kg	TM30/PM62
Selenium #M	-	<1									<1	mg/kg	TM30/PM15
Selenium	3	-									<1	mg/kg	TM30/PM62
Sulphur	-	-									<0.01	%	TM30/PM15
Sulphur	-	-									<0.01	%	TM30/PM62
Vanadium	-	33									<1	mg/kg	TM30/PM15
Vanadium	75	-									<1	mg/kg	TM30/PM62
Water Soluble Boron #M	-	1.0									<0.1	mg/kg	TM74/PM32
Water Soluble Boron	1.6	-									<0.1	mg/kg	TM74/PM61
Zinc #M	-	75									<5	mg/kg	TM30/PM15
Zinc	340	-									<5	mg/kg	TM30/PM62

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	118-120	123-124											
Sample ID	TP139	BH103											
Depth	1.20	1.20											
COC No / misc													
Containers	V J T	V J											
Sample Date	19/01/2017	18/01/2017											
Sample Type	Soil	Soil											
Batch Number	3	3											
Date of Receipt	21/01/2017	21/01/2017											

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
PAH MS													
Naphthalene #M	<0.04	0.47									<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.05	<0.03									<0.03	mg/kg	TM4/PM8
Acenaphthene #M	<0.05	0.89									<0.05	mg/kg	TM4/PM8
Fluorene #M	0.06	0.62									<0.04	mg/kg	TM4/PM8
Phenanthrene #M	0.41	3.02									<0.03	mg/kg	TM4/PM8
Anthracene #	0.16	0.81									<0.04	mg/kg	TM4/PM8
Fluoranthene #M	1.13	4.95									<0.03	mg/kg	TM4/PM8
Pyrene #	1.02	4.44									<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.56	2.18									<0.06	mg/kg	TM4/PM8
Chrysene #M	0.60	2.39									<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	0.89	3.65									<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.49	2.22									<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	0.29	1.23									<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.10	0.26									<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.24	1.31									<0.04	mg/kg	TM4/PM8
Coronene	-	-									<0.04	mg/kg	TM4/PM8
PAH 16 Total	6.0	28.4									<0.6	mg/kg	TM4/PM8
PAH 17 Total	-	-									<0.64	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.64	2.63									<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.25	1.02									<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	103	105									<0	%	TM4/PM8
Mineral Oil (C10-C40)	-	-									<30	mg/kg	TM5/PM16
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1	<0.1									<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1	<0.1									<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1									<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	<0.2									<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	<4									<4	mg/kg	TM5/PM16
>C16-C21 #M	25	<7									<7	mg/kg	TM5/PM16
>C21-C35 #M	192	9									<7	mg/kg	TM5/PM16
>C35-C44	35	<7									<7	mg/kg	TM5/PM16
Total aliphatics C5-44	252	<26									<26	mg/kg	TM5/TM36/PM16

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	118-120	123-124											
Sample ID	TP139	BH103											
Depth	1.20	1.20											
COC No / misc													
Containers	V J T	V J											
Sample Date	19/01/2017	18/01/2017											
Sample Type	Soil	Soil											
Batch Number	3	3											
Date of Receipt	21/01/2017	21/01/2017											
TPH CWG													
Aromatics													
>C5-EC7 #	<0.1	<0.1										<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	<0.1										<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1	<0.1										<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2										<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	<4										<4	mg/kg	TM5/PM16
>EC16-EC21 #	59	29										<7	mg/kg	TM5/PM16
>EC21-EC35 #	326	110										<7	mg/kg	TM5/PM16
>EC35-EC44	49	77										<7	mg/kg	TM5/PM16
Total aromatics C5-44	434	216										<26	mg/kg	TM5/TM36/PM16
Total aliphatics and aromatics(C5-44)	686	216										<52	mg/kg	TM5/TM36/PM16
MTBE #	<5	<5										<5	ug/kg	TM31/PM12
Benzene #	<5	<5										<5	ug/kg	TM31/PM12
Toluene #	<5	<5										<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5										<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	<5										<5	ug/kg	TM31/PM12
o-Xylene #	<5	<5										<5	ug/kg	TM31/PM12
PCB 28 #	-	-										<5	ug/kg	TM17/PM8
PCB 52 #	-	-										<5	ug/kg	TM17/PM8
PCB 101 #	-	-										<5	ug/kg	TM17/PM8
PCB 118 #	-	-										<5	ug/kg	TM17/PM8
PCB 138 #	-	-										<5	ug/kg	TM17/PM8
PCB 153 #	-	-										<5	ug/kg	TM17/PM8
PCB 180 #	-	-										<5	ug/kg	TM17/PM8
Total 7 PCBs #	-	-										<35	ug/kg	TM17/PM8
Phenol #M	<0.01	<0.01										<0.01	mg/kg	TM26/PM21
Natural Moisture Content	-	12.5										<0.1	%	PM4/PM0
Natural Moisture Content	59.0	-										<0.1	%	PM4/PM0
Ammoniacal Nitrogen as N	-	-										<0.6	mg/kg	TM38/PM20
Bromide	-	-										<0.3	mg/kg	TM27/PM20
Bromide	-	-										<0.3	mg/kg	TM27/PM60
Chloride #M	-	-										<2	mg/kg	TM38/PM20
Chloride	-	-										<2	mg/kg	TM38/PM60
Hexavalent Chromium #	<0.3	<0.3										<0.3	mg/kg	TM38/PM20
Ortho Phosphate as PO4	-	-										<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #M	-	371										<3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext)	0.4252	-										<0.0015	g/l	TM38/PM60

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	118-120	123-124									LOD/LOR	Units	Method No.
Sample ID	TP139	BH103											
Depth	1.20	1.20											
COC No / misc													
Containers	V J T	V J											
Sample Date	19/01/2017	18/01/2017											
Sample Type	Soil	Soil											
Batch Number	3	3											
Date of Receipt	21/01/2017	21/01/2017											
Free Cyanide	<0.5	<0.5									<0.5	mg/kg	TM89/PM45
Total Cyanide #M	<0.5	<0.5									<0.5	mg/kg	TM89/PM45
Total Organic Carbon #	-	-									<0.02	%	TM21/PM24
Fraction Organic Carbon	NDP	0.023									<0.001	None	TM21/PM24
ANC at pH4	-	-									<0.03	mol/kg	TM77/PM0
ANC at pH7	-	-									<0.03	mol/kg	TM77/PM0
Elemental Sulphur	-	-									<1	mg/kg	TM108/PM114
Elemental Sulphur	-	-									<1	mg/kg	TM108/PM8
Loss on Ignition #	-	-									<1.0	%	TM22/PM0
pH #M	8.07	10.91									<0.01	pH units	TM73/PM11
Sample Type	NDP	Sandy Loam										None	PM13/PM0
Sample Colour	NDP	Medium Brown										None	PM13/PM0
Other Items	NDP	stones										None	PM13/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	107-108												
Sample ID	TP137												
Depth	0.50												
COC No / misc													
Containers	V J												
Sample Date	19/01/2017												
Sample Type	Soil												
Batch Number	3												
Date of Receipt	21/01/2017												
Dissolved Arsenic #	1.7											<0.9	ug/l	TM30/PM14
Dissolved Boron #	<12											<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.03											<0.03	ug/l	TM30/PM14
Dissolved Chromium #	0.5											<0.2	ug/l	TM30/PM14
Dissolved Copper #	<3											<3	ug/l	TM30/PM14
Dissolved Lead #	<0.4											<0.4	ug/l	TM30/PM14
Dissolved Nickel #	1.4											<0.2	ug/l	TM30/PM14
Dissolved Selenium #	<1.2											<1.2	ug/l	TM30/PM14
Dissolved Zinc #	6											<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	<0.01											<0.01	ug/l	TM61/PM38
Sulphate #	15.33											<0.05	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	0.03											<0.03	mg/l	TM38/PM0
Total Cyanide #	<0.005											<0.005	mg/l	TM89/PM0
Mass of raw test portion	0.1113												kg	NONE/PM17
Leachant Volume	0.878												l	NONE/PM17
pH	10.14											<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Mass of sample taken (kg) =	NDP	Moisture Content Ratio (%) =	13.9
Mass of dry sample (kg) =	0.175	Dry Matter Content Ratio (%) =	87.8
Particle Size <4mm =	>95%		

JEFL Job No	**17/2576**				**Landfill Waste Acceptance Criteria Limits**	
Sample No	**94**					
Client Sample No	**TP134**				**Inert Waste Landfill**	**Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill**	**Hazardous Waste Landfill**
Depth/Other	**0.50**						
Sample Date	**19/01/2017**						
Batch No	**3**						
Solid Waste Analysis							
Total Organic Carbon (%)	0.38				3	5	6
Loss on Ignition (%)	2.5				-	-	10
Sum of BTEX (mg/kg)	<0.025				6	-	-
Sum of 7 PCBs (mg/kg)	<0.035				1	-	-
Mineral Oil (mg/kg)	<30				500	-	-
PAH Sum of 17(mg/kg)	<0.64				100	-	-
pH (pH Units)	6.37				-	>6	-
ANC to pH 7 (mol/kg)	NDP				-	to be evaluated	to be evaluated
ANC to pH 4 (mol/kg)	<0.03				-	to be evaluated	to be evaluated
Eluate Analysis	**Conc^{n} in 2:1 eluate**	**Conc^{n} in 8:1 eluate**	**2:1 conc^{n} leached**	**Cumulative 10:1 conc^{n} leached**	**Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg**		
	C_2	**C_8**	**A_2**	**A_{2-10}**			
	mg/l		**mg/kg**		**mg/kg**		
Arsenic	NDP	NDP	NDP	NDP	0.5	2	25
Barium	NDP	NDP	NDP	NDP	20	100	300
Cadmium	NDP	NDP	NDP	NDP	0.04	1	5
Chromium	NDP	NDP	NDP	NDP	0.5	10	70
Copper	NDP	NDP	NDP	NDP	2	50	100
Mercury	NDP	NDP	NDP	NDP	0.01	0.2	2
Molybdenum	NDP	NDP	NDP	NDP	0.5	10	30
Nickel	NDP	NDP	NDP	NDP	0.4	10	40
Lead	NDP	NDP	NDP	NDP	0.5	10	50
Antimony	NDP	NDP	NDP	NDP	0.06	0.7	5
Selenium	NDP	NDP	NDP	NDP	0.1	0.5	7
Zinc	NDP	NDP	NDP	NDP	4	50	200
Chloride	NDP	NDP	NDP	NDP	800	15000	25000
Fluoride	NDP	NDP	NDP	NDP	10	150	500
Sulphate as SO4	NDP	NDP	NDP	NDP	1000	20000	50000
Total Dissolved Solids	NDP	NDP	NDP	NDP	4000	60000	100000
Phenol	NDP	NDP	NDP	NDP	1	-	-
Dissolved Organic Carbon	NDP	NDP	NDP	NDP	500	800	1000

Leachate Information		
Date Prepared	25/01/2017	25/01/2017
pH (pH Units)	NDP	NDP
Conductivity (µS/cm)	NDP	NDP
Temperature (°C)	NDP	NDP
Volume Leachant (Litres)	NDP	NDP
Volume of Eluate VE1 (Litres)	NDP	

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/2576	3	TP133	0.40	88	27/01/2017	**General Description (Bulk Analysis)**	Soil/Stones
					27/01/2017	**Asbestos Fibres**	Fibre Bundles
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos Type**	Chrysotile
					27/01/2017	**Asbestos Level Screen**	<0.1%
17/2576	3	TP133	1.50	91	27/01/2017	**General Description (Bulk Analysis)**	Soil/Stones
					27/01/2017	**Asbestos Fibres**	NAD
					27/01/2017	**Asbestos Fibres (2)**	NAD
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos ACM (2)**	NAD
					27/01/2017	**Asbestos Type**	NAD
					27/01/2017	**Asbestos Type (2)**	NAD
					27/01/2017	**Asbestos Level Screen**	NAD
17/2576	3	TP134	0.50	94	27/01/2017	**General Description (Bulk Analysis)**	Soil/Stones
					27/01/2017	**Asbestos Fibres**	NAD
					27/01/2017	**Asbestos Fibres (2)**	NAD
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos ACM (2)**	NAD
					27/01/2017	**Asbestos Type**	NAD
					27/01/2017	**Asbestos Type (2)**	NAD
					27/01/2017	**Asbestos Level Screen**	NAD
17/2576	3	TP134	1.10	96	27/01/2017	**General Description (Bulk Analysis)**	soil/stones
					27/01/2017	**Asbestos Fibres**	NAD
					27/01/2017	**Asbestos Fibres (2)**	NAD
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos ACM (2)**	NAD
					27/01/2017	**Asbestos Type**	NAD
					27/01/2017	**Asbestos Type (2)**	NAD
					27/01/2017	**Asbestos Level Screen**	NAD
17/2576	3	TP135	1.00	101	27/01/2017	**General Description (Bulk Analysis)**	soil/stones
					27/01/2017	**Asbestos Fibres**	NAD
					27/01/2017	**Asbestos Fibres (2)**	NAD
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos ACM (2)**	NAD
					27/01/2017	**Asbestos Type**	NAD

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/2576	3	TP135	1.00	101	27/01/2017	**Asbestos Type (2)**	NAD
					27/01/2017	**Asbestos Level Screen**	NAD
17/2576	3	TP136	0.20	103	27/01/2017	**General Description (Bulk Analysis)**	soil/stones
					27/01/2017	**Asbestos Fibres**	NAD
					27/01/2017	**Asbestos Fibres (2)**	NAD
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos ACM (2)**	NAD
					27/01/2017	**Asbestos Type**	NAD
					27/01/2017	**Asbestos Type (2)**	NAD
					27/01/2017	**Asbestos Level Screen**	NAD
17/2576	3	TP137	0.50	108	27/01/2017	**General Description (Bulk Analysis)**	Soil/Stone
					27/01/2017	**Asbestos Fibres**	NAD
					27/01/2017	**Asbestos Fibres (2)**	NAD
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos ACM (2)**	NAD
					27/01/2017	**Asbestos Type**	NAD
					27/01/2017	**Asbestos Type (2)**	NAD
					27/01/2017	**Asbestos Level Screen**	NAD
17/2576	3	TP137	1.00	110	27/01/2017	**General Description (Bulk Analysis)**	Soil/Stone
					27/01/2017	**Asbestos Fibres**	NAD
					27/01/2017	**Asbestos Fibres (2)**	NAD
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos ACM (2)**	NAD
					27/01/2017	**Asbestos Type**	NAD
					27/01/2017	**Asbestos Type (2)**	NAD
					27/01/2017	**Asbestos Level Screen**	NAD
17/2576	3	TP138	0.20	113	27/01/2017	**General Description (Bulk Analysis)**	Soil/Stone
					27/01/2017	**Asbestos Fibres**	NAD
					27/01/2017	**Asbestos Fibres (2)**	NAD
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos ACM (2)**	NAD
					27/01/2017	**Asbestos Type**	NAD
					27/01/2017	**Asbestos Type (2)**	NAD
					27/01/2017	**Asbestos Level Screen**	NAD
17/2576	3	TP139	0.50	117	27/01/2017	**General Description (Bulk Analysis)**	Soil/Stone
					27/01/2017	**Asbestos Fibres**	NAD
					27/01/2017	**Asbestos Fibres (2)**	NAD
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos ACM (2)**	NAD
					27/01/2017	**Asbestos Type**	NAD
					27/01/2017	**Asbestos Type (2)**	NAD
					27/01/2017	**Asbestos Level Screen**	NAD
17/2576	3	TP139	1.20	119	27/01/2017	**General Description (Bulk Analysis)**	Soil/Stone/Silt
					27/01/2017	**Asbestos Fibres**	Fibre Bundles
					27/01/2017	**Asbestos ACM**	NAD
					27/01/2017	**Asbestos Type**	Chrysotile
					27/01/2017	**Asbestos Level Screen**	<0.1%

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/2576	3	BH103	1.20	124	31/01/2017	**General Description (Bulk Analysis)**	soil/stones
					31/01/2017	**Asbestos Fibres**	NAD
					31/01/2017	**Asbestos Fibres (2)**	NAD
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos ACM (2)**	NAD
					31/01/2017	**Asbestos Type**	NAD
					31/01/2017	**Asbestos Type (2)**	NAD
					31/01/2017	**Asbestos Level Screen**	NAD

Client Name: WYG **Matrix : Solid**
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
17/2576	3	TP133	0.40	87-89	Asbestos detected in sample
17/2576	3	TP134	0.50	93-94	Sample received is below pH7
17/2576	3	TP139	1.20	118-120	Asbestos detected in sample

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

Matrix : CEN 10:1 2-Batch

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
17/2576	3	TP134	0.50	93-94	Insufficient sample for test

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 17/2576						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/2576

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x2 Dilution
AB	x5 Dilution

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM20	Modified BS 1377-3: 1990/USEPA 160.3 Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.			AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.			AD	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes
TM22	Modified USEPA 160.4. Gravimetric determination of Loss on Ignition by temperature controlled Muffle Furnace (450°C)	PM0	No preparation is required.	Yes		AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.	Yes	Yes	AR	Yes
TM27	Modified US EPA method 9056.Determination of water soluble anions using Dionex (Ion-Chromatography).	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen and hydrazine. Samples are extracted using an orbital shaker.			AD	Yes
TM27	Modified US EPA method 9056.Determination of water soluble anions using Dionex (Ion-Chromatography).	PM60	As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid.			AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.			AR	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes		AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.			AR	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen and hydrazine. Samples are extracted using an orbital shaker.			AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen and hydrazine. Samples are extracted using an orbital shaker.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen and hydrazine. Samples are extracted using an orbital shaker.			AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen and hydrazine. Samples are extracted using an orbital shaker.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM60	As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid.			AR	Yes
TM60	Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR).	PM0	No preparation is required.			AR	Yes
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	Yes
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes	Yes	AD	Yes
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM61	As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP.			AR	Yes
TM77	Modified DDCEN/TS method 15364:2006. Determination of Acid Neutralization Capacity by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	No
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM0	No preparation is required.	Yes		AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.			AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes	Yes	AR	Yes
TM108	Determination of Elemental Sulphur by Reversed Phase High Performance Liquid Chromatography with Ultra Violet spectroscopy.	PM114	End over end extraction of dried and crushed soil samples for organic analysis. The solvent mix varies depending on analysis required			AD	Yes
TM108	Determination of Elemental Sulphur by Reversed Phase High Performance Liquid Chromatography with Ultra Violet spectroscopy.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.			AR	Yes
NONE	No Method Code	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.				
NONE	No Method Code	PM18	Modified method EN 12457-3. As received solid samples are leached with water in a 2:1 water to solid ratio for 6 hours, the same aliquot of solid is then re-leached with water in an 8:1 water to solid ratio for 18 hours, the moisture content of the sample is included in the ratio. This preparation produces two eluates.			AR	Yes
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.			AR	

Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

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WYG
Quay West at MediaCityUK
Trafford Wharf Road
Trafford Park
Manchester
M17 1HH

Attention :	Kathryn Ellis
Date :	3rd February, 2017
Your reference :	A090070-193
Our reference :	Test Report 17/2576 Batch 4
Location :	East Lancashire Paper Mill
Date samples received :	24th January, 2017
Status :	Final report
Issue :	1

Nine samples were received for analysis on 24th January, 2017 of which six were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

J E Sample No.	125-127	128-130	131-133	134-135	136-137	138-139					LOD/LOR	Units	Method No.
Sample ID	TP 115	TP 108	TP 108	TP 121	DS03	DS03							
Depth	0.50	0.50		0.50	0.50	1.70							
COC No / misc													
Containers	V J T	V J T	V J T	V J	V J	V J							
Sample Date	20/01/2017	20/01/2017	20/01/2017	20/01/2017	23/01/2017 14:00	23/01/2017 14:20							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	4	4	4	4	4	4							
Date of Receipt	24/01/2017	24/01/2017	24/01/2017	24/01/2017	24/01/2017	24/01/2017							
Arsenic #M	10.8	-	-	-	-	37.1					<0.5	mg/kg	TM30/PM15
Arsenic	-	11.8	11.6	17.0	11.1	-					<0.5	mg/kg	TM30/PM62
Beryllium	1.2	-	-	-	-	1.9					<0.5	mg/kg	TM30/PM15
Beryllium	-	1.1	1.0	0.9	0.9	-					<0.5	mg/kg	TM30/PM62
Cadmium #M	0.2	-	-	-	-	<0.1					<0.1	mg/kg	TM30/PM15
Cadmium	-	0.5	0.9	0.2	0.9	-					<0.1	mg/kg	TM30/PM62
Chromium #M	69.7	-	-	-	-	57.6					<0.5	mg/kg	TM30/PM15
Chromium	-	21.2	22.5	22.0	19.3	-					<0.5	mg/kg	TM30/PM62
Copper #M	9	-	-	-	-	140					<1	mg/kg	TM30/PM15
Copper	-	76	83	57	678$_{AA}$	-					<1	mg/kg	TM30/PM62
Lead #M	11	-	-	-	-	16820$_{AB}$					<5	mg/kg	TM30/PM15
Lead	-	283	476	169	1484	-					<5	mg/kg	TM30/PM62
Mercury #M	<0.1	-	-	-	-	0.2					<0.1	mg/kg	TM30/PM15
Mercury	-	0.4	0.7	<0.1	1.2	-					<0.1	mg/kg	TM30/PM62
Nickel #M	28.0	-	-	-	-	40.0					<0.7	mg/kg	TM30/PM15
Nickel	-	19.0	22.6	25.2	18.8	-					<0.7	mg/kg	TM30/PM62
Selenium #M	1	-	-	-	-	<1					<1	mg/kg	TM30/PM15
Selenium	-	<1	<1	<1	<1	-					<1	mg/kg	TM30/PM62
Vanadium	29	-	-	-	-	47					<1	mg/kg	TM30/PM15
Vanadium	-	30	30	22	25	-					<1	mg/kg	TM30/PM62
Water Soluble Boron #M	0.2	-	-	-	-	1.1					<0.1	mg/kg	TM74/PM32
Water Soluble Boron	-	1.3	1.7	0.9	1.4	-					<0.1	mg/kg	TM74/PM61
Zinc #M	73	-	-	-	-	135					<5	mg/kg	TM30/PM15
Zinc	-	191	304	107	298	-					<5	mg/kg	TM30/PM62

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

J E Sample No.	125-127	128-130	131-133	134-135	136-137	138-139					LOD/LOR	Units	Method No.
Sample ID	TP 115	TP 108	TP 108	TP 121	DS03	DS03							
Depth	0.50	0.50		0.50	0.50	1.70							
COC No / misc													
Containers	V J T	V J T	V J T	V J	V J	V J							
Sample Date	20/01/2017	20/01/2017	20/01/2017	20/01/2017	23/01/2017 14:00	23/01/2017 14:20							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	4	4	4	4	4	4							
Date of Receipt	24/01/2017	24/01/2017	24/01/2017	24/01/2017	24/01/2017	24/01/2017							
PAH MS													
Naphthalene #M	<0.04	0.05	0.16	0.08	0.07	<0.04					<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	0.11	<0.03	0.06	<0.03					<0.03	mg/kg	TM4/PM8
Acenaphthene #M	<0.05	<0.05	0.14	0.15	<0.05	0.12					<0.05	mg/kg	TM4/PM8
Fluorene #M	<0.04	<0.04	0.14	0.10	<0.04	0.06					<0.04	mg/kg	TM4/PM8
Phenanthrene #M	<0.03	0.43	1.33	0.95	0.39	0.97					<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	0.09	0.28	0.15	0.09	0.24					<0.04	mg/kg	TM4/PM8
Fluoranthene #M	<0.03	0.78	1.79	1.68	0.84	2.34					<0.03	mg/kg	TM4/PM8
Pyrene #	<0.03	0.71	1.53	1.36	0.79	2.13					<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	<0.06	0.28	0.63	0.52	0.35	0.92					<0.06	mg/kg	TM4/PM8
Chrysene #M	<0.02	0.32	0.84	0.68	0.41	1.09					<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	<0.07	0.54	1.20	1.02	0.71	1.93					<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04	0.28	0.63	0.61	0.39	1.13					<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	<0.04	0.18	0.52	0.38	0.27	0.70					<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	0.06	0.12	0.10	0.07	0.21					<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	0.19	0.41	0.35	0.27	0.61					<0.04	mg/kg	TM4/PM8
PAH 16 Total	<0.6	3.9	9.8	8.1	4.7	12.5					<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	<0.05	0.39	0.86	0.73	0.51	1.39					<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	<0.02	0.15	0.34	0.29	0.20	0.54					<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	118	111	115	110	113	121					<0	%	TM4/PM8
VOC TICs	-	-	-	-	-	ND						None	TM15/PM10
Methyl Tertiary Butyl Ether #M	-	-	-	-	-	<6					<6	ug/kg	TM15/PM10
Benzene #M	-	-	-	-	-	<5					<5	ug/kg	TM15/PM10
Toluene #M	-	-	-	-	-	<3					<3	ug/kg	TM15/PM10
Ethylbenzene #M	-	-	-	-	-	<3					<3	ug/kg	TM15/PM10
p/m-Xylene #M	-	-	-	-	-	<4					<4	ug/kg	TM15/PM10
o-Xylene #M	-	-	-	-	-	<4					<4	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	-	-	-	-	-	97					<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	-	-	-	-	-	83					<0	%	TM15/PM10
SVOC TICs	-	-	-	-	-	ND						None	TM16/PM8

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	125-127	128-130	131-133	134-135	136-137	138-139					LOD/LOR	Units	Method No.
Sample ID	TP 115	TP 108	TP 108	TP 121	DS03	DS03							
Depth	0.50	0.50		0.50	0.50	1.70							
COC No / misc													
Containers	V J T	V J T	V J T	V J	V J	V J							
Sample Date	20/01/2017	20/01/2017	20/01/2017	20/01/2017	23/01/2017 14:00	23/01/2017 14:20							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	4	4	4	4	4	4							
Date of Receipt	24/01/2017	24/01/2017	24/01/2017	24/01/2017	24/01/2017	24/01/2017							
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2					<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	<4	<4	<4	<4	<4					<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	12	15	<7	<7	<7					<7	mg/kg	TM5/PM16
>C21-C35 #M	<7	267	410	100	116	16					<7	mg/kg	TM5/PM16
>C35-C44	<7	180	289	136	113	<7					<7	mg/kg	TM5/PM16
Total aliphatics C5-44	<26	459	714	236	229	<26					<26	mg/kg	TM5/TM36/PM16
Aromatics													
>C5-EC7 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	1.0	<0.2	<0.2	<0.2					<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	<4	15	7	<4	9					<4	mg/kg	TM5/PM16
>EC16-EC21 #	<7	18	73	29	13	49					<7	mg/kg	TM5/PM16
>EC21-EC35 #	<7	236	353	144	128	143					<7	mg/kg	TM5/PM16
>EC35-EC44	<7	197	296	188	176	146					<7	mg/kg	TM5/PM16
Total aromatics C5-44	<26	451	738	368	317	347					<26	mg/kg	TM5/TM36/PM16
Total aliphatics and aromatics(C5-44)	<52	910	1452	604	546	347					<52	mg/kg	TM5/TM36/PM16
MTBE #	<5	<5	<5	<5	<5	-					<5	ug/kg	TM31/PM12
Benzene #	<5	<5	<5	<5	<5	-					<5	ug/kg	TM31/PM12
Toluene #	<5	<5	<5	9	<5	-					<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5	<5	<5	<5	-					<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	<5	<5	7	<5	-					<5	ug/kg	TM31/PM12
o-Xylene #	<5	<5	<5	<5	<5	-					<5	ug/kg	TM31/PM12
PCB 77	-	-	-	<5	-	-					<5	ug/kg	TM16/PM8
PCB 81	-	-	-	<5	-	-					<5	ug/kg	TM16/PM8
PCB 105	-	-	-	<5	-	-					<5	ug/kg	TM16/PM8
PCB 114	-	-	-	<5	-	-					<5	ug/kg	TM16/PM8
PCB 118	-	-	-	<5	-	-					<5	ug/kg	TM16/PM8
PCB 123	-	-	-	<5	-	-					<5	ug/kg	TM16/PM8
PCB 126	-	-	-	<5	-	-					<5	ug/kg	TM16/PM8
PCB 156	-	-	-	<5	-	-					<5	ug/kg	TM16/PM8
PCB 157	-	-	-	<5	-	-					<5	ug/kg	TM16/PM8
PCB 167	-	-	-	<5	-	-					<5	ug/kg	TM16/PM8
PCB 169	-	-	-	<5	-	-					<5	ug/kg	TM16/PM8
PCB 189	-	-	-	<5	-	-					<5	ug/kg	TM16/PM8
Total 12 PCBs	-	-	-	<60	-	-					<60	ug/kg	TM16/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	125-127	128-130	131-133	134-135	136-137	138-139					LOD/LOR	Units	Method No.
Sample ID	TP 115	TP 108	TP 108	TP 121	DS03	DS03							
Depth	0.50	0.50		0.50	0.50	1.70							
COC No / misc													
Containers	V J T	V J T	V J T	V J	V J	V J							
Sample Date	20/01/2017	20/01/2017	20/01/2017	20/01/2017	23/01/2017 14:00	23/01/2017 14:20							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	4	4	4	4	4	4							
Date of Receipt	24/01/2017	24/01/2017	24/01/2017	24/01/2017	24/01/2017	24/01/2017							
Phenol #M	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	mg/kg	TM26/PM21
Natural Moisture Content	7.0	-	-	15.9	-	22.0					<0.1	%	PM4/PM0
Natural Moisture Content	-	21.8	23.4	-	16.7	-					<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3					<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #M	8	-	-	-	-	111					<3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext)	-	0.0342	0.0491	0.0692	0.0223	-					<0.0015	g/l	TM38/PM60
Free Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	mg/kg	TM89/PM45
Total Cyanide #M	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	mg/kg	TM89/PM45
Fraction Organic Carbon	0.001	NDP	NDP	NDP	NDP	0.067					<0.001	None	TM21/PM24
pH #M	8.26	10.83	11.43	11.16	10.85	9.90					<0.01	pH units	TM73/PM11
Sample Type	Sand	Sand	NDP	Loamy Sand	NDP	Sandy Loam						None	PM13/PM0
Sample Colour	Medium Brown	Medium Brown	NDP	Dark Brown	NDP	Medium Brown						None	PM13/PM0
Other Items	stones	stones	NDP	stones	NDP	stones & roots						None	PM13/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	128-130	134-135									LOD/LOR	Units	Method No.
Sample ID	TP 108	TP 121											
Depth	0.50	0.50											
COC No / misc													
Containers	V J T	V J											
Sample Date	20/01/2017	20/01/2017											
Sample Type	Soil	Soil											
Batch Number	4	4											
Date of Receipt	24/01/2017	24/01/2017											
Dissolved Arsenic #	6.6	17.5									<0.9	ug/l	TM30/PM14
Dissolved Boron #	39	29									<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.03	<0.03									<0.03	ug/l	TM30/PM14
Dissolved Chromium #	1.0	2.2									<0.2	ug/l	TM30/PM14
Dissolved Copper #	12	31									<3	ug/l	TM30/PM14
Dissolved Lead #	6.6	6.6									<0.4	ug/l	TM30/PM14
Dissolved Nickel #	<0.2	3.5									<0.2	ug/l	TM30/PM14
Dissolved Selenium #	<1.2	<1.2									<1.2	ug/l	TM30/PM14
Dissolved Zinc #	<3	3									<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	0.04	<0.01									<0.01	ug/l	TM61/PM38
Sulphate #	19.65	25.14									<0.05	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	0.03	0.44									<0.03	mg/l	TM38/PM0
Total Cyanide #	<0.005	<0.005									<0.005	mg/l	TM89/PM0
Mass of raw test portion	0.1101	0.1054										kg	NONE/PM17
Leachant Volume	0.88	0.885										l	NONE/PM17
pH	10.64	8.08									<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

SVOC Report : **Solid**

J E Sample No.	138-139												
Sample ID	DS03												
Depth	1.70												
COC No / misc													
Containers	V J												
Sample Date	23/01/2017 14:20												
Sample Type	Soil												
Batch Number	4												
Date of Receipt	24/01/2017												

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
SVOC MS													
Phenols													
2-Chlorophenol #M	<10										<10	ug/kg	TM16/PM8
2-Methylphenol	<10										<10	ug/kg	TM16/PM8
2-Nitrophenol	<10										<10	ug/kg	TM16/PM8
2,4-Dichlorophenol #M	<10										<10	ug/kg	TM16/PM8
2,4-Dimethylphenol	<10										<10	ug/kg	TM16/PM8
2,4,5-Trichlorophenol	<10										<10	ug/kg	TM16/PM8
2,4,6-Trichlorophenol	<10										<10	ug/kg	TM16/PM8
4-Chloro-3-methylphenol	<10										<10	ug/kg	TM16/PM8
4-Methylphenol	<10										<10	ug/kg	TM16/PM8
4-Nitrophenol	<10										<10	ug/kg	TM16/PM8
Pentachlorophenol	<10										<10	ug/kg	TM16/PM8
Phenol #M	<10										<10	ug/kg	TM16/PM8
PAHs													
2-Chloronaphthalene #M	<10										<10	ug/kg	TM16/PM8
2-Methylnaphthalene #M	<10										<10	ug/kg	TM16/PM8
Phthalates													
Bis(2-ethylhexyl) phthalate	<100										<100	ug/kg	TM16/PM8
Butylbenzyl phthalate	<100										<100	ug/kg	TM16/PM8
Di-n-butyl phthalate	<100										<100	ug/kg	TM16/PM8
Di-n-Octyl phthalate	<100										<100	ug/kg	TM16/PM8
Diethyl phthalate	<100										<100	ug/kg	TM16/PM8
Dimethyl phthalate #M	<100										<100	ug/kg	TM16/PM8
Other SVOCs													
1,2-Dichlorobenzene	<10										<10	ug/kg	TM16/PM8
1,2,4-Trichlorobenzene #M	<10										<10	ug/kg	TM16/PM8
1,3-Dichlorobenzene	<10										<10	ug/kg	TM16/PM8
1,4-Dichlorobenzene	<10										<10	ug/kg	TM16/PM8
2-Nitroaniline	<10										<10	ug/kg	TM16/PM8
2,4-Dinitrotoluene	<10										<10	ug/kg	TM16/PM8
2,6-Dinitrotoluene	<10										<10	ug/kg	TM16/PM8
3-Nitroaniline	<10										<10	ug/kg	TM16/PM8
4-Bromophenylphenylether #M	<10										<10	ug/kg	TM16/PM8
4-Chloroaniline	<10										<10	ug/kg	TM16/PM8
4-Chlorophenylphenylether	<10										<10	ug/kg	TM16/PM8
4-Nitroaniline	<10										<10	ug/kg	TM16/PM8
Azobenzene	<10										<10	ug/kg	TM16/PM8
Bis(2-chloroethoxy)methane	<10										<10	ug/kg	TM16/PM8
Bis(2-chloroethyl)ether	<10										<10	ug/kg	TM16/PM8
Carbazole	29										<10	ug/kg	TM16/PM8
Dibenzofuran #M	<10										<10	ug/kg	TM16/PM8
Hexachlorobenzene	<10										<10	ug/kg	TM16/PM8
Hexachlorobutadiene #M	<10										<10	ug/kg	TM16/PM8
Hexachlorocyclopentadiene	<10										<10	ug/kg	TM16/PM8
Hexachloroethane	<10										<10	ug/kg	TM16/PM8
Isophorone #M	<10										<10	ug/kg	TM16/PM8
N-nitrosodi-n-propylamine #M	<10										<10	ug/kg	TM16/PM8
Nitrobenzene #M	<10										<10	ug/kg	TM16/PM8
Surrogate Recovery 2-Fluorobiphenyl	69										<0	%	TM16/PM8
Surrogate Recovery p-Terphenyl-d14	91										<0	%	TM16/PM8

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

VOC Report : **Solid**

J E Sample No.	138-139												
Sample ID	DS03												
Depth	1.70												
COC No / misc													
Containers	V J												
Sample Date	23/01/2017 14:20												
Sample Type	Soil												
Batch Number	4												
Date of Receipt	24/01/2017												

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
VOC MS													
Dichlorodifluoromethane	<2										<2	ug/kg	TM15/PM10
Methyl Tertiary Butyl Ether #M	<6										<6	ug/kg	TM15/PM10
Chloromethane #	<3										<3	ug/kg	TM15/PM10
Vinyl Chloride	<2										<2	ug/kg	TM15_A/PM10
Bromomethane	<1										<1	ug/kg	TM15/PM10
Chloroethane #M	<6										<6	ug/kg	TM15/PM10
Trichlorofluoromethane #M	<3										<3	ug/kg	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #M	<6										<6	ug/kg	TM15/PM10
Dichloromethane (DCM) #	55										<30	ug/kg	TM15/PM10
trans-1-2-Dichloroethene #	<3										<3	ug/kg	TM15/PM10
1,1-Dichloroethane #M	<6										<6	ug/kg	TM15/PM10
cis-1-2-Dichloroethene #M	<7										<7	ug/kg	TM15/PM10
2,2-Dichloropropane	<4										<4	ug/kg	TM15/PM10
Bromochloromethane #M	<4										<4	ug/kg	TM15/PM10
Chloroform #M	<5										<5	ug/kg	TM15/PM10
1,1,1-Trichloroethane #M	<5										<5	ug/kg	TM15/PM10
1,1-Dichloropropene #	<3										<3	ug/kg	TM15/PM10
Carbon tetrachloride #M	<4										<4	ug/kg	TM15/PM10
1,2-Dichloroethane #M	<5										<5	ug/kg	TM15/PM10
Benzene #M	<5										<5	ug/kg	TM15/PM10
Trichloroethene (TCE) #M	<5										<5	ug/kg	TM15/PM10
1,2-Dichloropropane #M	<4										<4	ug/kg	TM15/PM10
Dibromomethane #M	<4										<4	ug/kg	TM15/PM10
Bromodichloromethane #M	<4										<4	ug/kg	TM15/PM10
cis-1-3-Dichloropropene	<4										<4	ug/kg	TM15/PM10
Toluene #M	<3										<3	ug/kg	TM15/PM10
trans-1-3-Dichloropropene	<3										<3	ug/kg	TM15/PM10
1,1,2-Trichloroethane #M	<4										<4	ug/kg	TM15/PM10
Tetrachloroethene (PCE) #	<3										<3	ug/kg	TM15/PM10
1,3-Dichloropropane #M	<4										<4	ug/kg	TM15/PM10
Dibromochloromethane #M	<5										<5	ug/kg	TM15/PM10
1,2-Dibromoethane #	<3										<3	ug/kg	TM15/PM10
Chlorobenzene #M	<4										<4	ug/kg	TM15/PM10
1,1,1,2-Tetrachloroethane #M	<5										<5	ug/kg	TM15/PM10
Ethylbenzene #M	<3										<3	ug/kg	TM15/PM10
p/m-Xylene #M	<4										<4	ug/kg	TM15/PM10
o-Xylene #M	<4										<4	ug/kg	TM15/PM10
Styrene	<3										<3	ug/kg	TM15_A/PM10
Bromoform	<4										<4	ug/kg	TM15/PM10
Isopropylbenzene #	<3										<3	ug/kg	TM15/PM10
1,1,2,2-Tetrachloroethane #M	<3										<3	ug/kg	TM15/PM10
Bromobenzene	<2										<2	ug/kg	TM15/PM10
1,2,3-Trichloropropane #M	<4										<4	ug/kg	TM15/PM10
Propylbenzene #	<4										<4	ug/kg	TM15/PM10
2-Chlorotoluene	<3										<3	ug/kg	TM15/PM10
1,3,5-Trimethylbenzene #	<3										<3	ug/kg	TM15/PM10
4-Chlorotoluene	<3										<3	ug/kg	TM15/PM10
tert-Butylbenzene #	<5										<5	ug/kg	TM15/PM10
1,2,4-Trimethylbenzene #	<6										<6	ug/kg	TM15/PM10
sec-Butylbenzene #	<4										<4	ug/kg	TM15/PM10
4-Isopropyltoluene #	<4										<4	ug/kg	TM15/PM10
1,3-Dichlorobenzene #M	<4										<4	ug/kg	TM15/PM10
1,4-Dichlorobenzene #	<4										<4	ug/kg	TM15/PM10
n-Butylbenzene #	<4										<4	ug/kg	TM15/PM10
1,2-Dichlorobenzene #M	<4										<4	ug/kg	TM15/PM10
1,2-Dibromo-3-chloropropane #	<4										<4	ug/kg	TM15/PM10
1,2,4-Trichlorobenzene #	<7										<7	ug/kg	TM15/PM10
Hexachlorobutadiene	<4										<4	ug/kg	TM15/PM10
Naphthalene	<27										<27	ug/kg	TM15/PM10
1,2,3-Trichlorobenzene #	<7										<7	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	97										<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	83										<0	%	TM15/PM10

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/2576	4	TP 115	0.50	126	31/01/2017	**General Description (Bulk Analysis)**	soil/stones
					31/01/2017	**Asbestos Fibres**	NAD
					31/01/2017	**Asbestos Fibres (2)**	NAD
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos ACM (2)**	NAD
					31/01/2017	**Asbestos Type**	NAD
					31/01/2017	**Asbestos Type (2)**	NAD
					31/01/2017	**Asbestos Level Screen**	NAD
17/2576	4	TP 108	0.50	129	31/01/2017	**General Description (Bulk Analysis)**	soil/stones
					31/01/2017	**Asbestos Fibres**	Fibre Bundles
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos Type**	Chrysotile
					31/01/2017	**Asbestos Level Screen**	<0.1%
17/2576	4	TP 108		132	31/01/2017	**General Description (Bulk Analysis)**	soil/stones
					31/01/2017	**Asbestos Fibres**	Fibre Bundles
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos Type**	Chrysotile
					31/01/2017	**Asbestos Level Screen**	<0.1%
17/2576	4	TP 121	0.50	135	31/01/2017	**General Description (Bulk Analysis)**	soil/stones
					31/01/2017	**Asbestos Fibres**	Fibre Bundles
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos Type**	Chrysotile
					31/01/2017	**Asbestos Level Screen**	<0.1%
17/2576	4	DS03	0.50	137	31/01/2017	**General Description (Bulk Analysis)**	soil/stones
					31/01/2017	**Asbestos Fibres**	Fibre Bundles
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos Type**	Chrysotile
					31/01/2017	**Asbestos Level Screen**	Asbestos level cannot be determined at this stage of analysis
17/2576	4	DS03	1.70	139	31/01/2017	**General Description (Bulk Analysis)**	soil/stones
					31/01/2017	**Asbestos Fibres**	NAD
					31/01/2017	**Asbestos Fibres (2)**	NAD
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos ACM (2)**	NAD
					31/01/2017	**Asbestos Type**	NAD

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/2576	4	DS03	1.70	139	31/01/2017	**Asbestos Type (2)**	NAD
					31/01/2017	**Asbestos Level Screen**	NAD

Client Name: WYG **Matrix : Solid**
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
17/2576	4	TP 108	0.50	128-130	Asbestos detected in sample
17/2576	4	TP 108		131-133	Asbestos detected in sample
17/2576	4	TP 121	0.50	134-135	Asbestos detected in sample
17/2576	4	DS03	0.50	136-137	Asbestos detected in sample

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 17/2576						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/2576

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution
AB	x10 Dilution

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.			AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.	Yes	Yes	AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes		AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen and hydrazine. Samples are extracted using an orbital shaker.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen and hydrazine. Samples are extracted using an orbital shaker.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM60	As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid.			AR	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	Yes
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes	Yes	AD	Yes
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM61	As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP.			AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM0	No preparation is required.	Yes		AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.			AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes	Yes	AR	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
NONE	No Method Code	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.				
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.			AR	
TM15_A	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

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WYG
Quay West at MediaCityUK
Trafford Wharf Road
Trafford Park
Manchester
M17 1HH

Attention :	Kathryn Ellis
Date :	8th March, 2017
Your reference :	A090070-193
Our reference :	Test Report 17/2576 Batch 5
Location :	East Lancashire Paper Mill
Date samples received :	25th January, 2017
Status :	Final report
Issue :	2

Fifteen samples were received for analysis on 25th January, 2017 of which ten were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	146-147	150-151	154-155	158-159	160-161	164-165	166-167	168-169	170-172	173-175	LOD/LOR	Units	Method No.
Sample ID	DS04	DS07	DS01	DS01	BH104	DS02	DS02	DS02	TP102	TP102			
Depth	0.50	0.20	0.50	1.40	0.50	0.50	0.70	0.90	0.50	1.60			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J T	V J T			
Sample Date	23/01/2017 15:00	24/01/2017 10:00	24/01/2017 12:00	24/01/2017 13:00	23/01/2017 13:00	24/01/2017 14:00	24/01/2017 14:30	24/01/2017 15:00	24/01/2017 15:00	24/01/2017 15:30			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	5	5	5	5	5	5	5	5	5	5			
Date of Receipt	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017			
Arsenic #M	-	-	-	21.9	7.3	10.3	21.2	3.9	-	-	<0.5	mg/kg	TM30/PM15
Arsenic	21.5	31.0	21.9	-	-	-	-	-	18.8	73.2	<0.5	mg/kg	TM30/PM62
Beryllium	-	-	-	1.4	1.1	1.1	0.8	2.1	-	-	<0.5	mg/kg	TM30/PM15
Beryllium	0.9	1.1	1.5	-	-	-	-	-	1.5	1.8	<0.5	mg/kg	TM30/PM62
Cadmium #M	-	-	-	2.6	<0.1	0.3	<0.1	<0.1	-	-	<0.1	mg/kg	TM30/PM15
Cadmium	0.5	0.2	0.1	-	-	-	-	-	0.4	18.7	<0.1	mg/kg	TM30/PM62
Chromium #M	-	-	-	63.3	60.0	68.6	61.1	47.8	-	-	<0.5	mg/kg	TM30/PM15
Chromium	27.6	19.7	19.1	-	-	-	-	-	18.2	12.5	<0.5	mg/kg	TM30/PM62
Copper #M	-	-	-	67	21	18	27	8	-	-	<1	mg/kg	TM30/PM15
Copper	88	52	37	-	-	-	-	-	65	138	<1	mg/kg	TM30/PM62
Lead #M	-	-	-	89	33	41	36	899	-	-	<5	mg/kg	TM30/PM15
Lead	1657	103	57	-	-	-	-	-	139	102	<5	mg/kg	TM30/PM62
Mercury #M	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	mg/kg	TM30/PM15
Mercury	3.6	<0.1	0.2	-	-	-	-	-	<0.1	0.5	<0.1	mg/kg	TM30/PM62
Nickel #M	-	-	-	35.8	22.3	28.2	17.9	48.5	-	-	<0.7	mg/kg	TM30/PM15
Nickel	20.4	21.6	22.9	-	-	-	-	-	27.5	39.7	<0.7	mg/kg	TM30/PM62
Selenium #M	-	-	-	1	1	1	<1	<1	-	-	<1	mg/kg	TM30/PM15
Selenium	<1	<1	<1	-	-	-	-	-	<1	<1	<1	mg/kg	TM30/PM62
Vanadium	-	-	-	31	23	25	24	30	-	-	<1	mg/kg	TM30/PM15
Vanadium	24	25	35	-	-	-	-	-	38	38	<1	mg/kg	TM30/PM62
Water Soluble Boron #M	-	-	-	1.3	0.5	1.0	1.3	0.7	-	-	<0.1	mg/kg	TM74/PM32
Water Soluble Boron	0.9	0.2	1.2	-	-	-	-	-	0.6	0.6	<0.1	mg/kg	TM74/PM61
Zinc #M	-	-	-	261	73	150	51	84	-	-	<5	mg/kg	TM30/PM15
Zinc	185	101	71	-	-	-	-	-	208	3821$_{AB}$	<5	mg/kg	TM30/PM62

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	146-147	150-151	154-155	158-159	160-161	164-165	166-167	168-169	170-172	173-175	LOD/LOR	Units	Method No.
Sample ID	DS04	DS07	DS01	DS01	BH104	DS02	DS02	DS02	TP102	TP102			
Depth	0.50	0.20	0.50	1.40	0.50	0.50	0.70	0.90	0.50	1.60			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J T	V J T			
Sample Date	23/01/2017 15:00	24/01/2017 10:00	24/01/2017 12:00	24/01/2017 13:00	23/01/2017 13:00	24/01/2017 14:00	24/01/2017 14:30	24/01/2017 15:00	24/01/2017 15:00	24/01/2017 15:30			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	5	5	5	5	5	5	5	5	5	5			
Date of Receipt	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017			
PAH MS													
Naphthalene #M	0.31	<0.04	<0.04	0.29	<0.04	0.45	4.62AA	<0.04	0.70	0.18	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	0.03	<0.03	<0.03	<0.03	0.41	4.62AA	<0.03	<0.03	0.11	<0.03	mg/kg	TM4/PM8
Acenaphthene #M	0.45	<0.05	<0.05	0.68	<0.05	0.17	2.36AA	<0.05	1.87	0.10	<0.05	mg/kg	TM4/PM8
Fluorene #M	0.29	<0.04	<0.04	0.32	<0.04	0.26	4.15AA	<0.04	1.01	0.12	<0.04	mg/kg	TM4/PM8
Phenanthrene #M	2.69	0.30	0.10	3.94	<0.03	2.89	53.48AA	0.20	10.41	1.24	<0.03	mg/kg	TM4/PM8
Anthracene #	0.35	0.07	<0.04	0.61	<0.04	1.06	16.22AA	0.05	2.24	0.26	<0.04	mg/kg	TM4/PM8
Fluoranthene #M	4.04	0.99	0.12	4.62	<0.03	5.60	86.50AA	0.32	15.15	1.87	<0.03	mg/kg	TM4/PM8
Pyrene #	3.43	0.86	0.11	4.03	<0.03	4.62	73.91AA	0.29	12.91	1.55	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	1.20	0.40	0.07	1.63	<0.06	3.21	55.83AA	0.22	4.57	0.61	<0.06	mg/kg	TM4/PM8
Chrysene #M	1.63	0.52	0.08	2.03	<0.02	3.55	53.49AA	0.25	5.65	0.91	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	2.40	0.85	0.11	3.06	<0.07	7.81	108.53AA	0.44	10.65	1.29	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	1.52	0.52	0.07	1.83	<0.04	5.31	75.48AA	0.28	6.67	0.77	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	0.77	0.34	<0.04	1.23	<0.04	3.93	53.39AA	0.16	3.76	0.43	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.23	0.08	<0.04	0.33	<0.04	0.94	11.16AA	0.05	0.87	0.13	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.80	0.28	<0.04	0.98	<0.04	2.93	43.85AA	0.15	4.00	0.44	<0.04	mg/kg	TM4/PM8
PAH 16 Total	20.1	5.2	0.7	25.6	<0.6	43.1	647.6AA	2.4	80.5	10.0	<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	1.73	0.61	0.08	2.20	<0.05	5.62	78.14AA	0.32	7.67	0.93	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.67	0.24	0.03	0.86	<0.02	2.19	30.39AA	0.12	2.98	0.36	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	120	115	118	111	124	121	115AA	121	120	119	<0	%	TM4/PM8
VOC TICs	-	-	-	ND	-	-	ND	-	-	-		None	TM15/PM10
Methyl Tertiary Butyl Ether #M	-	-	-	<6	-	-	<6	-	-	-	<6	ug/kg	TM15/PM10
Benzene #M	-	-	-	<5	-	-	53	-	-	-	<5	ug/kg	TM15/PM10
Toluene #M	-	-	-	<3	-	-	44	-	-	-	<3	ug/kg	TM15/PM10
Ethylbenzene #M	-	-	-	<3	-	-	11	-	-	-	<3	ug/kg	TM15/PM10
p/m-Xylene #M	-	-	-	<4	-	-	50	-	-	-	<4	ug/kg	TM15/PM10
o-Xylene #M	-	-	-	<4	-	-	25	-	-	-	<4	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	-	-	-	98	-	-	89	-	-	-	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	-	-	-	77	-	-	67	-	-	-	<0	%	TM15/PM10
SVOC TICs	-	-	-	See AttachedAB	-	-	See AttachedAB	-	-	-		None	TM16/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	146-147	150-151	154-155	158-159	160-161	164-165	166-167	168-169	170-172	173-175	LOD/LOR	Units	Method No.
Sample ID	DS04	DS07	DS01	DS01	BH104	DS02	DS02	DS02	TP102	TP102			
Depth	0.50	0.20	0.50	1.40	0.50	0.50	0.70	0.90	0.50	1.60			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J T	V J T			
Sample Date	23/01/2017 15:00	24/01/2017 10:00	24/01/2017 12:00	24/01/2017 13:00	23/01/2017 13:00	24/01/2017 14:00	24/01/2017 14:30	24/01/2017 15:00	24/01/2017 15:00	24/01/2017 15:30			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	5	5	5	5	5	5	5	5	5	5			
Date of Receipt	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017			
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	<4	<4	6	<4	<4	6	<4	<4	<4	<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	<7	<7	27	<7	10	29	<7	30	<7	<7	mg/kg	TM5/PM16
>C21-C35 #M	110	<7	51	198	<7	150	196	<7	184	11	<7	mg/kg	TM5/PM16
>C35-C44	87	<7	<7	32	<7	26	37	<7	11	<7	<7	mg/kg	TM5/PM16
Total aliphatics C5-44	197	<26	51	263	<26	186	268	<26	225	<26	<26	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	<0.2	7.5	<0.2	<0.2	3.6	<0.2	0.8	<0.2	<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	<4	<4	104	<4	6	64	<4	19	6	<4	mg/kg	TM5/PM16
>EC16-EC21 #	44	17	<7	540	<7	54	954	16	156	21	<7	mg/kg	TM5/PM16
>EC21-EC35 #	150	100	33	1545	<7	266	4060	145	591	83	<7	mg/kg	TM5/PM16
>EC35-EC44	109	72	20	582	<7	146	1591	244	349	127	<7	mg/kg	TM5/PM16
Total aromatics C5-44	303	189	53	2779	<26	472	6673	405	1116	237	<26	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-44)	500	189	104	3042	<52	658	6941	405	1341	237	<52	mg/kg	TM5/TM36/PM12/PM16
MTBE #	<5	<5	<5	-	<5	<5	-	<5	<5	<5	<5	ug/kg	TM31/PM12
Benzene #	<5	<5	<5	-	<5	<5	-	<5	<5	<5	<5	ug/kg	TM31/PM12
Toluene #	<5	<5	<5	-	<5	<5	-	<5	<5	<5	<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5	<5	-	<5	<5	-	<5	<5	<5	<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	<5	<5	-	<5	<5	-	<5	<5	<5	<5	ug/kg	TM31/PM12
o-Xylene #	<5	<5	<5	-	<5	<5	-	<5	<5	<5	<5	ug/kg	TM31/PM12
Phenol #M	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	TM26/PM21
Monoethylene glycol	-	-	<10	-	-	-	-	-	-	-	<10	mg/kg	TM24/PM8
Propylene glycol	-	-	<10	-	-	-	-	-	-	-	<10	mg/kg	TM24/PM8
Diethylene glycol	-	-	<10	-	-	-	-	-	-	-	<10	mg/kg	TM24/PM8
Triethylene glycol	-	-	<10	-	-	-	-	-	-	-	<10	mg/kg	TM24/PM8
Thiodiglycol	-	-	<10	-	-	-	-	-	-	-	<10	mg/kg	TM24/PM8
Natural Moisture Content	-	-	-	17.1	18.1	18.0	17.8	36.3	-	-	<0.1	%	PM4/PM0
Natural Moisture Content	16.3	12.0	13.4	-	-	-	-	-	21.2	22.4	<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #M	-	-	-	55	78	192	5	44	-	-	<3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext)	0.0340	0.0030	0.0726	-	-	-	-	-	0.0109	0.0278	<0.0015	g/l	TM38/PM60

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	146-147	150-151	154-155	158-159	160-161	164-165	166-167	168-169	170-172	173-175	LOD/LOR	Units	Method No.
Sample ID	DS04	DS07	DS01	DS01	BH104	DS02	DS02	DS02	TP102	TP102			
Depth	0.50	0.20	0.50	1.40	0.50	0.50	0.70	0.90	0.50	1.60			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J T	V J T			
Sample Date	23/01/2017 15:00	24/01/2017 10:00	24/01/2017 12:00	24/01/2017 13:00	23/01/2017 13:00	24/01/2017 14:00	24/01/2017 14:30	24/01/2017 15:00	24/01/2017 15:00	24/01/2017 15:30			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	5	5	5	5	5	5	5	5	5	5			
Date of Receipt	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017			
Free Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
Total Cyanide #M	<0.5	<0.5	<0.5	0.8	<0.5	4.4	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
Fraction Organic Carbon	NDP	NDP	NDP	0.082	0.007	0.019	0.182	0.006	NDP	NDP	<0.001	None	TM21/PM24
pH #M	8.62	8.32	10.44	8.32	7.24	12.19	10.86	9.17	8.79	8.62	<0.01	pH units	TM73/PM11
Sample Type	NDP	NDP	NDP	Sandy Loam	Clay	Clay	Sandy Loam	Clay	NDP	NDP		None	PM13/PM0
Sample Colour	NDP	NDP	NDP	Dark Brown	Medium Brown	Medium Brown	Dark Brown	Medium Brown	NDP	NDP		None	PM13/PM0
Other Items	NDP	NDP	NDP	stones	stones	sand, stones	stones	stones	NDP	NDP		None	PM13/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	158-159	173-175									LOD/LOR	Units	Method No.
Sample ID	DS01	TP102											
Depth	1.40	1.60											
COC No / misc													
Containers	V J	V J T											
Sample Date	24/01/2017 13:00	24/01/2017 15:30											
Sample Type	Soil	Soil											
Batch Number	5	5											
Date of Receipt	25/01/2017	25/01/2017											
Dissolved Arsenic #	2.2	<0.9									<0.9	ug/l	TM30/PM14
Dissolved Boron #	33	<12									<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.03	<0.03									<0.03	ug/l	TM30/PM14
Dissolved Chromium #	0.4	11.2									<0.2	ug/l	TM30/PM14
Dissolved Copper #	<3	<3									<3	ug/l	TM30/PM14
Dissolved Lead #	<0.4	68.7									<0.4	ug/l	TM30/PM14
Dissolved Nickel #	0.4	<0.2									<0.2	ug/l	TM30/PM14
Dissolved Selenium #	<1.2	<1.2									<1.2	ug/l	TM30/PM14
Dissolved Zinc #	5	6									<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	0.02	0.06									<0.01	ug/l	TM61/PM38
Sulphate as SO4 #	8.17	72.52									<0.05	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	<0.03	0.05									<0.03	mg/l	TM38/PM0
Total Cyanide #	<0.005	<0.005									<0.005	mg/l	TM89/PM0
pH	7.98	12.69									<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

SVOC Report : **Solid**

J E Sample No.	158-159	166-167									LOD/LOR	Units	Method No.
Sample ID	DS01	DS02											
Depth	1.40	0.70											
COC No / misc													
Containers	V J	V J											
Sample Date	24/01/2017 13:00	24/01/2017 14:30											
Sample Type	Soil	Soil											
Batch Number	5	5											
Date of Receipt	25/01/2017	25/01/2017											
SVOC MS													
Phenols													
2-Chlorophenol #M	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
2-Methylphenol	<100 AB	690 AB									<10	ug/kg	TM16/PM8
2-Nitrophenol	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
2,4-Dichlorophenol #M	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
2,4-Dimethylphenol	687 AB	1130 AB									<10	ug/kg	TM16/PM8
2,4,5-Trichlorophenol	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
2,4,6-Trichlorophenol	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
4-Chloro-3-methylphenol	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
4-Methylphenol	743 AB	1334 AB									<10	ug/kg	TM16/PM8
4-Nitrophenol	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
Pentachlorophenol	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
Phenol #M	421 AB	763 AB									<10	ug/kg	TM16/PM8
PAHs													
2-Chloronaphthalene #M	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
2-Methylnaphthalene #M	7431 AB	3735 AB									<10	ug/kg	TM16/PM8
Phthalates													
Bis(2-ethylhexyl) phthalate	<1000 AB	<1000 AB									<100	ug/kg	TM16/PM8
Butylbenzyl phthalate	<1000 AB	<1000 AB									<100	ug/kg	TM16/PM8
Di-n-butyl phthalate	<1000 AB	<1000 AB									<100	ug/kg	TM16/PM8
Di-n-Octyl phthalate	<1000 AB	<1000 AB									<100	ug/kg	TM16/PM8
Diethyl phthalate	<1000 AB	<1000 AB									<100	ug/kg	TM16/PM8
Dimethyl phthalate #M	<1000 AB	<1000 AB									<100	ug/kg	TM16/PM8
Other SVOCs													
1,2-Dichlorobenzene	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
1,2,4-Trichlorobenzene #M	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
1,3-Dichlorobenzene	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
1,4-Dichlorobenzene	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
2-Nitroaniline	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
2,4-Dinitrotoluene	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
2,6-Dinitrotoluene	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
3-Nitroaniline	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
4-Bromophenylphenylether #M	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
4-Chloroaniline	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
4-Chlorophenylphenylether	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
4-Nitroaniline	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
Azobenzene	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
Bis(2-chloroethoxy)methane	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
Bis(2-chloroethyl)ether	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
Carbazole	5835 AB	14669 AB									<10	ug/kg	TM16/PM8
Dibenzofuran #M	8635 AB	6760 AB									<10	ug/kg	TM16/PM8
Hexachlorobenzene	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
Hexachlorobutadiene #M	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
Hexachlorocyclopentadiene	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
Hexachloroethane	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
Isophorone #M	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
N-nitrosodi-n-propylamine #M	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
Nitrobenzene #M	<100 AB	<100 AB									<10	ug/kg	TM16/PM8
Surrogate Recovery 2-Fluorobiphenyl	102 AB	112 AB									<0	%	TM16/PM8
Surrogate Recovery p-Terphenyl-d14	124 AB	135 AB									<0	%	TM16/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

VOC Report : **Solid**

J E Sample No.	158-159	166-167									LOD/LOR	Units	Method No.
Sample ID	DS01	DS02											
Depth	1.40	0.70											
COC No / misc													
Containers	V J	V J											
Sample Date	24/01/2017 13:00	24/01/2017 14:30											
Sample Type	Soil	Soil											
Batch Number	5	5											
Date of Receipt	25/01/2017	25/01/2017											
VOC MS													
Dichlorodifluoromethane	<2	<2									<2	ug/kg	TM15/PM10
Methyl Tertiary Butyl Ether #M	<6	<6									<6	ug/kg	TM15/PM10
Chloromethane #	<3	<3									<3	ug/kg	TM15/PM10
Vinyl Chloride	<2	<2									<2	ug/kg	TM15_A/PM10
Bromomethane	<1	<1									<1	ug/kg	TM15/PM10
Chloroethane #M	<6	<6									<6	ug/kg	TM15/PM10
Trichlorofluoromethane #M	<3	<3									<3	ug/kg	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #M	<6	<6									<6	ug/kg	TM15/PM10
Dichloromethane (DCM) #	<30	86									<30	ug/kg	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3									<3	ug/kg	TM15/PM10
1,1-Dichloroethane #M	<6	<6									<6	ug/kg	TM15/PM10
cis-1-2-Dichloroethene #M	<7	<7									<7	ug/kg	TM15/PM10
2,2-Dichloropropane	<4	<4									<4	ug/kg	TM15/PM10
Bromochloromethane #M	<4	<4									<4	ug/kg	TM15/PM10
Chloroform #M	<5	<5									<5	ug/kg	TM15/PM10
1,1,1-Trichloroethane #M	<5	<5									<5	ug/kg	TM15/PM10
1,1-Dichloropropene #	<3	<3									<3	ug/kg	TM15/PM10
Carbon tetrachloride #M	<4	<4									<4	ug/kg	TM15/PM10
1,2-Dichloroethane #M	<5	<5									<5	ug/kg	TM15/PM10
Benzene #M	<5	53									<5	ug/kg	TM15/PM10
Trichloroethene (TCE) #M	<5	<5									<5	ug/kg	TM15/PM10
1,2-Dichloropropane #M	<4	<4									<4	ug/kg	TM15/PM10
Dibromomethane #M	<4	<4									<4	ug/kg	TM15/PM10
Bromodichloromethane #M	<4	<4									<4	ug/kg	TM15/PM10
cis-1-3-Dichloropropene	<4	<4									<4	ug/kg	TM15/PM10
Toluene #M	<3	44									<3	ug/kg	TM15/PM10
trans-1-3-Dichloropropene	<3	<3									<3	ug/kg	TM15/PM10
1,1,2-Trichloroethane #M	<4	<4									<4	ug/kg	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3									<3	ug/kg	TM15/PM10
1,3-Dichloropropane #M	<4	<4									<4	ug/kg	TM15/PM10
Dibromochloromethane #M	<5	<5									<5	ug/kg	TM15/PM10
1,2-Dibromoethane #	<3	<3									<3	ug/kg	TM15/PM10
Chlorobenzene #M	<4	<4									<4	ug/kg	TM15/PM10
1,1,1,2-Tetrachloroethane #M	<5	<5									<5	ug/kg	TM15/PM10
Ethylbenzene #M	<3	11									<3	ug/kg	TM15/PM10
p/m-Xylene #M	<4	50									<4	ug/kg	TM15/PM10
o-Xylene #M	<4	25									<4	ug/kg	TM15/PM10
Styrene	<3	<3									<3	ug/kg	TM15_A/PM10
Bromoform	<4	<4									<4	ug/kg	TM15/PM10
Isopropylbenzene #	<3	<3									<3	ug/kg	TM15/PM10
1,1,2,2-Tetrachloroethane #M	<3	<3									<3	ug/kg	TM15/PM10
Bromobenzene	<2	<2									<2	ug/kg	TM15/PM10
1,2,3-Trichloropropane #M	<4	<4									<4	ug/kg	TM15/PM10
Propylbenzene #	<4	<4									<4	ug/kg	TM15/PM10
2-Chlorotoluene	<3	<3									<3	ug/kg	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3									<3	ug/kg	TM15/PM10
4-Chlorotoluene	<3	<3									<3	ug/kg	TM15/PM10
tert-Butylbenzene #	<5	<5									<5	ug/kg	TM15/PM10
1,2,4-Trimethylbenzene #	<6	39									<6	ug/kg	TM15/PM10
sec-Butylbenzene #	<4	<4									<4	ug/kg	TM15/PM10
4-Isopropyltoluene #	<4	<4									<4	ug/kg	TM15/PM10
1,3-Dichlorobenzene #M	<4	<4									<4	ug/kg	TM15/PM10
1,4-Dichlorobenzene #	<4	<4									<4	ug/kg	TM15/PM10
n-Butylbenzene #	<4	<4									<4	ug/kg	TM15/PM10
1,2-Dichlorobenzene #M	<4	<4									<4	ug/kg	TM15/PM10
1,2-Dibromo-3-chloropropane #	<4	<4									<4	ug/kg	TM15/PM10
1,2,4-Trichlorobenzene #	<7	<7									<7	ug/kg	TM15/PM10
Hexachlorobutadiene	<4	<4									<4	ug/kg	TM15/PM10
1,2,3-Trichlorobenzene #	<7	<7									<7	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	98	89									<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	77	67									<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Job number: 17/2576
Sample number: 159
Sample identity: DS01
Sample depth: 1.40
Sample Type: Soil
Units: ug/kg

Method: **SVOC**
Matrix: **Solid**

Note: Only samples with TICs (if requested) are reported. If TICs were requested but no compounds found they are not reported.

CAS No.	Tentative Compound Identification	Retention Time (minutes)	% Match	Concentration
91-57-6	Naphthalene, 2-methyl-	7.667	97	7960
92-52-4	Biphenyl	8.089	94	2980
939-27-5	Naphthalene, 2-ethyl-	8.221	86	3039
581-40-8	Naphthalene, 2,3-dimethyl-	8.379	98	9736
575-37-1	Naphthalene, 1,7-dimethyl-	8.499	95	4420
643-58-3	1,1'-Biphenyl, 2-methyl-	9.414	93	3516
7320-53-8	Dibenzofuran, 4-methyl-	9.591	86	6421
486-25-9	9H-Fluoren-9-one	10.049	93	4830
233-02-3	Naphtho[2,1-b]thiophene	10.157	95	7507
6574-36-3	Cyclobuta[1'',2'':3,4:3'',4'':3',4']dicyclobuta[1,2:1',2']dibenzene, 4b,4c,8b,8c-tetrahydro-	10.622	86	7267
2531-84-2	Phenanthrene, 2-methyl-	10.861	98	22710
612-94-2	Naphthalene, 2-phenyl-	11.140	91	7769
781-43-1	9,10-Dimethylanthracene	11.439	89	14531
243-42-5	Benzo[b]naphtho[2,3-d]furan	11.948	93	12140
243-17-4	11H-Benzo[b]fluorene	12.197	93	21005
2381-21-7	Pyrene, 1-methyl-	12.317	91	10548
3351-28-8	Chrysene, 1-methyl-	13.885	95	9567
192-65-4	1,2:4,5-Dibenzopyrene	14.576	95	96317
192-97-2	Benzo[e]pyrene	14.984	96	41447

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Job number: 17/2576
Sample number: 167
Sample identity: DS02
Sample depth: 0.70
Sample Type: Soil
Units: ug/kg

Method: SVOC
Matrix: Solid

Note: Only samples with TICs (if requested) are reported. If TICs were requested but no compounds found they are not reported.

CAS No.	Tentative Compound Identification	Retention Time (minutes)	% Match	Concentration
90-12-0	Naphthalene, 1-methyl-	7.667	93	3223
581-40-8	Naphthalene, 2,3-dimethyl-	8.379	96	6267
949-41-7	1H-Cyclopropa[l]phenanthrene,1a,9b-dihydro-	10.861	97	36403
610-48-0	Anthracene, 1-methyl-	10.911	97	17422
203-64-5	4H-Cyclopenta[def]phenanthrene	10.941	92	53633
612-94-2	Naphthalene, 2-phenyl-	11.140	91	16560
243-17-4	11H-Benzo[b]fluorene	12.197	93	48847
217-59-4	Triphenylene	13.450	86	59308
3351-28-8	Chrysene, 1-methyl-	13.885	97	37904
192-97-2	Benzo[e]pyrene	14.984	98	151596

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/2576	5	DS04	0.50	147	31/01/2017	**General Description (Bulk Analysis)**	Soil/Stone
					31/01/2017	**Asbestos Fibres**	Fibre Bundles
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos Type**	Chrysotile
					31/01/2017	**Asbestos Level Screen**	Asbestos level cannot be determined at this stage of analysis
17/2576	5	DS07	0.20	151	31/01/2017	**General Description (Bulk Analysis)**	Soil/Stone/Veg
					31/01/2017	**Asbestos Fibres**	Fibre Bundles
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos Type**	Chrysotile
					31/01/2017	**Asbestos Level Screen**	<0.1%
17/2576	5	DS01	0.50	155	31/01/2017	**General Description (Bulk Analysis)**	Soil/Stone/Brick/Concrete
					31/01/2017	**Asbestos Fibres**	Fibre Bundles
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos Type**	Chrysotile
					31/01/2017	**Asbestos Level Screen**	<0.1%
17/2576	5	DS01	1.40	159	31/01/2017	**General Description (Bulk Analysis)**	Soil/Stones
					31/01/2017	**Asbestos Fibres**	NAD
					31/01/2017	**Asbestos Fibres (2)**	NAD
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos ACM (2)**	NAD
					31/01/2017	**Asbestos Type**	NAD
					31/01/2017	**Asbestos Type (2)**	NAD
					31/01/2017	**Asbestos Level Screen**	NAD
17/2576	5	BH104	0.50	161	31/01/2017	**General Description (Bulk Analysis)**	Soil/Stones
					31/01/2017	**Asbestos Fibres**	NAD
					31/01/2017	**Asbestos Fibres (2)**	NAD
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos ACM (2)**	NAD
					31/01/2017	**Asbestos Type**	NAD
					31/01/2017	**Asbestos Type (2)**	NAD
					31/01/2017	**Asbestos Level Screen**	NAD
17/2576	5	DS02	0.50	165	31/01/2017	**General Description (Bulk Analysis)**	Soil/Stones
					31/01/2017	**Asbestos Fibres**	NAD
					31/01/2017	**Asbestos Fibres (2)**	NAD

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/2576	5	DS02	0.50	165	31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos ACM (2)**	NAD
					31/01/2017	**Asbestos Type**	NAD
					31/01/2017	**Asbestos Type (2)**	NAD
					31/01/2017	**Asbestos Level Screen**	NAD
17/2576	5	DS02	0.70	167	31/01/2017	**General Description (Bulk Analysis)**	soil-stones
					31/01/2017	**Asbestos Fibres**	NAD
					31/01/2017	**Asbestos Fibres (2)**	NAD
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos ACM (2)**	NAD
					31/01/2017	**Asbestos Type**	NAD
					31/01/2017	**Asbestos Type (2)**	NAD
					31/01/2017	**Asbestos Level Screen**	NAD
17/2576	5	DS02	0.90	169	31/01/2017	**General Description (Bulk Analysis)**	soil-stones
					31/01/2017	**Asbestos Fibres**	NAD
					31/01/2017	**Asbestos Fibres (2)**	NAD
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos ACM (2)**	NAD
					31/01/2017	**Asbestos Type**	NAD
					31/01/2017	**Asbestos Type (2)**	NAD
					31/01/2017	**Asbestos Level Screen**	NAD
17/2576	5	TP102	0.50	171	31/01/2017	**General Description (Bulk Analysis)**	soil-stones
					31/01/2017	**Asbestos Fibres**	Fibre Bundles
					31/01/2017	**Asbestos Fibres (2)**	Fibre Bundles
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos ACM (2)**	NAD
					31/01/2017	**Asbestos Type**	Chrysotile
					31/01/2017	**Asbestos Type (2)**	Amosite
					31/01/2017	**Asbestos Level Screen**	Asbestos level cannot be determined at this stage of analysis
					08/03/2017	**Asbestos Gravimetric Quantification**	0.029 (mass %)
					08/03/2017	**Asbestos PCOM Quantification (Fibres)**	0.016 (mass %)
					08/03/2017	**Asbestos Gravimetric & PCOM Total**	0.045 (mass %)
17/2576	5	TP102	1.60	174	31/01/2017	**General Description (Bulk Analysis)**	soil-stones
					31/01/2017	**Asbestos Fibres**	Free Fibres
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos Type**	Chrysotile
					31/01/2017	**Asbestos Level Screen**	<0.1%

Client Name: WYG **Matrix : Solid**
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
17/2576	5	DS04	0.50	146-147	Asbestos detected in sample
17/2576	5	DS07	0.20	150-151	Asbestos detected in sample
17/2576	5	DS01	0.50	154-155	Asbestos detected in sample
17/2576	5	TP102	0.50	170-172	Asbestos detected in sample
17/2576	5	TP102	1.60	173-175	Asbestos detected in sample

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 17/2576						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/2576

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution
AB	x10 Dilution

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.			AD	Yes
TM24	Determination of Glycols by GC-MS	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.	Yes	Yes	AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes		AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM60	As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid.			AR	Yes
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	Yes
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes	Yes	AD	Yes
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM61	As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP.			AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM0	No preparation is required.	Yes		AR	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.			AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes	Yes	AR	Yes
NONE	No Method Code	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.				
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.			AR	
TM15_A	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

Exova Jones Environmental

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WYG
Quay West at MediaCityUK
Trafford Wharf Road
Trafford Park
Manchester
M17 1HH

Attention :	Kathryn Ellis
Date :	3rd February, 2017
Your reference :	A090070-193
Our reference :	Test Report 17/2576 Batch 6
Location :	East Lancashire Paper Mill
Date samples received :	26th January, 2017
Status :	Final report
Issue :	1

Twenty samples were received for analysis on 26th January, 2017 of which nine were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Phil Sommerton BSc
Project Manager

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

J E Sample No.	179-180	183-185	190-191	194-195	198-200	203-205	208-210	211-213	217-219		LOD/LOR	Units	Method No.
Sample ID	DS26	DS26	DS11	TP101	SP1	SP2	SP3	TP103	TP106				
Depth	0.60	1.80	0.50	0.50	0.80	0.80	0.80	0.80	0.50				
COC No / misc													
Containers	V J	V J T	V J	V J	V J T	V J T	V J T	V J T	V J T				
Sample Date	25/01/2017 09:00	25/01/2017 09:20	25/01/2017 10:30	24/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	6	6	6	6	6	6	6	6	6				
Date of Receipt	26/01/2017	26/01/2017	26/01/2017	26/01/2017	26/01/2017	26/01/2017	26/01/2017	26/01/2017	26/01/2017				
Arsenic #M	21.7	10.8	4.2	NDP	3.2	6.6	4.9	9.5	NDP		<0.5	mg/kg	TM30/PM15
Arsenic	-	-	-	18.3	-	-	-	-	70.0		<0.5	mg/kg	TM30/PM62
Beryllium	1.8	2.3	<0.5	NDP	1.0	0.7	0.8	1.0	NDP		<0.5	mg/kg	TM30/PM15
Beryllium	-	-	-	1.7	-	-	-	-	4.0		<0.5	mg/kg	TM30/PM62
Cadmium #M	<0.1	<0.1	<0.1	NDP	<0.1	0.2	<0.1	<0.1	NDP		<0.1	mg/kg	TM30/PM15
Cadmium	-	-	-	0.7	-	-	-	-	9.9		<0.1	mg/kg	TM30/PM62
Chromium #M	73.2	42.6	64.6	NDP	57.1	63.9	54.6	54.1	NDP		<0.5	mg/kg	TM30/PM15
Chromium	-	-	-	18.2	-	-	-	-	36.5		<0.5	mg/kg	TM30/PM62
Copper #M	63	71	10	NDP	55	19	15	20	NDP		<1	mg/kg	TM30/PM15
Copper	-	-	-	59	-	-	-	-	405 AA		<1	mg/kg	TM30/PM62
Lead #M	139	35	22	NDP	16	21	15	90	NDP		<5	mg/kg	TM30/PM15
Lead	-	-	-	214	-	-	-	-	526		<5	mg/kg	TM30/PM62
Mercury #M	<0.1	<0.1	<0.1	NDP	<0.1	<0.1	<0.1	<0.1	NDP		<0.1	mg/kg	TM30/PM15
Mercury	-	-	-	<0.1	-	-	-	-	<0.1		<0.1	mg/kg	TM30/PM62
Nickel #M	27.3	34.7	8.7	NDP	29.9	24.0	25.1	11.7	NDP		<0.7	mg/kg	TM30/PM15
Nickel	-	-	-	27.4	-	-	-	-	72.7		<0.7	mg/kg	TM30/PM62
Selenium #M	2	1	<1	NDP	<1	<1	<1	2	NDP		<1	mg/kg	TM30/PM15
Selenium	-	-	-	<1	-	-	-	-	<1		<1	mg/kg	TM30/PM62
Vanadium	37	61	12	NDP	22	27	20	23	NDP		<1	mg/kg	TM30/PM15
Vanadium	-	-	-	41	-	-	-	-	86		<1	mg/kg	TM30/PM62
Water Soluble Boron #M	1.0	0.5	0.2	NDP	0.3	0.3	0.2	0.5	NDP		<0.1	mg/kg	TM74/PM32
Water Soluble Boron	-	-	-	0.9	-	-	-	-	2.2		<0.1	mg/kg	TM74/PM61
Zinc #M	119	50	30	NDP	68	55	50	52	NDP		<5	mg/kg	TM30/PM15
Zinc	-	-	-	411	-	-	-	-	858		<5	mg/kg	TM30/PM62

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	179-180	183-185	190-191	194-195	198-200	203-205	208-210	211-213	217-219		LOD/LOR	Units	Method No.
Sample ID	DS26	DS26	DS11	TP101	SP1	SP2	SP3	TP103	TP106				
Depth	0.60	1.80	0.50	0.50	0.80	0.80	0.80	0.80	0.50				
COC No / misc													
Containers	V J	V J T	V J	V J	V J T	V J T	V J T	V J T	V J T				
Sample Date	25/01/2017 09:00	25/01/2017 09:20	25/01/2017 10:30	24/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	6	6	6	6	6	6	6	6	6				
Date of Receipt	26/01/2017	26/01/2017	26/01/2017	26/01/2017	26/01/2017	26/01/2017	26/01/2017	26/01/2017	26/01/2017				
PAH MS													
Naphthalene #M	<0.04	0.97	<0.04	0.63 AA	<0.04	<0.04	<0.04	<0.04	0.45		<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.15 AA	<0.03	<0.03	<0.03	<0.03	0.27		<0.03	mg/kg	TM4/PM8
Acenaphthene #M	<0.05	<0.05	<0.05	0.85 AA	<0.05	<0.05	<0.05	<0.05	3.16		<0.05	mg/kg	TM4/PM8
Fluorene #M	<0.04	<0.04	<0.04	0.50 AA	<0.04	<0.04	<0.04	<0.04	1.50		<0.04	mg/kg	TM4/PM8
Phenanthrene #M	0.18	0.33	<0.03	5.49 AA	0.66	0.17	0.15	<0.03	19.07		<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	<0.04	1.12 AA	0.05	<0.04	<0.04	<0.04	2.88		<0.04	mg/kg	TM4/PM8
Fluoranthene #M	0.29	0.08	0.05	11.54 AA	0.80	0.40	0.27	<0.03	27.75		<0.03	mg/kg	TM4/PM8
Pyrene #	0.26	0.07	0.05	9.37 AA	0.65	0.36	0.24	<0.03	23.55		<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.17	0.09	<0.06	3.95 AA	0.29	0.17	0.16	<0.06	8.88		<0.06	mg/kg	TM4/PM8
Chrysene #M	0.17	0.07	0.02	5.74 AA	0.34	0.24	0.14	<0.02	12.19		<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	0.22	<0.07	<0.07	9.13 AA	0.53	0.32	0.20	<0.07	18.55		<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.10	<0.04	<0.04	5.64 AA	0.32	0.18	0.12	<0.04	10.56		<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	0.05	<0.04	<0.04	3.37 AA	0.21	0.12	0.07	<0.04	6.48		<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	0.79 AA	0.05	0.05	<0.04	<0.04	1.70		<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.07	<0.04	<0.04	3.43 AA	0.21	0.11	0.08	<0.04	6.22		<0.04	mg/kg	TM4/PM8
PAH 16 Total	1.5	1.6	<0.6	61.6 AA	4.1	2.1	1.4	<0.6	143.2		<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.16	<0.05	<0.05	6.57 AA	0.38	0.23	0.14	<0.05	13.36		<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.06	<0.02	<0.02	2.56 AA	0.15	0.09	0.06	<0.02	5.19		<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	103	105	100	114 AA	109	110	107	116	107		<0	%	TM4/PM8
VOC TICs	-	ND	-	ND	-	-	-	-	ND AB			None	TM15/PM10
Methyl Tertiary Butyl Ether #M	-	<6	-	<6	-	-	-	-	<60 AB		<6	ug/kg	TM15/PM10
Benzene #M	-	16	-	<5	-	-	-	-	<50 AB		<5	ug/kg	TM15/PM10
Toluene #M	-	55	-	<3	-	-	-	-	<30 AB		<3	ug/kg	TM15/PM10
Ethylbenzene #M	-	8	-	<3	-	-	-	-	<30 AB		<3	ug/kg	TM15/PM10
p/m-Xylene #M	-	39	-	<4	-	-	-	-	<40 AB		<4	ug/kg	TM15/PM10
o-Xylene #M	-	16	-	<4	-	-	-	-	<40 AB		<4	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	-	93	-	94	-	-	-	-	102 AB		<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	-	61	-	76	-	-	-	-	83 AB		<0	%	TM15/PM10
SVOC TICs	-	See Attached	-	See Attached AB	-	-	-	-	See Attached			None	TM16/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	179-180	183-185	190-191	194-195	198-200	203-205	208-210	211-213	217-219		LOD/LOR	Units	Method No.
Sample ID	DS26	DS26	DS11	TP101	SP1	SP2	SP3	TP103	TP106				
Depth	0.60	1.80	0.50	0.50	0.80	0.80	0.80	0.80	0.50				
COC No / misc										Please see attached notes for all abbreviations and acronyms			
Containers	V J	V J T	V J	V J	V J T	V J T	V J T	V J T	V J T				
Sample Date	25/01/2017 09:00	25/01/2017 09:20	25/01/2017 10:30	24/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	6	6	6	6	6	6	6	6	6				
Date of Receipt	26/01/2017	26/01/2017	26/01/2017	26/01/2017	26/01/2017	26/01/2017	26/01/2017	26/01/2017	26/01/2017				
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV		<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV		<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV		<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	3.0	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2		<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	7	<4	<4	<4	<4	<4	<4	<4		<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	<7	<7	84	<7	<7	<7	<7	<7		<7	mg/kg	TM5/PM16
>C21-C35 #M	<7	<7	<7	467	24	54	10	<7	54		<7	mg/kg	TM5/PM16
>C35-C44	<7	<7	<7	178	<7	<7	<7	<7	<7		<7	mg/kg	TM5/PM16
Total aliphatics C5-44	<26	<26	<26	729	<26	54	<26	<26	54		<26	mg/kg	TM5/TM36/PM16
Aromatics													
>C5-EC7 #	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV		<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV		<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1 SV		<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	0.5	<0.2	0.6	<0.2	<0.2	<0.2	<0.2	<0.2		<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	8	<4	21	<4	<4	<4	<4	<4		<4	mg/kg	TM5/PM16
>EC16-EC21 #	22	10	<7	156	<7	14	<7	<7	76		<7	mg/kg	TM5/PM16
>EC21-EC35 #	54	10	<7	823	31	97	26	<7	313		<7	mg/kg	TM5/PM16
>EC35-EC44	<7	<7	<7	620	22	95	<7	<7	177		<7	mg/kg	TM5/PM16
Total aromatics C5-44	76	29	<26	1621	53	206	26	<26	566		<26	mg/kg	TM5/TM36/PM16
Total aliphatics and aromatics(C5-44)	76	<52	<52	2350	53	260	<52	<52	620		<52	mg/kg	TM5/TM36/PM16
MTBE #	<5	-	<5	-	<5	<5	<5	<5	-		<5	ug/kg	TM31/PM12
Benzene #	<5	-	<5	-	<5	<5	<5	<5	-		<5	ug/kg	TM31/PM12
Toluene #	<5	-	<5	-	<5	<5	<5	<5	-		<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	-	<5	-	<5	<5	<5	<5	-		<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	-	<5	-	<5	<5	<5	<5	-		<5	ug/kg	TM31/PM12
o-Xylene #	<5	-	<5	-	<5	<5	<5	<5	-		<5	ug/kg	TM31/PM12
PCB 77	-	-	-	<5	-	-	-	-	<5		<5	ug/kg	TM16/PM8
PCB 81	-	-	-	<5	-	-	-	-	<5		<5	ug/kg	TM16/PM8
PCB 105	-	-	-	<5	-	-	-	-	<5		<5	ug/kg	TM16/PM8
PCB 114	-	-	-	<5	-	-	-	-	<5		<5	ug/kg	TM16/PM8
PCB 118	-	-	-	<5	-	-	-	-	<5		<5	ug/kg	TM16/PM8
PCB 123	-	-	-	<5	-	-	-	-	<5		<5	ug/kg	TM16/PM8
PCB 126	-	-	-	<5	-	-	-	-	<5		<5	ug/kg	TM16/PM8
PCB 156	-	-	-	<5	-	-	-	-	<5		<5	ug/kg	TM16/PM8
PCB 157	-	-	-	<5	-	-	-	-	<5		<5	ug/kg	TM16/PM8
PCB 167	-	-	-	<5	-	-	-	-	<5		<5	ug/kg	TM16/PM8
PCB 169	-	-	-	<5	-	-	-	-	<5		<5	ug/kg	TM16/PM8
PCB 189	-	-	-	<5	-	-	-	-	<5		<5	ug/kg	TM16/PM8
Total 12 PCBs	-	-	-	<60	-	-	-	-	<60		<60	ug/kg	TM16/PM8

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	179-180	183-185	190-191	194-195	198-200	203-205	208-210	211-213	217-219		LOD/LOR	Units	Method No.
Sample ID	DS26	DS26	DS11	TP101	SP1	SP2	SP3	TP103	TP106				
Depth	0.60	1.80	0.50	0.50	0.80	0.80	0.80	0.80	0.50				
COC No / misc													
Containers	V J	V J T	V J	V J	V J T	V J T	V J T	V J T	V J T				
Sample Date	25/01/2017 09:00	25/01/2017 09:20	25/01/2017 10:30	24/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	6	6	6	6	6	6	6	6	6				
Date of Receipt	26/01/2017	26/01/2017	26/01/2017	26/01/2017	26/01/2017	26/01/2017	26/01/2017	26/01/2017	26/01/2017				
Phenol #M	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	mg/kg	TM26/PM21
Natural Moisture Content	30.0	28.0	9.9	NDP	6.8	8.8	7.8	25.7	NDP		<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3		<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #M	143	92	<3	NDP	39	88	10	70	NDP		<3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext)	-	-	-	0.0133	-	-	-	-	0.1815		<0.0015	g/l	TM38/PM60
Free Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	mg/kg	TM89/PM45
Total Cyanide #M	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		<0.5	mg/kg	TM89/PM45
Fraction Organic Carbon	0.037	0.442	0.004	NDP	0.005	0.002	0.004	0.020	NDP		<0.001	None	TM21/PM24
pH #M	8.75	8.57	7.41	8.69	9.03	8.67	8.73	8.44	7.88		<0.01	pH units	TM73/PM11
Sample Type	Clay	Sandy Loam	Clay	NDP	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	NDP			None	PM13/PM0
Sample Colour	Medium Brown	Medium Brown	Medium Brown	NDP	Medium Brown	Medium Brown	Medium Brown	Medium Brown	NDP			None	PM13/PM0
Other Items	roots & stones	stones	stones	NDP	stones & roots	stones	stones & roots	stones	NDP			None	PM13/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

SVOC Report : **Solid**

J E Sample No.	183-185	194-195	217-219									
Sample ID	DS26	TP101	TP106									
Depth	1.80	0.50	0.50							Please see attached notes for all abbreviations and acronyms		
COC No / misc												
Containers	V J T	V J	V J T									
Sample Date	25/01/2017 09:20	24/01/2017	25/01/2017									
Sample Type	Soil	Soil	Soil									
Batch Number	6	6	6									
Date of Receipt	26/01/2017	26/01/2017	26/01/2017							LOD/LOR	Units	Method No.
SVOC MS												
Phenols												
2-Chlorophenol #M	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
2-Methylphenol	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
2-Nitrophenol	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
2,4-Dichlorophenol #M	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
2,4-Dimethylphenol	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
2,4,5-Trichlorophenol	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
2,4,6-Trichlorophenol	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
4-Chloro-3-methylphenol	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
4-Methylphenol	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
4-Nitrophenol	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
Pentachlorophenol	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
Phenol #M	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
PAHs												
2-Chloronaphthalene #M	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
2-Methylnaphthalene #M	1187	1183 AB	138							<10	ug/kg	TM16/PM8
Phthalates												
Bis(2-ethylhexyl) phthalate	<100	<1000 AB	<100							<100	ug/kg	TM16/PM8
Butylbenzyl phthalate	<100	<1000 AB	<100							<100	ug/kg	TM16/PM8
Di-n-butyl phthalate	<100	<1000 AB	<100							<100	ug/kg	TM16/PM8
Di-n-Octyl phthalate	<100	<1000 AB	<100							<100	ug/kg	TM16/PM8
Diethyl phthalate	<100	<1000 AB	<100							<100	ug/kg	TM16/PM8
Dimethyl phthalate #M	<100	<1000 AB	<100							<100	ug/kg	TM16/PM8
Other SVOCs												
1,2-Dichlorobenzene	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
1,2,4-Trichlorobenzene #M	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
1,3-Dichlorobenzene	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
1,4-Dichlorobenzene	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
2-Nitroaniline	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
2,4-Dinitrotoluene	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
2,6-Dinitrotoluene	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
3-Nitroaniline	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
4-Bromophenylphenylether #M	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
4-Chloroaniline	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
4-Chlorophenylphenylether	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
4-Nitroaniline	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
Azobenzene	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
Bis(2-chloroethoxy)methane	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
Bis(2-chloroethyl)ether	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
Carbazole	<10	1736 AB	422							<10	ug/kg	TM16/PM8
Dibenzofuran #M	243	1083 AB	200							<10	ug/kg	TM16/PM8
Hexachlorobenzene	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
Hexachlorobutadiene #M	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
Hexachlorocyclopentadiene	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
Hexachloroethane	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
Isophorone #M	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
N-nitrosodi-n-propylamine #M	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
Nitrobenzene #M	<10	<100 AB	<10							<10	ug/kg	TM16/PM8
Surrogate Recovery 2-Fluorobiphenyl	88	101 AB	72							<0	%	TM16/PM8
Surrogate Recovery p-Terphenyl-d14	107	121 AB	114							<0	%	TM16/PM8

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

VOC Report : **Solid**

J E Sample No.	183-185	194-195	217-219									
Sample ID	DS26	TP101	TP106									
Depth	1.80	0.50	0.50									
COC No / misc												
Containers	V J T	V J	V J T									
Sample Date	25/01/2017 09:20	24/01/2017	25/01/2017									
Sample Type	Soil	Soil	Soil									
Batch Number	6	6	6									
Date of Receipt	26/01/2017	26/01/2017	26/01/2017									
VOC MS												
Dichlorodifluoromethane	<2	<2	<20 AB								<2	ug/kg	TM15/PM10
Methyl Tertiary Butyl Ether #M	<6	<6	<60 AB								<6	ug/kg	TM15/PM10
Chloromethane #	<3	<3	<30 AB								<3	ug/kg	TM15/PM10
Vinyl Chloride	<2	<2	<20 AB								<2	ug/kg	TM15_A/PM10
Bromomethane	<1	<1	<10 AB								<1	ug/kg	TM15/PM10
Chloroethane #M	<6	<6	<60 AB								<6	ug/kg	TM15/PM10
Trichlorofluoromethane #M	<3	<3	<30 AB								<3	ug/kg	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #M	<6	<6	<60 AB								<6	ug/kg	TM15/PM10
Dichloromethane (DCM) #	252	97	<300 AB								<30	ug/kg	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<30 AB								<3	ug/kg	TM15/PM10
1,1-Dichloroethane #M	<6	<6	<60 AB								<6	ug/kg	TM15/PM10
cis-1-2-Dichloroethene #M	<7	<7	<70 AB								<7	ug/kg	TM15/PM10
2,2-Dichloropropane	<4	<4	<40 AB								<4	ug/kg	TM15/PM10
Bromochloromethane #M	<4	<4	<40 AB								<4	ug/kg	TM15/PM10
Chloroform #M	<5	<5	<50 AB								<5	ug/kg	TM15/PM10
1,1,1-Trichloroethane #M	<5	<5	<50 AB								<5	ug/kg	TM15/PM10
1,1-Dichloropropene #	<3	<3	<30 AB								<3	ug/kg	TM15/PM10
Carbon tetrachloride #M	<4	<4	<40 AB								<4	ug/kg	TM15/PM10
1,2-Dichloroethane #M	<5	<5	<50 AB								<5	ug/kg	TM15/PM10
Benzene #M	16	<5	<50 AB								<5	ug/kg	TM15/PM10
Trichloroethene (TCE) #M	<5	<5	<50 AB								<5	ug/kg	TM15/PM10
1,2-Dichloropropane #M	<4	<4	<40 AB								<4	ug/kg	TM15/PM10
Dibromomethane #M	<4	<4	<40 AB								<4	ug/kg	TM15/PM10
Bromodichloromethane #M	<4	<4	<40 AB								<4	ug/kg	TM15/PM10
cis-1-3-Dichloropropene	<4	<4	<40 AB								<4	ug/kg	TM15/PM10
Toluene #M	55	<3	<30 AB								<3	ug/kg	TM15/PM10
trans-1-3-Dichloropropene	<3	<3	<30 AB								<3	ug/kg	TM15/PM10
1,1,2-Trichloroethane #M	<4	<4	<40 AB								<4	ug/kg	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<30 AB								<3	ug/kg	TM15/PM10
1,3-Dichloropropane #M	<4	<4	<40 AB								<4	ug/kg	TM15/PM10
Dibromochloromethane #M	<5	<5	<50 AB								<5	ug/kg	TM15/PM10
1,2-Dibromoethane #	<3	<3	<30 AB								<3	ug/kg	TM15/PM10
Chlorobenzene #M	<4	<4	<40 AB								<4	ug/kg	TM15/PM10
1,1,1,2-Tetrachloroethane #M	<5	<5	<50 AB								<5	ug/kg	TM15/PM10
Ethylbenzene #M	8	<3	<30 AB								<3	ug/kg	TM15/PM10
p/m-Xylene #M	39	<4	<40 AB								<4	ug/kg	TM15/PM10
o-Xylene #M	16	<4	<40 AB								<4	ug/kg	TM15/PM10
Styrene	<3	<3	<30 AB								<3	ug/kg	TM15_A/PM10
Bromoform	<4	<4	<40 AB								<4	ug/kg	TM15/PM10
Isopropylbenzene #	<3	<3	<30 AB								<3	ug/kg	TM15/PM10
1,1,2,2-Tetrachloroethane #M	<3	<3	<30 AB								<3	ug/kg	TM15/PM10
Bromobenzene	<2	<2	<20 AB								<2	ug/kg	TM15/PM10
1,2,3-Trichloropropane #M	<4	<4	<40 AB								<4	ug/kg	TM15/PM10
Propylbenzene #	<4	<4	<40 AB								<4	ug/kg	TM15/PM10
2-Chlorotoluene	<3	<3	<30 AB								<3	ug/kg	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<30 AB								<3	ug/kg	TM15/PM10
4-Chlorotoluene	<3	<3	<30 AB								<3	ug/kg	TM15/PM10
tert-Butylbenzene #	<5	<5	<50 AB								<5	ug/kg	TM15/PM10
1,2,4-Trimethylbenzene #	16	<6	<60 AB								<6	ug/kg	TM15/PM10
sec-Butylbenzene #	<4	<4	<40 AB								<4	ug/kg	TM15/PM10
4-Isopropyltoluene #	<4	<4	<40 AB								<4	ug/kg	TM15/PM10
1,3-Dichlorobenzene #M	<4	<4	<40 AB								<4	ug/kg	TM15/PM10
1,4-Dichlorobenzene #	<4	<4	<40 AB								<4	ug/kg	TM15/PM10
n-Butylbenzene #	<4	<4	<40 AB								<4	ug/kg	TM15/PM10
1,2-Dichlorobenzene #M	<4	<4	<40 AB								<4	ug/kg	TM15/PM10
1,2-Dibromo-3-chloropropane #	<4	<4	<40 AB								<4	ug/kg	TM15/PM10
1,2,4-Trichlorobenzene #	<7	<7	<70 AB								<7	ug/kg	TM15/PM10
Hexachlorobutadiene	<4	<4	<40 AB								<4	ug/kg	TM15/PM10
Naphthalene	<27	199	<270 AB								<27	ug/kg	TM15/PM10
1,2,3-Trichlorobenzene #	<7	<7	<70 AB								<7	ug/kg	TM15/PM10
Surrogate Recovery Toluene D8	93	94	102 AB								<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	61	76	83 AB								<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

Job number: 17/2576
Sample number: 184
Sample identity: DS26
Sample depth: 1.80
Sample Type: Soil
Units: ug/kg

Method: **SVOC**
Matrix: **Solid**

Note: Only samples with TICs (if requested) are reported. If TICs were requested but no compounds found they are not reported.

CAS No.	Tentative Compound Identification	Retention Time (minutes)	% Match	Concentration
90-12-0	Naphthalene, 1-methyl-	7.668	95	1089
92-52-4	Biphenyl	8.089	92	278
581-40-8	Naphthalene, 2,3-dimethyl-	8.379	97	931
112-40-3	Dodecane	8.898	81	502
2245-38-7	Naphthalene, 1,6,7-trimethyl-	9.150	96	298
2131-42-2	Naphthalene, 1,4,6-trimethyl-	9.219	97	405
629-78-7	Heptadecane	9.941	96	378
638-36-8	Hexadecane, 2,6,10,14-tetramethyl-	9.989	94	433
949-41-7	1H-Cyclopropa[l]phenanthrene,1a,9b-dihydro-	10.861	94	784

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Job number: 17/2576
Sample number: 195
Sample identity: TP101
Sample depth: 0.50
Sample Type: Soil
Units: ug/kg

Method: **SVOC**
Matrix: **Solid**

Note: Only samples with TICs (if requested) are reported. If TICs were requested but no compounds found they are not reported.

CAS No.	Tentative Compound Identification	Retention Time (minutes)	% Match	Concentration
582-16-1	Naphthalene, 2,7-dimethyl-	8.379	84	1871
2531-84-2	Phenanthrene, 2-methyl-	10.861	96	7569
2381-21-7	Pyrene, 1-methyl-	12.197	96	7536
243-17-4	11H-Benzo[b]fluorene	12.277	86	3330

Job number: 17/2576
Sample number: 218
Sample identity: TP106
Sample depth: 0.50
Sample Type: Soil
Units: ug/kg

Method: **SVOC**
Matrix: **Solid**

Note: Only samples with TICs (if requested) are reported. If TICs were requested but no compounds found they are not reported.

CAS No.	Tentative Compound Identification	Retention Time (minutes)	% Match	Concentration
832-69-9	Phenanthrene, 1-methyl-	10.861	97	2140
612-94-2	Naphthalene, 2-phenyl-	11.140	90	799
781-43-1	9,10-Dimethylanthracene	11.439	90	723
243-42-5	Benzo[b]naphtho[2,3-d]furan	11.948	93	1416
243-17-4	11H-Benzo[b]fluorene	12.197	94	2822
1000332-58-9	: 4-((2-Methylphenyl)diazenyl)-1H-pyrazole-3,5-diamine	12.427	93	856
2381-21-7	Pyrene, 1-methyl-	12.466	95	839
239-35-0	Benzo[b]naphtho[2,1-d]thiophene	12.955	95	1038
3351-32-4	2-Methylchrysene	13.885	95	1573
192-97-2	Benzo[e]pyrene	14.983	96	4964

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/2576	6	DS26	0.60	180	31/01/2017	**General Description (Bulk Analysis)**	Soil/Stone
					31/01/2017	**Asbestos Fibres**	NAD
					31/01/2017	**Asbestos Fibres (2)**	NAD
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos ACM (2)**	NAD
					31/01/2017	**Asbestos Type**	NAD
					31/01/2017	**Asbestos Type (2)**	NAD
					31/01/2017	**Asbestos Level Screen**	NAD
17/2576	6	DS26	1.80	184	31/01/2017	**General Description (Bulk Analysis)**	Soil/Stone/Silt
					31/01/2017	**Asbestos Fibres**	NAD
					31/01/2017	**Asbestos Fibres (2)**	NAD
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos ACM (2)**	NAD
					31/01/2017	**Asbestos Type**	NAD
					31/01/2017	**Asbestos Type (2)**	NAD
					31/01/2017	**Asbestos Level Screen**	NAD
17/2576	6	DS11	0.50	191	31/01/2017	**General Description (Bulk Analysis)**	Soil/Stone
					31/01/2017	**Asbestos Fibres**	NAD
					31/01/2017	**Asbestos Fibres (2)**	NAD
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos ACM (2)**	NAD
					31/01/2017	**Asbestos Type**	NAD
					31/01/2017	**Asbestos Type (2)**	NAD
					31/01/2017	**Asbestos Level Screen**	NAD
17/2576	6	TP101	0.50	195	31/01/2017	**General Description (Bulk Analysis)**	Soil/Stones
					31/01/2017	**Asbestos Fibres**	Fibre Bundles
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos Type**	Chrysotile
					31/01/2017	**Asbestos Level Screen**	<0.1%
17/2576	6	SP1	0.80	199	31/01/2017	**General Description (Bulk Analysis)**	Soil/Stones
					31/01/2017	**Asbestos Fibres**	NAD
					31/01/2017	**Asbestos Fibres (2)**	NAD
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos ACM (2)**	NAD
					31/01/2017	**Asbestos Type**	NAD

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/2576	6	SP1	0.80	199	31/01/2017	**Asbestos Type (2)**	NAD
					31/01/2017	**Asbestos Level Screen**	NAD
17/2576	6	SP2	0.80	204	31/01/2017	**General Description (Bulk Analysis)**	Soil/Stones
					31/01/2017	**Asbestos Fibres**	NAD
					31/01/2017	**Asbestos Fibres (2)**	NAD
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos ACM (2)**	NAD
					31/01/2017	**Asbestos Type**	NAD
					31/01/2017	**Asbestos Type (2)**	NAD
					31/01/2017	**Asbestos Level Screen**	NAD
17/2576	6	SP3	0.80	209	31/01/2017	**General Description (Bulk Analysis)**	soil/stones
					31/01/2017	**Asbestos Fibres**	NAD
					31/01/2017	**Asbestos Fibres (2)**	NAD
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos ACM (2)**	NAD
					31/01/2017	**Asbestos Type**	NAD
					31/01/2017	**Asbestos Type (2)**	NAD
					31/01/2017	**Asbestos Level Screen**	NAD
17/2576	6	TP103	0.80	212	31/01/2017	**General Description (Bulk Analysis)**	soil/stones
					31/01/2017	**Asbestos Fibres**	NAD
					31/01/2017	**Asbestos Fibres (2)**	NAD
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos ACM (2)**	NAD
					31/01/2017	**Asbestos Type**	NAD
					31/01/2017	**Asbestos Type (2)**	NAD
					31/01/2017	**Asbestos Level Screen**	NAD
17/2576	6	TP106	0.50	218	31/01/2017	**General Description (Bulk Analysis)**	soil/stones
					31/01/2017	**Asbestos Fibres**	Fibre Bundles
					31/01/2017	**Asbestos ACM**	NAD
					31/01/2017	**Asbestos Type**	Chrysotile
					31/01/2017	**Asbestos Level Screen**	<0.1%

Client Name: WYG **Matrix : Solid**
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
17/2576	6	TP101	0.50	194-195	Asbestos detected in sample
17/2576	6	TP106	0.50	217-219	Asbestos detected in sample

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 17/2576						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/2576

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution
AB	x10 Dilution

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.			AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.	Yes	Yes	AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen and hydrazine. Samples are extracted using an orbital shaker.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground samples with deionised water in a 2:1 water to solid ratio for anions. Extraction of as received samples with deionised water in a 2:1 water to solid ratio for ammoniacal nitrogen and hydrazine. Samples are extracted using an orbital shaker.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM60	As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes	Yes	AD	Yes
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM61	As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP.			AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.			AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes	Yes	AR	Yes
TM15_A	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds, Vinyl Chloride & Styrene by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes

Exova Jones Environmental

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WYG
Quay West at MediaCityUK
Trafford Wharf Road
Trafford Park
Manchester
M17 1HH

Attention :	Kathryn Ellis
Date :	8th March, 2017
Your reference :	A090070-193
Our reference :	Test Report 17/2576 Batch 7
Location :	East Lancashire Paper Mill
Date samples received :	27th January, 2017
Status :	Final report
Issue :	2

Sixteen samples were received for analysis on 27th January, 2017 of which six were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	229-231	238-240	243-245	248-250	253-255	258-259					LOD/LOR	Units	Method No.
Sample ID	TP123	TP127	SP4	SP5	SP6	DS05							
Depth	1.50	1.20	0.80	0.80	0.80	0.50							
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J							
Sample Date	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	7	7	7	7	7	7							
Date of Receipt	27/01/2017	27/01/2017	27/01/2017	27/01/2017	27/01/2017	27/01/2017							
Arsenic	47.1	2.8	22.5	22.6	28.5	39.7					<0.5	mg/kg	TM30/PM62
Beryllium	2.6	<0.5	1.5	1.3	1.4	1.5					<0.5	mg/kg	TM30/PM62
Cadmium	0.5	0.4	0.4	0.4	0.5	0.6					<0.1	mg/kg	TM30/PM62
Chromium	25.4	5.5	25.9	20.3	24.3	21.6					<0.5	mg/kg	TM30/PM62
Copper	111	11	90	67	83	78					<1	mg/kg	TM30/PM62
Lead	136	<5	103	155	203	282					<5	mg/kg	TM30/PM62
Mercury	<0.1	<0.1	<0.1	0.5	0.5	0.3					<0.1	mg/kg	TM30/PM62
Nickel	48.1	2.8	25.8	24.5	24.5	28.5					<0.7	mg/kg	TM30/PM62
Selenium	1	<1	<1	<1	<1	<1					<1	mg/kg	TM30/PM62
Vanadium	57	4	39	29	32	34					<1	mg/kg	TM30/PM62
Water Soluble Boron	0.5	0.4	2.4	1.1	1.4	1.0					<0.1	mg/kg	TM74/PM61
Zinc	151	11	234	143	155	160					<5	mg/kg	TM30/PM62
PAH MS													
Naphthalene #M	0.65	<0.04	<0.20 AA	0.16	0.12	0.23					<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.15 AA	0.07	0.12	<0.03					<0.03	mg/kg	TM4/PM8
Acenaphthene #M	<0.05	<0.05	<0.25 AA	0.30	0.31	0.32					<0.05	mg/kg	TM4/PM8
Fluorene #M	<0.04	<0.04	<0.20 AA	0.26	0.20	0.21					<0.04	mg/kg	TM4/PM8
Phenanthrene #M	0.41	<0.03	1.79 AA	2.79	3.71	2.00					<0.03	mg/kg	TM4/PM8
Anthracene #	0.05	<0.04	0.49 AA	0.62	0.85	0.48					<0.04	mg/kg	TM4/PM8
Fluoranthene #M	0.50	<0.03	2.55 AA	4.33	7.61	2.68					<0.03	mg/kg	TM4/PM8
Pyrene #	0.44	<0.03	2.15 AA	3.83	6.58	2.31					<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.30	<0.06	1.29 AA	2.13	3.44	1.12					<0.06	mg/kg	TM4/PM8
Chrysene #M	0.34	<0.02	1.21 AA	2.32	3.35	1.21					<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	0.39	<0.07	1.53 AA	4.29	5.35	1.88					<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.24	<0.04	1.01 AA	2.60	3.30	1.06					<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	0.13	<0.04	0.58 AA	2.03	2.52	0.71					<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.20 AA	0.52	0.54	0.25					<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.15	<0.04	0.49 AA	1.72	1.98	0.64					<0.04	mg/kg	TM4/PM8
PAH 16 Total	3.6	<0.6	13.1 AA	28.0	40.0	15.1					<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.28	<0.05	1.10 AA	3.09	3.85	1.35					<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.11	<0.02	0.43 AA	1.20	1.50	0.53					<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	113	80	112 AA	119	111	112					<0	%	TM4/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	229-231	238-240	243-245	248-250	253-255	258-259					LOD/LOR	Units	Method No.
Sample ID	TP123	TP127	SP4	SP5	SP6	DS05							
Depth	1.50	1.20	0.80	0.80	0.80	0.50							
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J							
Sample Date	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	7	7	7	7	7	7							
Date of Receipt	27/01/2017	27/01/2017	27/01/2017	27/01/2017	27/01/2017	27/01/2017							
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2					<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	<4	<4	<4	<4	9					<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	<7	<7	9	12	48					<7	mg/kg	TM5/PM16
>C21-C35 #M	44	<7	144	57	91	240					<7	mg/kg	TM5/PM16
>C35-C44	25	<7	89	<7	13	62					<7	mg/kg	TM5/PM16
Total aliphatics C5-44	69	<26	233	66	116	359					<26	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7 #	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1 SV	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2					<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	11	<4	<4	<4	<4	5					<4	mg/kg	TM5/PM16
>EC16-EC21 #	33	<7	17	27	31	38					<7	mg/kg	TM5/PM16
>EC21-EC35 #	111	<7	229	135	135	194					<7	mg/kg	TM5/PM16
>EC35-EC44	38	<7	160	43	32	60					<7	mg/kg	TM5/PM16
Total aromatics C5-44	193	<26	406	205	198	297					<26	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-44)	262	<52	639	271	314	656					<52	mg/kg	TM5/TM36/PM12/PM16
MTBE #	<5 SV	<5	<5	<5	<5	<5					<5	ug/kg	TM31/PM12
Benzene #	<5 SV	<5	<5	<5	<5	<5					<5	ug/kg	TM31/PM12
Toluene #	<5 SV	<5	<5	<5	<5	<5					<5	ug/kg	TM31/PM12
Ethylbenzene #	<5 SV	<5	<5	<5	<5	<5					<5	ug/kg	TM31/PM12
m/p-Xylene #	<5 SV	<5	<5	<5	<5	<5					<5	ug/kg	TM31/PM12
o-Xylene #	<5 SV	<5	<5	<5	<5	<5					<5	ug/kg	TM31/PM12
Phenol #M	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	mg/kg	TM26/PM21
Natural Moisture Content	25.7	83.9	18.4	17.1	15.5	14.5					<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3					<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext)	0.0153	0.0169	0.1437	0.0520	0.1090	0.0404					<0.0015	g/l	TM38/PM60
Free Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	mg/kg	TM89/PM45
Total Cyanide #M	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	mg/kg	TM89/PM45
Fraction Organic Carbon	NDP	NDP	NDP	NDP	NDP	NDP					<0.001	None	TM21/PM24
pH #M	8.51	8.18	9.59	9.48	10.11	10.94					<0.01	pH units	TM73/PM11
Sample Type	NDP	NDP	NDP	NDP	NDP	NDP						None	PM13/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	229-231	238-240	243-245	248-250	253-255	258-259					LOD/LOR	Units	Method No.
Sample ID	TP123	TP127	SP4	SP5	SP6	DS05							
Depth	1.50	1.20	0.80	0.80	0.80	0.50							
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J							
Sample Date	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	7	7	7	7	7	7							
Date of Receipt	27/01/2017	27/01/2017	27/01/2017	27/01/2017	27/01/2017	27/01/2017							
Sample Colour	NDP	NDP	NDP	NDP	NDP	NDP						None	PM13/PM0
Other Items	NDP	NDP	NDP	NDP	NDP	NDP						None	PM13/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/2576	7	TP123	1.50	230	03/02/2017	**General Description (Bulk Analysis)**	soil/stones
					03/02/2017	**Asbestos Fibres**	Fibre Bundles
					03/02/2017	**Asbestos ACM**	NAD
					03/02/2017	**Asbestos Type**	Chrysotile
					03/02/2017	**Asbestos Level Screen**	<0.1%
17/2576	7	TP127	1.20	239	03/02/2017	**General Description (Bulk Analysis)**	Soil/Stones
					03/02/2017	**Asbestos Fibres**	Fibre Bundles
					03/02/2017	**Asbestos ACM**	NAD
					03/02/2017	**Asbestos Type**	Chrysotile
					03/02/2017	**Asbestos Level Screen**	<0.1%
17/2576	7	SP4	0.80	244	03/02/2017	**General Description (Bulk Analysis)**	soil/stones
					03/02/2017	**Asbestos Fibres**	Fibre Bundles
					03/02/2017	**Asbestos ACM**	NAD
					03/02/2017	**Asbestos Type**	Chrysotile
					03/02/2017	**Asbestos Level Screen**	<0.1%
17/2576	7	SP5	0.80	249	03/02/2017	**General Description (Bulk Analysis)**	Soil/Stones
					03/02/2017	**Asbestos Fibres**	Fibre Bundles
					03/02/2017	**Asbestos ACM**	NAD
					03/02/2017	**Asbestos Type**	Chrysotile
					03/02/2017	**Asbestos Level Screen**	<0.1%
17/2576	7	SP6	0.80	254	03/02/2017	**General Description (Bulk Analysis)**	Soil/Stones
					03/02/2017	**Asbestos Fibres**	Fibre Bundles
					03/02/2017	**Asbestos Fibres (2)**	Fibre Bundles
					03/02/2017	**Asbestos ACM**	NAD
					03/02/2017	**Asbestos ACM (2)**	NAD
					03/02/2017	**Asbestos Type**	Chrysotile
					03/02/2017	**Asbestos Type (2)**	Amosite
					03/02/2017	**Asbestos Level Screen**	<0.1%
					08/03/2017	**Asbestos Gravimetric Quantification**	<0.001 (mass %)
					08/03/2017	**Asbestos PCOM Quantification (Fibres)**	0.004 (mass %)
					08/03/2017	**Asbestos Gravimetric & PCOM Total**	0.004 (mass %)
17/2576	7	DS05	0.50	259	03/02/2017	**General Description (Bulk Analysis)**	Soil/Stones
					03/02/2017	**Asbestos Fibres**	Fibre Bundles
					03/02/2017	**Asbestos ACM**	NAD

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/2576	7	DS05	0.50	259	03/02/2017	**Asbestos Type**	Chrysotile
					03/02/2017	**Asbestos Level Screen**	<0.1%

Client Name: WYG **Matrix : Solid**
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
17/2576	7	TP123	1.50	229-231	Asbestos detected in sample
17/2576	7	TP127	1.20	238-240	Asbestos detected in sample
17/2576	7	SP4	0.80	243-245	Asbestos detected in sample
17/2576	7	SP5	0.80	248-250	Asbestos detected in sample
17/2576	7	SP6	0.80	253-255	Asbestos detected in sample
17/2576	7	DS05	0.50	258-259	Asbestos detected in sample

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 17/2576						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/2576

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x5 Dilution

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.			AD	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.	Yes	Yes	AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM60	As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM61	As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP.			AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.			AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes	Yes	AR	Yes

Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

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WYG
Quay West at MediaCityUK
Trafford Wharf Road
Trafford Park
Manchester
M17 1HH

Attention :	Kathryn Ellis
Date :	8th February, 2017
Your reference :	A090070-193
Our reference :	Test Report 17/2576 Batch 8
Location :	East Lancashire Paper Mill
Date samples received :	31st January, 2017
Status :	Final report
Issue :	1

Twenty samples were received for analysis on 31st January, 2017 of which five were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	270-272	276-278	292-293	302-304	312-313						LOD/LOR	Units	Method No.
Sample ID	TP128	TP130	DS14	DS20	DS25								
Depth	2.50	1.50	0.80	1.50	0.50								
COC No / misc													
Containers	V J T	V J T	V J	V J T	V J								
Sample Date	26/01/2017	26/01/2017	26/01/2017	27/01/2017	27/01/2017								
Sample Type	Soil	Soil	Soil	Soil	Soil								
Batch Number	8	8	8	8	8								
Date of Receipt	31/01/2017	31/01/2017	31/01/2017	31/01/2017	31/01/2017								
Arsenic #M	3.3	-	-	-	-						<0.5	mg/kg	TM30/PM15
Arsenic	-	20.6	27.0	73.1	51.2						<0.5	mg/kg	TM30/PM62
Beryllium	<0.5	-	-	-	-						<0.5	mg/kg	TM30/PM15
Beryllium	-	1.6	2.1	1.5	1.9						<0.5	mg/kg	TM30/PM62
Cadmium #M	0.4	-	-	-	-						<0.1	mg/kg	TM30/PM15
Cadmium	-	0.5	0.4	0.8	0.5						<0.1	mg/kg	TM30/PM62
Chromium #M	6.6	-	-	-	-						<0.5	mg/kg	TM30/PM15
Chromium	-	28.8	19.8	41.4	25.6						<0.5	mg/kg	TM30/PM62
Copper #M	6	-	-	-	-						<1	mg/kg	TM30/PM15
Copper	-	222	128	100	21						<1	mg/kg	TM30/PM62
Lead #M	7	-	-	-	-						<5	mg/kg	TM30/PM15
Lead	-	495	159	197	19						<5	mg/kg	TM30/PM62
Mercury #M	<0.1	-	-	-	-						<0.1	mg/kg	TM30/PM15
Mercury	-	0.6	<0.1	0.5	<0.1						<0.1	mg/kg	TM30/PM62
Nickel #M	2.5	-	-	-	-						<0.7	mg/kg	TM30/PM15
Nickel	-	32.5	52.4	26.5	38.2						<0.7	mg/kg	TM30/PM62
Selenium #M	<1	-	-	-	-						<1	mg/kg	TM30/PM15
Selenium	-	<1	<1	1	1						<1	mg/kg	TM30/PM62
Vanadium	4	-	-	-	-						<1	mg/kg	TM30/PM15
Vanadium	-	31	49	37	33						<1	mg/kg	TM30/PM62
Water Soluble Boron #M	1.1	-	-	-	-						<0.1	mg/kg	TM74/PM32
Water Soluble Boron	-	1.2	0.9	0.7	<0.1						<0.1	mg/kg	TM74/PM61
Zinc #M	15	-	-	-	-						<5	mg/kg	TM30/PM15
Zinc	-	202	120	152	149						<5	mg/kg	TM30/PM62

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

J E Sample No.	270-272	276-278	292-293	302-304	312-313						LOD/LOR	Units	Method No.
Sample ID	TP128	TP130	DS14	DS20	DS25								
Depth	2.50	1.50	0.80	1.50	0.50								
COC No / misc													
Containers	V J T	V J T	V J	V J T	V J								
Sample Date	26/01/2017	26/01/2017	26/01/2017	27/01/2017	27/01/2017								
Sample Type	Soil	Soil	Soil	Soil	Soil								
Batch Number	8	8	8	8	8								
Date of Receipt	31/01/2017	31/01/2017	31/01/2017	31/01/2017	31/01/2017								
PAH MS													
Naphthalene #M	<0.04	<0.04	0.16	0.07	<0.04						<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	0.11	<0.03						<0.03	mg/kg	TM4/PM8
Acenaphthene #M	<0.05	<0.05	<0.05	0.24	<0.05						<0.05	mg/kg	TM4/PM8
Fluorene #M	<0.04	<0.04	<0.04	0.24	<0.04						<0.04	mg/kg	TM4/PM8
Phenanthrene #M	<0.03	0.07	0.43	2.30	<0.03						<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	0.10	0.67	<0.04						<0.04	mg/kg	TM4/PM8
Fluoranthene #M	<0.03	0.11	0.70	4.82	<0.03						<0.03	mg/kg	TM4/PM8
Pyrene #	<0.03	0.11	0.66	4.00	<0.03						<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	<0.06	0.11	0.45	2.13	<0.06						<0.06	mg/kg	TM4/PM8
Chrysene #M	<0.02	0.09	0.48	2.01	<0.02						<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	<0.07	0.14	0.84	3.33	<0.07						<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04	0.10	0.46	1.98	<0.04						<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	<0.04	0.05	0.31	1.35	<0.04						<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	0.10	0.34	<0.04						<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	0.06	0.33	1.07	<0.04						<0.04	mg/kg	TM4/PM8
PAH 16 Total	<0.6	0.8	5.0	24.7	<0.6						<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	<0.05	0.10	0.60	2.40	<0.05						<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	<0.02	0.04	0.24	0.93	<0.02						<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	114	113	111	107	111						<0	%	TM4/PM8
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1	<0.1	<0.1 SV	<0.1	<0.1						<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1	<0.1	<0.1 SV	<0.1	<0.1						<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1	<0.1 SV	<0.1	<0.1						<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	6.2	1.6	<0.2	<0.2						<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	11	8	<4	<4						<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	14	21	<7	<7						<7	mg/kg	TM5/PM16
>C21-C35 #M	<7	207	145	8	<7						<7	mg/kg	TM5/PM16
>C35-C44	<7	76	50	<7	<7						<7	mg/kg	TM5/PM16
Total aliphatics C5-44	<26	314	226	<26	<26						<26	mg/kg	TM5/TM36/PM16
Aromatics													
>C5-EC7 #	<0.1	<0.1	<0.1 SV	<0.1	<0.1						<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	<0.1	<0.1 SV	<0.1	<0.1						<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1	<0.1	<0.1 SV	<0.1	<0.1						<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	1.0	<0.2	<0.2						<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	<4	14	<4	<4						<4	mg/kg	TM5/PM16
>EC16-EC21 #	<7	16	38	60	<7						<7	mg/kg	TM5/PM16
>EC21-EC35 #	<7	200	179	140	<7						<7	mg/kg	TM5/PM16
>EC35-EC44	<7	71	66	37	<7						<7	mg/kg	TM5/PM16
Total aromatics C5-44	<26	287	298	237	<26						<26	mg/kg	TM5/TM36/PM16
Total aliphatics and aromatics(C5-44)	<52	601	524	237	<52						<52	mg/kg	TM5/TM36/PM16

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

J E Sample No.	270-272	276-278	292-293	302-304	312-313						LOD/LOR	Units	Method No.
Sample ID	TP128	TP130	DS14	DS20	DS25								
Depth	2.50	1.50	0.80	1.50	0.50								
COC No / misc													
Containers	V J T	V J T	V J	V J T	V J								
Sample Date	26/01/2017	26/01/2017	26/01/2017	27/01/2017	27/01/2017								
Sample Type	Soil	Soil	Soil	Soil	Soil								
Batch Number	8	8	8	8	8								
Date of Receipt	31/01/2017	31/01/2017	31/01/2017	31/01/2017	31/01/2017								
MTBE #	<5	<5	<5 SV	<5	<5						<5	ug/kg	TM31/PM12
Benzene #	<5	<5	<5 SV	<5	<5						<5	ug/kg	TM31/PM12
Toluene #	<5	<5	<5 SV	<5	<5						<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5	<5 SV	<5	<5						<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	<5	<5 SV	<5	<5						<5	ug/kg	TM31/PM12
o-Xylene #	<5	<5	<5 SV	<5	<5						<5	ug/kg	TM31/PM12
PCB 77	-	-	<5	-	-						<5	ug/kg	TM16/PM8
PCB 81	-	-	<5	-	-						<5	ug/kg	TM16/PM8
PCB 105	-	-	<5	-	-						<5	ug/kg	TM16/PM8
PCB 114	-	-	<5	-	-						<5	ug/kg	TM16/PM8
PCB 118	-	-	<5	-	-						<5	ug/kg	TM16/PM8
PCB 123	-	-	<5	-	-						<5	ug/kg	TM16/PM8
PCB 126	-	-	<5	-	-						<5	ug/kg	TM16/PM8
PCB 156	-	-	<5	-	-						<5	ug/kg	TM16/PM8
PCB 157	-	-	<5	-	-						<5	ug/kg	TM16/PM8
PCB 167	-	-	<5	-	-						<5	ug/kg	TM16/PM8
PCB 169	-	-	<5	-	-						<5	ug/kg	TM16/PM8
PCB 189	-	-	<5	-	-						<5	ug/kg	TM16/PM8
Total 12 PCBs	-	-	<60	-	-						<60	ug/kg	TM16/PM8
Phenol #M	<0.01	<0.01	<0.01	<0.01	<0.01						<0.01	mg/kg	TM26/PM21
Natural Moisture Content	89.1	-	-	-	-						<0.1	%	PM4/PM0
Natural Moisture Content	-	24.0	25.4	13.1	7.3						<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3						<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #M	306	-	-	-	-						<3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext)	-	0.1250	0.1456	0.0521	<0.0015						<0.0015	g/l	TM38/PM60
Free Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5						<0.5	mg/kg	TM89/PM45
Total Cyanide #M	<0.5	5.2	<0.5	0.9	<0.5						<0.5	mg/kg	TM89/PM45
Fraction Organic Carbon	0.006	NDP	NDP	NDP	NDP						<0.001	None	TM21/PM24
pH #M	8.28	8.77	8.04	7.38	8.43						<0.01	pH units	TM73/PM11
Sample Type	Sand	NDP	NDP	NDP	NDP							None	PM13/PM0
Sample Colour	Light Grey	NDP	NDP	NDP	NDP							None	PM13/PM0
Other Items	NA	NDP	NDP	NDP	NDP							None	PM13/PM0

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/2576	8	TP128	2.50	271	03/02/2017	**General Description (Bulk Analysis)**	Soil
					03/02/2017	**Asbestos Fibres**	NAD
					03/02/2017	**Asbestos Fibres (2)**	NAD
					03/02/2017	**Asbestos ACM**	NAD
					03/02/2017	**Asbestos ACM (2)**	NAD
					03/02/2017	**Asbestos Type**	NAD
					03/02/2017	**Asbestos Type (2)**	NAD
					03/02/2017	**Asbestos Level Screen**	NAD
17/2576	8	TP130	1.50	277	03/02/2017	**General Description (Bulk Analysis)**	Soil/Stone
					03/02/2017	**Asbestos Fibres**	Fibre Bundles
					03/02/2017	**Asbestos Fibres (2)**	Fibre Bundles
					03/02/2017	**Asbestos ACM**	NAD
					03/02/2017	**Asbestos ACM (2)**	NAD
					03/02/2017	**Asbestos Type**	Amosite
					03/02/2017	**Asbestos Type (2)**	Chrysotile
					03/02/2017	**Asbestos Level Screen**	<0.1%
17/2576	8	DS14	0.80	293	03/02/2017	**General Description (Bulk Analysis)**	Soil/Stone/Silt
					03/02/2017	**Asbestos Fibres**	Fibre Bundles
					03/02/2017	**Asbestos ACM**	NAD
					03/02/2017	**Asbestos Type**	Chrysotile
					03/02/2017	**Asbestos Level Screen**	<0.1%
17/2576	8	DS20	1.50	303	03/02/2017	**General Description (Bulk Analysis)**	Soil/Stone
					03/02/2017	**Asbestos Fibres**	Fibre Bundles
					03/02/2017	**Asbestos ACM**	NAD
					03/02/2017	**Asbestos Type**	Chrysotile
					03/02/2017	**Asbestos Level Screen**	<0.1%
17/2576	8	DS25	0.50	313	03/02/2017	**General Description (Bulk Analysis)**	Soil/Stone
					03/02/2017	**Asbestos Fibres**	Fibre Bundles
					03/02/2017	**Asbestos ACM**	NAD
					03/02/2017	**Asbestos Type**	Chrysotile
					03/02/2017	**Asbestos Level Screen**	<0.1%

Client Name: WYG **Matrix : Solid**
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
17/2576	8	TP130	1.50	276-278	Asbestos detected in sample
17/2576	8	DS14	0.80	292-293	Asbestos detected in sample
17/2576	8	DS20	1.50	302-304	Asbestos detected in sample
17/2576	8	DS25	0.50	312-313	Asbestos detected in sample

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 17/2576						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/2576

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.			AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.	Yes	Yes	AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM60	As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes	Yes	AD	Yes
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM61	As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP.			AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.			AR	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes	Yes	AR	Yes

Exova Jones Environmental

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WYG
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Trafford Wharf Road
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M17 1HH

Attention :	Kathryn Ellis
Date :	8th March, 2017
Your reference :	A090070-193
Our reference :	Test Report 17/2576 Batch 9
Location :	East Lancashire Paper Mill
Date samples received :	31st January, 2017
Status :	Final report
Issue :	3

Thirteen samples were received for analysis on 31st January, 2017 of which six were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	314-315	320-322	325-327	328-329	338-339						LOD/LOR	Units	Method No.
Sample ID	DS17	DS17	DS17	DS22	DS27								
Depth	0.30	1.60	3.80	0.30	0.30								
COC No / misc													
Containers	V J	V J T	V J T	V J	V J								
Sample Date	30/01/2017 09:00	30/01/2017 09:30	30/01/2017 09:50	30/01/2017 11:00	30/01/2017 14:30								
Sample Type	Soil	Soil	Soil	Soil	Soil								
Batch Number	9	9	9	9	9								
Date of Receipt	31/01/2017	31/01/2017	31/01/2017	31/01/2017	31/01/2017								
Arsenic	72.2	2.7	16.4	34.9	124.9						<0.5	mg/kg	TM30/PM62
Beryllium	2.2	<0.5	<0.5	1.4	1.5						<0.5	mg/kg	TM30/PM62
Cadmium	1.7	<0.1	0.1	0.3	0.7						<0.1	mg/kg	TM30/PM62
Chromium	25.5	4.1	7.4	13.5	16.7						<0.5	mg/kg	TM30/PM62
Copper	283	10	36	75	201						<1	mg/kg	TM30/PM62
Lead	2166	12	49	120	311						<5	mg/kg	TM30/PM62
Mercury	0.5	<0.1	<0.1	<0.1	0.5						<0.1	mg/kg	TM30/PM62
Nickel	27.8	5.1	9.9	42.6	25.8						<0.7	mg/kg	TM30/PM62
Selenium	<1	<1	<1	1	<1						<1	mg/kg	TM30/PM62
Vanadium	29	4	14	36	29						<1	mg/kg	TM30/PM62
Water Soluble Boron	0.4	0.8	0.7	0.6	0.2						<0.1	mg/kg	TM74/PM61
Zinc	242	16	47	88	139						<5	mg/kg	TM30/PM62
PAH MS													
Naphthalene #M	<0.04	<0.04	<0.04	1.02	<0.04						<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.03	<0.03						<0.03	mg/kg	TM4/PM8
Acenaphthene #M	<0.05	<0.05	<0.05	0.08	<0.05						<0.05	mg/kg	TM4/PM8
Fluorene #M	<0.04	<0.04	<0.04	0.06	<0.04						<0.04	mg/kg	TM4/PM8
Phenanthrene #M	0.35	<0.03	0.34	0.93	0.07						<0.03	mg/kg	TM4/PM8
Anthracene #	0.09	<0.04	0.09	0.20	<0.04						<0.04	mg/kg	TM4/PM8
Fluoranthene #M	0.72	0.06	0.46	1.21	0.12						<0.03	mg/kg	TM4/PM8
Pyrene #	0.62	0.06	0.40	1.06	0.12						<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.36	<0.06	0.24	0.57	0.12						<0.06	mg/kg	TM4/PM8
Chrysene #M	0.36	0.06	0.26	0.59	0.10						<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	0.49	<0.07	0.34	0.80	0.16						<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.29	<0.04	0.21	0.52	0.11						<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	0.19	<0.04	0.11	0.31	<0.04						<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	0.08	<0.04						<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.16	<0.04	0.11	0.27	0.05						<0.04	mg/kg	TM4/PM8
PAH 16 Total	3.6	<0.6	2.6	7.7	0.9						<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.35	<0.05	0.24	0.58	0.12						<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.14	<0.02	0.10	0.22	0.04						<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	109	85	102	99	108						<0	%	TM4/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	314-315	320-322	325-327	328-329	338-339							
Sample ID	DS17	DS17	DS17	DS22	DS27							
Depth	0.30	1.60	3.80	0.30	0.30							
COC No / misc												
Containers	V J	V J T	V J T	V J	V J							
Sample Date	30/01/2017 09:00	30/01/2017 09:30	30/01/2017 09:50	30/01/2017 11:00	30/01/2017 14:30							
Sample Type	Soil	Soil	Soil	Soil	Soil							
Batch Number	9	9	9	9	9							
Date of Receipt	31/01/2017	31/01/2017	31/01/2017	31/01/2017	31/01/2017							

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
TPH CWG													
Aliphatics													
>C5-C6 #M	<0.1	<1.0 SV AA	<0.1	<0.1 SV	<0.1						<0.1	mg/kg	TM36/PM12
>C6-C8 #M	<0.1	<1.0 SV AA	<0.1	<0.1 SV	<0.1						<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<1.0 SV AA	<0.1	<0.1 SV	<0.1						<0.1	mg/kg	TM36/PM12
>C10-C12 #M	<0.2	<0.2	<0.2	7.5	<0.2						<0.2	mg/kg	TM5/PM16
>C12-C16 #M	<4	<4	<4	17	<4						<4	mg/kg	TM5/PM16
>C16-C21 #M	<7	<7	<7	25	10						<7	mg/kg	TM5/PM16
>C21-C35 #M	13	<7	<7	89	173						<7	mg/kg	TM5/PM16
>C35-C44	<7	<7	<7	11	17						<7	mg/kg	TM5/PM16
Total aliphatics C5-44	<26	<26	<26	150	200						<26	mg/kg	TM5/TM36/PM12/PM16
Aromatics													
>C5-EC7 #	<0.1	<1.0 SV AA	<0.1	<0.1 SV	<0.1						<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	<1.0 SV AA	<0.1	<0.1 SV	<0.1						<0.1	mg/kg	TM36/PM12
>EC8-EC10 #M	<0.1	<1.0 SV AA	<0.1	<0.1 SV	<0.1						<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	<0.2	11.7	<0.2						<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	<4	<4	<4	38	<4						<4	mg/kg	TM5/PM16
>EC16-EC21 #	<7	<7	<7	84	<7						<7	mg/kg	TM5/PM16
>EC21-EC35 #	40	<7	<7	214	85						<7	mg/kg	TM5/PM16
>EC35-EC44	24	<7	<7	53	24						<7	mg/kg	TM5/PM16
Total aromatics C5-44	64	<26	<26	401	109						<26	mg/kg	TM5/TM36/PM12/PM16
Total aliphatics and aromatics(C5-44)	64	<52	<52	551	309						<52	mg/kg	TM5/TM36/PM12/PM16
MTBE #	<5	<50 SV AA	<5	<5 SV	<5						<5	ug/kg	TM31/PM12
Benzene #	<5	<50 SV AA	<5	<5 SV	<5						<5	ug/kg	TM31/PM12
Toluene #	<5	<50 SV AA	<5	<5 SV	<5						<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<50 SV AA	<5	<5 SV	<5						<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	<50 SV AA	<5	<5 SV	<5						<5	ug/kg	TM31/PM12
o-Xylene #	<5	<50 SV AA	<5	<5 SV	<5						<5	ug/kg	TM31/PM12
PCB 77	-	-	-	-	<5						<5	ug/kg	TM16/PM8
PCB 81	-	-	-	-	<5						<5	ug/kg	TM16/PM8
PCB 105	-	-	-	-	<5						<5	ug/kg	TM16/PM8
PCB 114	-	-	-	-	<5						<5	ug/kg	TM16/PM8
PCB 118	-	-	-	-	<5						<5	ug/kg	TM16/PM8
PCB 123	-	-	-	-	<5						<5	ug/kg	TM16/PM8
PCB 126	-	-	-	-	<5						<5	ug/kg	TM16/PM8
PCB 156	-	-	-	-	<5						<5	ug/kg	TM16/PM8
PCB 157	-	-	-	-	<5						<5	ug/kg	TM16/PM8
PCB 167	-	-	-	-	<5						<5	ug/kg	TM16/PM8
PCB 169	-	-	-	-	<5						<5	ug/kg	TM16/PM8
PCB 189	-	-	-	-	<5						<5	ug/kg	TM16/PM8
Total 12 PCBs	-	-	-	-	<60						<60	ug/kg	TM16/PM8

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	314-315	320-322	325-327	328-329	338-339						LOD/LOR	Units	Method No.
Sample ID	DS17	DS17	DS17	DS22	DS27								
Depth	0.30	1.60	3.80	0.30	0.30								
COC No / misc													
Containers	V J	V J T	V J T	V J	V J								
Sample Date	30/01/2017 09:00	30/01/2017 09:30	30/01/2017 09:50	30/01/2017 11:00	30/01/2017 14:30								
Sample Type	Soil	Soil	Soil	Soil	Soil								
Batch Number	9	9	9	9	9								
Date of Receipt	31/01/2017	31/01/2017	31/01/2017	31/01/2017	31/01/2017								
Phenol #M	<0.01	<0.01	<0.01	0.03	<0.01						<0.01	mg/kg	TM26/PM21
Natural Moisture Content	21.6	96.3	42.8	27.3	21.6						<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3						<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext)	0.0186	0.0204	0.1035	0.0125	0.0064						<0.0015	g/l	TM38/PM60
Free Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5						<0.5	mg/kg	TM89/PM45
Total Cyanide #M	0.7	<0.5	<0.5	<0.5	<0.5						<0.5	mg/kg	TM89/PM45
Fraction Organic Carbon	NDP	NDP	NDP	NDP	NDP						<0.001	None	TM21/PM24
Sulphide	-	<10	<10	-	-						<10	mg/kg	TM106/PM45
Elemental Sulphur	-	<1	<1	-	-						<1	mg/kg	TM108/PM8
pH #M	8.04	7.75	7.82	8.03	6.97						<0.01	pH units	TM73/PM11
Sample Type	NDP	NDP	NDP	NDP	NDP							None	PM13/PM0
Sample Colour	NDP	NDP	NDP	NDP	NDP							None	PM13/PM0
Other Items	NDP	NDP	NDP	NDP	NDP							None	PM13/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	320-322	332-334									LOD/LOR	Units	Method No.
Sample ID	DS17	DS22											
Depth	1.60	3.90											
COC No / misc													
Containers	V J T	V J T											
Sample Date	30/01/2017 09:30	30/01/2017 11:10											
Sample Type	Soil	Soil											
Batch Number	9	9											
Date of Receipt	31/01/2017	31/01/2017											
Dissolved Arsenic #	2.8	5.5									<0.9	ug/l	TM30/PM14
Dissolved Boron #	70	14									<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.03	<0.03									<0.03	ug/l	TM30/PM14
Dissolved Chromium #	<0.2	0.6									<0.2	ug/l	TM30/PM14
Dissolved Copper #	<3	<3									<3	ug/l	TM30/PM14
Dissolved Lead #	<0.4	<0.4									<0.4	ug/l	TM30/PM14
Dissolved Nickel #	<0.2	0.7									<0.2	ug/l	TM30/PM14
Dissolved Selenium #	<1.2	<1.2									<1.2	ug/l	TM30/PM14
Dissolved Zinc #	<3	<3									<3	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	<0.01	<0.01									<0.01	ug/l	TM61/PM38
Sulphate as SO4 #	6.70	11.44									<0.05	mg/l	TM38/PM0
Ammoniacal Nitrogen as N #	0.03	<0.03									<0.03	mg/l	TM38/PM0
Total Cyanide #	<0.005	<0.005									<0.005	mg/l	TM89/PM0
pH	8.16	8.09									<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

SVOC Report : **Solid**

J E Sample No.	320-322	325-327											
Sample ID	DS17	DS17											
Depth	1.60	3.80									Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V J T	V J T											
Sample Date	30/01/2017 09:30	30/01/2017 09:50											
Sample Type	Soil	Soil											
Batch Number	9	9											
Date of Receipt	31/01/2017	31/01/2017									LOD/LOR	Units	Method No.
SVOC MS													
Phenols													
2-Chlorophenol #M	<10	<10									<10	ug/kg	TM16/PM8
2-Methylphenol	<10	<10									<10	ug/kg	TM16/PM8
2-Nitrophenol	<10	<10									<10	ug/kg	TM16/PM8
2,4-Dichlorophenol #M	<10	<10									<10	ug/kg	TM16/PM8
2,4-Dimethylphenol	<10	<10									<10	ug/kg	TM16/PM8
2,4,5-Trichlorophenol	<10	<10									<10	ug/kg	TM16/PM8
2,4,6-Trichlorophenol	<10	<10									<10	ug/kg	TM16/PM8
4-Chloro-3-methylphenol	<10	<10									<10	ug/kg	TM16/PM8
4-Methylphenol	<10	<10									<10	ug/kg	TM16/PM8
4-Nitrophenol	<10	<10									<10	ug/kg	TM16/PM8
Pentachlorophenol	<10	<10									<10	ug/kg	TM16/PM8
Phenol #M	<10	<10									<10	ug/kg	TM16/PM8
PAHs													
2-Chloronaphthalene #M	<10	<10									<10	ug/kg	TM16/PM8
2-Methylnaphthalene #M	<10	83									<10	ug/kg	TM16/PM8
Phthalates													
Bis(2-ethylhexyl) phthalate	<100	2716									<100	ug/kg	TM16/PM8
Butylbenzyl phthalate	<100	<100									<100	ug/kg	TM16/PM8
Di-n-butyl phthalate	<100	<100									<100	ug/kg	TM16/PM8
Di-n-Octyl phthalate	<100	<100									<100	ug/kg	TM16/PM8
Diethyl phthalate	<100	<100									<100	ug/kg	TM16/PM8
Dimethyl phthalate #M	<100	<100									<100	ug/kg	TM16/PM8
Other SVOCs													
1,2-Dichlorobenzene	<10	<10									<10	ug/kg	TM16/PM8
1,2,4-Trichlorobenzene #M	<10	<10									<10	ug/kg	TM16/PM8
1,3-Dichlorobenzene	<10	<10									<10	ug/kg	TM16/PM8
1,4-Dichlorobenzene	<10	<10									<10	ug/kg	TM16/PM8
2-Nitroaniline	<10	<10									<10	ug/kg	TM16/PM8
2,4-Dinitrotoluene	<10	<10									<10	ug/kg	TM16/PM8
2,6-Dinitrotoluene	<10	<10									<10	ug/kg	TM16/PM8
3-Nitroaniline	<10	<10									<10	ug/kg	TM16/PM8
4-Bromophenylphenylether #M	<10	<10									<10	ug/kg	TM16/PM8
4-Chloroaniline	<10	<10									<10	ug/kg	TM16/PM8
4-Chlorophenylphenylether	<10	<10									<10	ug/kg	TM16/PM8
4-Nitroaniline	<10	<10									<10	ug/kg	TM16/PM8
Azobenzene	<10	<10									<10	ug/kg	TM16/PM8
Bis(2-chloroethoxy)methane	<10	<10									<10	ug/kg	TM16/PM8
Bis(2-chloroethyl)ether	<10	<10									<10	ug/kg	TM16/PM8
Carbazole	<10	67									<10	ug/kg	TM16/PM8
Dibenzofuran #M	<10	56									<10	ug/kg	TM16/PM8
Hexachlorobenzene	<10	<10									<10	ug/kg	TM16/PM8
Hexachlorobutadiene #M	<10	<10									<10	ug/kg	TM16/PM8
Hexachlorocyclopentadiene	<10	<10									<10	ug/kg	TM16/PM8
Hexachloroethane	<10	<10									<10	ug/kg	TM16/PM8
Isophorone #M	<10	<10									<10	ug/kg	TM16/PM8
N-nitrosodi-n-propylamine #M	<10	<10									<10	ug/kg	TM16/PM8
Nitrobenzene #M	<10	<10									<10	ug/kg	TM16/PM8
Surrogate Recovery 2-Fluorobiphenyl	16	74									<0	%	TM16/PM8
Surrogate Recovery p-Terphenyl-d14	71	76									<0	%	TM16/PM8

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/2576	9	DS17	0.30	315	03/02/2017	**General Description (Bulk Analysis)**	soil-stones
					03/02/2017	**Asbestos Fibres**	Fibre Bundles
					03/02/2017	**Asbestos ACM**	NAD
					03/02/2017	**Asbestos Type**	Chrysotile
					03/02/2017	**Asbestos Level Screen**	Asbestos level cannot be determined at this stage of analysis
17/2576	9	DS17	1.60	321	13/02/2017	**General Description (Bulk Analysis)**	soil/stones
					13/02/2017	**Asbestos Fibres**	Fibre Bundles
					13/02/2017	**Asbestos ACM**	NAD
					13/02/2017	**Asbestos Type**	Crocidolite
					13/02/2017	**Asbestos Level Screen**	<0.1%
17/2576	9	DS17	3.80	326	13/02/2017	**General Description (Bulk Analysis)**	soil/stones
					13/02/2017	**Asbestos Fibres**	Fibre Bundles
					13/02/2017	**Asbestos Fibres (2)**	Fibre Bundles
					13/02/2017	**Asbestos ACM**	NAD
					13/02/2017	**Asbestos ACM (2)**	NAD
					13/02/2017	**Asbestos Type**	Chrysotile
					13/02/2017	**Asbestos Type (2)**	Crocidolite
					13/02/2017	**Asbestos Level Screen**	<0.1%
17/2576	9	DS22	0.30	329	03/02/2017	**General Description (Bulk Analysis)**	soil-stones
					03/02/2017	**Asbestos Fibres**	Fibre Bundles
					03/02/2017	**Asbestos Fibres (2)**	Fibre Bundles
					03/02/2017	**Asbestos Fibres (3)**	Fibre Bundles
					03/02/2017	**Asbestos ACM**	Insulation Debris
					03/02/2017	**Asbestos ACM (2)**	Insulation Debris
					03/02/2017	**Asbestos ACM (3)**	Insulation Debris
					03/02/2017	**Asbestos Type**	Chrysotile
					03/02/2017	**Asbestos Type (2)**	Amosite
					03/02/2017	**Asbestos Type (3)**	Crocidolite
					03/02/2017	**Asbestos Level Screen**	Asbestos level cannot be determined at this stage of analysis
					08/03/2017	**Asbestos Gravimetric Quantification**	0.134 (mass %)
					08/03/2017	**Asbestos PCOM Quantification (Fibres)**	0.007 (mass %)
					08/03/2017	**Asbestos Gravimetric & PCOM Total**	0.141 (mass %)
17/2576	9	DS27	0.30	339	03/02/2017	**General Description (Bulk Analysis)**	soil-stones
					03/02/2017	**Asbestos Fibres**	Fibre Bundles
					03/02/2017	**Asbestos ACM**	NAD

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/2576	9	DS27	0.30	339	03/02/2017	**Asbestos Type**	Chrysotile
					03/02/2017	**Asbestos Level Screen**	<0.1%

Client Name: WYG **Matrix : Solid**
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
17/2576	9	DS17	0.30	314-315	Asbestos detected in sample
17/2576	9	DS17	1.60	320-322	Asbestos detected in sample
17/2576	9	DS17	3.80	325-327	Asbestos detected in sample
17/2576	9	DS22	0.30	328-329	Asbestos detected in sample
17/2576	9	DS27	0.30	338-339	Asbestos detected in sample

Client Name: WYG

Matrix : Solid

Reference: A090070-193

Location: East Lancashire Paper Mill

Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
17/2576	9	DS17	1.60	320-322	GRO	Sample holding time exceeded
17/2576	9	DS17	3.80	325-327	GRO	Sample holding time exceeded

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/2576

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x10 Dilution

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes	Yes	AR	Yes
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM12/PM16	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis./Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM21	Modified USEPA 415.1. Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.			AD	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.	Yes	Yes	AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes		AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes	Yes	AR	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM60	As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid.			AR	Yes
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	Yes
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM61	As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP.			AR	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM0	No preparation is required.	Yes		AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.			AR	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes	Yes	AR	Yes
TM106	Determination of Sulphide by Skalar Continuous Flow Analyser	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.			AR	Yes
TM108	Determination of Elemental Sulphur by Reversed Phase High Performance Liquid Chromatography with Ultra Violet spectroscopy.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
NONE	No Method Code	PM17	Modified method EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.				
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.			AR	

Exova Jones Environmental

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WYG
Quay West at MediaCityUK
Trafford Wharf Road
Trafford Park
Manchester
M17 1HH

Attention :	Kathryn Ellis
Date :	9th February, 2017
Your reference :	A090070-193
Our reference :	Test Report 17/2576 Batch 10
Location :	East Lancashire Paper Mill
Date samples received :	3rd February, 2017
Status :	Final report
Issue :	1

Seven samples were received for analysis on 3rd February, 2017 of which five were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	342-343	344-345	348-349	350-351	354-355						LOD/LOR	Units	Method No.
Sample ID	DS1 OHP	HP5	HP6	HP8	HP7								
Depth	0.40	0.40	0.60	0.50	0.70								
COC No / misc													
Containers	V J	V J	V J	V J	V J								
Sample Date	01/02/2017 12:30	01/02/2017 13:00	01/02/2017 14:00	01/02/2017 14:30	01/02/2017 15:30								
Sample Type	Soil	Soil	Soil	Soil	Soil								
Batch Number	10	10	10	10	10								
Date of Receipt	03/02/2017	03/02/2017	03/02/2017	03/02/2017	03/02/2017								
Arsenic #M	-	-	-	-	40.5						<0.5	mg/kg	TM30/PM15
Arsenic	28.8	25.7	84.8	129.9	-						<0.5	mg/kg	TM30/PM62
Beryllium	-	-	-	-	3.8						<0.5	mg/kg	TM30/PM15
Beryllium	1.7	1.2	4.2	2.1	-						<0.5	mg/kg	TM30/PM62
Cadmium #M	-	-	-	-	<0.1						<0.1	mg/kg	TM30/PM15
Cadmium	0.5	0.5	0.8	1.6	-						<0.1	mg/kg	TM30/PM62
Chromium #M	-	-	-	-	41.2						<0.5	mg/kg	TM30/PM15
Chromium	28.6	21.6	31.9	41.4	-						<0.5	mg/kg	TM30/PM62
Copper #M	-	-	-	-	87						<1	mg/kg	TM30/PM15
Copper	94	61	194	161	-						<1	mg/kg	TM30/PM62
Lead #M	-	-	-	-	165						<5	mg/kg	TM30/PM15
Lead	145	137	583	618	-						<5	mg/kg	TM30/PM62
Mercury #M	-	-	-	-	0.9						<0.1	mg/kg	TM30/PM15
Mercury	<0.1	0.1	0.1	0.4	-						<0.1	mg/kg	TM30/PM62
Nickel #M	-	-	-	-	63.6						<0.7	mg/kg	TM30/PM15
Nickel	24.5	21.3	74.7	40.0	-						<0.7	mg/kg	TM30/PM62
Selenium #M	-	-	-	-	1						<1	mg/kg	TM30/PM15
Selenium	<1	<1	1	3	-						<1	mg/kg	TM30/PM62
Vanadium	-	-	-	-	74						<1	mg/kg	TM30/PM15
Vanadium	37	30	84	43	-						<1	mg/kg	TM30/PM62
Water Soluble Boron #M	-	-	-	-	0.4						<0.1	mg/kg	TM74/PM32
Water Soluble Boron	0.5	0.4	0.6	0.5	-						<0.1	mg/kg	TM74/PM61
Zinc #M	-	-	-	-	63						<5	mg/kg	TM30/PM15
Zinc	143	128	337	540	-						<5	mg/kg	TM30/PM62

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	342-343	344-345	348-349	350-351	354-355							
Sample ID	DS1 OHP	HP5	HP6	HP8	HP7							
Depth	0.40	0.40	0.60	0.50	0.70							
COC No / misc												
Containers	V J	V J	V J	V J	V J							
Sample Date	01/02/2017 12:30	01/02/2017 13:00	01/02/2017 14:00	01/02/2017 14:30	01/02/2017 15:30							
Sample Type	Soil	Soil	Soil	Soil	Soil							
Batch Number	10	10	10	10	10							
Date of Receipt	03/02/2017	03/02/2017	03/02/2017	03/02/2017	03/02/2017							

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
PAH MS													
Naphthalene #M	<0.04	<0.04	0.30	0.87	0.05						<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	0.24	0.37	<0.03						<0.03	mg/kg	TM4/PM8
Acenaphthene #M	<0.05	0.07	0.33	3.31	<0.05						<0.05	mg/kg	TM4/PM8
Fluorene #M	<0.04	0.06	0.23	1.94	<0.04						<0.04	mg/kg	TM4/PM8
Phenanthrene #M	<0.03	0.58	2.67	20.03	0.09						<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	0.18	0.72	5.07	<0.04						<0.04	mg/kg	TM4/PM8
Fluoranthene #M	<0.03	1.08	5.04	28.03	0.14						<0.03	mg/kg	TM4/PM8
Pyrene #	<0.03	0.92	4.46	23.59	0.12						<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	<0.06	0.52	2.43	11.58	0.11						<0.06	mg/kg	TM4/PM8
Chrysene #M	<0.02	0.47	2.06	11.23	0.09						<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #M	<0.07	0.80	3.86	18.68	0.12						<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04	0.34	1.57	7.60	0.07						<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #M	<0.04	0.45	2.03	10.69	<0.04						<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	0.17	0.78	3.71	<0.04						<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	0.33	1.55	7.59	<0.04						<0.04	mg/kg	TM4/PM8
PAH 16 Total	<0.6	6.0	28.3	154.3	0.8						<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	<0.05	0.58	2.78	13.45	0.09						<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	<0.02	0.22	1.08	5.23	0.03						<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	115	104	116	111	104						<0	%	TM4/PM8
EPH >C8-C10 #M	<5	<5	<5	<5	<5						<5	mg/kg	TM5/PM8
EPH >C10-C12 #M	<10	<10	<10	<10	<10						<10	mg/kg	TM5/PM8
EPH >C12-C16 #M	<10	<10	14	45	<10						<10	mg/kg	TM5/PM8
EPH >C16-C21 #M	<10	65	76	322	<10						<10	mg/kg	TM5/PM8
EPH >C21-C40	252	354	384	1090	<10						<10	mg/kg	TM5/PM8
EPH >C8-C40	252	419	474	1457	<30						<30	mg/kg	TM5/PM8
Total Phenols HPLC	<0.15	<0.15	<0.15	<0.15	<0.15						<0.15	mg/kg	TM26/PM21
Natural Moisture Content	-	-	-	-	19.4						<0.1	%	PM4/PM0
Natural Moisture Content	53.8	21.2	28.5	25.9	-						<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3						<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #M	-	-	-	-	0.0706						<0.0015	g/l	TM38/PM20
Sulphate as SO4 (2:1 Ext)	0.0311	0.0091	0.0131	0.0077	-						<0.0015	g/l	TM38/PM60
Free Cyanide	<0.5	<0.5	<0.5	<0.5	<0.5						<0.5	mg/kg	TM89/PM45
pH #M	4.50	7.88	7.73	6.55	6.74						<0.01	pH units	TM73/PM11
Sample Type	NDP	NDP	NDP	NDP	Sand							None	PM13/PM0
Sample Colour	NDP	NDP	NDP	NDP	Dark Brown							None	PM13/PM0
Other Items	NDP	NDP	NDP	NDP	Stones, brick							None	PM13/PM0

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

Note:

Analysis was carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
17/2576	10	DS1 OHP	0.40	343	06/02/2017	**General Description (Bulk Analysis)**	Soil/Stones
					06/02/2017	**Asbestos Fibres**	Fibre Bundles
					06/02/2017	**Asbestos ACM**	NAD
					06/02/2017	**Asbestos Type**	Chrysotile
					06/02/2017	**Asbestos Level Screen**	<0.1%
17/2576	10	HP5	0.40	345	06/02/2017	**General Description (Bulk Analysis)**	Soil/Stones
					06/02/2017	**Asbestos Fibres**	Fibre Bundles
					06/02/2017	**Asbestos ACM**	NAD
					06/02/2017	**Asbestos Type**	Amosite
					06/02/2017	**Asbestos Level Screen**	<0.1%
17/2576	10	HP6	0.60	349	06/02/2017	**General Description (Bulk Analysis)**	Soil/Stones
					06/02/2017	**Asbestos Fibres**	Fibre Bundles
					06/02/2017	**Asbestos ACM**	NAD
					06/02/2017	**Asbestos Type**	Amosite
					06/02/2017	**Asbestos Level Screen**	<0.1%
17/2576	10	HP8	0.50	351	06/02/2017	**General Description (Bulk Analysis)**	soil-stones
					06/02/2017	**Asbestos Fibres**	Fibre Bundles
					06/02/2017	**Asbestos ACM**	NAD
					06/02/2017	**Asbestos Type**	Chrysotile
					06/02/2017	**Asbestos Level Screen**	<0.1%
17/2576	10	HP7	0.70	355	06/02/2017	**General Description (Bulk Analysis)**	soil-stones
					06/02/2017	**Asbestos Fibres**	NAD
					06/02/2017	**Asbestos Fibres (2)**	NAD
					06/02/2017	**Asbestos ACM**	NAD
					06/02/2017	**Asbestos ACM (2)**	NAD
					06/02/2017	**Asbestos Type**	NAD
					06/02/2017	**Asbestos Type (2)**	NAD
					06/02/2017	**Asbestos Level Screen**	NAD

Client Name: WYG **Matrix : Solid**
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	NDP Reason
17/2576	10	DS1 OHP	0.40	342-343	Asbestos detected in sample
17/2576	10	HP5	0.40	344-345	Asbestos detected in sample
17/2576	10	HP6	0.60	348-349	Asbestos detected in sample
17/2576	10	HP8	0.50	350-351	Asbestos detected in sample

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 17/2576						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/2576

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.				
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes	Yes	AR	Yes
PM13	A visual examination of the solid sample is carried out to ascertain sample make up, colour and any other inclusions. This is not a geotechnical description.	PM0	No preparation is required.			AR	
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.			AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes	Yes	AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM62	Acid digestion of as received solid samples using Aqua Regia refluxed at 112.5 °C.			AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes	Yes	AD	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM60	As received solid samples are extracted with deionised water in a 2:1 ratio of water to solid.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.			AR	
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes	Yes	AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes	Yes	AD	Yes
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM61	As received solid samples are extracted with hot water in a 20:1 ratio of water to soil ready for analysis by ICP.			AR	Yes

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.			AR	Yes

Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

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WYG
Quay West at MediaCityUK
Trafford Wharf Road
Trafford Park
Manchester
M17 1HH

Attention :	Kathryn Ellis
Date :	22nd February, 2017
Your reference :	A090070-193
Our reference :	Test Report 17/2576 Batch 11
Location :	East Lancashire Paper Mill
Date samples received :	10th February, 2017
Status :	Final report
Issue :	1

Six samples were received for analysis on 10th February, 2017 of which six were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	356-364	365-373	374-382	383-391	392-400	401-409					LOD/LOR	Units	Method No.
Sample ID	SW3	SW4	SW1	SW5	SW6	SW2							
Depth													
COC No / misc													
Containers	V H HN N Z P G	V H HN N Z P G	V H HN N Z P G	V H HN N Z P G	V H HN N Z P G	V H HN N Z P G							
Sample Date	09/02/2017 09:30	09/02/2017 10:30	09/02/2017 11:00	09/02/2017 11:30	09/02/2017 12:00	09/02/2017 12:30							
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water							
Batch Number	11	11	11	11	11	11							
Date of Receipt	10/02/2017	10/02/2017	10/02/2017	10/02/2017	10/02/2017	10/02/2017							
Dissolved Aluminium #	-	6.7	13.0	-	-	12.7					<1.5	ug/l	TM30/PM14
Dissolved Antimony #	<2	<2	2	<2	<2	<2					<2	ug/l	TM30/PM14
Dissolved Arsenic #	1.3	1.3	<0.9	10.5	<0.9	1.3					<0.9	ug/l	TM30/PM14
Dissolved Barium #	52.6	31.6	40.4	36.8	48.2	39.7					<1.8	ug/l	TM30/PM14
Dissolved Beryllium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	ug/l	TM30/PM14
Dissolved Boron	50	17	47	71	38	42					<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03					<0.03	ug/l	TM30/PM14
Total Dissolved Chromium #	0.7	<0.2	<0.2	<0.2	<0.2	<0.2					<0.2	ug/l	TM30/PM14
Dissolved Copper #	<3	<3	<3	<3	4	<3					<3	ug/l	TM30/PM14
Total Dissolved Iron #	-	254.9	206.6	-	-	182.2					<4.7	ug/l	TM30/PM14
Dissolved Lead #	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4					<0.4	ug/l	TM30/PM14
Dissolved Molybdenum #	0.7	0.5	0.7	2.1	<0.2	0.2					<0.2	ug/l	TM30/PM14
Dissolved Nickel #	1.5	1.3	2.2	1.2	2.2	2.1					<0.2	ug/l	TM30/PM14
Dissolved Selenium #	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2					<1.2	ug/l	TM30/PM14
Dissolved Zinc #	9.6	4.3	11.6	7.8	13.5	13.1					<1.5	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	ug/l	TM61/PM38
Total Hardness Dissolved (as CaCO3)	82	32	108	180	124	110					<1	mg/l	TM30/PM14
PAH MS													
Naphthalene	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	ug/l	TM4/PM30
Acenaphthylene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Acenaphthene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Fluorene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Phenanthrene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Anthracene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Fluoranthene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Pyrene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Benzo(a)anthracene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Chrysene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Benzo(bk)fluoranthene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Benzo(a)pyrene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Indeno(123cd)pyrene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Dibenzo(ah)anthracene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Benzo(ghi)perylene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	ug/l	TM4/PM30
PAH 16 Total	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	ug/l	TM4/PM30
Benzo(b)fluoranthene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Benzo(k)fluoranthene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01					<0.01	ug/l	TM4/PM30
PAH Surrogate % Recovery	88	88	88	85	85	81					<0	%	TM4/PM30
VOC TICs	-	ND	ND	-	-	ND						None	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1					<0.1	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	ug/l	TM15/PM10
Toluene #	<5	<5	<5	<5	<5	<5					<5	ug/l	TM15/PM10
Ethylbenzene #	<1	<1	<1	<1	<1	<1					<1	ug/l	TM15/PM10

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	356-364	365-373	374-382	383-391	392-400	401-409					LOD/LOR	Units	Method No.
Sample ID	SW3	SW4	SW1	SW5	SW6	SW2							
Depth													
COC No / misc													
Containers	V H HN N Z P G	V H HN N Z P G	V H HN N Z P G	V H HN N Z P G	V H HN N Z P G	V H HN N Z P G							
Sample Date	09/02/2017 09:30	09/02/2017 10:30	09/02/2017 11:00	09/02/2017 11:30	09/02/2017 12:00	09/02/2017 12:30							
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water							
Batch Number	11	11	11	11	11	11							
Date of Receipt	10/02/2017	10/02/2017	10/02/2017	10/02/2017	10/02/2017	10/02/2017							
p/m-Xylene #	<2	<2	<2	<2	<2	<2					<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<1	<1	<1	<1					<1	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	108	121	109	109	108	120					<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	96	77	95	94	94	77					<0	%	TM15/PM10
SVOC TICs	-	ND	ND	-	-	ND						None	TM16/PM30
TPH CWG													
Aliphatics													
>C5-C6 #	<10	<10	<10	<10	<10	<10					<10	ug/l	TM36/PM12
>C6-C8 #	<10	<10	<10	<10	<10	<10					<10	ug/l	TM36/PM12
>C8-C10 #	<10	<10	<10	<10	<10	<10					<10	ug/l	TM36/PM12
>C10-C12 #	<5	<5	<5	<5	<5	<5					<5	ug/l	TM5/PM30
>C12-C16 #	<10	<10	<10	<10	<10	<10					<10	ug/l	TM5/PM30
>C16-C21 #	<10	<10	<10	<10	<10	<10					<10	ug/l	TM5/PM30
>C21-C35 #	<10	<10	<10	<10	<10	<10					<10	ug/l	TM5/PM30
Total aliphatics C5-35 #	<10	<10	<10	<10	<10	<10					<10	ug/l	TM5/TM36/PM30/PM12
Aromatics													
>C5-EC7 #	<10	<10	<10	<10	<10	<10					<10	ug/l	TM36/PM12
>EC7-EC8 #	<10	<10	<10	<10	<10	<10					<10	ug/l	TM36/PM12
>EC8-EC10 #	<10	<10	<10	<10	<10	<10					<10	ug/l	TM36/PM12
>EC10-EC12 #	<5	<5	<5	<5	<5	<5					<5	ug/l	TM5/PM30
>EC12-EC16 #	<10	<10	<10	<10	<10	<10					<10	ug/l	TM5/PM30
>EC16-EC21 #	<10	<10	<10	<10	<10	<10					<10	ug/l	TM5/PM30
>EC21-EC35 #	<10	<10	<10	<10	<10	<10					<10	ug/l	TM5/PM30
Total aromatics C5-35 #	<10	<10	<10	<10	<10	<10					<10	ug/l	TM5/TM36/PM30/PM12
Total aliphatics and aromatics(C5-35) #	<10	<10	<10	<10	<10	<10					<10	ug/l	TM5/TM36/PM30/PM12
Phenol	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	ug/l	TM26/PM0
Bromide	-	<0.05	0.09	-	-	0.12					<0.05	mg/l	TM27/PM0
Fluoride	-	<0.3	<0.3	-	-	<0.3					<0.3	mg/l	TM173/PM0
Sulphate #	22.8	10.3	35.1	56.1	28.2	35.0					<0.5	mg/l	TM38/PM0
Chloride #	22.9	7.2	33.3	25.3	35.6	35.3					<0.3	mg/l	TM38/PM0
Nitrate as NO3 #	1.9	1.2	18.1	0.8	7.1	19.6					<0.2	mg/l	TM38/PM0
Nitrite as NO2 #	<0.02	<0.02	0.13	<0.02	0.05	0.14					<0.02	mg/l	TM38/PM0
Ortho Phosphate as PO4 #	-	<0.06	0.31	-	-	0.39					<0.06	mg/l	TM38/PM0
Monoethylene glycol	-	<1	<1	-	-	<1					<1	ug/l	TM24/PM30
Propylene glycol	-	<1	<1	-	-	<1					<1	ug/l	TM24/PM30
Diethylene glycol	-	<1	<1	-	-	<1					<1	ug/l	TM24/PM30
Triethylene glycol	-	<1	<1	-	-	<1					<1	ug/l	TM24/PM30

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	356-364	365-373	374-382	383-391	392-400	401-409					LOD/LOR	Units	Method No.
Sample ID	SW3	SW4	SW1	SW5	SW6	SW2							
Depth													
COC No / misc													
Containers	V H HN N Z P G	V H HN N Z P G	V H HN N Z P G	V H HN N Z P G	V H HN N Z P G	V H HN N Z P G							
Sample Date	09/02/2017 09:30	09/02/2017 10:30	09/02/2017 11:00	09/02/2017 11:30	09/02/2017 12:00	09/02/2017 12:30							
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water							
Batch Number	11	11	11	11	11	11							
Date of Receipt	10/02/2017	10/02/2017	10/02/2017	10/02/2017	10/02/2017	10/02/2017							
Thiodiglycol	-	<1	<1	-	-	<1					<1	ug/l	TM24/PM30
Free Cyanide	<1	<1	1	1	<1	<1					<1	ug/l	TM89/PM0
Total Cyanide	1	<1	2	1	2	1					<1	ug/l	TM89/PM0
Ammoniacal Nitrogen as NH3 #	<0.03	0.08	0.28	<0.03	0.17	0.30					<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as NH4 #	0.03	0.08	0.30	0.03	0.18	0.32					<0.03	mg/l	TM38/PM0
Total Alkalinity as CaCO3 #	70	28	80	140	98	76					<1	mg/l	TM75/PM0
Sulphide	-	<10	<10	-	-	<10					<10	ug/l	TM106/PM0
Dissolved Organic Carbon #	4	4	5	3	5	5					<2	mg/l	TM60/PM0
Formaldehyde	-	<0.5	<0.5	-	-	<0.5					<0.5	mg/l	TM51/PM0
pH #	7.07	6.77	7.37	7.90	7.60	7.48					<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

SVOC Report : **Liquid**

J E Sample No.	365-373	374-382	401-409									
Sample ID	SW4	SW1	SW2									
Depth										Please see attached notes for all abbreviations and acronyms		
COC No / misc												
Containers	V H HN N Z P G	V H HN N Z P G	V H HN N Z P G									
Sample Date	09/02/2017 10:30	09/02/2017 11:00	09/02/2017 12:30									
Sample Type	Ground Water	Ground Water	Ground Water									
Batch Number	11	11	11									
Date of Receipt	10/02/2017	10/02/2017	10/02/2017									
SVOC MS										LOD/LOR	Units	Method No.
Phenols												
2-Chlorophenol #	<1	<1	<1							<1	ug/l	TM16/PM30
2-Methylphenol #	<0.5	<0.5	<0.5							<0.5	ug/l	TM16/PM30
2-Nitrophenol	<0.5	<0.5	<0.5							<0.5	ug/l	TM16/PM30
2,4-Dichlorophenol #	<0.5	<0.5	<0.5							<0.5	ug/l	TM16/PM30
2,4-Dimethylphenol	<1	<1	<1							<1	ug/l	TM16/PM30
2,4,5-Trichlorophenol #	<0.5	<0.5	<0.5							<0.5	ug/l	TM16/PM30
2,4,6-Trichlorophenol	<1	<1	<1							<1	ug/l	TM16/PM30
4-Chloro-3-methylphenol #	<0.5	<0.5	<0.5							<0.5	ug/l	TM16/PM30
4-Methylphenol	<1	<1	<1							<1	ug/l	TM16/PM30
4-Nitrophenol	<10	<10	<10							<10	ug/l	TM16/PM30
Pentachlorophenol	<1	<1	<1							<1	ug/l	TM16/PM30
Phenol	<1	<1	<1							<1	ug/l	TM16/PM30
PAHs												
2-Chloronaphthalene #	<1	<1	<1							<1	ug/l	TM16/PM30
2-Methylnaphthalene #	<1	<1	<1							<1	ug/l	TM16/PM30
Phthalates												
Bis(2-ethylhexyl) phthalate	<5	<5	<5							<5	ug/l	TM16/PM30
Butylbenzyl phthalate	<1	<1	<1							<1	ug/l	TM16/PM30
Di-n-butyl phthalate #	<1.5	<1.5	<1.5							<1.5	ug/l	TM16/PM30
Di-n-Octyl phthalate	<1	<1	<1							<1	ug/l	TM16/PM30
Diethyl phthalate #	<1	<1	<1							<1	ug/l	TM16/PM30
Dimethyl phthalate	<1	<1	<1							<1	ug/l	TM16/PM30
Other SVOCs												
1,2-Dichlorobenzene #	<1	<1	<1							<1	ug/l	TM16/PM30
1,2,4-Trichlorobenzene #	<1	<1	<1							<1	ug/l	TM16/PM30
1,3-Dichlorobenzene #	<1	<1	<1							<1	ug/l	TM16/PM30
1,4-Dichlorobenzene #	<1	<1	<1							<1	ug/l	TM16/PM30
2-Nitroaniline	<1	<1	<1							<1	ug/l	TM16/PM30
2,4-Dinitrotoluene #	<0.5	<0.5	<0.5							<0.5	ug/l	TM16/PM30
2,6-Dinitrotoluene	<1	<1	<1							<1	ug/l	TM16/PM30
3-Nitroaniline	<1	<1	<1							<1	ug/l	TM16/PM30
4-Bromophenylphenylether #	<1	<1	<1							<1	ug/l	TM16/PM30
4-Chloroaniline	<1	<1	<1							<1	ug/l	TM16/PM30
4-Chlorophenylphenylether #	<1	<1	<1							<1	ug/l	TM16/PM30
4-Nitroaniline	<0.5	<0.5	<0.5							<0.5	ug/l	TM16/PM30
Azobenzene #	<0.5	<0.5	<0.5							<0.5	ug/l	TM16/PM30
Bis(2-chloroethoxy)methane #	<0.5	<0.5	<0.5							<0.5	ug/l	TM16/PM30
Bis(2-chloroethyl)ether #	<1	<1	<1							<1	ug/l	TM16/PM30
Carbazole #	<0.5	<0.5	<0.5							<0.5	ug/l	TM16/PM30
Dibenzofuran #	<0.5	<0.5	<0.5							<0.5	ug/l	TM16/PM30
Hexachlorobenzene #	<1	<1	<1							<1	ug/l	TM16/PM30
Hexachlorobutadiene #	<1	<1	<1							<1	ug/l	TM16/PM30
Hexachlorocyclopentadiene	<1	<1	<1							<1	ug/l	TM16/PM30
Hexachloroethane #	<1	<1	<1							<1	ug/l	TM16/PM30
Isophorone #	<0.5	<0.5	<0.5							<0.5	ug/l	TM16/PM30
N-nitrosodi-n-propylamine #	<0.5	<0.5	<0.5							<0.5	ug/l	TM16/PM30
Nitrobenzene #	<1	<1	<1							<1	ug/l	TM16/PM30
Surrogate Recovery 2-Fluorobiphenyl	86	82	90							<0	%	TM16/PM30
Surrogate Recovery p-Terphenyl-d14	99	95	101							<0	%	TM16/PM30

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

VOC Report : **Liquid**

J E Sample No.	365-373	374-382	401-409									
Sample ID	SW4	SW1	SW2									
Depth										Please see attached notes for all abbreviations and acronyms		
COC No / misc												
Containers	V H HN N Z P G	V H HN N Z P G	V H HN N Z P G									
Sample Date	09/02/2017 10:30	09/02/2017 11:00	09/02/2017 12:30									
Sample Type	Ground Water	Ground Water	Ground Water									
Batch Number	11	11	11									
Date of Receipt	10/02/2017	10/02/2017	10/02/2017									
VOC MS										LOD/LOR	Units	Method No.
Dichlorodifluoromethane	<2	<2	<2							<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.1							<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<3							<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	<0.1							<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<1							<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<3							<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<3							<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<3							<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<5	<5	<5							<5	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<3							<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<3							<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	<3							<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<1							<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<2							<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<2							<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<2							<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<3							<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<2							<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<2							<2	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<0.5							<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	<3	<3							<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<2							<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<3							<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<2							<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<2							<2	ug/l	TM15/PM10
Toluene #	<5	<5	<5							<5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<2							<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<2							<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<3							<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<2							<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<2							<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<2							<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<2							<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<2							<2	ug/l	TM15/PM10
Ethylbenzene #	<1	<1	<1							<1	ug/l	TM15/PM10
p/m-Xylene #	<2	<2	<2							<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<1							<1	ug/l	TM15/PM10
Styrene	<2	<2	<2							<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<2							<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<3							<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<4							<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<2							<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<3							<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<3							<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<3							<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<3							<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<3							<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<3							<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	<3	<3							<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<3							<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<3							<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<3							<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<3							<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<3							<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<3							<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<2							<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<3							<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<3							<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<2							<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<3							<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	121	109	120							<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	77	95	77							<0	%	TM15/PM10

Client Name: WYG

Matrix : Liquid

Reference: A090070-193

Location: East Lancashire Paper Mill

Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
17/2576	11	SW3		356-364	Mercury	Sample holding time exceeded
17/2576	11	SW4		365-373	Mercury	Sample holding time exceeded
17/2576	11	SW1		374-382	Mercury	Sample holding time exceeded
17/2576	11	SW5		383-391	Mercury	Sample holding time exceeded
17/2576	11	SW6		392-400	Mercury	Sample holding time exceeded

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

Please include all sections of this report if it is reproduced

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/2576

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM30/PM12	CWG GC-FID	Yes			
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM24	Determination of Glycols by GC-MS	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.				
TM27	Modified US EPA method 9056.Determination of water soluble anions using Dionex (Ion-Chromatography).	PM0	No preparation is required.				

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes			
TM51	Formaldehyde determination by reaction with Ammonium Ions and acetylacetone which is analysed spectrophotometrically.	PM0	No preparation is required.				
TM60	Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR).	PM0	No preparation is required.	Yes			
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM75	Modified US EPA method 310.1. Determination of Alkalinity by Metrohm automated titration analyser.	PM0	No preparation is required.	Yes			
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM0	No preparation is required.				

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM106	Determination of Sulphide by Skalar Continuous Flow Analyser	PM0	No preparation is required.				
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.				

Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

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WYG
Quay West at MediaCityUK
Trafford Wharf Road
Trafford Park
Manchester
M17 1HH

Attention :	Kathryn Ellis
Date :	22nd February, 2017
Your reference :	A090070-193
Our reference :	Test Report 17/2576 Batch 12
Location :	East Lancashire Paper Mill
Date samples received :	11th February, 2017
Status :	Final report
Issue :	1

Six samples were received for analysis on 11th February, 2017 of which six were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

Please see attached notes for all abbreviations and acronyms

J E Sample No.	410-417	418-424	425-432	433-440	441-448	449-456					LOD/LOR	Units	Method No.
Sample ID	DS01	BH102	DS14	BH105	BH103	BH104							
Depth													
COC No / misc													
Containers	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G							
Sample Date	09/02/2017 14:00	09/02/2017 14:30	09/02/2017 15:00	09/02/2017 15:30	09/02/2017 16:00	09/02/2017 16:30							
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water							
Batch Number	12	12	12	12	12	12							
Date of Receipt	11/02/2017	11/02/2017	11/02/2017	11/02/2017	11/02/2017	11/02/2017							
Dissolved Aluminium #	5.9	3.9	6.2	1123.0	1.6	1.8					<1.5	ug/l	TM30/PM14
Dissolved Antimony #	<2	<2	<2	2	<2	<2					<2	ug/l	TM30/PM14
Dissolved Arsenic #	6.4	<0.9	4.7	36.4	<0.9	<0.9					<0.9	ug/l	TM30/PM14
Dissolved Barium #	179.4	179.9	70.8	440.1	121.7	336.0					<1.8	ug/l	TM30/PM14
Dissolved Beryllium	<0.5	<0.5	<0.5	2.8	<0.5	<0.5					<0.5	ug/l	TM30/PM14
Dissolved Boron	747	34	123	106	41	80					<12	ug/l	TM30/PM14
Dissolved Cadmium #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03					<0.03	ug/l	TM30/PM14
Total Dissolved Chromium #	0.2	<0.2	<0.2	76.6	<0.2	<0.2					<0.2	ug/l	TM30/PM14
Dissolved Copper #	<3	<3	<3	155	<3	<3					<3	ug/l	TM30/PM14
Total Dissolved Iron #	88.3	8.7	14.5	2353.0	22.4	34.0					<4.7	ug/l	TM30/PM14
Dissolved Lead #	<0.4	<0.4	<0.4	127.7	<0.4	<0.4					<0.4	ug/l	TM30/PM14
Dissolved Molybdenum #	12.5	3.0	17.9	18.2	0.4	<0.2					<0.2	ug/l	TM30/PM14
Dissolved Nickel #	3.6	4.0	3.5	46.5	1.5	2.3					<0.2	ug/l	TM30/PM14
Dissolved Selenium #	<1.2	<1.2	<1.2	20.3	<1.2	<1.2					<1.2	ug/l	TM30/PM14
Dissolved Zinc #	2.9	2.9	2.0	125.1	15.2	<1.5					<1.5	ug/l	TM30/PM14
Mercury Dissolved by CVAF #	<0.01	<0.01	<0.01	0.02	<0.01	<0.01					<0.01	ug/l	TM61/PM38
Total Hardness Dissolved (as CaCO3)	405	245	575	127	139	230					<1	mg/l	TM30/PM14
PAH MS													
Naphthalene	0.1	<0.1	1.2	0.2	<0.1	<0.1					<0.1	ug/l	TM4/PM30
Acenaphthylene	<0.01	<0.01	0.35	0.05	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Acenaphthene	0.17	0.02	3.39	0.13	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Fluorene	0.03	0.01	1.81	0.17	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Phenanthrene	0.02	0.05	15.49_{AC}	0.92	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Anthracene	0.02	0.02	5.06	0.16	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Fluoranthene	0.07	0.09	29.54_{AC}	1.38	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Pyrene	0.06	0.08	26.82_{AC}	1.33	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Benzo(a)anthracene	0.02	0.03	13.96_{AC}	0.61	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Chrysene	0.03	0.04	15.50_{AC}	0.69	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Benzo(bk)fluoranthene	0.04	0.06	25.35_{AC}	1.13	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Benzo(a)pyrene	0.02	0.03	14.76_{AC}	0.65	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Indeno(123cd)pyrene	0.01	0.02	8.52_{AC}	0.37	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Dibenzo(ah)anthracene	<0.01	<0.01	2.41	0.06	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Benzo(ghi)perylene	0.01	0.02	10.71	0.41	<0.01	<0.01					<0.01	ug/l	TM4/PM30
PAH 16 Total	0.6	0.5	174.9	8.3	<0.1	<0.1					<0.1	ug/l	TM4/PM30
Benzo(b)fluoranthene	0.03	0.04	18.25	0.81	<0.01	<0.01					<0.01	ug/l	TM4/PM30
Benzo(k)fluoranthene	0.01	0.02	7.10	0.32	<0.01	<0.01					<0.01	ug/l	TM4/PM30
PAH Surrogate % Recovery	79	81	73	77	83	88					<0	%	TM4/PM30
VOC TICs	ND	ND	ND_{AA}	ND	ND	ND						None	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	$<0.2_{AA}$	<0.1	<0.1	<0.1					<0.1	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	$<1.0_{AA}$	<0.5	<0.5	<0.5					<0.5	ug/l	TM15/PM10
Toluene #	<5	<5	$<10_{AA}$	<5	<5	<5					<5	ug/l	TM15/PM10
Ethylbenzene #	<1	<1	$<2_{AA}$	<1	<1	<1					<1	ug/l	TM15/PM10

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

J E Sample No.	410-417	418-424	425-432	433-440	441-448	449-456					LOD/LOR	Units	Method No.
Sample ID	DS01	BH102	DS14	BH105	BH103	BH104							
Depth													
COC No / misc													
Containers	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G							
Sample Date	09/02/2017 14:00	09/02/2017 14:30	09/02/2017 15:00	09/02/2017 15:30	09/02/2017 16:00	09/02/2017 16:30							
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water							
Batch Number	12	12	12	12	12	12							
Date of Receipt	11/02/2017	11/02/2017	11/02/2017	11/02/2017	11/02/2017	11/02/2017							
p/m-Xylene #	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<2 AA	<1	<1	<1					<1	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	106	100	107 AA	108	122	111					<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	89	69	81 AA	92	89	100					<0	%	TM15/PM10
SVOC TICs	ND	ND	ND	ND	ND	ND						None	TM16/PM30
TPH CWG													
Aliphatics													
>C5-C6 #	<10	<10	<10	<10	<10	<10					<10	ug/l	TM36/PM12
>C6-C8 #	<10	<10	<10	<10	<10	<10					<10	ug/l	TM36/PM12
>C8-C10 #	<10	<10	<10	<10	<10	<10					<10	ug/l	TM36/PM12
>C10-C12 #	<5	<5	<5	<5	<5	<5					<5	ug/l	TM5/PM30
>C12-C16 #	<10	90	<10	70	<10	<10					<10	ug/l	TM5/PM30
>C16-C21 #	110	490	<10	200	<10	<10					<10	ug/l	TM5/PM30
>C21-C35 #	1390	1510	<10	1190	<10	<10					<10	ug/l	TM5/PM30
Total aliphatics C5-35 #	1500	2090	<10	1460	<10	<10					<10	ug/l	TM5/TM36/PM30/PM12
Aromatics													
>C5-EC7 #	<10	<10	<10	<10	<10	<10					<10	ug/l	TM36/PM12
>EC7-EC8 #	<10	<10	<10	<10	<10	<10					<10	ug/l	TM36/PM12
>EC8-EC10 #	<10	<10	<10	<10	<10	<10					<10	ug/l	TM36/PM12
>EC10-EC12 #	<5	<5	<5	<5	<5	<5					<5	ug/l	TM5/PM30
>EC12-EC16 #	50	<10	<10	<10	<10	<10					<10	ug/l	TM5/PM30
>EC16-EC21 #	400	80	<10	20	<10	<10					<10	ug/l	TM5/PM30
>EC21-EC35 #	1570	650	<10	510	<10	<10					<10	ug/l	TM5/PM30
Total aromatics C5-35 #	2020	730	<10	530	<10	<10					<10	ug/l	TM5/TM36/PM30/PM12
Total aliphatics and aromatics(C5-35) #	3520	2820	<10	1990	<10	<10					<10	ug/l	TM5/TM36/PM30/PM12
Phenol	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	ug/l	TM26/PM0
Bromide	0.13	<0.05	0.09	0.26 AB	<0.05	<0.05					<0.05	mg/l	TM27/PM0
Fluoride	0.3	<0.3	<0.3	<0.3	<0.3	0.7					<0.3	mg/l	TM173/PM0
Sulphate #	121.3	75.1	195.6	26.9	51.7	127.9					<0.5	mg/l	TM38/PM0
Chloride #	38.5	84.9	9.9	23.4	10.2	71.9					<0.3	mg/l	TM38/PM0
Nitrate as NO3 #	0.5	0.6	0.4	1.8	0.3	<0.2					<0.2	mg/l	TM38/PM0
Nitrite as NO2 #	<0.02	<0.02	<0.02	0.03	<0.02	<0.02					<0.02	mg/l	TM38/PM0
Ortho Phosphate as PO4 #	<0.06	<0.06	<0.06	<0.06	<0.06	3.55					<0.06	mg/l	TM38/PM0
Monoethylene glycol	<1	<1	<1	<1	<1	<1					<1	ug/l	TM24/PM30
Propylene glycol	<1	<1	<1	<1	<1	<1					<1	ug/l	TM24/PM30
Diethylene glycol	<1	<1	<1	<1	<1	<1					<1	ug/l	TM24/PM30
Triethylene glycol	<1	<1	<1	<1	<1	<1					<1	ug/l	TM24/PM30

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

J E Sample No.	410-417	418-424	425-432	433-440	441-448	449-456					LOD/LOR	Units	Method No.
Sample ID	DS01	BH102	DS14	BH105	BH103	BH104							
Depth													
COC No / misc													
Containers	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G							
Sample Date	09/02/2017 14:00	09/02/2017 14:30	09/02/2017 15:00	09/02/2017 15:30	09/02/2017 16:00	09/02/2017 16:30							
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water							
Batch Number	12	12	12	12	12	12							
Date of Receipt	11/02/2017	11/02/2017	11/02/2017	11/02/2017	11/02/2017	11/02/2017							
Thiodiglycol	<1	<1	<1	<1	<1	<1					<1	ug/l	TM24/PM30
Free Cyanide	9	1	8	5	7	2					<1	ug/l	TM89/PM0
Total Cyanide	16	4	15	22	10	7					<1	ug/l	TM89/PM0
Ammoniacal Nitrogen as NH3 #	2.56	0.17	0.24	5.45	0.13	7.01					<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as NH4 #	2.71	0.18	0.25	5.77	0.14	7.43					<0.03	mg/l	TM38/PM0
Total Alkalinity as CaCO3 #	2738	1986	2322	566	128	244					<1	mg/l	TM75/PM0
Sulphide	<10	<10	<10	30	<10	<10					<10	ug/l	TM106/PM0
Dissolved Organic Carbon #	8	4	15	244	3	4					<2	mg/l	TM60/PM0
Formaldehyde	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	mg/l	TM51/PM0
pH #	7.34	7.47	7.54	8.75	7.09	7.31					<0.01	pH units	TM73/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

SVOC Report : **Liquid**

J E Sample No.	410-417	418-424	425-432	433-440	441-448	449-456							
Sample ID	DS01	BH102	DS14	BH105	BH103	BH104							
Depth											Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G							
Sample Date	09/02/2017 14:00	09/02/2017 14:30	09/02/2017 15:00	09/02/2017 15:30	09/02/2017 16:00	09/02/2017 16:30							
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water							
Batch Number	12	12	12	12	12	12							
Date of Receipt	11/02/2017	11/02/2017	11/02/2017	11/02/2017	11/02/2017	11/02/2017					LOD/LOR	Units	Method No.
SVOC MS													
Phenols													
2-Chlorophenol #	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
2-Methylphenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	ug/l	TM16/PM30
2-Nitrophenol	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	ug/l	TM16/PM30
2,4-Dichlorophenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	ug/l	TM16/PM30
2,4-Dimethylphenol	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
2,4,5-Trichlorophenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	ug/l	TM16/PM30
2,4,6-Trichlorophenol	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
4-Chloro-3-methylphenol #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	ug/l	TM16/PM30
4-Methylphenol	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
4-Nitrophenol	<10	<10	<10	<10	<10	<10					<10	ug/l	TM16/PM30
Pentachlorophenol	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
Phenol	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
PAHs													
2-Chloronaphthalene #	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
2-Methylnaphthalene #	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
Phthalates													
Bis(2-ethylhexyl) phthalate	<5	<5	<5	8	8	<5					<5	ug/l	TM16/PM30
Butylbenzyl phthalate	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
Di-n-butyl phthalate #	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5					<1.5	ug/l	TM16/PM30
Di-n-Octyl phthalate	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
Diethyl phthalate #	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
Dimethyl phthalate	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
Other SVOCs													
1,2-Dichlorobenzene #	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
1,2,4-Trichlorobenzene #	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
1,3-Dichlorobenzene #	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
1,4-Dichlorobenzene #	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
2-Nitroaniline	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
2,4-Dinitrotoluene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	ug/l	TM16/PM30
2,6-Dinitrotoluene	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
3-Nitroaniline	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
4-Bromophenylphenylether #	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
4-Chloroaniline	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
4-Chlorophenylphenylether #	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
4-Nitroaniline	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	ug/l	TM16/PM30
Azobenzene #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	ug/l	TM16/PM30
Bis(2-chloroethoxy)methane #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	ug/l	TM16/PM30
Bis(2-chloroethyl)ether #	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
Carbazole #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	ug/l	TM16/PM30
Dibenzofuran #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	ug/l	TM16/PM30
Hexachlorobenzene #	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
Hexachlorobutadiene #	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
Hexachlorocyclopentadiene	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
Hexachloroethane #	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
Isophorone #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	ug/l	TM16/PM30
N-nitrosodi-n-propylamine #	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5					<0.5	ug/l	TM16/PM30
Nitrobenzene #	<1	<1	<1	<1	<1	<1					<1	ug/l	TM16/PM30
Surrogate Recovery 2-Fluorobiphenyl	77	69	76	49 SV	65 SV	81					<0	%	TM16/PM30
Surrogate Recovery p-Terphenyl-d14	87	80	90	58 SV	81	93					<0	%	TM16/PM30

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

VOC Report : **Liquid**

J E Sample No.	410-417	418-424	425-432	433-440	441-448	449-456							
Sample ID	DS01	BH102	DS14	BH105	BH103	BH104							
Depth											Please see attached notes for all abbreviations and acronyms		
COC No / misc													
Containers	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G							
Sample Date	09/02/2017 14:00	09/02/2017 14:30	09/02/2017 15:00	09/02/2017 15:30	09/02/2017 16:00	09/02/2017 16:30							
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water							
Batch Number	12	12	12	12	12	12							
Date of Receipt	11/02/2017	11/02/2017	11/02/2017	11/02/2017	11/02/2017	11/02/2017							
VOC MS													
Dichlorodifluoromethane	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.1	<0.1	<0.2 AA	<0.1	<0.1	<0.1					<0.1	ug/l	TM15/PM10
Chloromethane #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
Vinyl Chloride #	<0.1	<0.1	<0.2 AA	<0.1	<0.1	<0.1					<0.1	ug/l	TM15/PM10
Bromomethane	<1	<1	<2 AA	<1	<1	<1					<1	ug/l	TM15/PM10
Chloroethane #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
Trichlorofluoromethane #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
Dichloromethane (DCM) #	<5	<5	<10 AA	<5	<5	<5					<5	ug/l	TM15/PM10
trans-1-2-Dichloroethene #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
1,1-Dichloroethane #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
cis-1-2-Dichloroethene #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
2,2-Dichloropropane	<1	<1	<2 AA	<1	<1	<1					<1	ug/l	TM15/PM10
Bromochloromethane #	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
Chloroform #	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
1,1,1-Trichloroethane #	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
1,1-Dichloropropene #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
Carbon tetrachloride #	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
1,2-Dichloroethane #	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
Benzene #	<0.5	<0.5	<1.0 AA	<0.5	<0.5	<0.5					<0.5	ug/l	TM15/PM10
Trichloroethene (TCE) #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
1,2-Dichloropropane #	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
Dibromomethane #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
Bromodichloromethane #	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
cis-1-3-Dichloropropene	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
Toluene #	<5	<5	<10 AA	<5	<5	<5					<5	ug/l	TM15/PM10
trans-1-3-Dichloropropene	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
1,1,2-Trichloroethane #	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
Tetrachloroethene (PCE) #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
1,3-Dichloropropane #	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
Dibromochloromethane #	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
1,2-Dibromoethane #	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
Chlorobenzene #	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
Ethylbenzene #	<1	<1	<2 AA	<1	<1	<1					<1	ug/l	TM15/PM10
p/m-Xylene #	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
o-Xylene #	<1	<1	<2 AA	<1	<1	<1					<1	ug/l	TM15/PM10
Styrene	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
Bromoform #	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
Isopropylbenzene #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<4	<4	<8 AA	<4	<4	<4					<4	ug/l	TM15/PM10
Bromobenzene #	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
1,2,3-Trichloropropane #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
Propylbenzene #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
2-Chlorotoluene #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
1,3,5-Trimethylbenzene #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
4-Chlorotoluene #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
tert-Butylbenzene #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
1,2,4-Trimethylbenzene #	<3	4	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
sec-Butylbenzene #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
4-Isopropyltoluene #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
1,3-Dichlorobenzene #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
1,4-Dichlorobenzene #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
n-Butylbenzene #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
1,2-Dichlorobenzene #	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
1,2,4-Trichlorobenzene	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
Hexachlorobutadiene	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
Naphthalene	<2	<2	<4 AA	<2	<2	<2					<2	ug/l	TM15/PM10
1,2,3-Trichlorobenzene	<3	<3	<6 AA	<3	<3	<3					<3	ug/l	TM15/PM10
Surrogate Recovery Toluene D8	106	100	107 AA	108	122	111					<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	89	69	81 AA	92	89	100					<0	%	TM15/PM10

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 17/2576						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/2576

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x2 Dilution
AB	x5 Dilution
AC	x10 Dilution

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM30/PM12	CWG GC-FID	Yes			
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.				
TM15	Modified USEPA 8260. Quantitative Determination of Volatile Organic Compounds (VOCs) by Headspace GC-MS.	PM10	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM16	Modified USEPA 8270. Quantitative determination of Semi-Volatile Organic compounds (SVOCs) by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM24	Determination of Glycols by GC-MS	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.				
TM27	Modified US EPA method 9056.Determination of water soluble anions using Dionex (Ion-Chromatography).	PM0	No preparation is required.				

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.	Yes			
TM51	Formaldehyde determination by reaction with Ammonium Ions and acetylacetone which is analysed spectrophotometrically.	PM0	No preparation is required.				
TM60	Modified USEPA 9060. Determination of TOC by calculation from Total Carbon and Inorganic Carbon using a TOC analyser, the carbon in the sample is converted to CO2 and then passed through a non-dispersive infrared gas analyser (NDIR).	PM0	No preparation is required.	Yes			
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM38	Samples are brominated to reduce all mercury compounds to Mercury (II) which is analysed using method TM061.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM75	Modified US EPA method 310.1. Determination of Alkalinity by Metrohm automated titration analyser.	PM0	No preparation is required.	Yes			
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM0	No preparation is required.				

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM106	Determination of Sulphide by Skalar Continuous Flow Analyser	PM0	No preparation is required.				
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.				

Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

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Zone 3
Deeside Industrial Park
Deeside
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Tel: +44 (0) 1244 833780
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WYG
Quay West at MediaCityUK
Trafford Wharf Road
Trafford Park
Manchester
M17 1HH

Attention :	Kathryn Ellis
Date :	22nd March, 2017
Your reference :	A090070-193
Our reference :	Test Report 17/2576 Batch 13
Location :	East Lancashire Paper Mill
Date samples received :	10th March, 2017
Status :	Final report
Issue :	1

Seven samples were received for analysis on 10th March, 2017 of which six were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Phil Sommerton BSc
Project Manager

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	459-462	463-466	467-470	471-474	475-478							
Sample ID	BH102	BH105	DS01	SW1	SW2							
Depth												
COC No / misc												
Containers	V P G	V P G	V P G	V P G	V P G							
Sample Date	09/03/2017	09/03/2017	09/03/2017	09/03/2017	09/03/2017							
Sample Type	Ground Water	Ground Water	Ground Water	Surface Water	Surface Water							
Batch Number	13	13	13	13	13							
Date of Receipt	10/03/2017	10/03/2017	10/03/2017	10/03/2017	10/03/2017							

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
Dissolved Arsenic #	-	12.3	-	<0.9	<0.9						<0.9	ug/l	TM30/PM14
Dissolved Barium #	-	290.5	-	34.9	33.3						<1.8	ug/l	TM30/PM14
Dissolved Beryllium	-	<0.5	-	<0.5	<0.5						<0.5	ug/l	TM30/PM14
Dissolved Boron	-	158	-	32	27						<12	ug/l	TM30/PM14
Dissolved Cadmium #	-	<0.03	-	<0.03	<0.03						<0.03	ug/l	TM30/PM14
Total Dissolved Chromium #	-	15.9	-	<0.2	<0.2						<0.2	ug/l	TM30/PM14
Dissolved Copper #	-	<3	-	<3	<3						<3	ug/l	TM30/PM14
Dissolved Lead #	-	<0.4	-	<0.4	<0.4						<0.4	ug/l	TM30/PM14
Dissolved Mercury #	-	<0.5	-	<0.5	<0.5						<0.5	ug/l	TM30/PM14
Dissolved Nickel #	-	2.9	-	<0.2	0.5						<0.2	ug/l	TM30/PM14
Dissolved Selenium #	-	<1.2	-	<1.2	<1.2						<1.2	ug/l	TM30/PM14
Dissolved Vanadium #	-	25.9	-	<0.6	1.3						<0.6	ug/l	TM30/PM14
Dissolved Zinc #	-	<1.5	-	6.7	7.1						<1.5	ug/l	TM30/PM14
PAH MS													
Naphthalene	-	<0.1 B	-	<0.1 B	<0.1 B						<0.1	ug/l	TM4/PM30
Acenaphthylene	-	<0.01	-	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Acenaphthene	-	<0.01	-	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Fluorene	-	<0.01	-	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Phenanthrene	-	<0.01	-	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Anthracene	-	<0.01	-	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Fluoranthene	-	0.01	-	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Pyrene	-	0.02	-	<0.01	0.02						<0.01	ug/l	TM4/PM30
Benzo(a)anthracene	-	<0.01	-	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Chrysene	-	<0.01	-	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Benzo(bk)fluoranthene	-	<0.01	-	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Benzo(a)pyrene	-	<0.01	-	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Indeno(123cd)pyrene	-	<0.01	-	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Dibenzo(ah)anthracene	-	<0.01	-	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Benzo(ghi)perylene	-	<0.01	-	<0.01	<0.01						<0.01	ug/l	TM4/PM30
PAH 16 Total	-	<0.1	-	<0.1	<0.1						<0.1	ug/l	TM4/PM30
Benzo(b)fluoranthene	-	<0.01	-	<0.01	<0.01						<0.01	ug/l	TM4/PM30
Benzo(k)fluoranthene	-	<0.01	-	<0.01	<0.01						<0.01	ug/l	TM4/PM30
PAH Surrogate % Recovery	-	73	-	79	80						<0	%	TM4/PM30

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
$H=H_2SO_4$, Z=ZnAc, N=NaOH, $HN=HN0_3$

J E Sample No.	459-462	463-466	467-470	471-474	475-478							
Sample ID	BH102	BH105	DS01	SW1	SW2							
Depth												
COC No / misc												
Containers	V P G	V P G	V P G	V P G	V P G							
Sample Date	09/03/2017	09/03/2017	09/03/2017	09/03/2017	09/03/2017							
Sample Type	Ground Water	Ground Water	Ground Water	Surface Water	Surface Water							
Batch Number	13	13	13	13	13							
Date of Receipt	10/03/2017	10/03/2017	10/03/2017	10/03/2017	10/03/2017							

Please see attached notes for all abbreviations and acronyms

											LOD/LOR	Units	Method No.
TPH CWG													
Aliphatics													
>C5-C6 #	<10	<10	<10	<10	<10						<10	ug/l	TM36/PM12
>C6-C8 #	<10	<10	<10	<10	<10						<10	ug/l	TM36/PM12
>C8-C10 #	<10	<10	<10	<10	<10						<10	ug/l	TM36/PM12
>C10-C12 #	<5	<5	<5	<5	<5						<5	ug/l	TM5/PM30
>C12-C16 #	<10	<10	<10	<10	<10						<10	ug/l	TM5/PM30
>C16-C21 #	<10	<10	<10	<10	<10						<10	ug/l	TM5/PM30
>C21-C35 #	<10	<10	<10	<10	<10						<10	ug/l	TM5/PM30
Total aliphatics C5-35 #	<10	<10	<10	<10	<10						<10	ug/l	TM5/TM36/PM30/PM12
Aromatics													
>C5-EC7 #	<10	<10	<10	<10	<10						<10	ug/l	TM36/PM12
>EC7-EC8 #	<10	<10	<10	<10	<10						<10	ug/l	TM36/PM12
>EC8-EC10 #	<10	<10	<10	<10	<10						<10	ug/l	TM36/PM12
>EC10-EC12 #	<5	<5	<5	<5	<5						<5	ug/l	TM5/PM30
>EC12-EC16 #	<10	<10	<10	<10	<10						<10	ug/l	TM5/PM30
>EC16-EC21 #	<10	<10	<10	<10	<10						<10	ug/l	TM5/PM30
>EC21-EC35 #	<10	<10	<10	<10	<10						<10	ug/l	TM5/PM30
Total aromatics C5-35 #	<10	<10	<10	<10	<10						<10	ug/l	TM5/TM36/PM30/PM12
Total aliphatics and aromatics(C5-35) #	<10	<10	<10	<10	<10						<10	ug/l	TM5/TM36/PM30/PM12
MTBE #	<5	<5	<5	<5	<5						<5	ug/l	TM31/PM12
Benzene #	<5	<5	<5	<5	<5						<5	ug/l	TM31/PM12
Toluene #	<5	<5	<5	<5	<5						<5	ug/l	TM31/PM12
Ethylbenzene #	<5	<5	<5	<5	<5						<5	ug/l	TM31/PM12
m/p-Xylene #	<5	<5	<5	<5	<5						<5	ug/l	TM31/PM12
o-Xylene #	<5	<5	<5	<5	<5						<5	ug/l	TM31/PM12
Free Cyanide #	-	<0.01	<0.01	<0.01	<0.01						<0.01	mg/l	TM89/PM0
Total Cyanide #	-	<0.01	<0.01	0.01	<0.01						<0.01	mg/l	TM89/PM0
Hexavalent Chromium	-	<6	-	<6	<6						<6	ug/l	TM38/PM0
Total Dissolved Chromium III	-	16	-	<6	<6						<6	ug/l	NONE/NONE

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis
JE Job No.: 17/2576

Report : Gas

J E Sample No.	458										LOD/LOR	Units	Method No.
Sample ID	DS20												
Depth													
COC No / misc													
Containers	TB												
Sample Date	09/03/2017												
Sample Type	Gas												
Batch Number	13												
Date of Receipt	10/03/2017												
Carbon Dioxide	20.01										<0.05	%	TM69/PM0
Carbon Monoxide	<0.05										<0.05	%	TM69/PM0
Methane	22.31										<0.05	%	TM69/PM0
Methane	207630										<5	ppmV	TM69/PM0
Nitrogen	48.2										<0.5	%	TM69/PM0
Oxygen	9.5										<0.5	%	TM69/PM0

Please see attached notes for all abbreviations and acronyms

Exova Jones Environmental

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

Sample Date: 9 Mar 2017
Date of Receipt: 10 Mar 2017
Date Analysed: 15 Mar 2017

Sample ID: DS20
Depth:
JE Job No: 17/2576
JE Sample No: 458
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: -
Sample Train Serial number: -

Q* - Qualifiers

B Indicates analyte found in associated method blank
++ Indicates value exceeds calibration range

Key

MDL Method Detection Limit
RL Reporting Limit
ISO 17025 (UKAS) accredited

Cas No	Molecular Weight		Compound	Q*	RESULT ppbv	RESULT ug/m^3	RL ppbv	MDL ppbv	RL ug/m^3	MDL ug/m^3
75-01-4	62.5	#	Vinyl Chloride		**<1.5**	**<3.8**	<1.5	<1.5	<3.8	<3.8
75-71-8	120.91		Dichlorodifluoromethane (F-12)		**<2.5**	**<12.4**	<2.5	<2.5	<12.4	<12.4
74-87-3	50.49		Chloromethane		**<1.5**	**<3.1**	<1.5	<1.5	<3.1	<3.1
74-83-9	94.95	#	Bromomethane		**<1.5**	**<5.8**	<1.5	<1.5	<5.8	<5.8
75-00-3	64.52	#	Chloroethane		**<1.5**	**<4.0**	<1.5	<1.5	<4.0	<4.0
75-69-4	137.36	#	Trichlorofluoromethane (F-11)		**<1.5**	**<8.4**	<1.5	<1.5	<8.4	<8.4
75-35-4	96.95		1,1-Dichloroethene (1,1 DCE)		**<1.5**	**<5.9**	<1.5	<1.5	<5.9	<5.9
75-09-2	84.93	#	Dichloromethane (DCM)		**<14.4**	**<50**	<14.4	<14.4	<50	<50
156-60-5	96.94		Trans-1,2-Dichloroethene		**<1.5**	**<5.9**	<1.5	<1.5	<5.9	<5.9
75-34-3	98.97	#	1,1-Dichloroethane		**<1.5**	**<6.1**	<1.5	<1.5	<6.1	<6.1
156-59-2	96.94	#	cis-1,2-Dichloroethene		**<1**	**<4**	<1	<1	<4	<4
594-20-7	112.99		2,2-Dichloropropane		**<1.5**	**<6.9**	<1.5	<1.5	<6.9	<6.9
74-97-5	129.38		Bromochloromethane (Int Std)		**NA**	**NA**	<1.5	<1.5	<7.9	<7.9
67-66-3	119.39	#	Chloroform		**<1.5**	**<7.3**	<1.5	<1.5	<7.3	<7.3
71-55-6	133.42	#	1,1,1-Trichloroethane		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
563-58-6	110.97		1,1-Dichloropropene		**<1.5**	**<6.8**	<1.5	<1.5	<6.8	<6.8
56-23-5	153.84	#	Carbon Tetrachloride		**<1.5**	**<9.4**	<1.5	<1.5	<9.4	<9.4
107-06-2	98.96	#	1,2-Dichloroethane		**<1.5**	**<6.1**	<1.5	<1.5	<6.1	<6.1
71-43-2	78.11	#	Benzene		**<1.5**	**<4.8**	<1.5	<1.5	<4.8	<4.8
79-01-6	131.4	#	Trichloroethene (TCE)		**<1.5**	**<8.1**	<1.5	<1.5	<8.1	<8.1
78-87-5	112.99	#	1,2-Dichloropropane		**<1.5**	**<6.9**	<1.5	<1.5	<6.9	<6.9
74-95-3	173.83		Dibromomethane		**<1.5**	**<10.7**	<1.5	<1.5	<10.7	<10.7
75-27-4	163.83		Bromodichloromethane		**<1.5**	**<10.1**	<1.5	<1.5	<10.1	<10.1
10061-01-5	110.97	#	cis-1,3-Dichloropropene		**<1.5**	**<6.8**	<1.5	<1.5	<6.8	<6.8
108-88-3	92.13	#	Toluene		**5.4**	**20.3**	<1.5	<1.5	<5.7	<5.7
10061-02-6	110.97	#	trans-1,3-Dichloropropene		**<1.5**	**<6.8**	<1.5	<1.5	<6.8	<6.8
79-00-5	133.4	#	1,1,2-Trichloroethane		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
127-18-4	165.85	#	Tetrachloroethene (PCE)		**<1.5**	**<10.2**	<1.5	<1.5	<10.2	<10.2
142-28-9	112.99		1,3-Dichloropropane		**<1.5**	**<6.9**	<1.5	<1.5	<6.9	<6.9
124-48-1	208.28		Dibromochloromethane		**<1.5**	**<12.8**	<1.5	<1.5	<12.8	<12.8
106-93-4	187.86	#	1,2-Dibromoethane		**<1.5**	**<11.5**	<1.5	<1.5	<11.5	<11.5
108-90-7	112.56	#	Chlorobenzene		**<1.5**	**<6.9**	<1.5	<1.5	<6.9	<6.9
630-20-6	167.85		1,1,1,2-Tetrachloroethane		**<1.5**	**<10.3**	<1.5	<1.5	<10.3	<10.3
100-41-4	106.16	#	Ethylbenzene		**<1.5**	**<6.5**	<1.5	<1.5	<6.5	<6.5
	106.17	#	m&p - Xylenes		**<1.5**	**<6.5**	<1.5	<1.5	<6.5	<6.5
95-47-6	106.17	#	o-Xylene		**<1.5**	**<6.5**	<1.5	<1.5	<6.5	<6.5
100-42-5	104.14	#	Styrene		**2.7**	**11.5**	<1.5	<1.5	<6.4	<6.4
75-25-2	252.77		Bromoform		**<1.5**	**<15.5**	<1.5	<1.5	<15.5	<15.5
98-82-8	120.19		Isopropylbenzene		**<1.5**	**<7.4**	<1.5	<1.5	<7.4	<7.4

Exova Jones Environmental

Client Name: WYG
Reference: A090070-193
Location: East Lancashire Paper Mill
Contact: Kathryn Ellis

Sample Date: 9 Mar 2017
Date of Receipt: 10 Mar 2017
Date Analysed: 15 Mar 2017

Sample ID: DS20
Depth:
JE Job No: 17/2576
JE Sample No: 458
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: -
Sample Train Serial number: -

Q* - Qualifiers

B Indicates analyte found in associated method blank
++ Indicates value exceeds calibration range

Key

MDL Method Detection Limit
RL Reporting Limit
ISO 17025 (UKAS) accredited

Cas No	Molecular Weight	Compound	Q*	RESULT ppbv	RESULT ug/m^3	RL ppbv	MDL ppbv	RL ug/m^3	MDL ug/m^3
79-34-5	167.85	# 1,1,2,2-Tetrachloroethane		**<1.5**	**<10.3**	<1.5	<1.5	<10.3	<10.3
108-86-1	157.01	Bromobenzene		**<1.5**	**<9.6**	<1.5	<1.5	<9.6	<9.6
96-18-4	147.43	1,2,3-Trichloropropane		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
103-65-1	120.19	Propylbenzene		**<1.5**	**<7.4**	<1.5	<1.5	<7.4	<7.4
95-49-8	126.58	2-Chlorotoluene		**<1.5**	**<7.8**	<1.5	<1.5	<7.8	<7.8
108-67-8	120.2	# 1,3,5-Trimethylbenzene		**<1.5**	**<7.4**	<1.5	<1.5	<7.4	<7.4
106-43-4	126.58	4-Chlorotoluene		**<1.5**	**<7.8**	<1.5	<1.5	<7.8	<7.8
98-06-6	134.22	Tert-Butylbenzene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
95-63-6	120.19	# 1,2,4-Trimethylbenzene		**<1.5**	**<7.4**	<1.5	<1.5	<7.4	<7.4
135-98-8	134.22	Sec-Butylbenzene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
99-87-6	134.22	4-Isopropyltoluene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
106-46-7	147.01	# 1,4-Dichlorobenzene		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
541-73-1	147.01	# 1,3-Dichlorobenzene		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
104-51-8	134.22	n-Butylbenzene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
95-50-1	147	# 1,2-Dichlorobenzene		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
96-12-8	236.33	1,2-Dibromo-3-chloropropane		**<1.5**	**<14.5**	<1.5	<1.5	<14.5	<14.5
120-82-1	181.46	1,2,4-Trichlorobenzene		**<1.5**	**<11.1**	<1.5	<1.5	<11.1	<11.1
87-68-3	260.76	Hexachlorobutadiene		**<1.5**	**<16.0**	<1.5	<1.5	<16.0	<16.0
91-20-3	128.17	Naphthalene		**<0.32**	**<1.7**	<0.32	<0.32	<1.7	<1.7
87-61-6	181.45	1,2,3-Trichlorobenzene		**<1.5**	**<11.1**	<1.5	<1.5	<11.1	<11.1
1634-04-4	88.15	Methyl tertiary butyl ether		**<1.5**	**<5.4**	<1.5	<1.5	<5.4	<5.4
		Sum of VOC USEPA compounds		**8.1**	**31.8**				
460-00-4		4-Bromofluorobenzene Surrogate Recovery		**99%**		0%	0%		

Client Name: WYG

Matrix : Gas

Reference: A090070-193

Location: East Lancashire Paper Mill

Contact: Kathryn Ellis

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
17/2576	13	DS20		458	VOC	Sample holding time exceeded

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/2576

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.				
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM30	Water samples are extracted with solvent using a magnetic stirrer to create a vortex.	Yes			
TM5/TM36	TM005: Modified USEPA 8015B. Determination of solvent Extractable Petroleum Hydrocarbons (EPH) including column fractionation in the carbon range of C10-35 into aliphatic and aromatic fractions by GC-FID. TM036: Modified USEPA 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C5-10 by headspace GC-FID. Including determination of	PM30/PM12	CWG GC-FID	Yes			
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.				
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7 and 6010B	PM14	Analysis of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for dissolved metals and acidified if required.	Yes			
TM31	Modified USEPA 8015B. Determination of Methyltertbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes			
TM38	Soluble Ion analysis using the Thermo Aquakem Photometric Automatic Analyser. Modified US EPA methods 325.2, 375.4, 365.2, 353.1, 354.1	PM0	No preparation is required.				
TM68	Modified TO-15 method. Volatile Organic Compounds (VOCs) sampled using Gas Canisters, BottleVacs or Tedlar bags and analysed using Entech GC-MS.	PM0	No preparation is required.				
TM68	Modified TO-15 method. Volatile Organic Compounds (VOCs) sampled using Gas Canisters, BottleVacs or Tedlar bags and analysed using Entech GC-MS.	PM0	No preparation is required.	Yes			

JE Job No: 17/2576

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM69	Analysis of gas samples by direct injection onto a Gas Chromatography (GC) column and analysed using a Flame Ionisation Detector (FID) or a Thermocouple Detector (TD)	PM0	No preparation is required.				
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM0	No preparation is required.	Yes			
NONE	No Method Code	NONE	No Method Code				

Appendix D – Geotechnical Test Results

LABORATORY REPORT

4043

Contract Number: PSL17/0692

Report Date: 03 March 2017

Client's Reference: A090070-193

Client Name: WYG Manchester
Quay West at MediaCityUK
Trafford Wharf Road
Trafford Park
Manchester
M17 1HH

For the attention of: David Brett

Contract Title: ELPM

Date Received: 15/2/2017
Date Commenced: 15/2/2017
Date Completed: 3/3/2017

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

R Gunson (Director)
A Watkins (Director)
R Berriman (Quality Manager)

L Knight (Senior Technician)
S Royle (Senior Technician)
A Fry (Senior Technician)

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Doncaster DN4 0AR
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SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
BH102	5	B	2.00	2.45	Brown very gravelly clayey silty SAND with cobbles.
BH102	9	U	5.00	5.45	Firm brown very gravelly very sandy CLAY.
BH102	13	D	7.00		Brown slightly gravelly very sandy CLAY.
BH103	4	B	1.20		MADE GROUND brown very sandy slightly clayey GRAVEL.
BH103	7	B	3.00	3.45	Brown mottled grey slightly clayey SAND & GRAVEL.
BH103	10	U	4.50	4.95	Firm brown very gravelly very sandy CLAY.
BH104	1	B	0.00	1.00	MADE GROUND brown mottled grey very sandy very clayey gravel.
BH104	9	B	3.00	3.45	Brown very sandy slightly silty gravel of COBBLES.
BH104	12	U	4.60	5.05	Firm brown very gravelly very sandy CLAY.
BH105	4	B	3.00	3.45	MADE GROUND brown mottled grey very sandy slightly clayey silty gravel.
BH105	6	B	5.00	5.45	Brown mottled grey sandy clayey very silty GRAVEL.
BH105	11	U	7.50	7.95	Brown very silty SAND.
BH105	15	U	10.50	10.95	Very stiff brown gravelly very sandy CLAY.
DS01	3	D	1.20	1.65	Dark brown sandy very clayey GRAVEL.
DS03	8	D	3.00	3.45	Dark grey slightly gravelly sandy organic CLAY.
DS03	9	D	4.20		Brown slightly gravelly very sandy CLAY with some organic material.
DS07	1	B	0.50		Brown very sandy slightly clayey GRAVEL with some cobbles.
DS07	6	D	3.00	3.45	Brown slightly gravelly very sandy CLAY.
DS14	11	D	4.00	4.45	MADE GROUND dark brown sandy slightly clayey GRAVEL.

UKAS TESTING 4043	PSL Professional Soils Laboratory	ELPM	Contract No: PSL17/0692 Client Ref: A090070-193

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
DS17	11	D	5.00	5.45	MADE GROUND grey gravelly sandy clayey silt.
DS20	3	D	1.20		Dark grey very gravelly slightly clayey SAND with some organic material.
TP102	3	B	0.80	1.20	MADE GROUND brown mottled grey very sandy silty gravel.
TP103	3	B	0.60	1.60	MADE GROUND brown mottled grey very gravelly very sandy clay.
TP103	6	B	2.00	2.70	Brown mottled grey gravelly sandy CLAY.
TP114	2	B	0.50	1.00	Brown sandy slightly silty GRAVEL with cobbles.
TP116	6	D	2.40		Brown slightly gravelly very sandy CLAY.
TP123	5	D	2.40		Dark grey slightly gravelly sandy organic CLAY.
TP127	4	D	1.10		MADE GROUND black organic silt.
TP137	5	B	1.00	1.70	Brown mottled grey slightly sandy GRAVEL with many cobbles.

UKAS TESTING
4043

PSL
Professional Soils Laboratory

ELPM

Contract No:
PSL17/0692
Client Ref:
A090070-193

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
BH102	5	B	2.00	2.45	15							
BH102	9	U	5.00	5.45	12			29	15	14	63	Low plasticity CL.
BH102	13	D	7.00		22			34	17	17	96	Low plasticity CL.
BH103	4	B	1.20		15				NP			
BH103	7	B	3.00	3.45	15							
BH103	10	U	4.50	4.95	14			27	14	13	73	Low plasticity CL.
BH104	1	B	0.00	1.00	17							
BH104	9	B	3.00	3.45	7.2							
BH104	12	U	4.60	5.05	13			28	14	14	71	Low plasticity CL.
BH105	4	B	3.00	3.45	7.6				NP			
BH105	6	B	5.00	5.45	20				NP			
BH105	11	U	7.50	7.95	23				NP			
BH105	15	U	10.50	10.95	13			33	17	16	84	Low plasticity CL.
DS01	3	D	1.20	1.65	23			40	21	19	51	Intermediate plasticity CI.
DS03	8	D	3.00	3.45	39			76	35	41	98	Very high plasticity CV.
DS03	9	D	4.20		36			49	25	24	95	Intermediate plasticity CI.
DS07	1	B	0.50		9.1							
DS07	6	D	3.00	3.45	16			32	16	16	93	Low plasticity CL.
DS14	11	D	4.00	4.45	31				NP			

SYMBOLS : NP : Non Plastic *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL Professional Soils Laboratory

ELPM

Contract No:

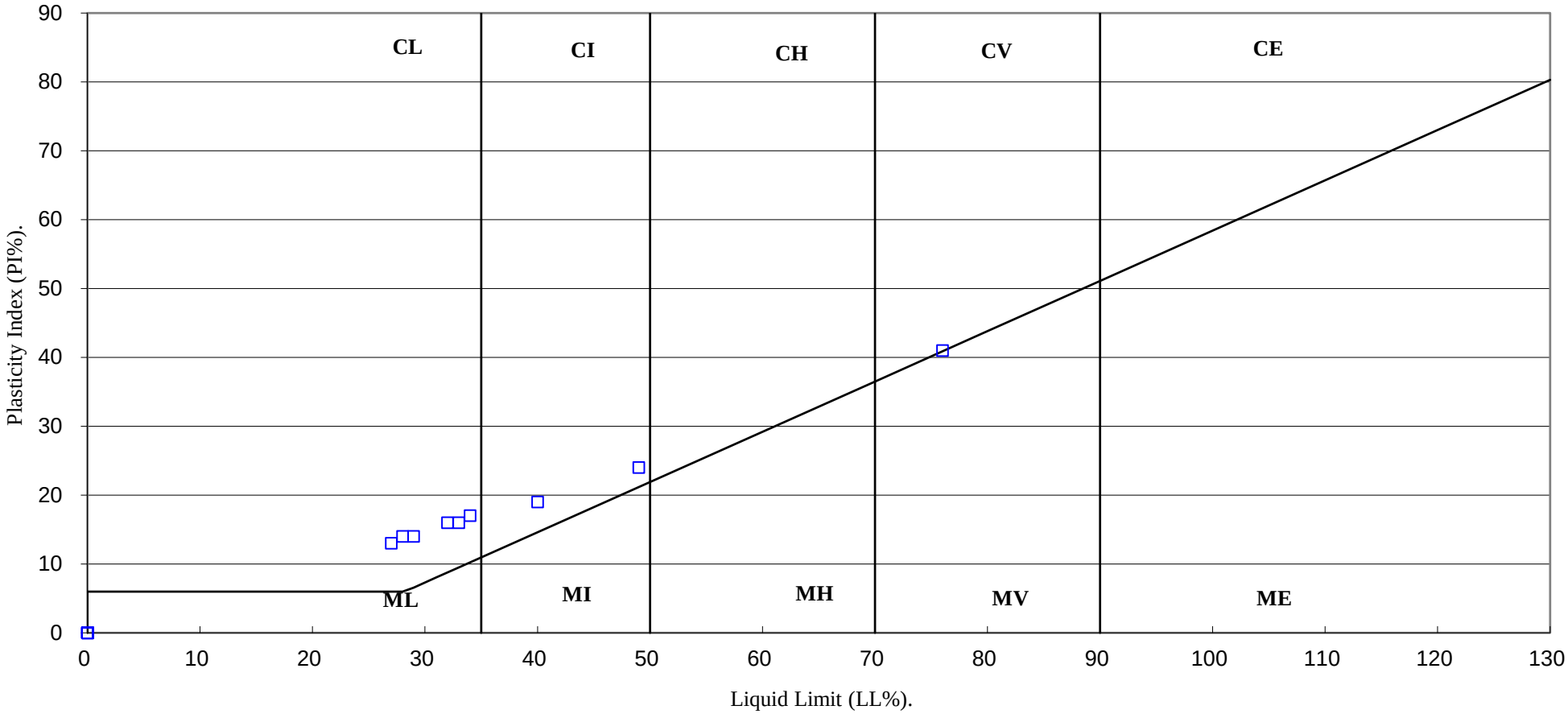
PSL17/0692

Client Ref:

A090070-193

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.

(BS5930 :2015)



UKAS TESTING 4043	PSL Professional Soils Laboratory	**ELPM**	**Contract No:** PSL17/0692 **Client Ref:** A090070-193

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
DS17	11	D	5.00	5.45	83				NP			
DS20	3	D	1.20		22				NP			
TP103	6	B	2.00	2.70	15			45	22	23	82	Intermediate plasticity CI.
TP116	6	D	2.40		14			27	13	14	92	Low plasticity CL.
TP123	5	D	2.40		110			120	51	69	98	Extremely high plasticity ME.
TP127	4	D	1.10		240				NP			

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL Professional Soils Laboratory

ELPM

Contract No:

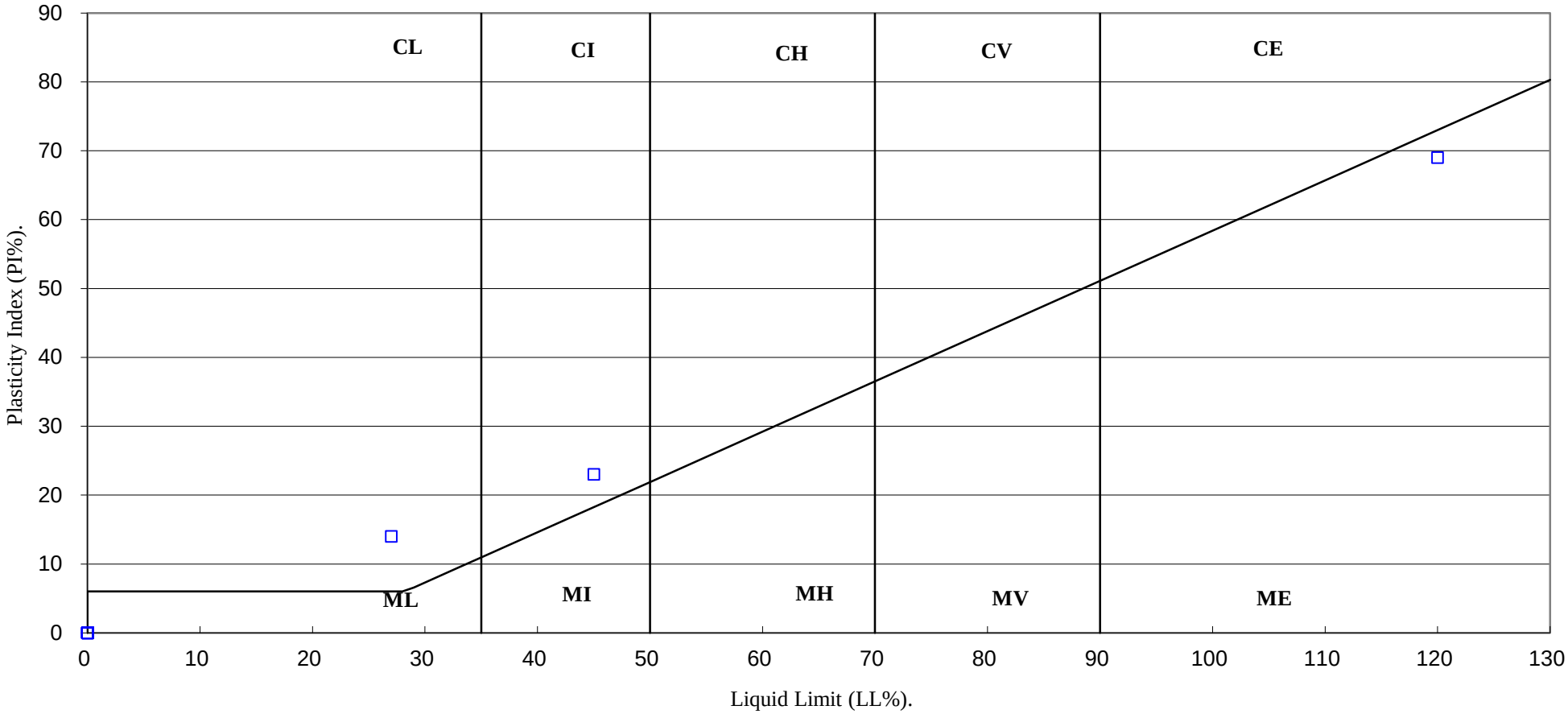
PSL17/0692

Client Ref:

A090070-193

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.

(BS5930 :2015)



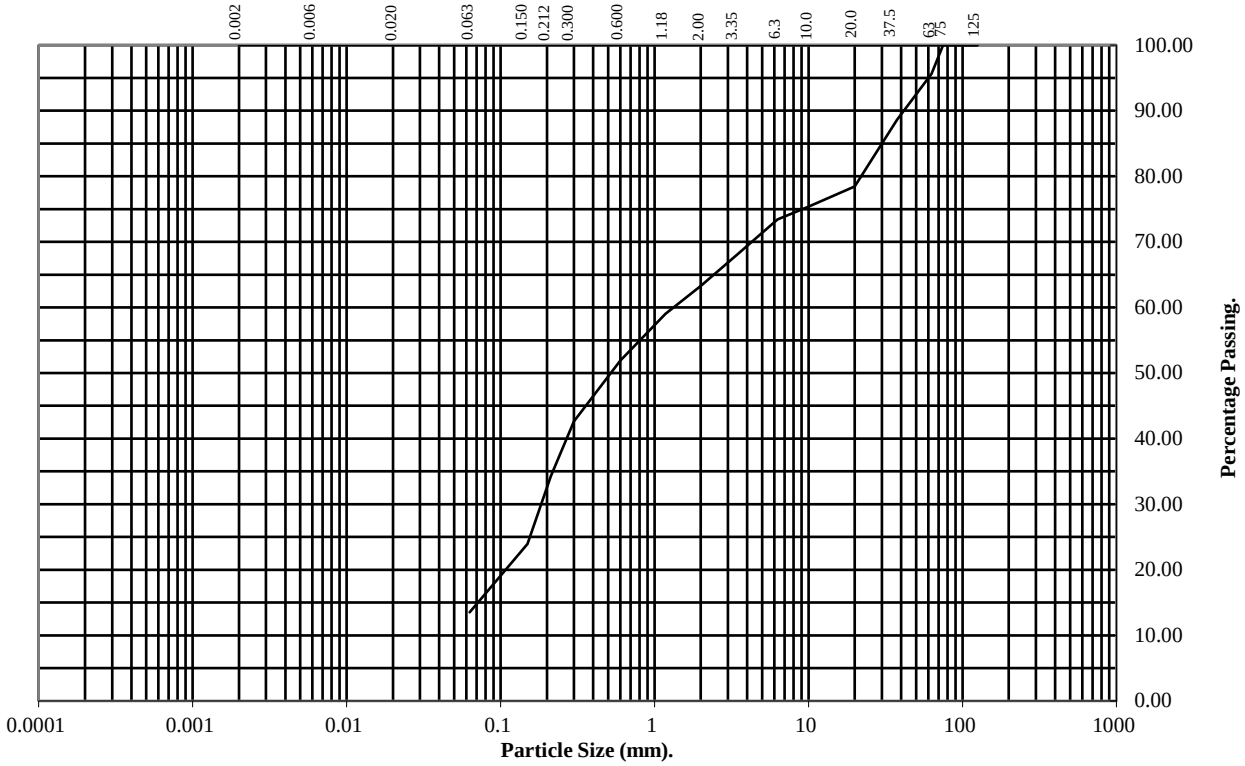
UKAS TESTING 4043	PSL Professional Soils Laboratory	**ELPM**	**Contract No:** PSL17/0692 **Client Ref:** A090070-193

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number:	**BH102**	**Top Depth (m):**	**2.00**
Sample Number:	**5**	**Base Depth(m):**	**2.45**
Sample Type:	**B**		



BS Test Sieve	Percentage Passing
125	100
75	100
63	96
37.5	89
20	78
10	75
6.3	73
3.35	68
2	63
1.18	59
0.6	52
0.3	43
0.212	34
0.15	24
0.063	14

Soil Fraction	Total Percentage
Cobbles	4
Gravel	33
Sand	49
Silt/Clay	14

Remarks:

See summary of soil descriptions.

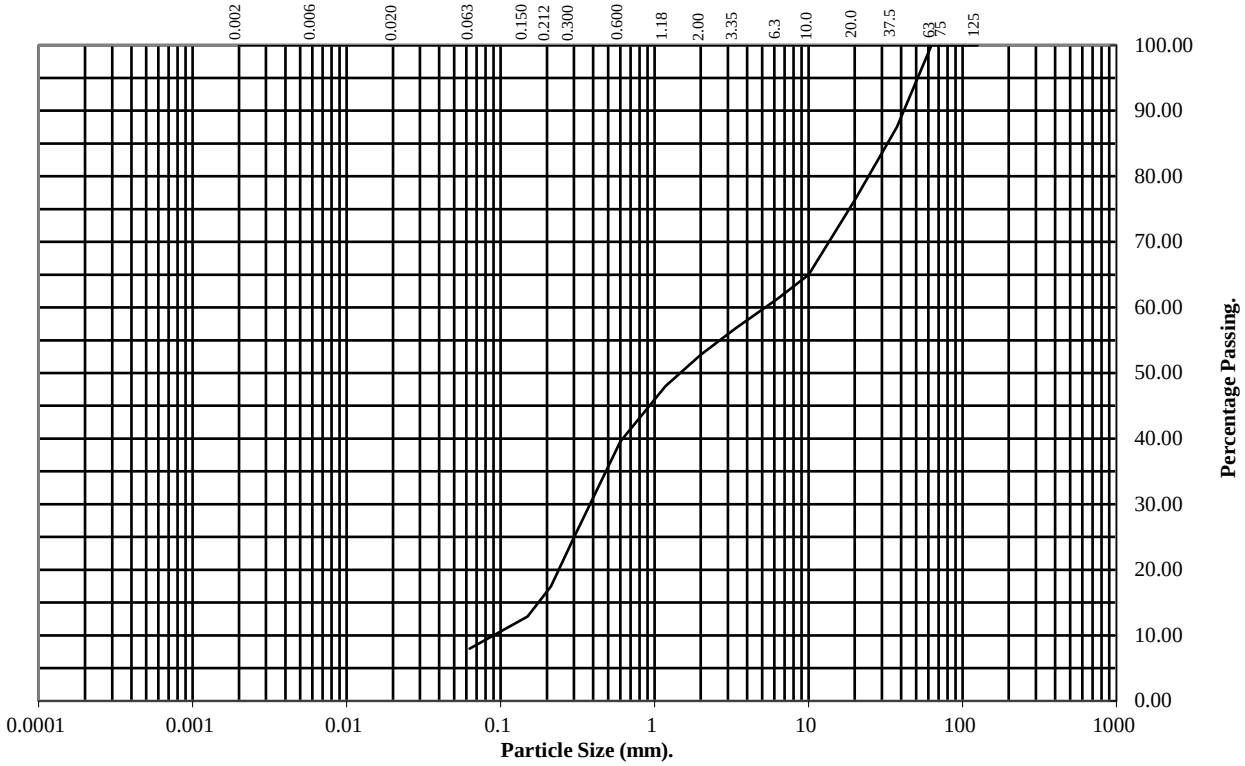
UKAS TESTING 4043	PSL Professional Soils Laboratory	**ELPM**	**Contract No:** PSL17/0692 **Client Ref:** A090070-193

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number:	**BH103**	**Top Depth (m):**	**3.00**
Sample Number:	**7**	**Base Depth(m):**	**3.45**
Sample Type:	**B**		



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	88
20	76
10	65
6.3	61
3.35	57
2	53
1.18	48
0.6	40
0.3	25
0.212	17
0.15	13
0.063	8

Soil Fraction	Total Percentage
Cobbles	0
Gravel	47
Sand	45
Silt/Clay	8

Remarks:

See summary of soil descriptions.

UKAS TESTING 4043

PSL Professional Soils Laboratory

ELPM

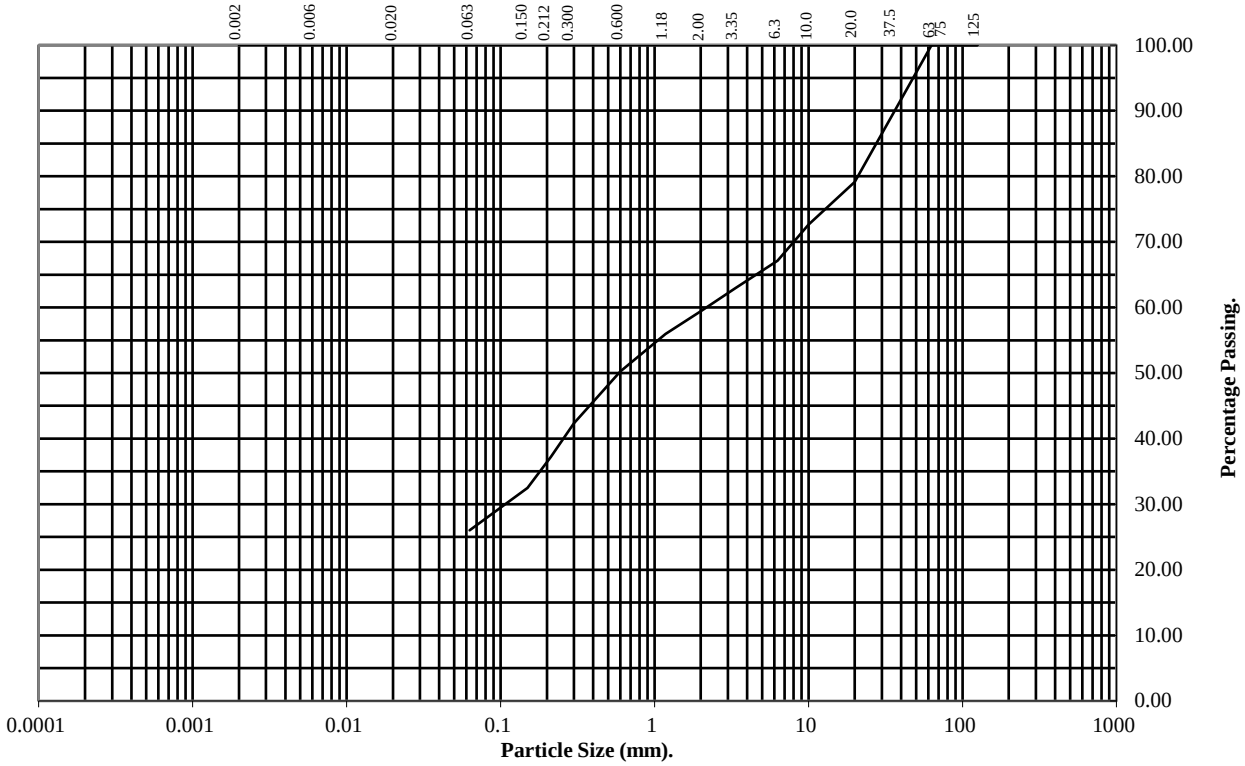
Contract No:
PSL17/0692
Client Ref:
A090070-193

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number:	**BH104**	**Top Depth (m):**	**0.00**
Sample Number:	**1**	**Base Depth(m):**	**1.00**
Sample Type:	**B**		



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	91
20	79
10	73
6.3	67
3.35	63
2	59
1.18	56
0.6	50
0.3	42
0.212	37
0.15	32
0.063	26

Soil Fraction	Total Percentage
Cobbles	0
Gravel	41
Sand	33
Silt/Clay	26

Remarks:

See summary of soil descriptions.

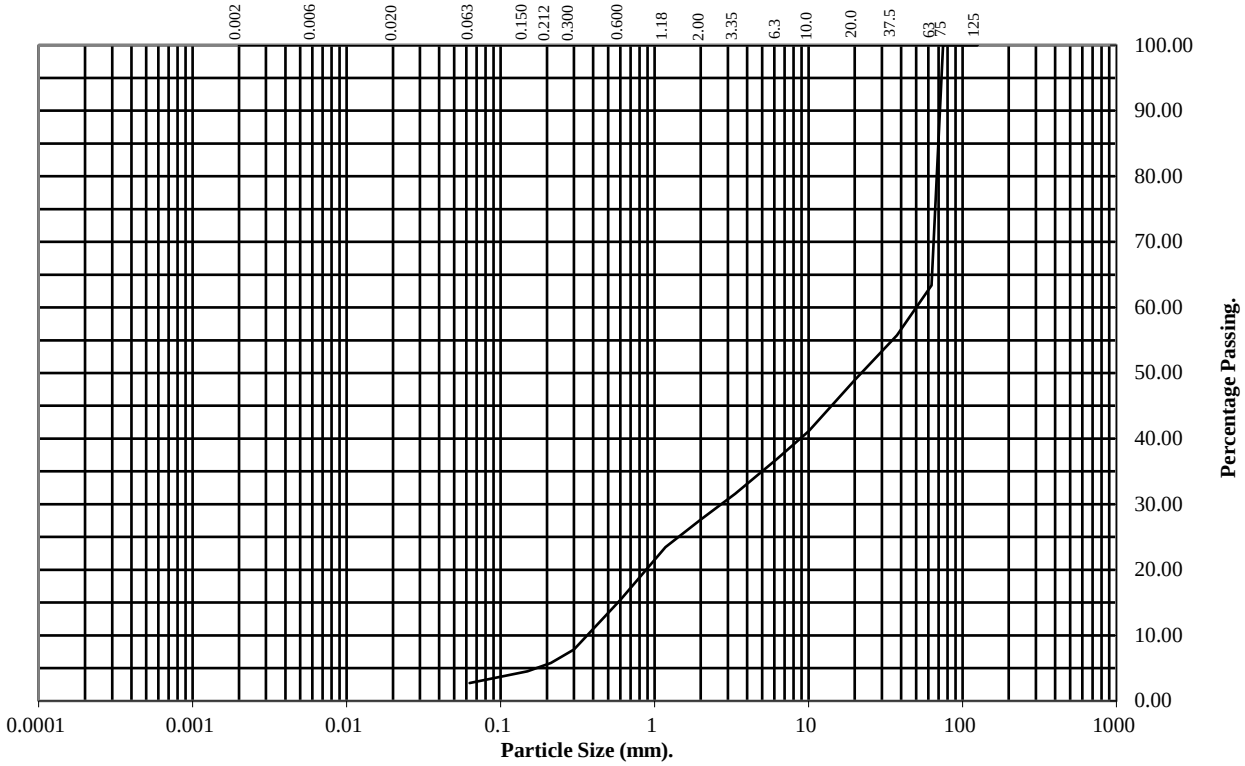
UKAS TESTING 4043	PSL Professional Soils Laboratory	**ELPM**	**Contract No:** PSL17/0692 **Client Ref:** A090070-193

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number:	**BH104**	**Top Depth (m):**	**3.00**
Sample Number:	**9**	**Base Depth(m):**	**3.45**
Sample Type:	**B**		



BS Test Sieve	Percentage Passing
125	100
75	100
63	63
37.5	56
20	49
10	41
6.3	37
3.35	32
2	28
1.18	23
0.6	15
0.3	8
0.212	6
0.15	4
0.063	3

Soil Fraction	Total Percentage
Cobbles	37
Gravel	35
Sand	25
Silt/Clay	3

Remarks:

See summary of soil descriptions.

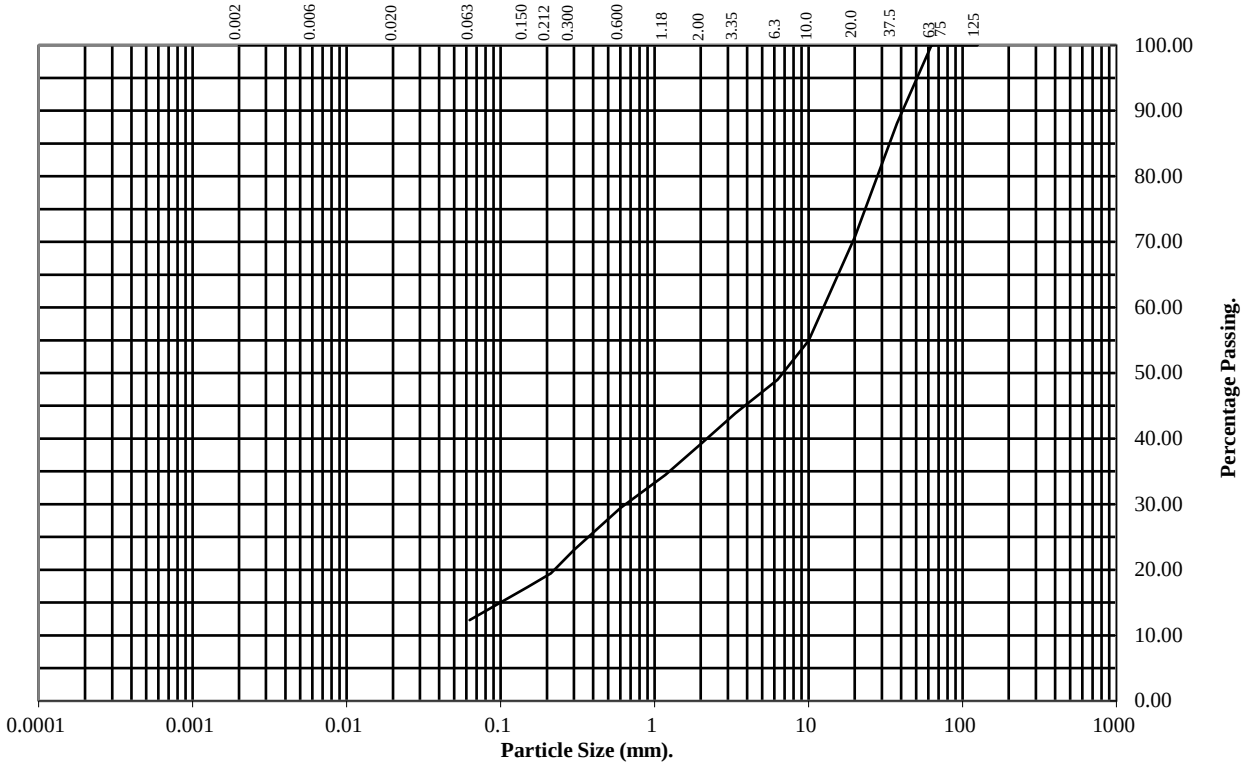
UKAS TESTING 4043	PSL Professional Soils Laboratory	**ELPM**	**Contract No:** PSL17/0692 **Client Ref:** A090070-193

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number:	**BH105**	**Top Depth (m):**	**3.00**
Sample Number:	**4**	**Base Depth(m):**	**3.45**
Sample Type:	**B**		



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	88
20	71
10	55
6.3	49
3.35	44
2	39
1.18	34
0.6	29
0.3	23
0.212	19
0.15	17
0.063	12

Soil Fraction	Total Percentage
Cobbles	0
Gravel	61
Sand	27
Silt/Clay	12

Remarks:

See summary of soil descriptions.

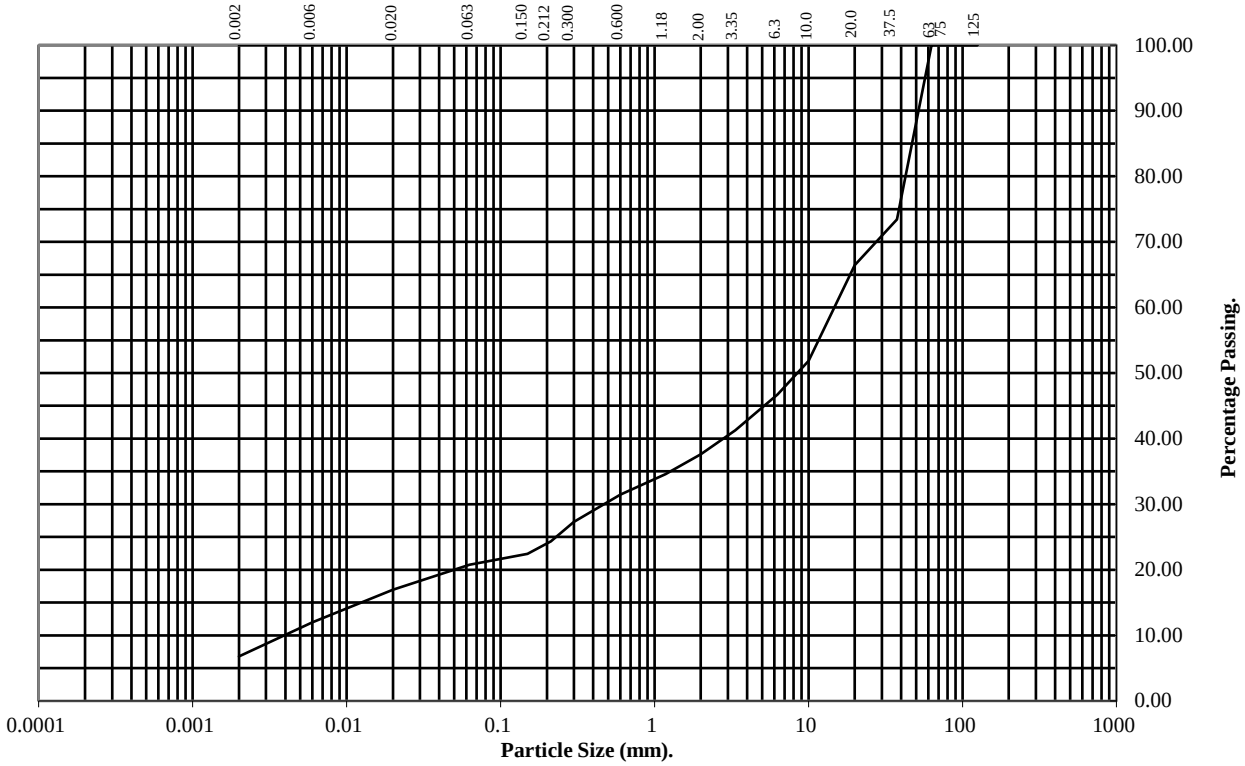
UKAS TESTING 4043	PSL Professional Soils Laboratory	**ELPM**	**Contract No:** PSL17/0692 **Client Ref:** A090070-193

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve & Pipette Analysis, Clause 9.2 & 9.4

Hole Number:	**BH105**	**Top Depth (m):**	**5.00**
Sample Number:	**6**	**Base Depth(m):**	**5.45**
Sample Type:	**B**		



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	73
20	66
10	52
6.3	47
3.35	41
2	38
1.18	35
0.6	31
0.3	27
0.212	24
0.15	22
0.063	21

Particle Diameter	Percentage Passing
0.02	17
0.006	12
0.002	7

Soil Fraction	Total Percentage
Cobbles	0
Gravel	62
Sand	17
Silt	14
Clay	7

Remarks:
See summary of soil descriptions.

UKAS TESTING 4043	PSL Professional Soils Laboratory	**ELPM**	**Contract No:** PSL17/0692 **Client Ref:** A090070-193

PARTICLE SIZE DISTRIBUTION TEST

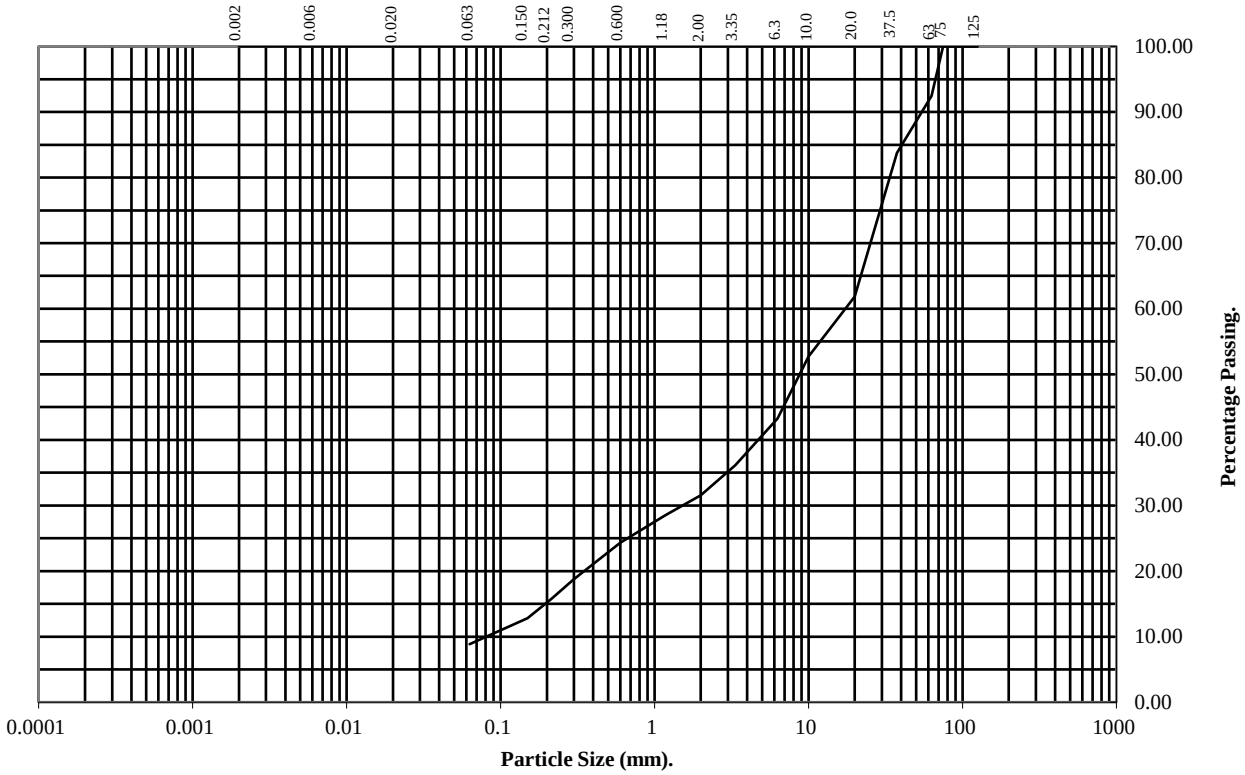
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: **DS07** **Top Depth (m):** **0.50**

Sample Number: **1** **Base Depth(m):**

Sample Type: **B**



BS Test Sieve	Percentage Passing
125	100
75	100
63	92
37.5	84
20	62
10	53
6.3	43
3.35	36
2	32
1.18	28
0.6	24
0.3	19
0.212	16
0.15	13
0.063	9

Soil Fraction	Total Percentage
Cobbles	8
Gravel	60
Sand	23
Silt/Clay	9

Remarks:

See summary of soil descriptions.

UKAS TESTING 4043

PSL Professional Soils Laboratory

ELPM

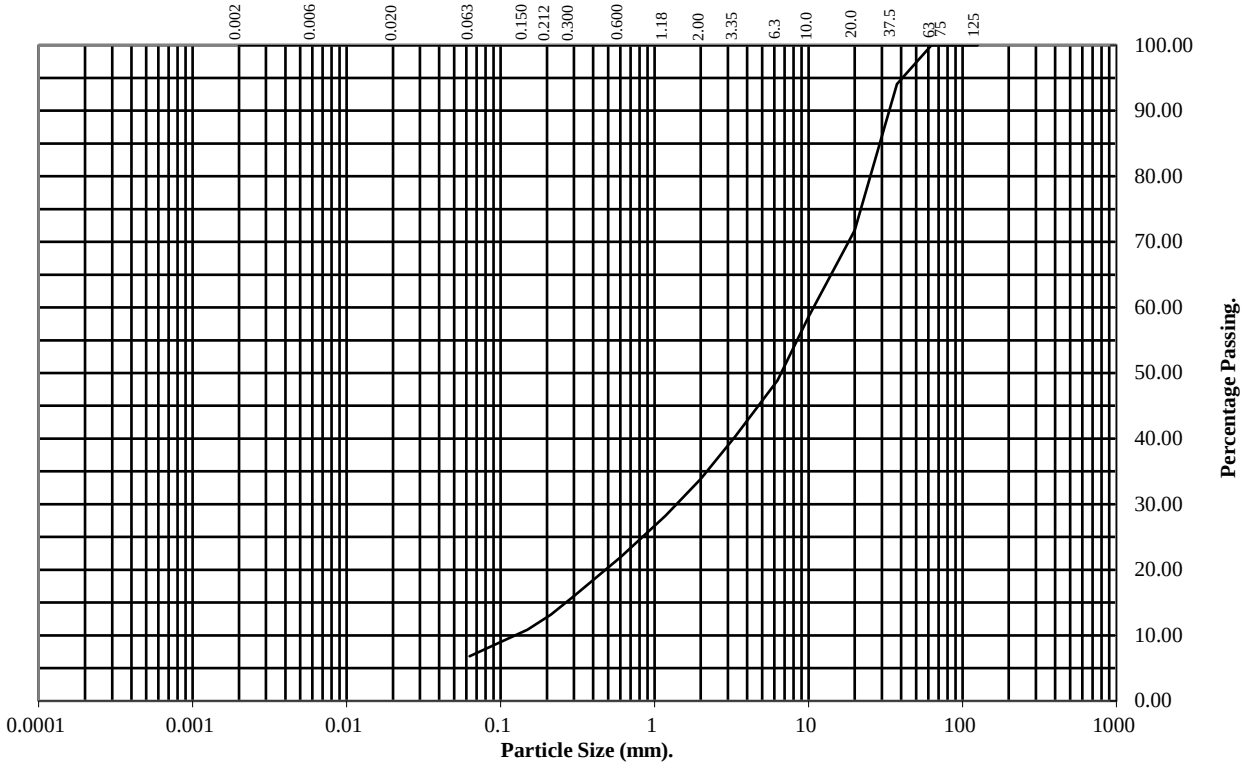
Contract No:
PSL17/0692
Client Ref:
A090070-193

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number:	**TP102**	**Top Depth (m):**	**0.80**
Sample Number:	**3**	**Base Depth(m):**	**1.20**
Sample Type:	**B**		



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	94
20	72
10	59
6.3	49
3.35	40
2	34
1.18	28
0.6	22
0.3	16
0.212	13
0.15	11
0.063	7

Soil Fraction	Total Percentage
Cobbles	0
Gravel	66
Sand	27
Silt/Clay	7

Remarks:

See summary of soil descriptions.

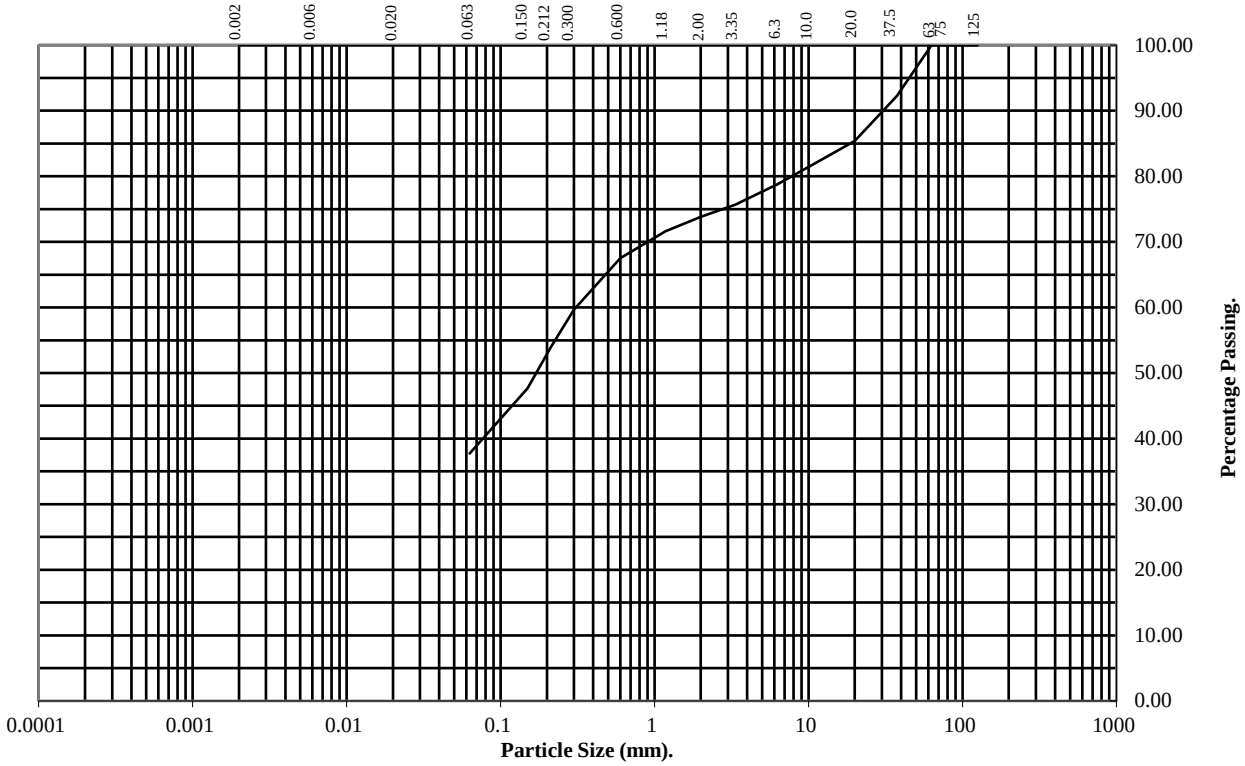
UKAS TESTING 4043	PSL Professional Soils Laboratory	**ELPM**	**Contract No:** PSL17/0692 **Client Ref:** A090070-193

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number:	**TP103**	**Top Depth (m):**	**0.60**
Sample Number:	**3**	**Base Depth(m):**	**1.60**
Sample Type:	**B**		



BS Test Sieve	Percentage Passing
125	100
75	100
63	100
37.5	92
20	85
10	81
6.3	79
3.35	76
2	74
1.18	72
0.6	68
0.3	60
0.212	54
0.15	48
0.063	38

Soil Fraction	Total Percentage
Cobbles	0
Gravel	26
Sand	36
Silt/Clay	38

Remarks:

See summary of soil descriptions.

UKAS TESTING 4043

PSL Professional Soils Laboratory

ELPM

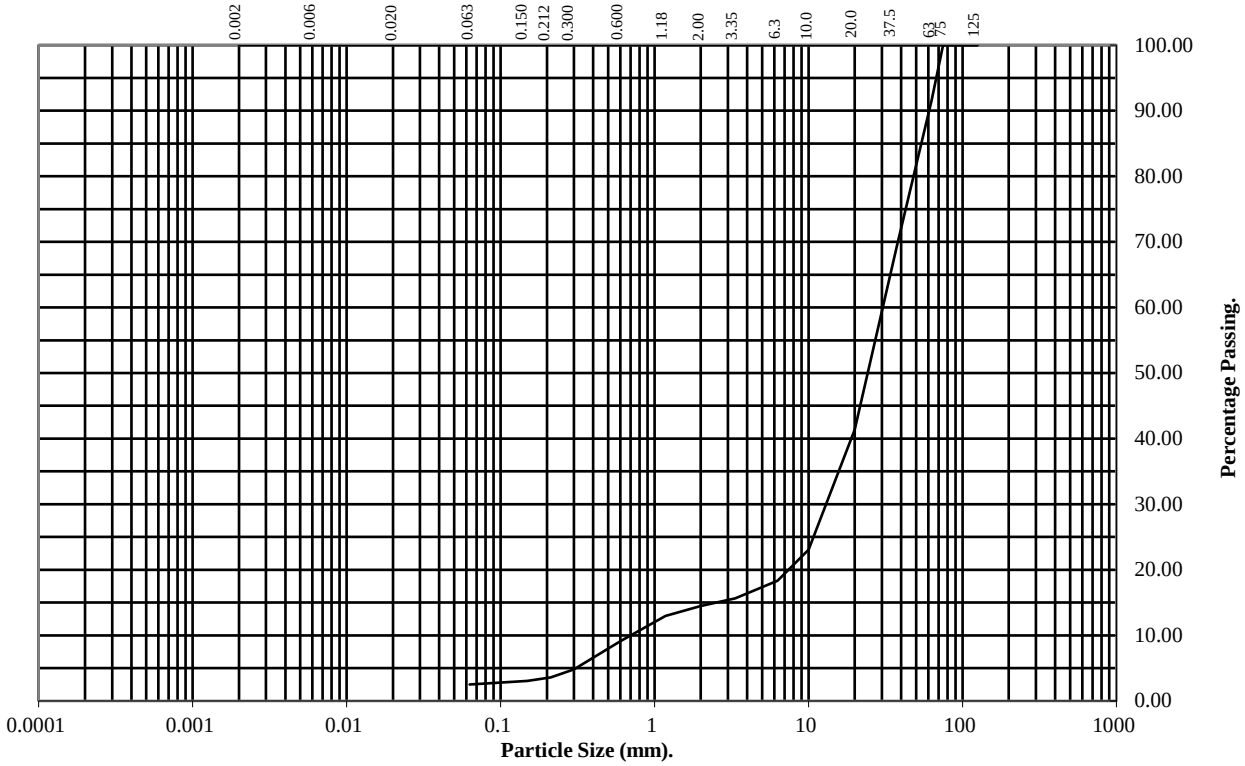
Contract No:
PSL17/0692
Client Ref:
A090070-193

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number:	**TP114**	**Top Depth (m):**	**0.50**
Sample Number:	**2**	**Base Depth(m):**	**1.00**
Sample Type:	**B**		



BS Test Sieve	Percentage Passing
125	100
75	100
63	92
37.5	69
20	41
10	23
6.3	18
3.35	16
2	14
1.18	13
0.6	9
0.3	5
0.212	4
0.15	3
0.063	3

Soil Fraction	Total Percentage
Cobbles	8
Gravel	78
Sand	11
Silt/Clay	3

Remarks:

See summary of soil descriptions.

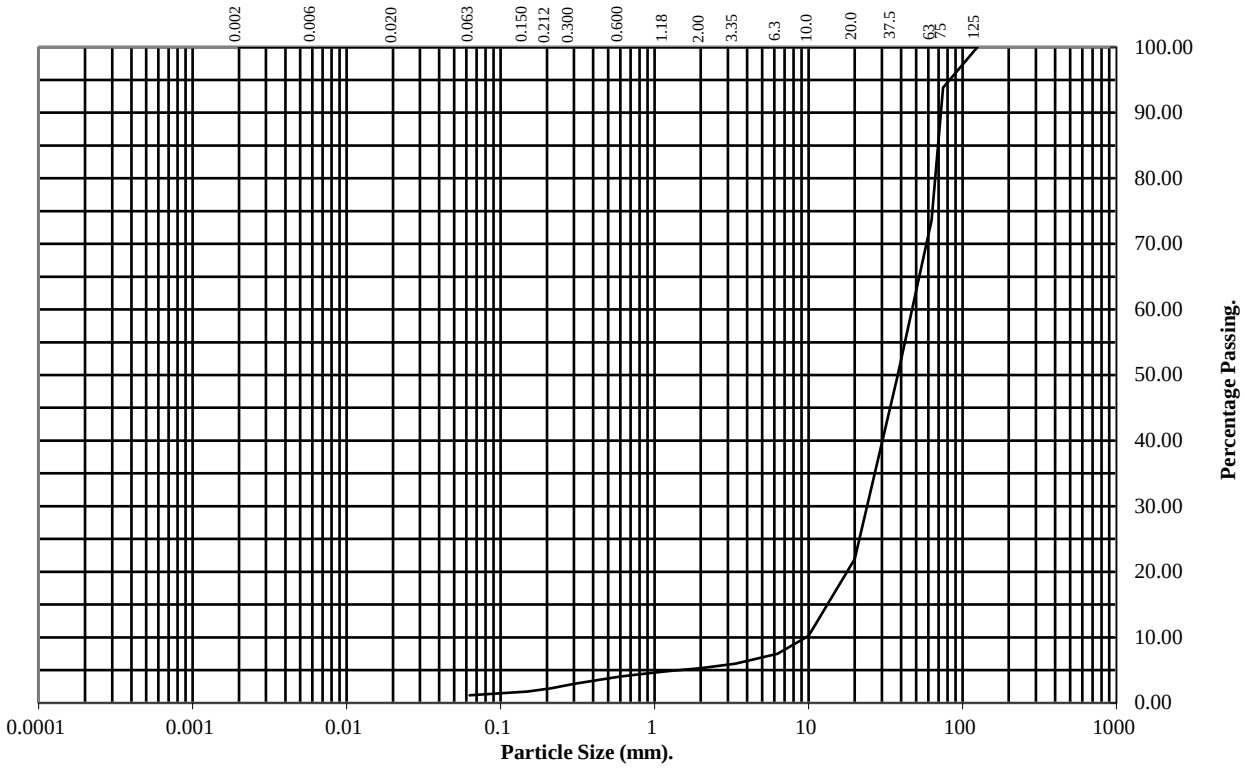
UKAS TESTING 4043	PSL Professional Soils Laboratory	**ELPM**	**Contract No:** PSL17/0692 **Client Ref:** A090070-193

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number:	**TP137**	**Top Depth (m):**	**1.00**
Sample Number:	**5**	**Base Depth(m):**	**1.70**
Sample Type:	**B**		



BS Test Sieve	Percentage Passing
125	100
75	94
63	74
37.5	49
20	22
10	10
6.3	8
3.35	6
2	5
1.18	5
0.6	4
0.3	3
0.212	2
0.15	2
0.063	1

Soil Fraction	Total Percentage
Cobbles	26
Gravel	69
Sand	4
Silt/Clay	1

Remarks:

See summary of soil descriptions.

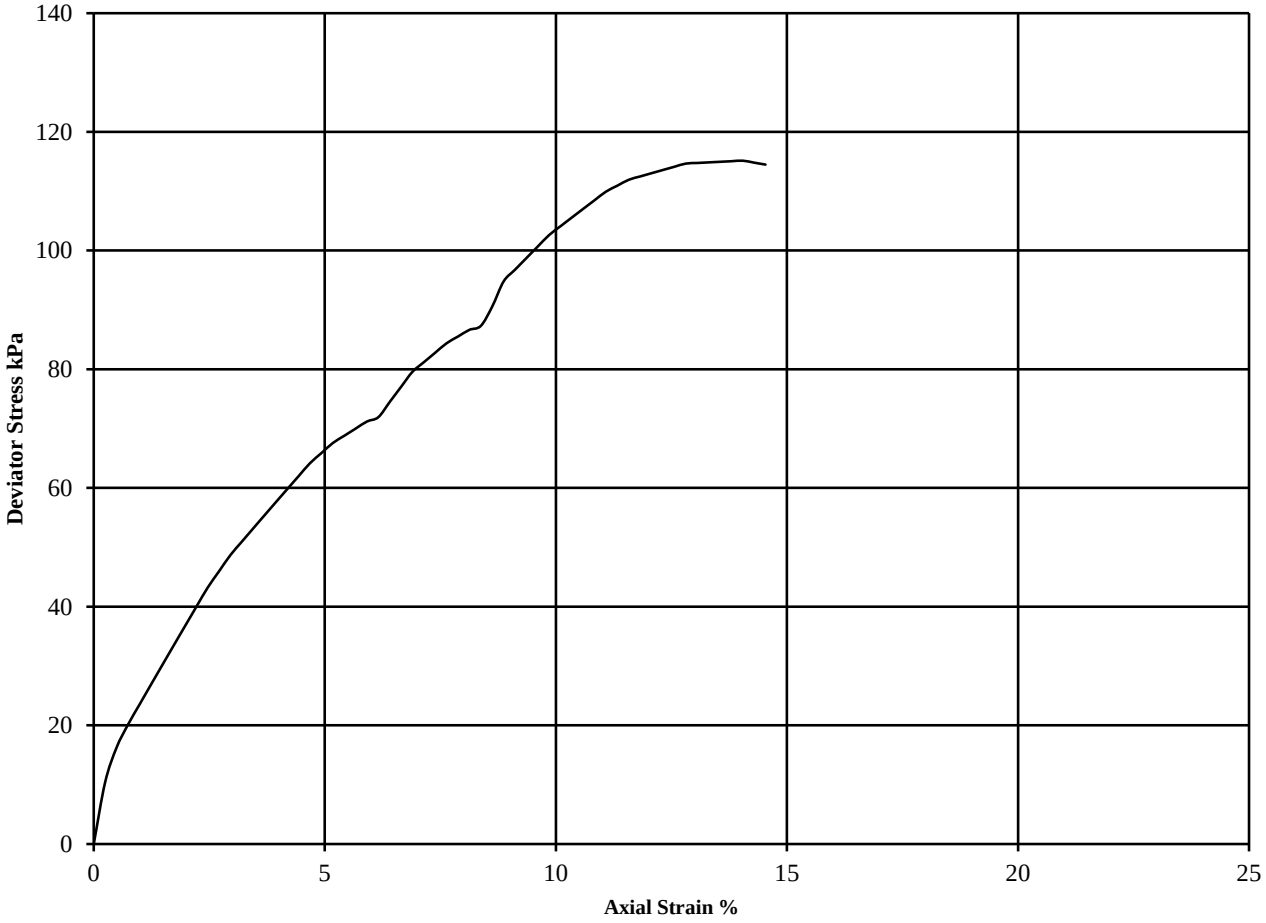
UKAS TESTING 4043	PSL Professional Soils Laboratory	**ELPM**	**Contract No:** PSL17/0692 **Client Ref:** A090070-193

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 9

Hole Number:	**BH102**	**Top Depth (m):**	**5.00**
Sample Number:	**9**	**Base Depth (m):**	**5.45**
Sample Type	**U**		



Diameter (mm):		102	Height (mm):		207	Test:	UU Multistage		Remarks
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick Membrane Correction applied (kPa)
1	12	2.20	1.97	100	72	36	6.2		0.36 0.36 0.35
				150	87	44	8.4		See summary of soil descriptions
				250	115	58	14.0	Plastic	

UKAS TESTING 4043

PSL Professional Soils Laboratory

ELPM

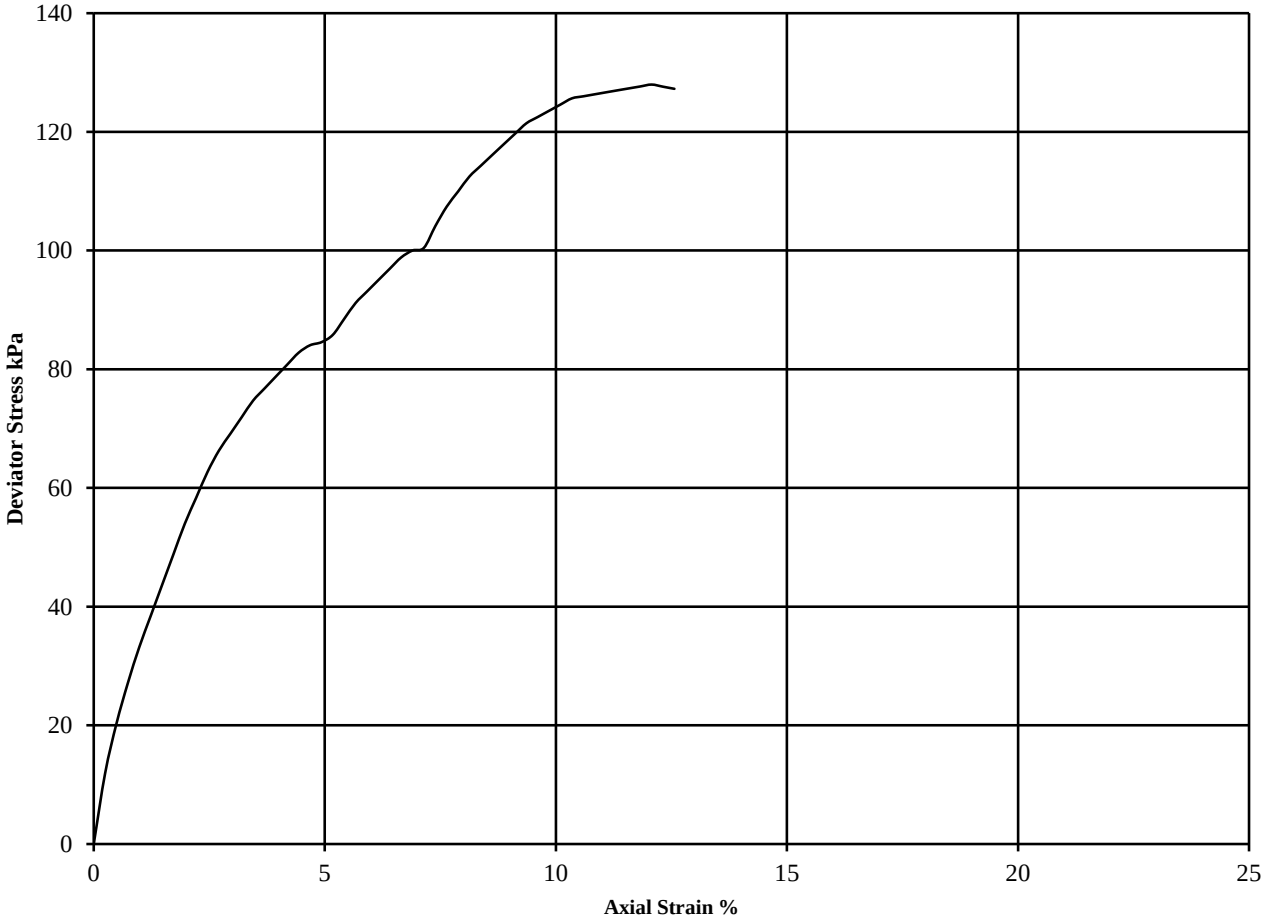
Contract No:
PSL17/0692
Client Ref:
A090070-193

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 9

Hole Number:	**BH103**	**Top Depth (m):**	**4.50**
Sample Number:	**10**	**Base Depth (m):**	**4.95**
Sample Type	**U**		



Diameter (mm):		102	Height (mm):		207	Test:	UU Multistage		Remarks
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick Membrane Correction applied (kPa)
1	14	2.31	2.03	75	85	42	4.9		0.36 0.36 0.35
				150	100	50	7.1		See summary of soil descriptions
				250	128	64	12.1	Plastic	

UKAS TESTING 4043

PSL Professional Soils Laboratory

ELPM

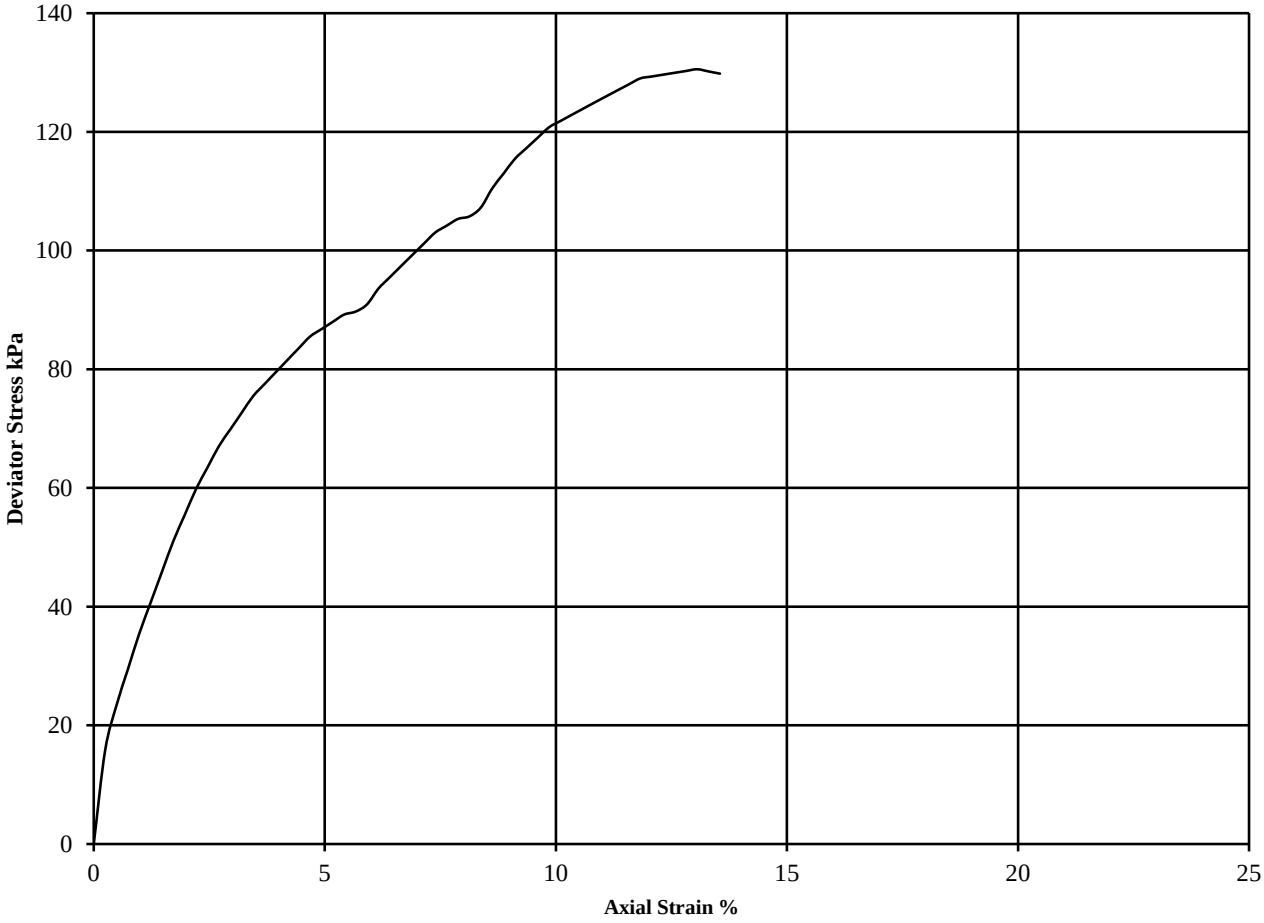
Contract No:
PSL17/0692
Client Ref:
A090070-193

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 9

Hole Number:	**BH104**	**Top Depth (m):**	**4.60**
Sample Number:	**12**	**Base Depth (m):**	**5.05**
Sample Type	**U**		



Diameter (mm):		102	Height (mm):		207	Test:	UU Multistage		Remarks
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick Membrane Correction applied (kPa)
1	13	2.33	2.07	100	90	45	5.7		0.36 0.36 0.35
				150	106	53	8.1		See summary of soil descriptions
				250	131	65	13.1	Plastic	

UKAS TESTING 4043

PSL Professional Soils Laboratory

ELPM

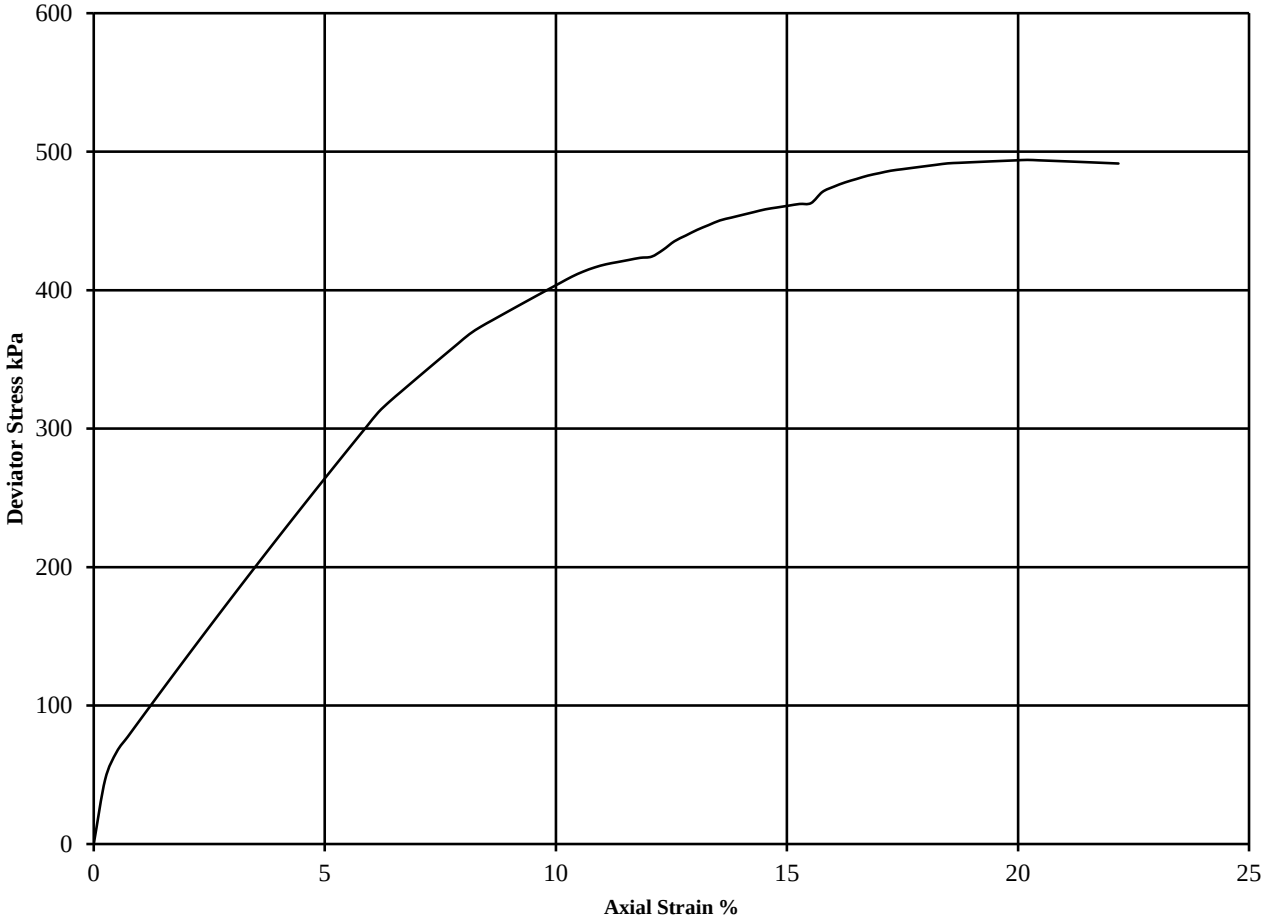
Contract No:
PSL17/0692
Client Ref:
A090070-193

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 9

Hole Number:	**BH105**	**Top Depth (m):**	**10.50**
Sample Number:	**15**	**Base Depth (m):**	**10.95**
Sample Type	**U**		



Diameter (mm):		102	Height (mm):		207	Test:	UU Multistage		Remarks
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa) θ_3	Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$	Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick Membrane Correction applied (kPa)
1	13	2.32	2.06	150	424	212	12.1		0.35 0.34 0.33
				250	463	231	15.5		See summary of soil descriptions
				350	494	247	20.2	Plastic	

UKAS TESTING 4043

PSL Professional Soils Laboratory

ELPM

Contract No:
PSL17/0692
Client Ref:
A090070-193

Certificate of Analysis

Certificate Number 17-92079

28-Feb-17

Client Professional Soils Laboratory Ltd
5/7 Hexthorpe Road
Hexthorpe
DN4 0AR

Our Reference 17-92079

Client Reference PSL17/0692

Order No (not supplied)

Contract Title ELPM

Description 22 Soil samples.

Date Received 18-Feb-17

Date Started 18-Feb-17

Date Completed 28-Feb-17

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

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

Approved By

Rob Brown
Business Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 17-92079
Client Ref PSL17/0692
Contract Title ELPM

			Lab No	1130100	1130101	1130102	1130103	1130104	1130105	1130106	1130107	1130108	1130109	1130110
			Sample ID	BH102	BH102	BH103	BH103	BH103	BH104	BH104	BH105	BH105	BH105	DS01
			Depth	0.00-1.20	2.00-2.45	1.20-1.65	3.00-3.45	4.50-4.95	0.00-1.00	3.00-3.45	3.00-3.45	7.50-7.95	10.50-10.95	1.20-1.65
			Other ID											
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**											
Inorganics														
Loss on Ignition at 440oC	DETSC 2003#	0.01	%											
pH	DETSC 2008#			7.5	7.2	7.5	6.7	6.8	7.3	7.3	8.6	8.7	8.5	8.5
Organic matter	DETSC 2002#	0.1	%									5.4		
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	32	18	150	140	33	64	20	76	35	43	41

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

Summary of Chemical Analysis
Soil Samples

Our Ref 17-92079
Client Ref PSL17/0692
Contract Title ELPM

			Lab No	1130111	1130112	1130113	1130114	1130115	1130116	1130117	1130118	1130119	1130120	1130121
			Sample ID	DS03	DS03	DS07	DS09	DS14	DS17	DS20	DS27	TP102	TP123	TP127
			Depth	3.00-3.45	4.20	0.50	2.00-2.45	4.00-4.45	5.00-5.45	1.20	1.20-1.65	0.80-1.20	2.40	1.10
			Other ID											
			Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
			Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**											
Inorganics														
Loss on Ignition at 440oC	DETSC 2003#	0.01	%											66
pH	DETSC 2008#			8.2	8.1	7.9	8.0	7.8	8.6	7.5	7.6	7.7		7.8
Organic matter	DETSC 2002#	0.1	%	2.1	2.1			3.8	6.8				5.3	> 25
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	180	43	25	< 10	250	620	81	13	180		110

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

Information in Support of the Analytical Results

Our Ref 17-92079
Client Ref PSL17/0692
Contract ELPM

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1130100	BH102 0.00-1.20 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1130101	BH102 2.00-2.45 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1130102	BH103 1.20-1.65 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1130103	BH103 3.00-3.45 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1130104	BH103 4.50-4.95 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1130105	BH104 0.00-1.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1130106	BH104 3.00-3.45 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1130107	BH105 3.00-3.45 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1130108	BH105 7.50-7.95 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Organic Matter (Manual) (730 days), pH + Conductivity (7 days)	
1130109	BH105 10.50-10.95 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1130110	DS01 1.20-1.65 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1130111	DS03 3.00-3.45 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Organic Matter (Manual) (730 days), pH + Conductivity (7 days)	
1130112	DS03 4.20 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Organic Matter (Manual) (730 days), pH + Conductivity (7 days)	
1130113	DS07 0.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1130114	DS09 2.00-2.45 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1130115	DS14 4.00-4.45 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Organic Matter (Manual) (730 days), pH + Conductivity (7 days)	
1130116	DS17 5.00-5.45 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Organic Matter (Manual) (730 days), pH + Conductivity (7 days)	
1130117	DS20 1.20 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1130118	DS27 1.20-1.65 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1130119	TP102 0.80-1.20 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), pH + Conductivity (7 days)	
1130120	TP123 2.40 SOIL		PT 1L	Sample date not supplied, Organic Matter (Manual) (730 days)	

Information in Support of the Analytical Results

Our Ref 17-92079
Client Ref PSL17/0692
Contract ELPM

1130121	TP127 1.10 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (365 days), Loss on Ignition (730 days), Organic Matter (Manual) (730 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

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

Soil Analysis Notes

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

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

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

Disposal

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

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

Appendix E – Gas and Groundwater Level Monitoring Results

GAS & GROUNDWATER MONITORING RECORD

Client Homes and Communities Agency
Project East Lancashire Paper Mill
Job Number A090070-193

VISIT 1 **Date** 09/02/2017 **Start** 09:15 **End** 15:15 **By** L. Daley **AP Trend** Steady **Weather** Overcast and cold.
Instruments used - GA5000 with internal flow pod, Dip meter
Background (start) **CH_4** <0.1 **CO_2** <0.1 **O_2** 21.2% **AP** 1024
Background (end) **CH_4** <0.1 **CO_2** <0.1 **O_2** 21.0% **AP** 1020

Installation	Exploratory Hole Level (mAOD)	CH_4		CO_2		O_2	CO	H_2S	VOC	Flow Rate		Atmospheric Pressure (mbar)	Depth to Water (mbgl)	Groundwater (mAOD)	Depth to Base (mbgl)	Remarks
		Peak (% vol)	Steady (% vol)	Peak (% vol)	Steady (% vol)	Steady (% vol)	Av. (ppm)	Av. (ppm)	Av. (ppm)	Peak (l/h)	Steady (l/h)					
BH102	67.055	<0.1	<0.1	0.7	0.7	21.1	<0.1	<0.1	0	0.1	0.1	1020	2.00	65.055	3.28	
BH103	67.384	<0.1	<0.1	0.3	0.3	21.6	<0.1	<0.1	0.2	0.2	0.2	1024	3.52	63.864	12.75	
BH104	66.944	1.0	1.0	0.3	0.3	19.4	<0.1	<0.1	0.8	0.2	0.2	1024	1.15	65.794	4.22	
BH105	68.930	0.8	0.8	2.1	2.1	16.9	4.0	2.0	0	0.2	0.1	1022	5.16	63.770	9.25	
DS01	62.009	<0.1	<0.1	0.5	0.5	21.2	<0.1	<0.1	0	0.1	0.1	1022	1.35	60.659	2.50	
DS02	62.143	<0.1	<0.1	<0.1	<0.1	21.8	<0.1	<0.1	0	0.1	0.1	1022	1.10	61.043	3.00	
DS03	64.193	<0.1	<0.1	<0.1	<0.1	20.4	<0.1	<0.1	0	0.1	0.1	1022	2.37	61.823	2.75	
DS04	64.208	<0.1	<0.1	<0.1	<0.1	20.9	<0.1	<0.1	12.8	0.1	0.1	1022	Dry	-	1.00	
DS05	64.897	<0.1	<0.1	<0.1	<0.1	19.6	<0.1	<0.1	8	0.1	0.1	1022	Dry	-	2.35	
DS06	64.621	<0.1	<0.1	<0.1	<0.1	21.9	<0.1	<0.1	0	0.1	0.1	1022	Dry	-	1.88	
DS07	66.512	<0.1	<0.1	0.2	0.2	21.6	<0.1	<0.1	0	0.1	0.1	1021	1.78	64.732	2.28	
DS09	67.647	<0.1	<0.1	1.3	1.3	20.2	<0.1	<0.1	0	0.1	0.1	1020	1.65	65.997	2.20	
DS11	67.573	<0.1	<0.1	3.0	2.6	19.0	<0.1	<0.1	0	0.1	0.1	1022	1.70	65.873	2.80	
DS14	64.324	0.6	0.6	3.3	3.2	10.1	<0.1	<0.1	21.2	0.1	0.1	1022	1.70	62.624	4.00	
DS17	69.176	<0.1	<0.1	7.2	7.2	3.6	21	<0.1	6.2	0.2	0.2	1022	Dry	-	3.95	
DS20	76.314	29.3	29.3	33.0	33.0	1.0	<0.1	<0.1	32.6	0.1	0.1	1022	Dry	-	5.05	
DS22	71.147	<0.1	<0.1	2.9	2.9	15.7	<0.1	<0.1	30.7	0.2	0.2	1022	Dry	-	4.77	
DS23	67.225	<0.1	<0.1	0.3	0.3	21.1	<0.1	<0.1	0	0.2	0.2	1024	0.20	67.025	1.00	
DS24	66.731	<0.1	<0.1	1.5	1.5	20.0	<0.1	<0.1	0.2	0.2	0.2	1024	0.80	65.931	1.00	
DS25	66.851	<0.1	<0.1	0.7	0.7	21.3	<0.1	<0.1	0..0	0.2	0.2	1024	1.05	65.801	1.05	
DS26	70.247	<0.1	<0.1	2.3	2.3	18.2	<0.1	<0.1	0	0.1	0.1	1022	4.25	65.997	4.60	
DS27	66.817	<0.1	<0.1	0.3	0.3	21.8	<0.1	<0.1	5.8	0.1	0.1	1022	1.68	65.137	2.40	

Notes:
Calibration gas standards = CH_4 4.94%, CO_2 5.01%, O_2 6.03%, VOCs 100ppm
AP - Atmospheric Pressure Trend
Peak reading = maximum recorded level during a monitoring event.
Steady reading = level which remained constant after approximately 5 minutes.
GSV = Gas Screening Value - the maximum percentage steady CH_4 or CO_2 multiplied by the gas flow rate.
Atmosphric Pressure trend obtained from weather online (www.weatheronline.co.uk)

GAS & GROUNDWATER MONITORING RECORD

Client Homes and Communities Agency
Project East Lancashire Paper Mill
Job Number A090070-193

VISIT 2 **Date** 15/02/2017 **Start** 9:10 **End** 15:20 **By** LD **AP Trend** Rising **Weather** Clear, dry & cold
Instruments used - GA5000 with internal flow pod, Dip meter
Background (start) CH_4 <0.1 CO_2 <0.1 O_2 21.8% **AP** 1017
Background (end) CH_4 <0.1 CO_2 <0.1 O_2 21.2% **AP** 1019

Installation	Exploratory Hole Level (mAOD)	CH_4		CO_2		O_2	CO	H_2S	VOC	Flow Rate		Atmospheric Pressure (mbar)	Depth to Water (mbgl)	Groundwater (mAOD)	Depth to Base (mbgl)	Remarks
		Peak (% vol)	Steady (% vol)	Peak (% vol)	Steady (% vol	Steady (% vol	Av. (ppm)	Av. (ppm)	Av. (ppm)	Peak (l/h)	Steady (l/h)					
BH102	67.055	<0.1	<0.1	0.9	0.8	20.9	<1	<1	0.2	0.1	0.1	1017	2.05	65.005	3.26	
BH103	67.384	<0.1	<0.1	0.4	0.4	21.4	<1	<1	0.4	0.1	0.1	1018	3.55	63.834	12.75	
BH104	66.944	1.1	0.9	0.4	0.4	19.3	<1	<1	0.6	0.1	0.1	1018	1.16	65.784	4.20	
BH105	68.930	1	0.8	2.1	2.0	17.0	5.0	1.0	0.1	0.2	0.1	1018	5.18	63.750	9.25	
DS01	62.009	<0.1	<0.1	0.6	0.5	21.1	<1	<1	0.1	0.1	0.1	1017	1.38	60.629	2.50	
DS02	62.143	<0.1	<0.1	0.2	<0.1	21.6	<1	<1	0	0.1	0.1	1017	1.12	61.023	3.02	
DS03	64.193	<0.1	<0.1	<0.1	<0.1	20.5	<1	<1	0	0.2	0.1	1017	2.40	61.793	2.74	
DS04	64.208	<0.1	<0.1	<0.1	<0.1	21.0	<1	<1	13	0.1	0.1	1017	DRY	-	1.00	
DS05	64.897	<0.1	<0.1	<0.1	<0.1	19.8	<1	<1	6.8	0.2	0.1	1017	DRY	-	2.35	
DS06	64.621	<0.1	<0.1	<0.1	<0.1	21.7	<1	<1	0	0.1	0.1	1017	DRY	-	1.87	
DS07	66.512	<0.1	<0.1	0.3	0.1	21.7	<1	<1	0	0.1	0.1	1018	1.81	64.702	2.28	
DS09	67.647	<0.1	<0.1	1.1	1.1	20.4	<1	<1	0	0.1	0.1	1017	1.66	65.987	2.20	
DS11	67.573	<0.1	<0.1	2.8	2.8	19.3	<1	<1	0	0.2	0.1	1019	1.72	65.853	2.80	
DS14	64.324	0.5	0.5	3.4	3.4	10.2	<1	<1	27.8	0.1	0.1	1018	1.72	62.604	4.00	
DS17	69.176	<0.1	<0.1	7.3	7.0	3.8	20	<1	7.2	0.2	0.2	1017	DRY	-	3.95	
DS20	76.314	29.6	29.4	33.2	33.2	0.8	<1	<1	38.8	0.1	0.1	1018	DRY	-	5.02	
DS22	71.147	<0.1	<0.1	3.0	3.0	15.5	<1	<1	28	0.2	0.1	1017	DRY	-	4.75	
DS23	67.225	<0.1	<0.1	0.2	0.2	21.0	<1	<1	0	0.2	0.2	1017	0.28	66.945	1.00	
DS24	66.731	<0.1	<0.1	1.3	1.3	20.1	<1	<1	0	0.2	0.2	1017	0.81	65.921	1.00	
DS25	66.851	<0.1	<0.1	0.5	0.5	21.4	<1	<1	0.4	0.1	0.1	1017	0.70	66.151	1.05	
DS26	70.247	<0.1	<0.1	2.4	2.4	18.0	<1	<1	0	0.1	0.1	1017	4.27	65.977	4.60	
DS27	66.817	<0.1	<0.1	0.2	0.2	21.6	<1	<1	6.2	0.1	0.1	1017	1.70	65.117	2.41	

Notes:
Calibration gas standards = CH_4 4.94%, CO_2 5.01%, O_2 6.03%, VOCs 100ppm
AP - Atmospheric Pressure Trend
Peak reading = maximum recorded level during a monitoring event.
Steady reading = level which remained constant after approximately 5 minutes.
GSV = Gas Screening Value - the maximum percentage steady CH_4 or CO_2 multiplied by the gas flow rate.
Atmosphric Pressure trend obtained from weather online (www.weatheronline.co.uk)

GAS & GROUNDWATER MONITORING RECORD

Client Homes and Communities Agency
Project East Lancashire Paper Mill
Job Number A090070-193

VISIT 3 **Date** 23.02.17 **Start** 10:30 **End** 15:40 **By** LD **AP Trend** Rising after a period of significant fall
Instruments used - GA5000 with internal flow pod, Dip meter
Background (start) CH_4 <0.1 CO_2 <0.1 O_2 20.9% **AP** 987 **Weather** Strong gales and rain
Background (end) CH_4 <0.1 CO_2 <0.1 O_2 21.4% **AP** 991

Installation	Exploratory Hole Level (mAOD)	CH_4		CO_2		O_2	CO	H_2S	VOC	Flow Rate		Atmospheric Pressure (mbar)	Depth to Water (mbgl)	Groundwater (mAOD)	Depth to Base (mbgl)	Remarks
		Peak (% vol)	Steady (% vol)	Peak (% vol)	Steady (% vol)	Steady (% vol)	Av. (ppm)	Av. (ppm)	Av. (ppm)	Peak (l/h)	Steady (l/h)					
BH102	67.055	<0.1	<0.1	1.0	1.0	20.7	<1	<1	0.4	0.1	0.1	987	2.00	65.055	3.24	
BH103	67.384	<0.1	<0.1	0.6	0.6	21.0	<1	<1	0.6	0.1	0.1	988	3.51	63.874	12.75	
BH104	66.944	1.4	1.4	0.5	0.5	18.9	<1	<1	0.4	0.1	0.1	988	1.12	65.824	4.20	
BH105	68.930	1.4	1.2	2.2	2.0	16.8	5.0	<1	0.2	0.1	0.1	989	5.15	63.780	9.23	
DS01	62.009	<0.1	<0.1	0.7	0.6	20.9	<1	<1	0.1	0.1	0.1	988	1.35	60.659	2.50	
DS02	62.143	<0.1	<0.1	0.2	0.2	21.2	<1	<1	0	0.1	0.1	987	1.34	60.803	3.00	
DS03	64.193	<0.1	<0.1	<0.1	<0.1	20.4	<1	<1	0	0.1	0.1	989	2.38	61.813	2.75	
DS04	64.208	<0.1	<0.1	<0.1	<0.1	20.9	<1	<1	18	0.1	0.1	990	WAB	-	1.00	
DS05	64.897	<0.1	<0.1	<0.1	<0.1	19.7	<1	<1	7.4	0.1	0.1	993	DRY	-	2.33	
DS06	64.621	<0.1	<0.1	0.2	0.2	21.5	<1	<1	0	0.1	0.1	992	DRY	-	1.85	
DS07	66.512	<0.1	<0.1	0.2	0.2	21.5	<1	<1	0	0.1	0.1	994	1.80	64.712	2.28	
DS09	67.647	<0.1	<0.1	1.3	1.3	20.2	<1	<1	0	0.1	0.1	994	1.65	65.997	2.20	
DS11	67.573	<0.1	<0.1	3.0	3.0	19.0	<1	<1	0	0.2	0.2	992	1.69	65.883	2.80	
DS14	64.324	0.7	0.7	3.5	3.5	10.0	<1	<1	30	0.2	0.2	992	1.69	62.634	4.00	
DS17	69.176	<0.1	<0.1	7.5	7.5	3.5	22	<1	7.8	0.1	0.1	990	DRY	-	3.95	
DS20	76.314	29.8	29.6	33.7	33.5	0.5	<1	<1	35.2	0.4	0.4	989	DRY	-	5.03	
DS22	71.147	<0.1	<0.1	3.2	3.2	15.3	<1	<1	29.2	0.2	0.2	989	DRY	-	4.75	
DS23	67.225	<0.1	<0.1	0.3	0.3	20.9	<1	<1	0	0.2	0.2	991	0.25	66.975	1.00	GW noted then purged prior
DS24	66.731	<0.1	<0.1	1.5	1.5	19.9	<1	<1	0	0.1	0.1	990	0.58	66.151	1.00	
DS25	66.851	<0.1	<0.1	0.6	0.6	21.3	<1	<1	0.6	0.1	0.1	991	0.55	66.301	1.05	
DS26	70.247	<0.1	<0.1	2.5	2.5	17.9	<1	<1	6	0.1	0.1	991	4.00	66.247	4.60	
DS27	66.817	<0.1	<0.1	0.3	0.3	21.4	<1	<1	6.5	0.1	0.1	992	1.64	65.177	2.40	

Notes:
Calibration gas standards = CH_4 4.94%, CO_2 5.01%, O_2 6.03%, VOCs 100ppm
AP - Atmospheric Pressure Trend
Peak reading = maximum recorded level during a monitoring event.
Steady reading = level which remained constant after approximately 5 minutes.
GSV = Gas Screening Value - the maximum percentage steady CH_4 or CO_2 multiplied by the gas flow rate.
Atmosphric Pressure trend obtained from weather online (www.weatheronline.co.uk)

GAS & GROUNDWATER MONITORING RECORD

Client Homes and Communities Agency
Project East Lancashire Paper Mill
Job Number A090070-193

VISIT 4 **Date** 28.02.17 **Start** 08.20 **End** 14.00 **By** LD **AP Trend** Rising after a period of significant fall
Instruments used - GA5000 with internal flow pod, Dip meter
Background (start) CH_4 <0.1 CO_2 0.2% O_2 21.2% **AP** 976 **Weather** Snow, cold
Background (end) CH_4 <0.1 CO_2 <0.1 O_2 21.0% **AP** 977

Installation	Exploratory Hole Level (mAOD)	CH_4		CO_2		O_2	CO	H_2S	VOC	Flow Rate		Atmospheric Pressure (mbar)	Depth to Water (mbgl)	Groundwater (mAOD)	Depth to Base (mbgl)	Remarks
		Peak (% vol)	Steady (% vol)	Peak (% vol)	Steady (% vol)	Steady (% vol	Av. (ppm)	Av. (ppm)	Av. (ppm)	Peak (l/h)	Steady (l/h)					
BH102	67.055	<0.1	<0.1	0.7	0.3	20.9	<1	<1	<0.1	0.1	0.1	976	1.67	65.385	3.24	
BH103	67.384	<0.1	<0.1	0.4	0.4	21.0	<1	<1	0.4	0.1	0.1	976	3.19	64.194	12.75	
BH104	66.944	0.1	0.1	0.3	0.3	20.3	<1	<1	0.3	0.1	0.1	976	0.90	66.044	4.20	
BH105	68.930	0.3	0.3	2.1	2.1	15.2	3.0	<1	0.8	0.1	0.1	976	5.00	63.930	9.23	
DS01	62.009	<0.1	<0.1	0.6	0.6	20.8	<1	<1	<0.1	0.2	0.2	976	1.33	60.679	2.48	
DS02	62.143	<0.1	<0.1	0.4	0.4	21.0	<1	<1	<0.1	0.2	0.2	976	2.00	60.143	3.01	
DS03	64.193	<0.1	<0.1	0.2	0.2	21.0	<1	<1	<0.1	0.2	0.2	977	DRY	-	2.75	
DS04	64.208	<0.1	<0.1	0.1	0.1	20.9	<1	<1	16.8	0.1	0.1	977	DRY	-	1.00	
DS05	64.897	<0.1	<0.1	0.2	0.2	19.6	<1	<1	6	0.2	0.2	976	DRY	-	2.33	
DS06	64.621	<0.1	<0.1	<0.1	<0.1	21.4	<1	<1	<0.1	0.1	0.1	977	DRY	-	1.86	
DS07	66.512	<0.1	<0.1	0.2	0.2	21.0	<1	<1	<0.1	0.1	0.1	976	1.61	64.902	2.26	
DS09	67.647	<0.1	<0.1	1.4	1.2	20.3	<1	<1	<0.1	0.1	0.1	977	1.66	65.987	2.21	
DS11	67.573	<0.1	<0.1	3.2	2.8	19.6	<1	<1	0.1	0.1	0.1	977	1.66	65.913	2.80	
DS14	64.324	<0.1	<0.1	3.9	3.9	7.3	<1	<1	25.6	0.1	0.1	976	1.44	62.884	4.00	
DS17	69.176	<0.1	<0.1	4.8	3.8	14.0	<1	<1	7	0.1	0.1	976	DRY	-	3.95	
DS20	76.314	37.4	37.4	38.0	38.0	0.3	<1	<1	28.4	0.2	0.2	976	DRY	-	5.04	
DS22	71.147	<0.1	<0.1	3.1	3.1	16.8	<1	<1	12	0.1	0.1	976	DRY	-	4.75	
DS23	67.225	<0.1	<0.1	0.2	0.2	20.9	<1	<1	<0.1	0.2	0.2	977	0.25	66.975	1.00	
DS24	66.731	<0.1	<0.1	1.6	1.4	19.8	<1	<1	<0.1	0.2	0.2	977	0.70	66.031	1.00	
DS25	66.851	<0.1	<0.1	0.7	0.5	21.0	<1	<1	<0.1	0.1	0.1	976	0.59	66.261	1.05	
DS26	70.247	<0.1	<0.1	2.6	2.3	17.6	<1	<1	4.8	0.1	0.1	976	3.96	66.287	4.58	
DS27	66.817	<0.1	<0.1	0.3	0.3	21.0	<1	<1	<0.1	0.1	0.1	976	1.60	65.217	2.40	

Notes:
Calibration gas standards = CH_4 4.94%, CO_2 5.01%, O_2 6.03%, VOCs 100ppm
AP - Atmospheric Pressure Trend
Peak reading = maximum recorded level during a monitoring event
Steady reading = level which remained constant after approximately 5 minutes.
GSV = Gas Screening Value - the maximum percentage steady CH_4 or CO_2 multiplied by the gas flow rate.
Atmosphric Pressure trend obtained from weather online (www.weatheronline.co.uk)

GAS & GROUNDWATER MONITORING RECORD
Client Homes and Communities Agency
Project East Lancashire Paper Mill
Job Number A090070-193

VISIT 5 **Date** 09/03/2017 **Start** 09:10 **End** 16:00 **By** LD **AP Trend** Rising **Weather** Clear, Sunny
Instruments used - GA5000 with internal flow pod, Dip meter
Background (start) **CH_4** <0.1 **CO_2** 0.1% **O_2** 21.1% **AP** 1009
Background (end) **CH_4** <0.1 **CO_2** 0.1% **O_2** 21.0% **AP** 1011

Installation	Exploratory Hole Level (mAOD)	CH_4		CO_2		O_2	CO	H_2S	VOC	Flow Rate		Atmospheric Pressure (mbar)	Depth to Water (mbgl)	Groundwater (mAOD)	Depth to Base (mbgl)	Remarks
		Peak (% vol)	Steady (% vol)	Peak (% vol)	Steady (% vol)	Steady (% vol)	Av. (ppm)	Av. (ppm)	Av. (ppm)	Peak (l/h)	Steady (l/h)					
BH102	67.055	<0.1	<0.1	0.6	0.3	20.8	<1	<1	0	0.1	0.1	1009	1.60	65.455	3.25	
BH103	67.384	<0.1	<0.1	0.2	0.2	21.2	<1	<1	0	0.1	0.1	1010	3.65	63.734	12.75	
BH104	66.944	0.3	0.2	0.6	0.5	18.8	<1	<1	0.6	0.1	0.1	1010	1.02	65.924	4.20	
BH105	68.930	0.2	0.2	2.6	2.6	15.0	<1	<1	0.3	0.1	0.1	1011	5.00	63.930	9.05	
DS01	62.009	<0.1	<0.1	0.3	0.3	20.9	<1	<1	0.8	0.2	0.1	1009	1.05	60.959	2.45	
DS02	62.143	<0.1	<0.1	0.2	0.2	20.9	<1	<1	0.2	0.1	0.1	1009	0.84	61.303	3.01	
DS03	64.193	<0.1	<0.1	0.1	0.1	17.6	<1	<1	0.4	0.1	0.1	1009	2.32	61.873	2.73	
DS04	64.208	<0.1	<0.1	0.2	0.2	21.2	<1	<1	14.2	0.1	0.1	1010	DRY	-	1.00	
DS05	64.897	<0.1	<0.1	0.2	0.2	20.2	<1	<1	8.6	0.2	0.1	1009	DRY	-	2.35	
DS06	64.621	<0.1	<0.1	0.2	0.2	21.3	<1	<1	0	0.1	0.1	1009	DRY	-	1.87	
DS07	66.512	<0.1	<0.1	0.2	0.2	21.2	<1	<1	0	0.1	0.1	1011	1.72	64.792	2.29	
DS09	67.647	<0.1	<0.1	0.8	0.8	20.6	<1	<1	0	0.2	0.1	1011	1.60	66.047	2.18	
DS11	67.573	<0.1	<0.1	2.6	2.6	19.5	<1	<1	0	0.1	0.1	1010	1.66	65.913	2.80	
DS14	64.324	<0.1	<0.1	3.3	3.3	6.1	<1	<1	28.6	0.1	0.1	1009	1.65	62.674	3.95	
DS17	69.176	<0.1	<0.1	1.6	1.6	18.6	4	<1	6.6	0.1	0.1	1011	DRY	-	3.94	
DS20	76.314	37.9	37.9	36.6	36.6	0.1	<1	<1	34.8	0.2	0.2	1011	DRY	-	5.02	
DS22	71.147	<0.1	<0.1	2.8	2.8	15.9	<1	<1	0	0.1	0.1	1010	DRY	-	4.75	
DS23	67.225	<0.1	<0.1	0.2	0.2	20.8	<1	<1	0	0.2	0.1	1010	0.26	66.965	1.00	
DS24	66.731	<0.1	<0.1	1.3	1.3	20.2	<1	<1	0	0.1	0.1	1009	0.72	66.011	1.00	
DS25	66.851	<0.1	<0.1	0.6	0.5	21.2	<1	<1	0	0.1	0.1	1011	0.66	66.191	1.05	
DS26	70.247	<0.1	<0.1	2.2	2.2	18.2	<1	<1	0	0.1	0.1	1011	4.12	66.127	4.60	
DS27	66.817	<0.1	<0.1	0.2	0.2	21.2	<1	<1	6	0.2	0.2	1011	1.60	65.217	2.40	

Notes:
Calibration gas standards = CH_4 4.94%, CO_2 5.01%, O_2 6.03%, VOCs 100ppm
AP - Atmospheric Pressure Trend
Peak reading = maximum recorded level during a monitoring event.
Steady reading = level which remained constant after approximately 5 minutes.
GSV = Gas Screening Value - the maximum percentage steady CH_4 or CO_2 multiplied by the gas flow rate.
Atmosphric Pressure trend obtained from weather online (www.weatheronline.co.uk)

GAS & GROUNDWATER MONITORING RECORD

Client Homes and Communities Agency
Project East Lancashire Paper Mill
Job Number A090070-193

VISIT 6 **Date** 14/03/2017 **Start** 09:25 **End** 15.15 **By** LD **AP Trend** Rising **Weather** Over cast
Instruments used - GA5000 with internal flow pod, Dip meter
Background (start) **CH_4** <0.1 **CO_2** <0.1% **O_2** 21.3% **AP** 1019
Background (end) **CH_4** <0.1 **CO_2** <0.1% **O_2** 21.0% **AP** 1022

Installation	Exploratory Hole Level (mAOD)	CH_4		CO_2		O_2	CO	H_2S	VOC	Flow Rate		Atmospheric Pressure (mbar)	Depth to Water (mbgl)	Groundwater (mAOD)	Depth to Base (mbgl)	Remarks
		Peak (% vol)	Steady (% vol)	Peak (% vol)	Steady (% vol	Steady (% vol	Av. (ppm)	Av. (ppm)	Av. (ppm)	Peak (l/h)	Steady (l/h)					
BH102	67.055	<0.1	<0.1	0.3	0.3	20.7	<0.1	<0.1	0	0.2	0.1	1019	1.64	65.415	3.25	
BH103	67.384	<0.1	<0.1	0.3	0.3	21.1	<0.1	<0.1	0	0.1	0.1	1020	3.78	63.604	12.75	
BH104	66.944	0.4	0.4	0.4	0.4	18.7	<0.1	<0.1	1.2	0.2	0.2	1020	1.09	65.854	4.20	
BH105	68.930	0.2	0.1	2.0	2.0	15.7	<0.1	<0.1	0.2	0.1	0.1	1020	5.08	63.850	9.05	
DS01	62.009	<0.1	<0.1	0.3	0.2	20.7	<0.1	<0.1	0.6	0.1	0.1	1019	1.12	60.889	2.45	
DS02	62.143	<0.1	<0.1	0.2	0.2	20.8	<0.1	<0.1	0	0.1	0.1	1019	0.88	61.263	3.00	
DS03	64.193	<0.1	<0.1	<0.1	<0.1	17.8	<0.1	<0.1	0	0.1	0.1	1020	2.35	61.843	2.73	
DS04	64.208	<0.1	<0.1	0.2	0.2	21.1	<0.1	<0.1	12.8	0.1	0.1	1020	Dry	-	1.00	
DS05	64.897	<0.1	<0.1	0.3	0.1	20.4	<0.1	<0.1	8.0	0.2	0.1	1020	Dry	-	2.35	
DS06	64.621	<0.1	<0.1	0.3	0.1	21.3	<0.1	<0.1	0	0.1	0.1	1021	Dry	-	1.86	
DS07	66.512	<0.1	<0.1	<0.1	<0.1	21.3	<0.1	<0.1	0	0.2	0.1	1020	1.76	64.752	2.26	
DS09	67.647	<0.1	<0.1	0.6	0.5	20.9	<0.1	<0.1	0	0.1	0.1	1020	1.65	65.997	2.16	
DS11	67.573	<0.1	<0.1	3.0	2.5	19.6	<0.1	<0.1	0	0.1	0.1	1021	1.70	65.873	2.80	
DS14	64.324	<0.1	<0.1	3.0	2.9	6.3	<0.1	<0.1	28	0.2	0.2	1021	1.68	62.644	3.95	
DS17	69.176	<0.1	<0.1	1.9	1.6	19.4	10	<0.1	6.2	0.1	0.1	1020	Dry	-	3.95	
DS20	76.314	37.6	37.6	36.9	36.9	0.1	<0.1	<0.1	33.6	0.1	0.1	1021	Dry	-	5.00	
DS22	71.147	<0.1	<0.1	3.0	2.7	16.0	<0.1	<0.1	0	0.1	0.1	1021	Dry	-	4.75	
DS23	67.225	<0.1	<0.1	0.3	0.3	20.6	<0.1	<0.1	0	0.1	0.1	1020	0.32	66.905	1.00	
DS24	66.731	<0.1	<0.1	1.4	1.2	20.4	<0.1	<0.1	0	0.1	0.1	1021	0.76	65.971	1.00	
DS25	66.851	<0.1	<0.1	0.5	0.5	21.0	<0.1	<0.1	0	0.1	0.1	1021	0.68	66.171	1.03	
DS26	70.247	<0.1	<0.1	2.3	2.0	18.4	<0.1	<0.1	0	0.1	0.1	1022	4.16	66.087	4.60	
DS27	66.817	<0.1	<0.1	0.4	0.4	21.0	<0.1	<0.1	5.6	0.1	0.1	1022	1.64	65.177	2.40	

Notes:
Calibration gas standards = CH_4 4.94%, CO_2 5.01%, O_2 6.03%, VOCs 100ppm
AP - Atmospheric Pressure Trend
Peak reading = maximum recorded level during a monitoring event
Steady reading = level which remained constant after approximately 5 minutes.
GSV = Gas Screening Value - the maximum percentage steady CH_4 or CO_2 multiplied by the gas flow rate.
Atmosphric Pressure trend obtained from weather online (www.weatheronline.co.uk)

Photo Plate No. 01 - Surface Water 1 (SW1) taken from upstream of the River Irwell

Photo Plate No. 02 – Surface Water 2 (SW2) taken from downstream of the River Irwell

Quay West at MediaCityUK,
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Environmental Consultancy
Ground Technologies & Investigation

Project : East Lancashire Paper Mill

Client: Homes & Communities Agency

Surface Water Sampling Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No. 03 – Surface Water 3 (SW3) taken from upstream of Hutchinson's Goit

Photo Plate No. 04 – Surface Water 4 (SW4) taken from the onsite reservoir

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Environmental Consultancy
Ground Technologies & Investigation

Project : East Lancashire Paper Mill

Client: Homes & Communities Agency

Surface Water Sampling Photo Plates

Project No.: A090070-193

Date: March 2017

Photo Plate No. 05 - Surface Water 5 (SW5) taken from the outfall of Hutchinson's Goit

Photo Plate No. 06 – Surface Water 6 (SW6) taken from the outfall of Crow Tree Farm Brooke

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Environmental Consultancy
Ground Technologies & Investigation

Project : East Lancashire Paper Mill

Client: Homes & Communities Agency

Surface Water Sampling Photo Plates

Project No.: A090070-193

Date: March 2017

Appendix F – Tier 1 Screening and Statistical Assessment

				Zone 1 - Former Wilton Mill								
			Sample Location	**TP101**	**TP102**	**TP102**	**TP103**	**DS01**	**DS01**	**DS02**	**DS02**	**DS02**
			Depth (m bgl)	0.50	0.50	1.60	0.80	0.50	1.40	0.50	0.70	0.90
			Date	24/01/2017	24/01/2017	24/01/2017	25/01/2017	24/01/2017	24/01/2017	24/01/2017	24/01/2017	24/01/2017
			Strata	MG: Granular	MG: Granular	MG: Granular	MG: Cohesive	MG: Granular	MG: Granular	MG: Granular	MG: Granular	MG: Cohesive
Field Observations				Ash and Clinker	Ash and Paper	Ash and Paper	Ash	NA	Paper Waste	Ash	Ash	Ash
Determinand	**Units**	**LOD**	**TSV**									
pH	pH units	<0.01	<5 >9	8.69	8.79	8.62	8.44	10.44	8.32	12.19	10.86	9.17
Asbestos Containing Materials	NA	NA	Presence (Y/N)	Yes	Yes	Yes	No	Yes	No	No	No	No
Asbestos Classification	NA	NA	NA	Chrysotile	Chrysotile, Amosite	Chrysotile	NAD	Chrysotile	NAD	NAD	NAD	NAD
Asbestos Level	NA	NA	0.01%	<0.1%	CBT	<0.1%	NA	<0.1%	NA	NA	NA	NA
Asbestos Gravimetric Quantificatio	mass %			-	0.029	-	-	-	-	-	-	-
Asbestos PCOM Quantification (Fib	mass %			-	0.016	-	-	-	-	-	-	-
Asbestos Gravimetric & PCOM	mass %			-	0.045	-	-	-	-	-	-	-
Metals												
Arsenic	mg/kg	<0.5	37	18.3	18.8	73.2	9.5	21.9	21.9	10.3	21.2	3.9
Barium	mg/kg	<1	1300	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	<0.5	1.7	1.7	1.5	1.8	1	1.5	1.4	1.1	0.8	2.1
Cadmium	mg/kg	<0.1	22	0.7	0.4	18.7	< 0.1	0.1	2.6	0.3	< 0.1	< 0.1
Chromium	mg/kg	<0.5	910	18.2	18.2	12.5	54.1	19.1	63.3	68.6	61.1	47.8
Chromium VI	mg/kg	<0.3	21	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Copper	mg/kg	<1	2400	59	65	138	20	37	67	18	27	8
Lead	mg/kg	<5	200	214	139	102	90	57	89	41	36	899
Mercury	mg/kg	<0.1	40	< 0.1	< 0.1	0.5	< 0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	mg/kg	<0.7	180	27.4	27.5	39.7	11.7	22.9	35.8	28.2	17.9	48.5
Selenium	mg/kg	<1	250	< 1	< 1	< 1	2	< 1	1	1	< 1	< 1
Water Soluble Boron	mg/kg	<0.1	290	0.9	0.6	0.6	0.5	1.2	1.3	1	1.3	0.7
Vanadium	mg/kg	<1	410	41	38	38	23	35	31	25	24	30
Zinc	mg/kg	<5	3700	411	208	3821	52	71	261	150	51	84
PAH												
Benzo(a)Pyrene	mg/kg	<0.04	5	5.64	6.67	0.77	< 0.04	0.07	1.83	5.31	75.48	0.28
Naphthalene	mg/kg	<0.04	2.3	0.63	0.7	0.18	< 0.04	< 0.04	0.29	0.45	4.62	< 0.04
EPH Hydrocarbons*												
EPH (>C8-C10)	mg/kg	<5	27	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C10-C12)	mg/kg	<10	74	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C12-C16)	mg/kg	<10	140	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C16-C21)	mg/kg	<10	260	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C21-C40)	mg/kg	<10	1100	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C8-C40)	mg/kg	<10		NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH CWG												
Aliphatic >C5-6	mg/kg	<0.1	42	< 0.1	< 0.1	< 0.1	< 0.1	0.1	0.1	< 0.1	< 0.1	< 0.1
Aliphatic >C6-8	mg/kg	<0.1	100	< 0.1	< 0.1	< 0.1	< 0.1	0.1	0.1	< 0.1	< 0.1	< 0.1
Aliphatic >C8-10	mg/kg	<0.1	27	< 0.1	< 0.1	< 0.1	< 0.1	0.1	0.1	< 0.1	< 0.1	< 0.1
Aliphatic >C10-12	mg/kg	<0.2	130	< 0.2	< 0.2	< 0.2	< 0.2	0.2	0.2	< 0.2	< 0.2	< 0.2
Aliphatic >C12-16	mg/kg	<4	1100	< 4	< 4	< 4	< 4	4	6	< 4	6	< 4
Aliphatic >C16-35	mg/kg	<14	65000	551	214	18	< 14	58	225	160	225	< 14
Aliphatic >C35-C44	mg/kg	<7	65000	178	11	< 7	< 7	7	32	26	37	< 7
Total Aliphatics C5-44	mg/kg	<26		729	225	< 26	< 26	51	263	186	268	< 26
Aromatic >EC5-7	mg/kg	<0.1	70	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic >EC7-8	mg/kg	<0.1	130	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic >EC8-10	mg/kg	<0.1	34	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic >EC10-12	mg/kg	<0.2	74	0.6	0.8	< 0.2	< 0.2	< 0.2	7.5	< 0.2	3.6	< 0.2
Aromatic >EC12-16	mg/kg	<4	140	21	19	6	< 4	< 4	104	6	64	< 4
Aromatic >EC16-21	mg/kg	<7	260	156	156	21	< 7	< 7	540	54	954	16
Aromatic >EC21-35	mg/kg	<7	1100	823	591	83	< 7	33	1545	266	4060	145
Aromatic > EC35-EC44	mg/kg	<7	1100	620	349	127	< 7	20	582	146	1591	244
Total aliphatics and aromatics	mg/kg	<52		2350	1341	237	< 52	104	3042	658	6941	405

VOCs																			
Benzene #	ug/kg	<0.1	200		NA	<	5	<	5	<	5	<	5		NA	<	5		NA	<	5
MTBE #	ug/kg	<5	49000		NA	<	5	<	5	<	5	<	5		NA	<	5		NA	<	5
Toluene #	ug/kg	<5	130,000		NA	<	5	<	5	<	5	<	5		NA	<	5		NA	<	5
Ethylbenzene #	ug/kg	<5	47000		NA	<	5	<	5	<	5	<	5		NA	<	5		NA	<	5
m/p-Xylene	ug/kg	<5	56000		NA	<	5	<	5	<	5	<	5		NA	<	5		NA	<	5
o-Xylene	ug/kg	<5	60000		NA	<	5	<	5	<	5	<	5		NA	<	5		NA	<	5
WHO 12 Congeners																			
PCB 77	ug/kg	<5		<	5		NA		NA		NA		NA		NA		NA		NA		NA
PCB 81	ug/kg	<5		<	5		NA		NA		NA		NA		NA		NA		NA		NA
PCB 105	ug/kg	<5		<	5		NA		NA		NA		NA		NA		NA		NA		NA
PCB 114	ug/kg	<5		<	5		NA		NA		NA		NA		NA		NA		NA		NA
PCB 118	ug/kg	<5	8	<	5		NA		NA		NA		NA		NA		NA		NA		NA
PCB 123	ug/kg	<5		<	5		NA		NA		NA		NA		NA		NA		NA		NA
PCB 126	ug/kg	<5		<	5		NA		NA		NA		NA		NA		NA		NA		NA
PCB 156	ug/kg	<5		<	5		NA		NA		NA		NA		NA		NA		NA		NA
PCB 157	ug/kg	<5		<	5		NA		NA		NA		NA		NA		NA		NA		NA
PCB 167	ug/kg	<5		<	5		NA		NA		NA		NA		NA		NA		NA		NA
PCB 169	ug/kg	<5		<	5		NA		NA		NA		NA		NA		NA		NA		NA
PCB 189	ug/kg	<5		<	5		NA		NA		NA		NA		NA		NA		NA		NA
Total 12 PCBs	ug/kg	<60		<	60		NA		NA		NA		NA		NA		NA		NA		NA
Glycol Suite																			
Monoethylene glycol	mg/kg	<10			NA		NA		NA		NA	<	10		NA		NA		NA		NA
Propylene glycol	mg/kg	<10			NA		NA		NA		NA	<	10		NA		NA		NA		NA
Diethylene glycol	mg/kg	<10			NA		NA		NA		NA	<	10		NA		NA		NA		NA
Triethylene glycol	mg/kg	<10			NA		NA		NA		NA	<	10		NA		NA		NA		NA
Thiodiglycol	mg/kg	<10			NA		NA		NA		NA	<	10		NA		NA		NA		NA
Miscellaneous																			
Fraction of organic carbon (FOC)	none	<0.001			NDP		NDP		NDP		0.02		NDP		0.082		0.019		0.182		0.006
Soil Organic Matter											3.4483				14.1379		3.2759		31.3793		1.0345
Total Organic Carbon	%	<0.02			NDP		21.2		22.4		25.7		NA		17.1		18		17.8		36.3
Cyanide(free)	mg/kg	<0.5	24	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Cyanide(total)	mg/kg	<0.5	24	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5		0.8		4.4	<	0.5	<	0.5
Sulphate as SO4 (2:1 Ext)	g/l	<0.0015			0.0133		0.0109		0.0278		NA		0.0726		NA		NA		NA		NA
Sulphate as SO4 (2:1 Ext)	mg/kg	<3			NA		NA		NA		70		NA		55		192		5		44
Total Phenols	mg/kg	<0.15	120	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Aluminium	mg/kg	<50			NA		NA		NA		NA		NA		NA		NA		NA		NA
Iron	mg/kg	<20			NA		NA		NA		NA		NA		NA		NA		NA		NA
Formaldehyde (water soluble)	mg/kg	<0.5			NA		NA		NA		NA		NA		NA		NA		NA		NA
Sulphide	mg/kg	<10			NA		NA		NA		NA		NA		NA		NA		NA		NA
Elemental Sulphur	mg/kg	<1			NA		NA		NA		NA		NA		NA		NA		NA		NA
Sulphur	%	<0.01			NA		NA		NA		NA		NA		NA		NA		NA		NA
Ammoniacal Nitrogen as N	mg/kg	<0.6			NA		NA		NA		NA		NA		NA		NA		NA		NA
Bromide	mg/kg	<0.3			NA		NA		NA		NA		NA		NA		NA		NA		NA
Chloride	mg/kg	<2			NA		NA		NA		NA		NA		NA		NA		NA		NA
Ortho Phosphate as PO4	mg/kg	<0.3			NA		NA		NA		NA		NA		NA		NA		NA		NA

KEY

	Concentration exceeds TSV
	S4UL 1% SOM
	C4SL 1% SOM
	WYG Screening Value
	Acute effects of infant 1 dose 3g soil
	CL:AIRE EIC Guidance. Residential without plant uptake
	Environmental Agency, 2009
NDP	No Determination Possible
NAD	No Asbestos Detected
-	Not tested
*	Worst case EPH fraction used.

Both C16-21 and C21-35 added together to create C16-25.

CBT Asbestos level Cannot Be Determined at this stage of analysis

				Zone 2 - Former Paper Mill Building														
			Sample Location	**BH101 (TP112)**	**BH101 (TP112)**	**TP106**	**TP108**	**TP108**	**TP110**	**TP110**	**TP111**	**TP111**	**TP112 (BH101)**	**TP112 (BH101)**	**TP113**	**TP113**	**TP119**	**TP119**
			Depth (m bgl)	0.20	1.00	0.50	0.50	2.0	0.20	1.80	0.40	0.50	0.20	1.00	0.50	1.20	0.50	1.20
			Date	17/01/2017	17/01/2017	25/01/2017	20/01/2017	20/01/2017	18/01/2017	18/01/2017	18/01/2017	18/01/2017	17/01/2017	17/01/2017	17/01/2017	17/01/2017	17/01/2017	17/01/2017
			Strata	MG: Granular	MG: Granular	MG: Cohesive	MG: Granular	MG: Granular	MG: Granular	MG: Granular	MG: Cohesive	MG: Granular	MG: Granular	MG: Granular	MG: Cohesive	MG: Cohesive	MG: Granular	MG: Granular
Field Observations				NA	NA	Paper Waste	NA	NA	NA	Hydrocarbon Odours	Ash and Clinker	Ash and Clinker	NA	NA	Hydrocarbon Odours	Hydrocarbon Odours	NA	NA
Determinand	**Units**	**LOD**	**TSV**															
pH	pH units	<0.01	<5 >9	8.87	11.61	7.88	10.83	11.43	11.13	11.34	8.39	9.64	8.87	11.61	9.31	8.97	7.89	8.08
Asbestos Containing Materials	NA	NA	Presence (Y/N)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes
Asbestos Classification	NA	NA	NA	Chrysotile	Chrysotile	Chrysotile	Chrysotile	Chrysotile	Chrysotile	Chrysotile Crocidolite	Chrysotile	Chrysotile, Amosite	Chrysotile	Chrysotile	NAD	Chrysotile	NAD	Chrysotile
Asbestos Level	NA	NA	0.01%	CBT	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%	CBT	<0.1%	NA	<0.1%	NA	<0.1%
Asbestos Gravimetric Quantificatio	mass %			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos PCOM Quantification (Fib	mass %			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos Gravimetric & PCOM	mass %			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Metals																		
Arsenic	mg/kg	<0.5	37	28.5	31	70	11.8	11.6	10.6	10.5	5	26.2	28.5	31	8.9	18.2	58.2	47.6
Barium	mg/kg	<1	1300	NA	NA	NA	NA	NA	168	NA	77	NA	NA	NA	134	NA	NA	NA
Beryllium	mg/kg	<0.5	1.7	1.4	1.2	4	1.1	1	1	0.9	0.9	1.8	1.4	1.2	1.1	1.5	1.2	1
Cadmium	mg/kg	<0.1	22	0.5	0.7	9.9	0.5	0.9	0.4	0.3	0.2	0.2	0.5	0.7	< 0.1	1.6	< 0.1	0.2
Chromium	mg/kg	<0.5	910	21.4	24.7	36.5	21.2	22.5	14.1	16.9	6.9	18.9	21.4	24.7	36.7	49.3	51.9	29.2
Chromium VI	mg/kg	<0.3	21	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	<0.3	
Copper	mg/kg	<1	2400	119	86	405	76	83	50	62	26	125	119	86	27	123	37	63
Lead	mg/kg	<5	200	225	206	526	283	476	144	166	18	219	225	206	34	500	105	172
Mercury	mg/kg	<0.1	40	0.1	0.3	< 0.1	0.4	0.7	0.4	0.7	< 0.1	0.2	0.1	0.3	< 0.1	0.8	< 0.1	< 0.1
Nickel	mg/kg	<0.7	180	32.2	30.5	72.7	19	22.6	16.5	18.6	18.3	46	32.2	30.5	27	48	29.9	22
Selenium	mg/kg	<1	250	< 1	< 1	< 1	< 1	< 1	< 1	1	< 1	1	< 1	< 1	1	1	1	1
Water Soluble Boron	mg/kg	<0.1	290	0.8	1	2.2	1.3	1.7	1.6	1.2	0.2	1.1	0.8	1	0.5	1.2	0.6	0.7
Vanadium	mg/kg	<1	410	34	28	86	30	30	20	24	18	41	34	28	23	61	26	26
Zinc	mg/kg	<5	3700	193	165	858	191	304	127	183	33	180	193	165	67	306	99	116
PAH																		
Benzo(a)Pyrene	mg/kg	<0.04	5	1.4	3.55	10.56	0.28	0.63	28.58	2.26	0.08	2.97	1.4	3.55	< 0.04	7.25	0.87	0.67
Naphthalene	mg/kg	<0.04	2.3	0.13	0.58	0.45	0.05	0.16	2.8	0.29	< 0.04	0.16	0.13	0.58	< 0.04	0.13	< 0.04	0.06
EPH Hydrocarbons*																		
EPH (>C8-C10)	mg/kg	<5	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C10-C12)	mg/kg	<10	74	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C12-C16)	mg/kg	<10	140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C16-C21)	mg/kg	<10	260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C21-C40)	mg/kg	<10	1100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C8-C40)	mg/kg	<10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH CWG																		
Aliphatic >C5-6	mg/kg	<0.1	42	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic >C6-8	mg/kg	<0.1	100	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic >C8-10	mg/kg	<0.1	27	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic >C10-12	mg/kg	<0.2	130	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	3.8	< 0.2	< 0.2
Aliphatic >C12-16	mg/kg	<4	1100	< 4	< 4	< 4	< 4	< 4	< 4	5	< 4	< 4	< 4	< 4	< 4	30	< 4	< 4
Aliphatic >C16-35	mg/kg	<14	65000	131	165	61	279	425	172	337	< 14	124	131	165	130	1202	< 14	20
Aliphatic >C35-C44	mg/kg	<7	65000	75	91	< 7	180	289	55	97	< 7	47	75	91	63	1127	< 7	< 7
Total Aliphatics C5-44	mg/kg	<26		199	256	54	459	714	227	439	< 26	171	199	256	193	2363	< 26	< 26
Aromatic >EC5-7	mg/kg	<0.1	70	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic >EC7-8	mg/kg	<0.1	130	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic >EC8-10	mg/kg	<0.1	34	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic >EC10-12	mg/kg	<0.2	74	< 0.2	< 0.2	< 0.2	< 0.2	1	< 0.2	1.7	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Aromatic >EC12-16	mg/kg	<4	140	8	10	< 4	< 4	15	< 4	13	< 4	< 4	8	10	< 4	20	< 4	< 4
Aromatic >EC16-21	mg/kg	<7	260	46	66	76	18	73	18	73	< 7	11	46	66	< 7	469	17	23
Aromatic >EC21-35	mg/kg	<7	1100	234	243	313	236	353	121	308	< 7	129	234	243	50	1190	50	82
Aromatic > EC35-EC44	mg/kg	<7	1100	200	202	177	197	296	48	91	< 7	110	200	202	39	984	< 7	70
Total aliphatics and aromatics	mg/kg	<52		687	777	620	910	1452	414	926	< 52	421	687	777	282	5026	67	175

VOCs																														
Benzene [#]	ug/kg	<0.1	200	<	5	<	5		NA	<	5	<	5		NA	<	5		NA	<	5	<	5	<	5	<	5		NA	<	5	<	5
MTBE [#]	ug/kg	<5	49000	<	5	<	5		NA	<	5	<	5		NA	<	5		NA	<	5	<	5	<	5	<	5		NA	<	5	<	5
Toluene [#]	ug/kg	<5	130,000	<	5		6		NA	<	5	<	5		NA	<	5		NA	<	5	<	5		6	<	5		NA	<	5	<	5
Ethylbenzene [#]	ug/kg	<5	47000	<	5	<	5		NA	<	5	<	5		NA	<	5		NA	<	5	<	5	<	5	<	5		NA	<	5	<	5
m/p-Xylene	ug/kg	<5	56000	<	5	<	5		NA	<	5	<	5		NA	<	5		NA	<	5	<	5	<	5	<	5		NA	<	5	<	5
o-Xylene	ug/kg	<5	60000	<	5	<	5		NA	<	5	<	5		NA	<	5		NA	<	5	<	5	<	5	<	5		NA	<	5	<	5
WHO 12 Congeners																														
PCB 77	ug/kg	<5			NA		NA	<	5		NA		NA		NA	<	5		NA		NA		NA		NA		NA		NA		NA
PCB 81	ug/kg	<5			NA		NA	<	5		NA		NA		NA	<	5		NA		NA		NA		NA		NA		NA		NA
PCB 105	ug/kg	<5			NA		NA	<	5		NA		NA		NA	<	5		NA		NA		NA		NA		NA		NA		NA
PCB 114	ug/kg	<5			NA		NA	<	5		NA		NA		NA	<	5		NA		NA		NA		NA		NA		NA		NA
PCB 118	ug/kg	<5	8		NA		NA	<	5		NA		NA		NA	<	5		NA		NA		NA		NA		NA		NA		NA
PCB 123	ug/kg	<5			NA		NA	<	5		NA		NA		NA	<	5		NA		NA		NA		NA		NA		NA		NA
PCB 126	ug/kg	<5			NA		NA	<	5		NA		NA		NA	<	5		NA		NA		NA		NA		NA		NA		NA
PCB 156	ug/kg	<5			NA		NA	<	5		NA		NA		NA	<	5		NA		NA		NA		NA		NA		NA		NA
PCB 157	ug/kg	<5			NA		NA	<	5		NA		NA		NA	<	5		NA		NA		NA		NA		NA		NA		NA
PCB 167	ug/kg	<5			NA		NA	<	5		NA		NA		NA	<	5		NA		NA		NA		NA		NA		NA		NA
PCB 169	ug/kg	<5			NA		NA	<	5		NA		NA		NA	<	5		NA		NA		NA		NA		NA		NA		NA
PCB 189	ug/kg	<5			NA		NA	<	5		NA		NA		NA	<	5		NA		NA		NA		NA		NA		NA		NA
Total 12 PCBs	ug/kg	<60			NA		NA	<	60		NA		NA		NA	<	60		NA		NA		NA		NA		NA		NA		NA
Glycol Suite																														
Monoethylene glycol	mg/kg	<10			NA		NA		NA		NA		NA	<	10		NA	<	10		NA		NA		NA	<	10		NA		NA		NA
Propylene glycol	mg/kg	<10			NA		NA		NA		NA		NA	<	10		NA	<	10		NA		NA		NA	<	10		NA		NA		NA
Diethylene glycol	mg/kg	<10			NA		NA		NA		NA		NA	<	10		NA	<	10		NA		NA		NA	<	10		NA		NA		NA
Triethylene glycol	mg/kg	<10			NA		NA		NA		NA		NA	<	10		NA	<	10		NA		NA		NA	<	10		NA		NA		NA
Thiodiglycol	mg/kg	<10			NA		NA		NA		NA		NA	<	10		NA	<	10		NA		NA		NA	<	10		NA		NA		NA
Miscellaneous																														
Fraction of organic carbon (FOC)	none	<0.001			NDP		NDP		NDP		NDP		NDP		NDP		NDP		NDP		NDP		NDP		0.02		NDP		0.023		NDP
Soil Organic Matter																									3.4483				3.9655		
Total Organic Carbon	%	<0.02			17		15.2		NDP		21.8		23.4		8.6		16.4		50		21.4		17		15.2		17.4		34.8		15.1		16
Cyanide(free)	mg/kg	<0.5	24	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Cyanide(total)	mg/kg	<0.5	24	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Sulphate as SO4 (2:1 Ext)	g/l	<0.0015			0.0281		0.0457		0.1815		0.0342		0.0491		0.033		0.0452		0.2511		0.2751		0.0281		0.0457		NA		0.4101		NA		0.0992
Sulphate as SO4 (2:1 Ext)	mg/kg	<3			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		165		NA		134		NA
Total Phenols	mg/kg	<0.15	120	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Aluminium	mg/kg	<50			NA		NA		NA		NA		NA		7109		NA		4055		NA		NA		NA		10050		NA		NA		NA
Iron	mg/kg	<20			NA		NA		NA		NA		NA		21438		NA		8775		NA		NA		NA		26200		NA		NA		NA
Formaldehyde (water soluble)	mg/kg	<0.5			NA		NA		NA		NA		NA		20.6		NA		22.4		NA		NA		NA		30.9		NA		NA		NA
Sulphide	mg/kg	<10			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
Elemental Sulphur	mg/kg	<1			NA		NA		NA		NA		NA	<	2		NA	<	2		NA		NA		NA		34		NA		NA		NA
Sulphur	%	<0.01			NA		NA		NA		NA		NA		0.09		NA		0.04		NA		NA		NA		0.08		NA		NA		NA
Ammoniacal Nitrogen as N	mg/kg	<0.6			NA		NA		NA		NA		NA	<	0.6		NA	<	0.6		NA		NA		NA	<	0.6		NA		NA		NA
Bromide	mg/kg	<0.3			NA		NA		NA		NA		NA	<	0.3		NA	<	0.3		NA		NA		NA	<	0.3		NA		NA		NA
Chloride	mg/kg	<2			NA		NA		NA		NA		NA	<	2		NA	<	2		NA		NA		NA		29		NA		NA		NA
Ortho Phosphate as PO4	mg/kg	<0.3			NA		NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	<	0.3		NA		NA		NA

KEY

	Concentration exceeds TSV
	S4UL 1% SOM
	C4SL 1% SOM
	WYG Screening Value
	Acute effects of infant 1 dose 3g soil
	CL:AIRE EIC Guidance. Residential without plant uptake
	Environmental Agency, 2009
NDP	No Determination Possible
NAD	No Asbestos Detected
-	Not tested
*	Worst case EPH fraction used.

Both C16-21 and C21-35 added together to create C16-25.

CBT Asbestos level Cannot Be Determined at this stage of analysis

				Zone 2 - Former Paper Mill Building											
			Sample Location	**TP119**	**TP120**	**TP120**	**TP121**	**TP123**	**TP124**	**TP124**	**DS03**	**DS03**	**DS04**	**DS05**	**DS14**
			Depth (m bgl)	2.50	0.50	2.80	0.50	1.50	0.20	1.20	0.50	1.70	0.5	0.50	0.8
			Date	17/01/2017	18/01/2017	18/01/2017	20/01/2017	25/01/2017	17/01/2017	17/01/2017	23/01/2017	23/01/2017	23/01/2017	25/01/2017	26/01/2017
			Strata	MG: Cohesive	MG: Cohesive	Natural: Sand &	MG: Granular	MG: Granular	MG: Cohesive	MG: Granular	MG: Granular	MG: Granular	MG: Granular	MG: Granular	MG: Granular
Field Observations				Black Staining	NA	Hydrocarb on Odours	NA	Paper Waste	NA	Ash and Clinker	Ash	Ash	NA	NA	Ash
Determinand	**Units**	**LOD**	**TSV**												
pH	pH units	<0.01	<5 >9	8.15	9.39	7.73	11.16	8.51	8.44	8.38	10.85	9.9	8.62	10.94	8.04
Asbestos Containing Materials	NA	NA	Presence (Y/N)	No	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Asbestos Classification	NA	NA	NA	NAD	Chrysotile	NAD	Chrysotile	Chrysotile	Chrysotile , Amosite	Chrysotile	Chrysotile	NAD	Chrysotile	Chrysotile	Chrysotile
Asbestos Level	NA	NA	0.01%	NA	<0.1%	NA	<0.1%	<0.1%	CBT	<0.1%	CBT	NA	CBT	<0.1%	<0.1%
Asbestos Gravimetric Quantificatio	mass %			-	-	-	-	-	0.003	-	-	-	-	-	-
Asbestos PCOM Quantification (Fib	mass %			-	-	-	-	-	0.001	-	-	-	-	-	-
Asbestos Gravimetric & PCOM	mass %			-	-	-	-	-	0.004	-	-	-	-	-	-
Metals															
Arsenic	mg/kg	<0.5	37	65	39.7	5.4	17	47.1	30.7	43.2	11.1	37.1	21.5	39.7	27
Barium	mg/kg	<1	1300	NA	223	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	<0.5	1.7	1.1	1.4	1.1	0.9	2.6	1.6	2.5	0.9	1.9	0.9	1.5	2.1
Cadmium	mg/kg	<0.1	22	< 0.1	< 0.1	0.1	0.2	0.5	0.5	0.3	0.9	< 0.1	0.5	0.6	0.4
Chromium	mg/kg	<0.5	910	38.3	31.3	42.3	22	25.4	33.5	21.5	19.3	57.6	27.6	21.6	19.8
Chromium VI	mg/kg	<0.3	21	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	<0.3	0.3	< 0.3
Copper	mg/kg	<1	2400	37	183	6	57	111	166	179	678	140	88	78	128
Lead	mg/kg	<5	200	103	182	9	169	136	944	301	1484	16820	1657	282	159
Mercury	mg/kg	<0.1	40	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.2	0.2	3.6	0.3	< 0.1
Nickel	mg/kg	<0.7	180	14.5	31.3	26.4	25.2	48.1	31	53	18.8	40	20.4	28.5	52.4
Selenium	mg/kg	<1	250	1	1	1	< 1	1	2	1	< 1	< 1	<1	1	< <1
Water Soluble Boron	mg/kg	<0.1	290	1.3	1.2	0.7	0.9	0.5	0.2	0.5	1.4	1.1	0.9	1	0.9
Vanadium	mg/kg	<1	410	26	29	25	22	57	37	63	25	47	24	34	49
Zinc	mg/kg	<5	3700	81	136	57	107	151	168	185	298	135	185	160	120
PAH															
Benzo(a)Pyrene	mg/kg	<0.04	5	< 0.04	0.2	< 0.04	0.61	0.24	4.43	2.81	0.39	1.13	1.52	1.06	0.46
Naphthalene	mg/kg	<0.04	2.3	< 0.04	< 0.04	< 0.04	0.08	0.65	0.23	0.25	0.07	< 0.04	0.31	0.23	< 0.16
EPH Hydrocarbons*															
EPH (>C8-C10)	mg/kg	<5	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C10-C12)	mg/kg	<10	74	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C12-C16)	mg/kg	<10	140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C16-C21)	mg/kg	<10	260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C21-C40)	mg/kg	<10	1100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C8-C40)	mg/kg	<10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH CWG															
Aliphatic >C5-6	mg/kg	<0.1	42	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< <0.1
Aliphatic >C6-8	mg/kg	<0.1	100	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< <0.1
Aliphatic >C8-10	mg/kg	<0.1	27	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< <0.1
Aliphatic >C10-12	mg/kg	<0.2	130	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	< 1.6
Aliphatic >C12-16	mg/kg	<4	1100	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	9	< 8
Aliphatic >C16-35	mg/kg	<14	65000	< 14	< 14	< 14	107	51	66	< 14	123	< 23	117	288	166
Aliphatic >C35-C44	mg/kg	<7	65000	< 7	< 7	< 7	136	25	< 7	< 7	113	< 7	87	62	< 50
Total Aliphatics C5-44	mg/kg	<26		< 26	< 26	< 26	236	69	66	< 26	229	< 26	197	359	< 226
Aromatic >EC5-7	mg/kg	<0.1	70	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< <0.1
Aromatic >EC7-8	mg/kg	<0.1	130	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< <0.1
Aromatic >EC8-10	mg/kg	<0.1	34	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.1	< <0.1
Aromatic >EC10-12	mg/kg	<0.2	74	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	0.2	< 1
Aromatic >EC12-16	mg/kg	<4	140	< 4	< 4	< 4	7	11	5	5	< 4	9	< 4	5	< 14
Aromatic >EC16-21	mg/kg	<7	260	< 7	< 7	< 7	29	33	58	28	13	49	44	38	< 38
Aromatic >EC21-35	mg/kg	<7	1100	< 7	< 36	< 7	144	111	185	89	128	143	150	194	179
Aromatic > EC35-EC44	mg/kg	<7	1100	< 7	< 7	< 7	188	38	165	29	176	146	109	60	66
Total aliphatics and aromatics	mg/kg	<52		< 52	< 52	< 52	604	262	479	151	546	347	500	656	524

VOCs																			
Benzene [#]	ug/kg	<0.1	200	NA		NA	NA	<	5	<	5	<	5	<	5	NA	<	5	5	<	5
MTBE [#]	ug/kg	<5	49000	NA		NA	NA	<	5	<	5	<	5	<	5	NA	<	5	5	<	5
Toluene [#]	ug/kg	<5	130,000	NA		NA	NA		9	<	5	<	5	<	5	NA	<	5	5	<	5
Ethylbenzene [#]	ug/kg	<5	47000	NA		NA	NA	<	5	<	5	<	5	<	5	NA	<	5	5	<	5
m/p-Xylene	ug/kg	<5	56000	NA		NA	NA	<	7	<	5	<	5	<	5	NA	<	5	5	<	5
o-Xylene	ug/kg	<5	60000	NA		NA	NA	<	5	<	5	<	5	<	5	NA	<	5	5	<	5
WHO 12 Congeners																			
PCB 77	ug/kg	<5		NA		NA	NA	<	5		NA		NA		NA	NA		NA	NA	<	5
PCB 81	ug/kg	<5		NA		NA	NA	<	5		NA		NA		NA	NA		NA	NA	<	5
PCB 105	ug/kg	<5		NA		NA	NA	<	5		NA		NA		NA	NA		NA	NA	<	5
PCB 114	ug/kg	<5		NA		NA	NA	<	5		NA		NA		NA	NA		NA	NA	<	5
PCB 118	ug/kg	<5	8	NA		NA	NA	<	5		NA		NA		NA	NA		NA	NA	<	5
PCB 123	ug/kg	<5		NA		NA	NA	<	5		NA		NA		NA	NA		NA	NA	<	5
PCB 126	ug/kg	<5		NA		NA	NA	<	5		NA		NA		NA	NA		NA	NA	<	5
PCB 156	ug/kg	<5		NA		NA	NA	<	5		NA		NA		NA	NA		NA	NA	<	5
PCB 157	ug/kg	<5		NA		NA	NA	<	5		NA		NA		NA	NA		NA	NA	<	5
PCB 167	ug/kg	<5		NA		NA	NA	<	5		NA		NA		NA	NA		NA	NA	<	5
PCB 169	ug/kg	<5		NA		NA	NA	<	5		NA		NA		NA	NA		NA	NA	<	5
PCB 189	ug/kg	<5		NA		NA	NA	<	5		NA		NA		NA	NA		NA	NA	<	5
Total 12 PCBs	ug/kg	<60		NA		NA	NA	<	60		NA		NA		NA	NA		NA	NA	<	60
Glycol Suite																			
Monoethylene glycol	mg/kg	<10		NA	<	10	NA		NA		NA		NA		NA	NA		NA	NA		NA
Propylene glycol	mg/kg	<10		NA	<	10	NA		NA		NA		NA		NA	NA		NA	NA		NA
Diethylene glycol	mg/kg	<10		NA	<	10	NA		NA		NA		NA		NA	NA		NA	NA		NA
Triethylene glycol	mg/kg	<10		NA	<	10	NA		NA		NA		NA		NA	NA		NA	NA		NA
Thiodiglycol	mg/kg	<10		NA	<	10	NA		NA		NA		NA		NA	NA		NA	NA		NA
Miscellaneous																			
Fraction of organic carbon (FOC)	none	<0.001		0.002		NDP	0.004		NDP		NDP		NDP		NDP	0.067		NA	NDP		NA
Soil Organic Matter				0.3448			0.6897									11.5517					
Total Organic Carbon	%	<0.02		28.4		24.4	14.6		15.9		25.7		16.8		26.6	NA		22	NA		NA
Cyanide(free)	mg/kg	<0.5	24	0.5	<	0.5	0.5	<	0.5	<	0.5	<	0.5	<	0.5	0.5	<	0.5	0.5	<	0.5
Cyanide(total)	mg/kg	<0.5	24	0.5	<	0.5	0.5	<	0.5	<	0.5		1.1		0.6	0.5	<	0.5	0.5	<	0.5
Sulphate as SO4 (2:1 Ext)	g/l	<0.0015		NA		0.2478	NA		0.0692		0.0153		0.0141		0.0187	0.0223		NA	0.034		0.0404		0.1456
Sulphate as SO4 (2:1 Ext)	mg/kg	<3		386		NA	47		NA		NA		NA		NA	111		NA	NA		NA
Total Phenols	mg/kg	<0.15	120	0.01	<	0.01	0.01	<	0.01	<	0.01	<	0.01	<	0.01	0.01	<	0.01	0.01	<	0.01
Aluminium	mg/kg	<50		NA		9117	NA		NA		NA		NA		NA	NA		NA	NA		NA
Iron	mg/kg	<20		NA		29383	NA		NA		NA		NA		NA	NA		NA	NA		NA
Formaldehyde (water soluble)	mg/kg	<0.5		NA		26.7	NA		NA		NA		NA		NA	NA		NA	NA		NA
Sulphide	mg/kg	<10		NA		NA	NA		NA		NA		NA		NA	NA		NA	NA		NA
Elemental Sulphur	mg/kg	<1		NA		15	NA		NA		NA		NA		NA	NA		NA	NA		NA
Sulphur	%	<0.01		NA		0.15	NA		NA		NA		NA		NA	NA		NA	NA		NA
Ammoniacal Nitrogen as N	mg/kg	<0.6		NA		8.6	NA		NA		NA		NA		NA	NA		NA	NA		NA
Bromide	mg/kg	<0.3		NA	<	0.3	NA		NA		NA		NA		NA	NA		NA	NA		NA
Chloride	mg/kg	<2		NA		16	NA		NA		NA		NA		NA	NA		NA	NA		NA
Ortho Phosphate as PO4	mg/kg	<0.3		NA		NA	NA		NA		NA		NA		NA	NA		NA	NA		NA

KEY

	Concentration exceeds TSV
	S4UL 1% SOM
	C4SL 1% SOM
	WYG Screening Value
	Acute effects of infant 1 dose 3g soil
	CL:AIRE EIC Guidance. Residential without plant uptake
	Environmental Agency, 2009
NDP	No Determination Possible
NAD	No Asbestos Detected
-	Not tested
*	Worst case EPH fraction used.

Both C16-21 and C21-35 added together to create C16-25.

CBT Asbestos level Cannot Be Determined at this stage of analysis

				Zone 3 - Land North of Church Street										
			Sample Location	**BH102**	**BH102**	**TP114**	**TP115**	**TP116**	**DS07**	**DS27**	**HP5**	**HP6**	**HP7**	**HP8**
			Depth (m bgl)	0.20	1.30	0.50	0.50	0.50	0.20	0.30	0.40	0.60	0.70	0.50
			Date	16/01/2017	16/01/2017	16/01/2017	20/01/2017	16/01/2017	24/01/2017	30/01/2017	01/02/2017	01/02/2017	01/02/2017	01/02/2017
			Strata	Natural: Gravel	Natural: Gravel	Natural: Sand &	Natural: Sand &	MG: Granular	Topsoil	MG: Granular	MG: Granular	MG: Granular	MG: Granular	MG: Granular
Field Observations				NA	NA	NA	NA	NA	NA	NA	Ash	NA	Ash	NA
Determinand	**Units**	**LOD**	**TSV**											
pH	pH units	<0.01	<5 >9	7.03	7.16	7.35	8.26	7.77	8.32	6.97	7.88	7.73	6.74	6.55
Asbestos Containing Materials	NA	NA	Presence (Y/N)	No	No	No	No	No	Yes	Yes	Yes	Yes	No	Yes
Asbestos Classification	NA	NA	NA	NAD	NAD	NAD	NAD	NAD	Chrysotile	Chrysotile	Amosite	Amosite	NAD	Chrysotile
Asbestos Level	NA	NA	0.01%	NA	NA	NA	NA	NA	<0.1%	<0.1%	<0.1%	<0.1%	NA	<0.1%
Asbestos Gravimetric Quantificatio	mass %			-	-	-	-	-	-	-	-	-	-	-
Asbestos PCOM Quantification (Fib	mass %			-	-	-	-	-	-	-	-	-	-	-
Asbestos Gravimetric & PCOM	mass %			-	-	-	-	-	-	-	-	-	-	-
Metals														
Arsenic	mg/kg	<0.5	37	4.1	5.2	5.2	10.8	25.3	31	124.9	25.7	84.8	40.5	129.9
Barium	mg/kg	<1	1300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	<0.5	1.7	1.2	0.9	1.2	1.2	1	1.1	1.5	1.2	4.2	3.8	2.1
Cadmium	mg/kg	<0.1	22	< 0.1	< 0.1	< 0.1	0.2	< 0.1	0.2	0.7	0.5	0.8	< 0.1	1.6
Chromium	mg/kg	<0.5	910	43	55.4	59.2	69.7	55.3	19.7	16.7	21.6	31.9	41.2	41.4
Chromium VI	mg/kg	<0.3	21	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Copper	mg/kg	<1	2400	6	7	8	9	9	52	201	61	194	87	161
Lead	mg/kg	<5	200	8	8	8	11	10	103	311	137	583	165	618
Mercury	mg/kg	<0.1	40	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.5	0.1	0.1	0.9	0.4
Nickel	mg/kg	<0.7	180	29.9	20	29.9	28	26.9	21.6	25.8	21.3	74.7	63.6	40
Selenium	mg/kg	<1	250	2	1	< 1	1	1	< 1	< 1	< 1	1	1	3
Water Soluble Boron	mg/kg	<0.1	290	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.6	0.4	0.5
Vanadium	mg/kg	<1	410	22	19	30	29	24	25	29	30	84	74	43
Zinc	mg/kg	<5	3700	70	46	61	73	65	101	139	128	337	63	540
PAH														
Benzo(a)Pyrene	mg/kg	<0.04	5	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.52	0.11	0.34	1.57	0.07	7.6
Naphthalene	mg/kg	<0.04	2.3	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.3	0.05	0.87
EPH Hydrocarbons*														
EPH (>C8-C10)	mg/kg	<5	27	NA	NA	NA	NA	NA	NA	NA	< 5	< 5	< 5	< 5
EPH (>C10-C12)	mg/kg	<10	74	NA	NA	NA	NA	NA	NA	NA	< 10	< 10	< 10	< 10
EPH (>C12-C16)	mg/kg	<10	140	NA	NA	NA	NA	NA	NA	NA	< 10	14	< 10	45
EPH (>C16-C21)	mg/kg	<10	260	NA	NA	NA	NA	NA	NA	NA	65	76	< 10	322
EPH (>C21-C40)	mg/kg	<10	1100	NA	NA	NA	NA	NA	NA	NA	354	384	< 10	1090
EPH (>C8-C40)	mg/kg	<10		NA	NA	NA	NA	NA	NA	NA	419	474	< 30	1457
TPH CWG														
Aliphatic >C5-6	mg/kg	<0.1	42	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	NA	NA	NA	NA
Aliphatic >C6-8	mg/kg	<0.1	100	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	NA	NA	NA	NA
Aliphatic >C8-10	mg/kg	<0.1	27	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	NA	NA	NA	NA
Aliphatic >C10-12	mg/kg	<0.2	130	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	NA	NA	NA	NA
Aliphatic >C12-16	mg/kg	<4	1100	< 4	< 4	< 4	< 4	< 4	< 4	< 4	NA	NA	NA	NA
Aliphatic >C16-35	mg/kg	<14	65000	< 14	< 14	< 14	< 14	< 14	< 14	183	NA	NA	NA	NA
Aliphatic >C35-C44	mg/kg	<7	65000	< 7	< 7	< 7	< 7	< 7	< 7	17	NA	NA	NA	NA
Total Aliphatics C5-44	mg/kg	<26		< 26	< 26	< 26	< 26	< 26	< 26	200	NA	NA	NA	NA
Aromatic >EC5-7	mg/kg	<0.1	70	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	NA	NA	NA	NA
Aromatic >EC7-8	mg/kg	<0.1	130	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	NA	NA	NA	NA
Aromatic >EC8-10	mg/kg	<0.1	34	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	NA	NA	NA	NA
Aromatic >EC10-12	mg/kg	<0.2	74	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	NA	NA	NA	NA
Aromatic >EC12-16	mg/kg	<4	140	< 4	< 4	< 4	< 4	< 4	< 4	< 4	NA	NA	NA	NA
Aromatic >EC16-21	mg/kg	<7	260	< 7	< 7	< 7	< 7	< 7	< 7	< 7	NA	NA	NA	NA
Aromatic >EC21-35	mg/kg	<7	1100	< 7	< 7	< 7	< 7	< 7	100	85	NA	NA	NA	NA
Aromatic > EC35-EC44	mg/kg	<7	1100	< 7	< 7	< 7	< 7	< 7	72	24	NA	NA	NA	NA
Total aliphatics and aromatics	mg/kg	<52		< 52	< 52	< 52	< 52	< 52	189	309	NA	NA	NA	NA

VOCs																
Benzene #	ug/kg	<0.1	200	<	5	<	5	<	5	<	5	NA	<	5	<	5	NA	NA	NA	NA
MTBE #	ug/kg	<5	49000	<	5	<	5	<	5	<	5	NA	<	5	<	5	NA	NA	NA	NA
Toluene #	ug/kg	<5	130,000	<	5	<	5	<	5	<	5	NA	<	5	<	5	NA	NA	NA	NA
Ethylbenzene #	ug/kg	<5	47000	<	5	<	5	<	5	<	5	NA	<	5	<	5	NA	NA	NA	NA
m/p-Xylene	ug/kg	<5	56000	<	5	<	5	<	5	<	5	NA	<	5	<	5	NA	NA	NA	NA
o-Xylene	ug/kg	<5	60000	<	5	<	5	<	5	<	5	NA	<	5	<	5	NA	NA	NA	NA
WHO 12 Congeners																
PCB 77	ug/kg	<5			NA		NA		NA		NA	NA		NA	<	5	NA	NA	NA	NA
PCB 81	ug/kg	<5			NA		NA		NA		NA	NA		NA	<	5	NA	NA	NA	NA
PCB 105	ug/kg	<5			NA		NA		NA		NA	NA		NA	<	5	NA	NA	NA	NA
PCB 114	ug/kg	<5			NA		NA		NA		NA	NA		NA	<	5	NA	NA	NA	NA
PCB 118	ug/kg	<5	8		NA		NA		NA		NA	NA		NA	<	5	NA	NA	NA	NA
PCB 123	ug/kg	<5			NA		NA		NA		NA	NA		NA	<	5	NA	NA	NA	NA
PCB 126	ug/kg	<5			NA		NA		NA		NA	NA		NA	<	5	NA	NA	NA	NA
PCB 156	ug/kg	<5			NA		NA		NA		NA	NA		NA	<	5	NA	NA	NA	NA
PCB 157	ug/kg	<5			NA		NA		NA		NA	NA		NA	<	5	NA	NA	NA	NA
PCB 167	ug/kg	<5			NA		NA		NA		NA	NA		NA	<	5	NA	NA	NA	NA
PCB 169	ug/kg	<5			NA		NA		NA		NA	NA		NA	<	5	NA	NA	NA	NA
PCB 189	ug/kg	<5			NA		NA		NA		NA	NA		NA	<	5	NA	NA	NA	NA
Total 12 PCBs	ug/kg	<60			NA		NA		NA		NA	NA		NA	<	60	NA	NA	NA	NA
Glycol Suite																
Monoethylene glycol	mg/kg	<10			NA		NA		NA		NA	NA		NA		NA	NA	NA	NA	NA
Propylene glycol	mg/kg	<10			NA		NA		NA		NA	NA		NA		NA	NA	NA	NA	NA
Diethylene glycol	mg/kg	<10			NA		NA		NA		NA	NA		NA		NA	NA	NA	NA	NA
Triethylene glycol	mg/kg	<10			NA		NA		NA		NA	NA		NA		NA	NA	NA	NA	NA
Thiodiglycol	mg/kg	<10			NA		NA		NA		NA	NA		NA		NA	NA	NA	NA	NA
Miscellaneous																
Fraction of organic carbon (FOC)	none	<0.001			0.001		0.003		0.002		0.001	0.002		NDP		NDP	NA	NA	NA	NA
Soil Organic Matter					0.1724		0.5172		0.3448		0.1724	0.3448								
Total Organic Carbon	%	<0.02			7.2		11.3		7.7		7	9.6		NA		NA	NA	NA	19.4	NA
Cyanide(free)	mg/kg	<0.5	24	<	0.5	<	0.5	<	0.5	<	0.5	0.5	<	0.5	<	0.5	0.5	<	0.5	0.5
Cyanide(total)	mg/kg	<0.5	24	<	0.5	<	0.5	<	0.5	<	0.5	0.5	<	0.5	<	0.5	NA	NA	NA	NA
Sulphate as SO4 (2:1 Ext)	g/l	<0.0015			8		22		6		8	7		0.003		0.0064	0.0091	0.0131	0.0706	0.0077
Sulphate as SO4 (2:1 Ext)	mg/kg	<3			NA		NA		NA		NA	NA		NA		NA	NA	NA	NA	NA
Total Phenols	mg/kg	<0.15	120	<	0.01	<	0.01	<	0.01	<	0.01	0.01	<	0.01	<	0.01	0.15	<	0.15	0.15
Aluminium	mg/kg	<50			NA		NA		NA		NA	NA		NA		NA	NA	NA	NA	NA
Iron	mg/kg	<20			NA		NA		NA		NA	NA		NA		NA	NA	NA	NA	NA
Formaldehyde (water soluble)	mg/kg	<0.5			NA		NA		NA		NA	NA		NA		NA	NA	NA	NA	NA
Sulphide	mg/kg	<10			NA		NA		NA		NA	NA		NA		NA	NA	NA	NA	NA
Elemental Sulphur	mg/kg	<1			NA		NA		NA		NA	NA		NA		NA	NA	NA	NA	NA
Sulphur	%	<0.01			NA		NA		NA		NA	NA		NA		NA	NA	NA	NA	NA
Ammoniacal Nitrogen as N	mg/kg	<0.6			NA		NA		NA		NA	NA		NA		NA	NA	NA	NA	NA
Bromide	mg/kg	<0.3			NA		NA		NA		NA	NA		NA		NA	NA	NA	NA	NA
Chloride	mg/kg	<2			NA		NA		NA		NA	NA		NA		NA	NA	NA	NA	NA
Ortho Phosphate as PO4	mg/kg	<0.3			NA		NA		NA		NA	NA		NA		NA	NA	NA	NA	NA

KEY

	Concentration exceeds TSV
	S4UL 1% SOM
	C4SL 1% SOM
	WYG Screening Value
	Acute effects of infant 1 dose 3g soil
	CL:AIRE EIC Guidance. Residential without plant uptake
	Environmental Agency, 2009
NDP	No Determination Possible
NAD	No Asbestos Detected
-	Not tested
*	Worst case EPH fraction used.

Both C16-21 and C21-35 added together to create C16-25.

CBT Asbestos level Cannot Be Determined at this stage of analysis

				Zone 4 - CHP and Boiler House Landfill							
			Sample Location	**TP127**	**TP128**	**TP130**	**DS17**	**DS17**	**DS17**	**DS20**	**DS22**
			Depth (m bgl)	1.20	2.50	1.50	0.30	1.60	3.80	1.50	0.30
			Date	25/01/2017	26/01/2017	26/01/2017	30/01/2017	30/01/2017	30/01/2017	27/01/2017	30/01/2017
			Strata	MG: Cohesive	MG: Granular	MG: Cohesive	MG: Granular	MG: Cohesive	MG: Cohesive	MG: Cohesive	MG: Granular
Field Observations				Paper Waste	Ash and Clinker	Ash and Coal	NA	Paper Waste	Paper Waste	Black Staining	NA
Determinand	**Units**	**LOD**	**TSV**								
pH	pH units	<0.01	<5 >9	8.18	8.28	8.77	8.04	7.75	7.82	7.38	8.03
Asbestos Containing Materials	NA	NA	Presence (Y/N)	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Asbestos Classification	NA	NA	NA	Chrysotile	NAD	Amosite, Chrysotile	Chrysotile	Crocidolite	Chrysotile, Crocidolite	Chrysotile	Chrysotile, Amosite
Asbestos Level	NA	NA	0.01%	<0.1%	NA	<0.1%	CBT	<0.1%	<0.1%	<0.1%	CBT
Asbestos Gravimetric Quantificatio	mass %			-	-	-	-	-	-	-	0.134
Asbestos PCOM Quantification (Fib	mass %			-	-	-	-	-	-	-	0.007
Asbestos Gravimetric & PCOM	mass %			-	-	-	-	-	-	-	0.141
Metals											
Arsenic	mg/kg	<0.5	37	2.8	3.3	20.6	72.2	2.7	16.4	73.1	34.9
Barium	mg/kg	<1	1300	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	<0.5	1.7	< 0.5	< 0.5	1.6	2.2	< 0.5	< 0.5	1.5	1.4
Cadmium	mg/kg	<0.1	22	0.4		0.5	1.7	< 0.1	0.1	0.8	0.3
Chromium	mg/kg	<0.5	910	5.5	6.6	28.8	25.5	4.1	7.4	41.4	13.5
Chromium VI	mg/kg	<0.3	21	< 0.3	< 0.3	< 0.3	0.3	< 0.3	< 0.3	< 0.3	< 0.3
Copper	mg/kg	<1	2400	11	6	222	283	10	36	100	75
Lead	mg/kg	<5	200	<5	7	495	2166	12	49	197	120
Mercury	mg/kg	<0.1	40	< 0.1	< 0.1	0.6	0.5	< 0.1	< 0.1	0.5	< 0.1
Nickel	mg/kg	<0.7	180	2.8	2.5	32.5	27.8	5.1	9.9	26.5	42.6
Selenium	mg/kg	<1	250	< 1	< 1	< 1	1	< 1	< 1	1	1
Water Soluble Boron	mg/kg	<0.1	290	0.4	1.1	1.2	0.4	0.8	0.7	0.7	0.6
Vanadium	mg/kg	<1	410	4	4	31	29	4	14	37	36
Zinc	mg/kg	<5	3700	11	15	202	242	16	47	152	88
PAH											
Benzo(a)Pyrene	mg/kg	<0.04	5	< 0.04	< 0.04	0.1	0.29	< 0.04	0.21	0.52	NA
Naphthalene	mg/kg	<0.04	2.3	< 0.04	< 0.04	< 0.04	0.04	< 0.04	< 0.04	0.07	1.02
EPH Hydrocarbons*											
EPH (>C8-C10)	mg/kg	<5	27	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C10-C12)	mg/kg	<10	74	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C12-C16)	mg/kg	<10	140	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C16-C21)	mg/kg	<10	260	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C21-C40)	mg/kg	<10	1100	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C8-C40)	mg/kg	<10		NA	NA	NA	NA	NA	NA	NA	NA
TPH CWG											
Aliphatic >C5-6	mg/kg	<0.1	42	< 0.1	< 0.1	< 0.1	0.1	< 1	< 0.1	< 0.1	< 0.1
Aliphatic >C6-8	mg/kg	<0.1	100	< 0.1	< 0.1	< 0.1	0.1	< 1	< 0.1	< 0.1	< 0.1
Aliphatic >C8-10	mg/kg	<0.1	27	< 0.1	< 0.1	< 0.1	0.1	< 1	< 0.1	< 0.1	< 0.1
Aliphatic >C10-12	mg/kg	<0.2	130	< 0.2	< 0.2	6.2	0.2	< 0.2	< 0.2	< 0.2	7.5
Aliphatic >C12-16	mg/kg	<4	1100	< 4	< 4	11	4	< 4	< 4	< 4	17
Aliphatic >C16-35	mg/kg	<14	65000	< 14	< 14	221	20	< 14	< 14	15	114
Aliphatic >C35-C44	mg/kg	<7	65000	< 7	< 7	76	7	< 7	< 7	< 7	11
Total Aliphatics C5-44	mg/kg	<26		< 26	< 26	314	26	< 26	< 26	< 26	150
Aromatic >EC5-7	mg/kg	<0.1	70	< 0.1	< 0.1	< 0.1	0.1	< 1	< 0.1	< 0.1	NA
Aromatic >EC7-8	mg/kg	<0.1	130	< 0.1	< 0.1	< 0.1	0.1	< 1	< 0.1	< 0.1	< 0.1
Aromatic >EC8-10	mg/kg	<0.1	34	< 0.1	< 0.1	< 0.1	0.1	< 1	< 0.1	< 0.1	< 0.1
Aromatic >EC10-12	mg/kg	<0.2	74	< 0.2	< 0.2	< 0.2	0.2	< 0.2	< 0.2	< 0.2	11.7
Aromatic >EC12-16	mg/kg	<4	140	< 4	< 4	< 4	4	< 4	< 4	< 4	38
Aromatic >EC16-21	mg/kg	<7	260	< 7	< 7	16	7	< 7	< 7	60	84
Aromatic >EC21-35	mg/kg	<7	1100	< 7	< 7	200	40	< 7	< 7	140	214
Aromatic > EC35-EC44	mg/kg	<7	1100	< 7	< 7	71	24	< 7	< 7	37	53
Total aliphatics and aromatics	mg/kg	<52		< 52	< 52	601	64	< 52	< 52	237	551

VOCs											
Benzene #	ug/kg	<0.1	200	<5	<5	<5	5	<50	<5	<5	<5
MTBE #	ug/kg	<5	49000	<5	<5	<5	5	<50	<5	<5	<5
Toluene #	ug/kg	<5	130,000	<5	<5	<5	5	<50	<5	<5	<5
Ethylbenzene #	ug/kg	<5	47000	<5	<5	<5	5	<50	<5	<5	<5
m/p-Xylene	ug/kg	<5	56000	<5	<5	<5	5	<50	<5	<5	<5
o-Xylene	ug/kg	<5	60000	<5	<5	<5	5	<50	<5	<5	<5
WHO 12 Congeners											
PCB 77	ug/kg	<5		NA	NA	NA	NA	NA	NA	NA	NA
PCB 81	ug/kg	<5		NA	NA	NA	NA	NA	NA	NA	NA
PCB 105	ug/kg	<5		NA	NA	NA	NA	NA	NA	NA	NA
PCB 114	ug/kg	<5		NA	NA	NA	NA	NA	NA	NA	NA
PCB 118	ug/kg	<5	8	NA	NA	NA	NA	NA	NA	NA	NA
PCB 123	ug/kg	<5		NA	NA	NA	NA	NA	NA	NA	NA
PCB 126	ug/kg	<5		NA	NA	NA	NA	NA	NA	NA	NA
PCB 156	ug/kg	<5		NA	NA	NA	NA	NA	NA	NA	NA
PCB 157	ug/kg	<5		NA	NA	NA	NA	NA	NA	NA	NA
PCB 167	ug/kg	<5		NA	NA	NA	NA	NA	NA	NA	NA
PCB 169	ug/kg	<5		NA	NA	NA	NA	NA	NA	NA	NA
PCB 189	ug/kg	<5		NA	NA	NA	NA	NA	NA	NA	NA
Total 12 PCBs	ug/kg	<60		NA	NA	NA	NA	NA	NA	NA	NA
Glycol Suite											
Monoethylene glycol	mg/kg	<10		NA	NA	NA	NA	NA	NA	NA	NA
Propylene glycol	mg/kg	<10		NA	NA	NA	NA	NA	NA	NA	NA
Diethylene glycol	mg/kg	<10		NA	NA	NA	NA	NA	NA	NA	NA
Triethylene glycol	mg/kg	<10		NA	NA	NA	NA	NA	NA	NA	NA
Thiodiglycol	mg/kg	<10		NA	NA	NA	NA	NA	NA	NA	NA
Miscellaneous											
Fraction of organic carbon (FOC)	none	<0.001		NDP	0.006	NDP	NDP	NDP	NDP	NDP	NDP
Soil Organic Matter					1.0345						
Total Organic Carbon	%	<0.02		83.9	89.1	24	NA	NA	NA	NA	NA
Cyanide(free)	mg/kg	<0.5	24	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5
Cyanide(total)	mg/kg	<0.5	24	<0.5	<0.5	5.2	0.7	<0.5	<0.5	0.9	<0.5
Sulphate as SO4 (2:1 Ext)	g/l	<0.0015		0.0169	NA	0.125	0.0186	0.0204	0.1035	0.0521	0.0125
Sulphate as SO4 (2:1 Ext)	mg/kg	<3		NA	306	NA	NA	NA	NA	NA	NA
Total Phenols	mg/kg	<0.15	120	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.03
Aluminium	mg/kg	<50		NA	NA	NA	NA	NA	NA	NA	NA
Iron	mg/kg	<20		NA	NA	NA	NA	NA	NA	NA	NA
Formaldehyde (water soluble)	mg/kg	<0.5		NA	NA	NA	NA	NA	NA	NA	NA
Sulphide	mg/kg	<10		NA	NA	NA	NA	<10	<10	NA	NA
Elemental Sulphur	mg/kg	<1		NA	NA	NA	NA	<1	<1	NA	NA
Sulphur	%	<0.01		NA	NA	NA	NA	NA	NA	NA	NA
Ammoniacal Nitrogen as N	mg/kg	<0.6		NA	NA	NA	NA	NA	NA	NA	NA
Bromide	mg/kg	<0.3		NA	NA	NA	NA	NA	NA	NA	NA
Chloride	mg/kg	<2		NA	NA	NA	NA	NA	NA	NA	NA
Ortho Phosphate as PO4	mg/kg	<0.3		NA	NA	NA	NA	NA	NA	NA	NA

KEY

	Concentration exceeds TSV
	S4UL 1% SOM
	C4SL 1% SOM
	WYG Screening Value
	Acute effects of infant 1 dose 3g soil
	CL:AIRE EIC Guidance. Residential without plant uptake
	Environmental Agency, 2009
NDP	No Determination Possible
NAD	No Asbestos Detected
-	Not tested
*	Worst case EPH fraction used.

Both C16-21 and C21-35 added together to create C16-25.

CBT	Asbestos level Cannot Be Determined at this stage of analysis

				Zone 5 - Former Reservoirs															
			Sample Location	**BH103**	**BH104**	**TP117**	**TP117**	**TP117**	**TP118**	**TP118**	**TP133**	**TP133**	**TP134**	**TP134**	**TP135**	**TP136**	**TP137**	**TP137**	**TP138**
			Depth (m bgl)	1.20	0.50	0.50	1.20	1.50	0.10	1.00	0.40	1.50	0.50	1.10	1.00	0.20	0.50	1.00	0.20
			Date	18/01/2017	23/01/2017	17/01/2017	17/01/2017	17/01/2017	17/01/2017	17/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017	19/01/2017
			Strata	MG: Cohesive	MG: Granular	MG: Cohesive	MG: Granular	Natural: Sand &	MG: Cohesive	Natural: Sand &	MG: Cohesive	Natural: Cohesive	MG: Granular	Natural: Cohesive	MG: Cohesive	MG: Cohesive	MG: Cohesive	Natural: Sand &	MG: Cohesive
Field Observations				NA	NA	NA	Black Staining	NA	NA	Black Staining	NA	Black Staining	NA	Black Staining	NA	NA	NA	NA	NA
Determinand	**Units**	**LOD**	**TSV**																
pH	pH units	<0.01	<5 >9	10.91	7.24	7.87	7.62	7.92	8.06	8.21	8.24	7.33	6.37	6.26	5.1	5.76	5.76	6.21	6.08
Asbestos Containing Materials	NA	NA	Presence (Y/N)	No	No	No	No	No	Yes	No	Yes	No	No	No	No	No	No	No	No
Asbestos Classification	NA	NA	NA	NAD	NAD	NAD	NAD	NAD	Chrysotile, Crocidolite, Amosite	NAD	Chrysotile	NAD	NAD	NAD	NAD	NAD	NAD	NAD	NAD
Asbestos Level	NA	NA	0.01%	NA	NA	NA	NA	NA	CBT	NA	<0.1%	NA	NA	NA	NA	NA	NA	NA	NA
Asbestos Gravimetric Quantificatio	mass %			-	-	-	-	-	0.146	-	-	-	-	-	-	-	-	-	-
Asbestos PCOM Quantification (Fib	mass %			-	-	-	-	-	0.009	-	-	-	-	-	-	-	-	-	-
Asbestos Gravimetric & PCOM	mass %			-	-	-	-	-	0.155	-	-	-	-	-	-	-	-	-	-
Metals																			
Arsenic	mg/kg	<0.5	37	12.7	7.3	33.9	6.9	4	29.8	5.6	17.9	53.7	19.4	6.6	15.4	22.6	15.6	10.2	18
Barium	mg/kg	<1	1300	NA	NA	NA	NA	NA	NA	NA	130	NA	NA	NA	NA	NA	106	NA	NA
Beryllium	mg/kg	<0.5	1.7	2.1	1.1	1.4	0.9	1	1.5	1.1	1.1	2.3	1	0.9	1	1.3	1	0.8	1.2
Cadmium	mg/kg	<0.1	22	< 0.1	< 0.1	< 0.1	< 0.1	0.4	0.1	0.2	0.1	0.9	< 0.1	< 0.1	< 0.1	0.1	< 0.1	0.2	< 0.1
Chromium	mg/kg	<0.5	910	55.9	60	57.6	45.9	52.4	34.4	42.6	33.5	89.8	68.5	43.5	50.7	51.9	48.2	69.5	65.4
Chromium VI	mg/kg	<0.3	21	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Copper	mg/kg	<1	2400	46	21	69	8	7	92	7	62	274	3	22	17	25	26	9	43
Lead	mg/kg	<5	200	84	33	104	9	7	348	11	125	490	9	37	23	38	45	10	89
Mercury	mg/kg	<0.1	40	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	1.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	mg/kg	<0.7	180	27.2	22.3	28.9	23.7	27.3	28.7	29.7	21.1	59.2	18.5	16.5	31.7	35.2	22	29.2	29.1
Selenium	mg/kg	<1	250	< 1	1	< 1	2	1	1	2	1	3	1	2	2	2	2	< 1	2
Water Soluble Boron	mg/kg	<0.1	290	1	0.5	0.4	0.3	0.2	0.6	0.3	0.9	1.8	0.3	0.7	0.2	0.3	0.4	0.3	0.5
Vanadium	mg/kg	<1	410	33	23	30	21	20	32	22	24	44	16	28	24	25	24	16	28
Zinc	mg/kg	<5	3700	75	73	119	68	56	134	60	99	320	41	77	77	115	82	81	99
PAH																			
Benzo(a)Pyrene	mg/kg	<0.04	5	2.22	< 0.04	< 0.04	< 0.04	< 0.04	0.2	< 0.04	0.45	< 0.04	< 0.04	< 0.04	0.06	< 0.04	< 0.04	< 0.04	< 0.04
Naphthalene	mg/kg	<0.04	2.3	0.47	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04
EPH Hydrocarbons*																			
EPH (>C8-C10)	mg/kg	<5	27	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C10-C12)	mg/kg	<10	74	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C12-C16)	mg/kg	<10	140	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C16-C21)	mg/kg	<10	260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C21-C40)	mg/kg	<10	1100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C8-C40)	mg/kg	<10		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH CWG																			
Aliphatic >C5-6	mg/kg	<0.1	42	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic >C6-8	mg/kg	<0.1	100	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic >C8-10	mg/kg	<0.1	27	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic >C10-12	mg/kg	<0.2	130	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Aliphatic >C12-16	mg/kg	<4	1100	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
Aliphatic >C16-35	mg/kg	<14	65000	16	< 14	14	< 14	< 14	29	< 14	14	< 14	< 14	< 14	< 14	< 14	< 14	< 14	< 14
Aliphatic >C35-C44	mg/kg	<7	65000	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7
Total Aliphatics C5-44	mg/kg	<26		< 26	< 26	< 26	< 26	< 26	< 26	< 26	< 26	< 26	< 26	< 26	< 26	< 26	< 26	< 26	< 26
Aromatic >EC5-7	mg/kg	<0.1	70	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic >EC7-8	mg/kg	<0.1	130	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic >EC8-10	mg/kg	<0.1	34	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic >EC10-12	mg/kg	<0.2	74	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Aromatic >EC12-16	mg/kg	<4	140	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
Aromatic >EC16-21	mg/kg	<7	260	29	< 7	< 7	< 7	< 7	< 7	< 7	8	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7
Aromatic >EC21-35	mg/kg	<7	1100	110	< 7	< 7	< 7	< 7	53	< 7	52	76	< 7	45	< 7	< 7	< 7	< 7	< 7
Aromatic > EC35-EC44	mg/kg	<7	1100	77	< 7	< 7	< 7	< 7	29	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7
Total aliphatics and aromatics	mg/kg	<52		216	< 52	< 52	< 52	< 52	82	< 52	60	76	< 52	< 52	< 52	< 52	< 52	< 52	< 52

VOCs																							
Benzene [#]	ug/kg	<0.1	200	<	5	<	5	NA	<	5	<	5	<	5	NA	<	5	<	5	<	5	<	5	<	5	<	5	<	5
MTBE [#]	ug/kg	<5	49000	<	5	<	5	NA	<	5	<	5	<	5	NA	<	5	<	5	<	5	<	5	<	5	<	5	<	5
Toluene [#]	ug/kg	<5	130,000	<	5	<	5	NA	<	5	<	5	<	5	NA	<	5	<	5	<	5	<	5	<	5	<	5	<	5
Ethylbenzene [#]	ug/kg	<5	47000	<	5	<	5	NA	<	5	<	5	<	5	NA	<	5	<	5	<	5	<	5	<	5	<	5	<	5
m/p-Xylene	ug/kg	<5	56000	<	5	<	5	NA	<	5	<	5	<	5	NA	<	5	<	5	<	5	<	5	<	5	<	5	<	5
o-Xylene	ug/kg	<5	60000	<	5	<	5	NA	<	5	<	5	<	5	NA	<	5	<	5	<	5	<	5	<	5	<	5	<	5
WHO 12 Congeners																							
PCB 77	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
PCB 81	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
PCB 105	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
PCB 114	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
PCB 118	ug/kg	<5	8		NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
PCB 123	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
PCB 126	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
PCB 156	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
PCB 157	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
PCB 167	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
PCB 169	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
PCB 189	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
Total 12 PCBs	ug/kg	<60			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
Glycol Suite																							
Monoethylene glycol	mg/kg	<10			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
Propylene glycol	mg/kg	<10			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
Diethylene glycol	mg/kg	<10			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
Triethylene glycol	mg/kg	<10			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
Thiodiglycol	mg/kg	<10			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
Miscellaneous																							
Fraction of organic carbon (FOC)	none	<0.001			0.023		0.007	0.028		0.006		0.001		NDP	0.001		NDP		0.049		NA		0.004		0.005		0.006		0.003		0.002		0.006
Soil Organic Matter					3.9655		1.2069	4.8276		1.0345		0.1724							8.4483				0.6897		0.8621		1.0345		0.5172		0.3448		1.0345
Total Organic Carbon	%	<0.02			12.5		18.1	16.8		10.4		8.7		22.8	6.7		17.8		93.2		NA		25		11.5		14.1		20.2		9.3		19.8
Cyanide(free)	mg/kg	<0.5	24	<	0.5	<	0.5	0.5	<	0.5	<	0.5	<	0.5	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Cyanide(total)	mg/kg	<0.5	24	<	0.5	<	0.5	0.5	<	0.5	<	0.5	<	0.5	0.5	<	0.5	<	3.7	<	0.5	<	0.8	<	0.5	<	0.5	<	0.5	<	0.8	<	0.5
Sulphate as SO4 (2:1 Ext)	g/l	<0.0015			NA		NA	NA		NA		NA		0.0052	NA		0.1159		NA		NA		NA		NA		NA		NA		NA		NA
Sulphate as SO4 (2:1 Ext)	mg/kg	<3			371		78	30		35		19		NA	9		NA		83		215		349		50		36		169		96		134
Total Phenols	mg/kg	<0.15	120	<	0.01	<	0.01	0.01	<	0.01	<	0.01	<	0.01	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Aluminium	mg/kg	<50			NA		NA	NA		NA		NA		NA	NA		10345		NA		NA		NA		NA		NA		11880		NA		NA
Iron	mg/kg	<20			NA		NA	NA		NA		NA		NA	NA		27306		NA		NA		NA		NA		NA		28330		NA		NA
Formaldehyde (water soluble)	mg/kg	<0.5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
Sulphide	mg/kg	<10			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA
Elemental Sulphur	mg/kg	<1			NA		NA	NA		NA		NA		NA	NA		4		NA		NA		NA		NA		NA		13		NA		NA
Sulphur	%	<0.01			NA		NA	NA		NA		NA		NA	NA		0.05		NA		NA		NA		NA		NA		0.03		NA		NA
Ammoniacal Nitrogen as N	mg/kg	<0.6			NA		NA	NA		NA		NA		NA	NA	<	0.6		NA		NA		NA		NA		NA	<	0.6		NA		NA
Bromide	mg/kg	<0.3			NA		NA	NA		NA		NA		NA	NA	<	0.3		NA		NA		NA		NA		NA	<	0.3		NA		NA
Chloride	mg/kg	<2			NA		NA	NA		NA		NA		NA	NA		2		NA		NA		NA		NA		NA		3		NA		NA
Ortho Phosphate as PO4	mg/kg	<0.3			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA	<	0.3		NA		NA

KEY

	Concentration exceeds TSV
	S4UL 1% SOM
	C4SL 1% SOM
	WYG Screening Value
	Acute effects of infant 1 dose 3g soil
	CL:AIRE EIC Guidance. Residential without plant uptake
	Environmental Agency, 2009
NDP	No Determination Possible
NAD	No Asbestos Detected
-	Not tested
*	Worst case EPH fraction used.

Both C16-21 and C21-35 added together to create C16-25.

CBT Asbestos level Cannot Be Determined at this stage of analysis

				Zone 5 - Former Reservoirs							Stockpiles					
			Sample Location	**TP139**	**TP139**	**DS10H p**	**DS11**	**DS25**	**DS26**	**DS26**	**SP1**	**SP2**	**SP3**	**SP4**	**SP5**	**SP6**
			Depth (m bgl)	0.50	1.20	0.40	0.50	0.50	0.60	1.80	0.80	0.80	0.80	0.80	0.80	0.80
			Date	19/01/2017	19/01/2017	01/02/2017	25/01/2017	27/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017	25/01/2017
			Strata	MG: Cohesive	MG: Cohesive	Natural: Sand	MG: Cohesive	MG: Sand & Gravel	MG: Cohesive	MG: Granular	MG: Granular	MG: Granular	MG: Granular	MG: Granular	MG: Granular	MG: Granular
Field Observations				NA	NA	NA	NA	NA	Ash	Ash	NA	NA	NA	NA	NA	NA
Determinand	**Units**	**LOD**	**TSV**													
pH	pH units	<0.01	<5 >9	4.43	8.07	4.5	7.41	8.43	8.75	8.57	9.03	8.67	8.73	9.59	9.48	10.11
Asbestos Containing Materials	NA	NA	Presence (Y/N)	No	Yes	Yes	No	Yes	No	No	No	No	No	Yes	Yes	Yes
Asbestos Classification	NA	NA	NA	NAD	Chrysotile	Chrysotile	NAD	Chrysotile	NAD	NAD	NAD	NAD	NAD	Chrysotile	Chrysotile	Chrysotile, Amosite
Asbestos Level	NA	NA	0.01%	NA	<0.1%	<0.1%	NA	<0.1%	NA	NA	NA	NA	NA	<0.1%	<0.1%	<0.1%
Asbestos Gravimetric Quantificatio	mass %			-	-	-	-	-	-	-	-	-	-	-	-	<0.001
Asbestos PCOM Quantification (Fib	mass %			-	-	-	-	-	-	-	-	-	-	-	-	0.004
Asbestos Gravimetric & PCOM	mass %			-	-	-	-	-	-	-	-	-	-	-	-	0.004
Metals																
Arsenic	mg/kg	<0.5	37	107	54.5	28.8	4.2	51.2	21.7	10.8	3.2	6.6	4.9	22.5	22.6	28.5
Barium	mg/kg	<1	1300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	<0.5	1.7	1.5	3	1.7	0.5	1.9	1.8	2.3	1	0.7	0.8	1.5	1.3	1.4
Cadmium	mg/kg	<0.1	22	< 0.1	1.4	0.5	< 0.1	0.5	< 0.1	< 0.1	< 0.1	0.2	< 0.1	0.4	0.4	0.5
Chromium	mg/kg	<0.5	910	55.4	60.9	28.6	64.6	25.6	73.2	42.6	57.1	63.9	54.6	25.9	20.3	24.3
Chromium VI	mg/kg	<0.3	21	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Copper	mg/kg	<1	2400	28	114	94	10	21	63	71	55	19	15	90	67	83
Lead	mg/kg	<5	200	34	200	145	22	19	139	35	16	21	15	103	155	203
Mercury	mg/kg	<0.1	40	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	0.5	0.5
Nickel	mg/kg	<0.7	180	31.8	63.4	24.5	8.7	38.2	27.3	34.7	29.9	24	25.1	25.8	24.5	24.5
Selenium	mg/kg	<1	250	2	3	< 1	< 1	1	2	1	< 1	< 1	< 1	< 1	< 1	< 1
Water Soluble Boron	mg/kg	<0.1	290	0.4	1.6	0.5	0.2	< 0.1	1	0.5	0.3	0.3	0.2	2.4	1.1	1.4
Vanadium	mg/kg	<1	410	25	75	37	12	33	37	61	22	27	20	39	29	32
Zinc	mg/kg	<5	3700	117	340	143	30	149	119	50	68	55	50	234	143	155
PAH																
Benzo(a)Pyrene	mg/kg	<0.04	5	< 0.04	0.49	< 0.04	< 0.04	< 0.04	0.1	< 0.04	0.32	0.18	0.12	1.01	2.6	3.3
Naphthalene	mg/kg	<0.04	2.3	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.97	< 0.04	< 0.04	< 0.04	0.2	0.16	0.12
EPH Hydrocarbons*																
EPH (>C8-C10)	mg/kg	<5	27	NA	NA	< 5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C10-C12)	mg/kg	<10	74	NA	NA	< 10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C12-C16)	mg/kg	<10	140	NA	NA	< 10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C16-C21)	mg/kg	<10	260	NA	NA	< 10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C21-C40)	mg/kg	<10	1100	NA	NA	252	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPH (>C8-C40)	mg/kg	<10		NA	NA	252	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH CWG																
Aliphatic >C5-6	mg/kg	<0.1	42	< 0.1	< 0.1	NA	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic >C6-8	mg/kg	<0.1	100	< 0.1	< 0.1	NA	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic >C8-10	mg/kg	<0.1	27	< 0.1	< 0.1	NA	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aliphatic >C10-12	mg/kg	<0.2	130	< 0.2	< 0.2	NA	< 0.2	< 0.2	< 0.2	3	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Aliphatic >C12-16	mg/kg	<4	1100	< 4	< 4	NA	< 4	< 4	< 4	7	< 4	< 4	< 4	< 4	< 4	< 4
Aliphatic >C16-35	mg/kg	<14	65000	226	217	NA	< 14	< 20	< 14	< 14	31	61	17	151	66	103
Aliphatic >C35-C44	mg/kg	<7	65000	108	35	NA	< 7	< 7	< 7	< 7	< 7	< 7	< 7	89	< 7	13
Total Aliphatics C5-44	mg/kg	<26		334	252	NA	< 26	< 26	< 26	< 26	< 26	54	< 26	233	66	116
Aromatic >EC5-7	mg/kg	<0.1	70	< 0.1	< 0.1	NA	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic >EC7-8	mg/kg	<0.1	130	< 0.1	< 0.1	NA	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic >EC8-10	mg/kg	<0.1	34	< 0.1	< 0.1	NA	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aromatic >EC10-12	mg/kg	<0.2	74	< 0.2	< 0.2	NA	< 0.2	< 0.2	< 0.2	0.5	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Aromatic >EC12-16	mg/kg	<4	140	< 4	< 4	NA	< 4	< 4	< 4	8	< 4	< 4	< 4	< 4	< 4	< 4
Aromatic >EC16-21	mg/kg	<7	260	< 7	59	NA	< 7	< 7	22	10	< 7	14	< 7	17	27	31
Aromatic >EC21-35	mg/kg	<7	1100	< 7	326	NA	< 7	< 7	54	10	31	97	26	229	135	135
Aromatic > EC35-EC44	mg/kg	<7	1100	< 7	49	NA	< 7	< 7	< 7	< 7	22	95	< 7	160	43	32
Total aliphatics and aromatics	mg/kg	<52		334	686	NA	< 52	< 52	76	< 52	53	260	< 52	639	271	314

VOCs																			
Benzene #	ug/kg	<0.1	200	<	5	<	5	NA	<	5	<	5	<	5	NA	<	5	<	5	<	5	<	5	<	5
MTBE #	ug/kg	<5	49000	<	5	<	5	NA	<	5	<	5	<	5	NA	<	5	<	5	<	5	<	5	<	5
Toluene #	ug/kg	<5	130,000	<	5	<	5	NA	<	5	<	5	<	5	NA	<	5	<	5	<	5	<	5	<	5
Ethylbenzene #	ug/kg	<5	47000	<	5	<	5	NA	<	5	<	5	<	5	NA	<	5	<	5	<	5	<	5	<	5
m/p-Xylene	ug/kg	<5	56000	<	5	<	5	NA	<	5	<	5	<	5	NA	<	5	<	5	<	5	<	5	<	5
o-Xylene	ug/kg	<5	60000	<	5	<	5	NA	<	5	<	5	<	5	NA	<	5	<	5	<	5	<	5	<	5
WHO 12 Congeners																			
PCB 77	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA
PCB 81	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA
PCB 105	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA
PCB 114	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA
PCB 118	ug/kg	<5	8		NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA
PCB 123	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA
PCB 126	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA
PCB 156	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA
PCB 157	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA
PCB 167	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA
PCB 169	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA
PCB 189	ug/kg	<5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA
Total 12 PCBs	ug/kg	<60			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA
Glycol Suite																			
Monoethylene glycol	mg/kg	<10			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA
Propylene glycol	mg/kg	<10			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA
Diethylene glycol	mg/kg	<10			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA
Triethylene glycol	mg/kg	<10			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA
Thiodiglycol	mg/kg	<10			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA
Miscellaneous																			
Fraction of organic carbon (FOC)	none	<0.001			0.006		NDP	NA		0.004		NDP		0.037	0.442		0.005		0.002		0.004		NDP		NDP		NDP
Soil Organic Matter					1.0345					0.6897				6.3793	76.2069		0.8621		0.3448		0.6897					
Total Organic Carbon	%	<0.02			20.1		59	NA		9.9		NA		30	28		6.8		8.8		7.8		NA		NA		NA
Cyanide(free)	mg/kg	<0.5	24	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Cyanide(total)	mg/kg	<0.5	24	<	0.5	<	0.5	NA	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Sulphate as SO4 (2:1 Ext)	g/l	<0.0015			NA		0.4252	0.0311		NA	<	0.0015		NA	NA		NA		NA		NA		0.1437		0.052		0.109
Sulphate as SO4 (2:1 Ext)	mg/kg	<3			298		NA	NA	<	3		NA		143	92		39		88		10		NA		NA		NA
Total Phenols	mg/kg	<0.15	120	<	0.01	<	0.01	<	0.15	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Aluminium	mg/kg	<50			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
Iron	mg/kg	<20			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
Formaldehyde (water soluble)	mg/kg	<0.5			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
Sulphide	mg/kg	<10			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
Elemental Sulphur	mg/kg	<1			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
Sulphur	%	<0.01			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
Ammoniacal Nitrogen as N	mg/kg	<0.6			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
Bromide	mg/kg	<0.3			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
Chloride	mg/kg	<2			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA
Ortho Phosphate as PO4	mg/kg	<0.3			NA		NA	NA		NA		NA		NA	NA		NA		NA		NA		NA		NA		NA

KEY

	Concentration exceeds TSV
	S4UL 1% SOM
	C4SL 1% SOM
	WYG Screening Value
	Acute effects of infant 1 dose 3g soil
	CL:AIRE EIC Guidance. Residential without plant uptake
	Environmental Agency, 2009
NDP	No Determination Possible
NAD	No Asbestos Detected
-	Not tested
*	Worst case EPH fraction used.

Both C16-21 and C21-35 added together to create C16-25.

CBT Asbestos level Cannot Be Determined at this stage of analysis

					Zone 1 - Former Wilton Mill			Zone 2 - Former Paper Mill								Zone 3 - Land North of Church Street		Zone 5 - Former Reservoirs	
			Sample Location		TP101	DS01	DS02	TP106	TP110	TP111	TP113	TP119	TP120	TP120	DS03	TP116	DS26	TP117	TP118
			Depth (m bgl)		0.50	1.40	0.70	0.50	0.20	0.40	1.20	2.50	0.50	2.80	1.70	0.50	1.80	0.50	1.00
			Date		24/01/2017	24/01/2017	24/01/2017	25/01/2017	18/01/2017	18/01/2017	17/01/2017	17/01/2017	18/01/2017	18/01/2017	23/01/2017	16/01/2017	25/01/2017	17/01/2017	17/01/2017
			Strata		MG: Granular	MG: Granular	MG: Granular	MG: Cohesive	MG: Granular	MG: Cohesive	MG: Cohesive	MG: Cohesive	MG: Cohesive	Natural: Sand & Gravel	MG: Granular	MG: Granular	MG: Granular	MG: Cohesive	Natural: Sand & Gravel
Field Observations					Ash and Clinker	Paper Waste	Ash and Clinker	Ash and Paper	NA	NA	NA	Black Staining	Black Staining	Hydrocarbons	NA	NA	Ash	Ash and Clinker	Black Staining
Determinand	**Units**	**LOD**	**TSV**																
Dichlorodifluoromethane	ug/kg	<2		<	2	2	< 2	20	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Methyl Tertiary Butyl Ether	ug/kg	<6		<	6	< 6	< 6	60	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Chloromethane	ug/kg	<3		<	3	< 3	< 3	30	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Vinyl Chloride	ug/kg	<2		<	2	< 2	< 2	20	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Bromomethane	ug/kg	<1		<	1	< 1	< 1	10	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Chloroethane	ug/kg	<6		<	6	< 6	< 6	60	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Trichlorofluoromethane	ug/kg	<3		<	3	< 3	< 3	30	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,1-Dichloroethene (1,1 DCE)	ug/kg	<6		<	6	< 6	< 6	60	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Dichloromethane (DCM)	ug/kg	<30	580		97	< 30	86	300	40	62	< 30	< 30	< 30	30	55	< 30	252	63	< 30
trans-1-2-Dichloroethene	ug/kg	<3		<	3	< 3	< 3	30	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,1-Dichloroethane	ug/kg	<6		<	6	< 6	< 6	60	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	<6	< 6
cis-1-2-Dichloroethene	ug/kg	<7		<	7	< 7	< 7	70	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7
2,2-Dichloropropane	ug/kg	<4		<	4	< 4	< 4	40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
Bromochloromethane	ug/kg	<4		<	4	< 4	< 4	40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
Chloroform	ug/kg	<5		<	5	< 5	< 5	50	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1,1-Trichloroethane	ug/kg	<5		<	5	< 5	< 5	50	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,1-Dichloropropene	ug/kg	<3		<	3	< 3	< 3	30	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Carbon tetrachloride	ug/kg	<4		<	4	< 4	< 4	40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
1,2-Dichloroethane	ug/kg	<5		<	5	< 5	< 5	50	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Trichloroethene (TCE)	ug/kg	<5		<	5	< 5	< 5	50	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,2-Dichloropropane	ug/kg	<4		<	4	< 4	< 4	40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
Dibromomethane	ug/kg	<4		<	4	< 4	< 4	40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
Bromodichloromethane	ug/kg	<4		<	4	< 4	< 4	40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
cis-1-3-Dichloropropene	ug/kg	<4		<	4	< 4	< 4	40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
trans-1-3-Dichloropropene	ug/kg	<3		<	3	< 3	< 3	30	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,1,2-Trichloroethane	ug/kg	<4		<	4	< 4	< 4	40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
Tetrachloroethene (PCE)	ug/kg	<3		<	3	< 3	< 3	30	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,3-Dichloropropane	ug/kg	<4		<	4	< 4	< 4	40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
Dibromochloromethane	ug/kg	<5		<	5	< 5	< 5	50	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,2-Dibromoethane	ug/kg	<3		<	3	< 3	< 3	30	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Chlorobenzene	ug/kg	<4		<	4	< 4	< 4	40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
1,1,1,2-Tetrachloroethane	ug/kg	<5		<	5	< 5	< 5	50	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
Styrene	ug/kg	<3		<	3	< 3	< 3	30	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Bromoform	ug/kg	<4		<	4	< 4	< 4	40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
Isopropylbenzene	ug/kg	<3		<	3	< 3	< 3	30	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,1,2,2-Tetrachloroethane	ug/kg	<3		<	3	< 3	< 3	30	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Bromobenzene	ug/kg	<2		<	2	< 2	< 2	20	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
1,2,3-Trichloropropane	ug/kg	<4		<	4	< 4	< 4	40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
Propylbenzene	ug/kg	<4		<	4	< 4	< 4	40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
2-Chlorotoluene	ug/kg	<3		<	3	< 3	< 3	30	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
1,3,5-Trimethylbenzene	ug/kg	<3		<	3	< 3	< 3	30	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
4-Chlorotoluene	ug/kg	<3		<	3	< 3	< 3	30	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
tert-Butylbenzene	ug/kg	<5		<	5	< 5	< 5	50	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
1,2,4-Trimethylbenzene	ug/kg	<6		<	6	< 6	**39**	60	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	**16**	< 6	< 6
sec-Butylbenzene	ug/kg	<4		<	4	< 4	< 4	40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
4-Isopropyltoluene	ug/kg	<4		<	4	< 4	< 4	40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
1,3-Dichlorobenzene	ug/kg	<4		<	4	< 4	< 4	40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
1,4-Dichlorobenzene	ug/kg	<4		<	4	< 4	< 4	40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
n-Butylbenzene	ug/kg	<4		<	4	< 4	< 4	40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
1,2-Dichlorobenzene	ug/kg	<4		<	4	< 4	< 4	40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
1,2-Dibromo-3-chloropropane	ug/kg	<4		<	4	< 4	< 4	40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
1,2,4-Trichlorobenzene	ug/kg	<7		<	7	< 7	< 7	70	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7
Hexachlorobutadiene	ug/kg	<4		<	4	< 4	< 4	40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4
Naphthalene	ug/kg	<27	2300		199	< NA	< NA	270	< 30	NA	66	< NA	< NA	< NA	< 27	< 27	< 27	< 27	< 27
1,2,3-Trichlorobenzene	ug/kg	<7		<	7	< 7	< 7	70	< 31	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7	< 7
VOC TICs	None				ND	< ND	< ND	ND	ND	ND	ND	< ND	< ND	< ND	< ND	ND	< ND	< ND	ND
Methyl Tertiary Butyl Ether	ug/kg	<6		<	6	< 6	< 6	60	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6	< 6
Benzene	ug/kg	<5	200	<	5	< 5	53	< 50	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	16	< 5	< 5
Toluene	ug/kg	<3	130,000	<	3	< 3	44	< 30	4	< 3	8	< 3	< 3	< 3	< 3	< 3	55	< 3	< 3
Ethylbenzene	ug/kg	<3	47000	<	3	< 3	11	< 30	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	8	< 3	< 3
p/m-Xylene	ug/kg	<4	59000	<	4	< 4	50	< 40	< 4	< 4	7	< 4	5	< 4	< 4	< 4	39	< 4	< 4
o-Xylene	ug/kg	<4	60000	<	4	< 4	25	< 40	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	16	< 4	< 4

KEY

	EIC.AGS/CL:AIRE GAC for organics with 1% SOM
	S4UL 1% SOM
	C4SL 1% SOM

				Zone 1 - Former Wilton mill						Zone 2 - Former Paper Mill																					
			Sample Location		TP101		DS01		DS02		TP106		TP110		TP111		TP113		TP119		TP120		TP120		DS03	
			Depth (m		0.50		1.40		0.70		0.50		0.20		0.40		1.20		2.50		0.50		2.80		1.70	
			Date		24/01/2017		24/01/2017		24/01/2017		25/01/2017		18/01/2017		18/01/2017		17/01/2017		17/01/2017		18/01/2017		18/01/2017		23/01/2017	
			Strata		MG: Granular		MG: Granular		MG: Granular		MG: Cohesive		MG: Granular		MG: Cohesive		MG: Cohesive		MG: Cohesive		MG: Cohesive		Natural: Sand & Gravel		MG: Granular	
Field Observations					Ash and Clinker		Paper Waste		Ash and Clinker		Ash and Paper		NA		NA		NA		Black Staining		Black Staining		Hydrocarbons		NA	
Determinand	**Units**	**LOD**	**TSV**																							
Phenols																										
2-Chlorophenol	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
2-Methylphenol	ug/kg	<10		<	100	<	100		**690**	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
2-Nitrophenol	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
2,4-Dichlorophenol	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
2,4-Dimethylphenol	ug/kg	<10	19000	<	100		687		1130	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
2,4,5-Trichlorophenol	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
2,4,6-Trichlorophenol	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
4-Chloro-3-methylphenol	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
4-Methylphenol	ug/kg	<10	80000	<	100		743		1334	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
4-Nitrophenol	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
Pentachlorophenol	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
Phenol	ug/kg	<10	120000	<	100		421		763	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
PAHs																										
2-Chloronaphthalene	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
2-Methylnaphthalene	ug/kg	<10			**1183**		**7431**		**3735**		**138**		**153**	<	10		**120**	<	10	<	10	<	10	<	10	
Phthalates																										
Bis(2-ethylhexyl) phthalate	ug/kg	<100	280000	<	1000	<	1000	<	1000	<	100	<	100	<	100		5128	<	100	<	100	<	100	<	100	
Butylbenzyl phthalate	ug/kg	<100		<	1000	<	1000	<	1000	<	100	<	100	<	100	<	100	<	100	<	100	<	100	<	100	
Di-n-butyl phthalate	ug/kg	<100		<	1000	<	1000	<	1000	<	100	<	100	<	100	<	100	<	100	<	100	<	100	<	100	
Di-n-Octyl phthalate	ug/kg	<100		<	1000	<	1000	<	1000	<	100	<	100	<	100	<	100	<	100	<	100	<	100	<	100	
Diethyl phthalate	ug/kg	<100		<	1000	<	1000	<	1000	<	100	<	100	<	100	<	100	<	100	<	100	<	100	<	100	
Dimethyl phthalate	ug/kg	<100		<	1000	<	1000	<	1000	<	100	<	100	<	100	<	100	<	100	<	100	<	100	<	100	
Other SVOCs																										
1,2-Dichlorobenzene	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
1,2,4-Trichlorobenzene	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
1,3-Dichlorobenzene	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
1,4-Dichlorobenzene	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
2-Nitroaniline	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
2,4-Dinitrotoluene	ug/kg	<10	1500	<	100	<	100	<	100	<	10	<	10		5445	<	10	<	10	<	10	<	10	<	10	
2,6-Dinitrotoluene	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
3-Nitroaniline	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
4-Bromophenylphenylether	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
4-Chloroaniline	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
4-Chlorophenylphenylether	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
4-Nitroaniline	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
Azobenzene	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
Bis(2-chloroethoxy)methane	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
Bis(2-chloroethyl)ether	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
Carbazole	ug/kg	<10			**1736**		**5835**		**14669**		**422**		**172**	<	10		**1471**	<	10	<	10	<	10		**29**	
Dibenzofuran	ug/kg	<10			**1083**		**8635**		**6760**		**200**		**144**	<	10		**340**	<	10	<	10	<	10	<	10	
Hexachlorobenzene	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
Hexachlorobutadiene	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
Hexachlorocyclopentadiene	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
Hexachloroethane	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
Isophorone	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
N-nitrosodi-n-propylamine	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
Nitrobenzene	ug/kg	<10		<	100	<	100	<	100	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	
SVOC TICs	None				See Attached		See Attached		See Attached		See Attached		See Attached		ND		See Attached		ND		See Attached		ND		ND	
Naphthalene, 1-methyl-	ug/kg	<100			-		-		3223		-		219		-		-		-		-		-		-	
Naphthalene, 2-methyl-	ug/kg	<100			-		7960		-		-		-		-		-		-		-		-		-	
Biphenyl	ug/kg	<100			-		2980		-		-		-		-		-		-		-		-		-	
Naphthalene, 2-ethyl-	ug/kg	<100			-		3039		-		-		-		-		-		-		-		-		-	
Naphthalene, 2,7-dimethyl-	ug/kg	<100			1871		-		-		-		-		-		-		-		-		-		-	
Naphthalene, 2,3-dimethyl-	ug/kg	<100			-		9736		6267		-		-		-		-		-		-		-		-	
Naphthalene, 1,7-dimethyl-	ug/kg	<100			-		4420		-		-		-		-		-		-		-		-		-	
Dodecane	ug/kg	<100			-		-		-		-		-		-		-		-		-		-		-	
Butylated Hydroxytoluene	ug/kg	<100			-		-		-		-		-		-		2282		-		-		-		-	
Naphthalene, 1,6,7-trimethyl-	ug/kg	<100			-		-		-		-		-		-		-		-		-		-		-	
Naphthalene, 1,4,6-trimethyl-	ug/kg	<100			-		-		-		-		-		-		-		-		-		-		-	
1,1'-Biphenyl, 2-methyl-	ug/kg	<100			-		3516		-		-		-		-		-		-		-		-		-	
Dibenzofuran, 4-methyl-	ug/kg	<100			-		6421		-		-		-		-		-		-		-		-		-	
Heptadecane	ug/kg	<100			-		-		-		-		-		-		-		-		-		-		-	
Eicosane	ug/kg	<100			-		-		-		-		262		-		-		-		-		-		-	
Hexadecane, 2,6,10,14-tetramethyl-	ug/kg	<100			-		-		-		-		-		-		-		-		-		-		-	
Pentadecane, 2,6,10,14-tetramethyl-	ug/kg	<100			-		-		-		-		273		-		-		-		-		-		-	
9H-Fluoren-9-one	ug/kg	<100			-		4830		-		-		-		-		-		-		-		-		-	
Phenol, 4-(1,1,3,3-tetramethylbutyl)-	ug/kg	<100			-		-		-		-		-		-		2529		-		-		-		-	
Naphtho[2,1-b]thiophene	ug/kg	<100			-		7507		-		-		-		-		-		-		-		-		-	
Dibenzothiophene	ug/kg	<100			-		-		-		-		-		-		2968		-		-		-		-	
Cyclobuta[1",2":3,4:3",4":3',4']dicyclobuta[1,2:1',2']dibenzene, 4b,4c,8b,8c-tetrahydro-	ug/kg	<100			-		7267		-		-		-		-		-		-		-		-		-	
Phenanthrene, 2-methyl-	ug/kg	<100			7569		22710		-		-		422		-		7357		-		-		-		-	
Phenanthrene, 1-methyl-	ug/kg	<100			-		-		-		2140		-		-		1100		-		-		-		-	
1H-Cyclopropa[l]phenanthrene,1a,9b-dihydro-	ug/kg	<100			-		-		36403		-		-		-		-		-		-		-		-	
Phenanthrene, 4-methyl-	ug/kg	<100			-		-		-		-		439		-		-		-		-		-		-	
Anthracene, 1-methyl-	ug/kg	<100			-		-		17422		-		-		-		-		-		-		-		-	
4H-Cyclopenta[def]phenanthrene	ug/kg	<100			-		-		53633		-		539		-		6613		-		-		-		-	
9,10-Anthracenedione	ug/kg	<100			-		-		-		-		-		-		1202		-		-		-		-	
Naphthalene, 2-phenyl-	ug/kg	<100			-		7769		16560		799		-		-		2259		-		-		-		-	
Cyclic octaatomic sulfur	ug/kg	<100			-		-		-		-		-		-		-		-		511		-		-	
9,10-Dimethylanthracene	ug/kg	<100			-		14531		-		723		-		-		-		-		-		-		-	
Cyclopenta(def)phenanthrenone	ug/kg	<100			-		-		-		-		-		-		2603		-		-		-		-	
Benzo[b]naphtho[2,3-d]furan	ug/kg	<100			-		12140		-		1416		-		-		3896		-		-		-		-	
Pyrene, 1-methyl-	ug/kg	<100			7536		10548		-		839		1068		-		2843		-		-		-		-	
11H-Benzo[b]fluorene	ug/kg	<100			3330		21005		48847		2822		-		-		-		-		-		-		-	
Fluoranthene, 2-methyl-	ug/kg	<100			-		-		-		-		-		-		6279		-		-		-		-	
: 4-((2-Methylphenyl)diazenyl)-1H-pyrazole-3,5-diamine	ug/kg	<100			-		-		-		856		-		-		-		-		-		-		-	
Benzo[b]naphtho[2,1-d]thiophene	ug/kg	<100			-		-		-		1038		-		-		-		-		-		-		-	
11H-Benzo[a]fluoren-11-one	ug/kg	<100			-		-		-		-		-		-		6433		-		-		-		-	
Triphenylene	ug/kg	<100			-		-		59308		-		-		-		-		-		-		-		-	
Chrysene, 1-methyl-	ug/kg	<100			-		9567		37904		-		-		-		-		-		-		-		-	
2-Methylchrysene	ug/kg	<100			-		-		-		1573		-		-		-		-		-		-		-	
1,2:4,5-Dibenzopyrene	ug/kg	<100			-		96317		-		-		-		-		-		-		-		-		-	
Benzo[e]pyrene	ug/kg	<100			-		41447		151596		4964		-		-		-		-		-		-		-	
Perylene	ug/kg	<100			-		-		-		-		1696		-		7313		-		-		-		-	
16-Hentriacontanone	ug/kg	<100			-		-		-		-		-		-		25107		-		-		-		-	

KEY

	Concentration exceeds TSV
	S4UL 1% SOM
	EIC.AGS/CL:AIRE GAC for organics with 1% SOM

					Zone 3 - Land North of Church Street				Zone 4 - CHP and Boiler House Landfill				Zone 5 - Former Reservoirs			
			Sample Location		TP116		DS26		DS17		DS17		TP117		TP118	
			Depth (m		0.50		1.80		1.60		3.80		0.50		1.00	
			Date		16/01/2017		25/01/2017		30/01/2017		30/01/2017		17/01/2017		17/01/2017	
			Strata		MG: Granular		MG: Granular		MG: Cohesive		MG: Cohesive		MG: Cohesive		Natural: Sand & Gravel	
Field Observations					NA		Ash		Paper Waste		Paper Waste		Ash and Clinker		Black Staining	
Determinand	**Units**	**LOD**	**TSV**													
Phenols																
2-Chlorophenol	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
2-Methylphenol	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
2-Nitrophenol	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
2,4-Dichlorophenol	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
2,4-Dimethylphenol	ug/kg	<10	19000	<	10	<	10	<	10	<	10	<	10	<	10	
2,4,5-Trichlorophenol	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
2,4,6-Trichlorophenol	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
4-Chloro-3-methylphenol	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
4-Methylphenol	ug/kg	<10	80000	<	10	<	10	<	10	<	10	<	10	<	10	
4-Nitrophenol	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
Pentachlorophenol	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
Phenol	ug/kg	<10	120000	<	10	<	10	<	10	<	10	<	10	<	10	
PAHs																
2-Chloronaphthalene	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
2-Methylnaphthalene	ug/kg	<10		<	10		**1187**	<	10		**83**	<	10	<	10	
Phthalates																
Bis(2-ethylhexyl) phthalate	ug/kg	<100	280000	<	100	<	100	<	100		2716	<	100	<	100	
Butylbenzyl phthalate	ug/kg	<100		<	100	<	100	<	100	<	100	<	100	<	100	
Di-n-butyl phthalate	ug/kg	<100		<	100	<	100	<	100	<	100	<	100	<	100	
Di-n-Octyl phthalate	ug/kg	<100		<	100	<	100	<	100	<	100	<	100	<	100	
Diethyl phthalate	ug/kg	<100		<	100	<	100	<	100	<	100	<	100	<	100	
Dimethyl phthalate	ug/kg	<100		<	100	<	100	<	100	<	100	<	100	<	100	
Other SVOCs																
1,2-Dichlorobenzene	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
1,2,4-Trichlorobenzene	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
1,3-Dichlorobenzene	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
1,4-Dichlorobenzene	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
2-Nitroaniline	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
2,4-Dinitrotoluene	ug/kg	<10	1500	<	10	<	10	<	10	<	10	<	10	<	10	
2,6-Dinitrotoluene	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
3-Nitroaniline	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
4-Bromophenylphenylether	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
4-Chloroaniline	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
4-Chlorophenylphenylether	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
4-Nitroaniline	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
Azobenzene	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
Bis(2-chloroethoxy)methane	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
Bis(2-chloroethyl)ether	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
Carbazole	ug/kg	<10		<	10	<	10	<	10		**67**	<	10	<	10	
Dibenzofuran	ug/kg	<10		<	10		**243**	<	10		**56**	<	10	<	10	
Hexachlorobenzene	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
Hexachlorobutadiene	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
Hexachlorocyclopentadiene	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
Hexachloroethane	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
Isophorone	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
N-nitrosodi-n-propylamine	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
Nitrobenzene	ug/kg	<10		<	10	<	10	<	10	<	10	<	10	<	10	
SVOC TICs	None				ND		See Attached		-		-		ND		ND	
Naphthalene, 1-methyl-	ug/kg	<100			-		1089		-		-		-		-	
Naphthalene, 2-methyl-	ug/kg	<100			-		-		-		-		-		-	
Biphenyl	ug/kg	<100			-		278		-		-		-		-	
Naphthalene, 2-ethyl-	ug/kg	<100			-		-		-		-		-		-	
Naphthalene, 2,7-dimethyl-	ug/kg	<100			-		-		-		-		-		-	
Naphthalene, 2,3-dimethyl-	ug/kg	<100			-		931		-		-		-		-	
Naphthalene, 1,7-dimethyl-	ug/kg	<100			-		-		-		-		-		-	
Dodecane	ug/kg	<100			-		502		-		-		-		-	
Butylated Hydroxytoluene	ug/kg	<100			-		-		-		-		-		-	
Naphthalene, 1,6,7-trimethyl-	ug/kg	<100			-		298		-		-		-		-	
Naphthalene, 1,4,6-trimethyl-	ug/kg	<100			-		405		-		-		-		-	
1,1'-Biphenyl, 2-methyl-	ug/kg	<100			-		-		-		-		-		-	
Dibenzofuran, 4-methyl-	ug/kg	<100			-		-		-		-		-		-	
Heptadecane	ug/kg	<100			-		378		-		-		-		-	
Eicosane	ug/kg	<100			-		-		-		-		-		-	
Hexadecane, 2,6,10,14-tetramethyl-	ug/kg	<100			-		433		-		-		-		-	
Pentadecane, 2,6,10,14-tetramethyl-	ug/kg	<100			-		-		-		-		-		-	
9H-Fluoren-9-one	ug/kg	<100			-		-		-		-		-		-	
Phenol, 4-(1,1,3,3-tetramethylbutyl)-	ug/kg	<100			-		-		-		-		-		-	
Naphtho[2,1-b]thiophene	ug/kg	<100			-		-		-		-		-		-	
Dibenzothiophene	ug/kg	<100			-		-		-		-		-		-	
Cyclobuta[1",2":3,4:3",4":3',4']dicyclobuta[1,2:1',2']dibenzene, 4b,4c,8b,8c-tetrahydro-	ug/kg	<100			-		-		-		-		-		-	
Phenanthrene, 2-methyl-	ug/kg	<100			-		-		-		-		-		-	
Phenanthrene, 1-methyl-	ug/kg	<100			-		-		-		-		-		-	
1H-Cyclopropa[l]phenanthrene,1a,9b-dihydro-	ug/kg	<100			-		784		-		-		-		-	
Phenanthrene, 4-methyl-	ug/kg	<100			-		-		-		-		-		-	
Anthracene, 1-methyl-	ug/kg	<100			-		-		-		-		-		-	
4H-Cyclopenta[def]phenanthrene	ug/kg	<100			-		-		-		-		-		-	
9,10-Anthracenedione	ug/kg	<100			-		-		-		-		-		-	
Naphthalene, 2-phenyl-	ug/kg	<100			-		-		-		-		-		-	
Cyclic octaatomic sulfur	ug/kg	<100			-		-		-		-		-		-	
9,10-Dimethylanthracene	ug/kg	<100			-		-		-		-		-		-	
Cyclopenta(def)phenanthrenone	ug/kg	<100			-		-		-		-		-		-	
Benzo[b]naphtho[2,3-d]furan	ug/kg	<100			-		-		-		-		-		-	
Pyrene, 1-methyl-	ug/kg	<100			-		-		-		-		-		-	
11H-Benzo[b]fluorene	ug/kg	<100			-		-		-		-		-		-	
Fluoranthene, 2-methyl-	ug/kg	<100			-		-		-		-		-		-	
: 4-((2-Methylphenyl)diazenyl)-1H-pyrazole-3,5-diamine	ug/kg	<100			-		-		-		-		-		-	
Benzo[b]naphtho[2,1-d]thiophene	ug/kg	<100			-		-		-		-		-		-	
11H-Benzo[a]fluoren-11-one	ug/kg	<100			-		-		-		-		-		-	
Triphenylene	ug/kg	<100			-		-		-		-		-		-	
Chrysene, 1-methyl-	ug/kg	<100			-		-		-		-		-		-	
2-Methylchrysene	ug/kg	<100			-		-		-		-		-		-	
1,2:4,5-Dibenzopyrene	ug/kg	<100			-		-		-		-		-		-	
Benzo[e]pyrene	ug/kg	<100			-		-		-		-		-		-	
Perylene	ug/kg	<100			-		-		-		-		-		-	
16-Hentriacontanone	ug/kg	<100			-		-		-		-		-		-	

KEY

	Concentration exceeds TSV
	S4UL 1% SOM

			Sample ID		TP102		TP108		TP110		TP111		TP117		TP119		TP121		TP137		DS01		DS17		DS22
			Sample Location		Former Wilton Mill		Former Paper Mill		Former Paper Mill		Former Paper Mill		Land North of Church Street		Former Paper Mill		Former Paper Mill		Former Reservoirs		Former Wilton Mill		CHP and Boiler House Landfill		CHP and Boiler House Landfill
			Depth (m)		1.60		0.50		0.20		0.40		0.50		0.50		0.50		0.50		1.40		1.60		3.90
			Date		24/01/2017		20/01/2017		20/01/2017		18/01/2017		17/01/2017		17/01/2017		20/01/2017		19/01/2017		24/01/2017		30/01/2017		30/01/2017
Determinand	**Units**	**LOD**																							
pH	pH units	<0.01	>6 <9		12.69		10.64		10.8		8.02		7.85		4.73		8.08		10.14		7.98		8.16		8.09
Sulphate	mg/l	<0.5	250		72.52		19.65		18.68		66.44		3.54		22.8		25.14		15.33		8.17		6.7		11.44
Total Cyanide	ug/l	<1	1	<	0.005	<	0.005	<	0.005	<	0.005	<	0.005	<	0.005	<	0.005	<	0.005	<	0.005	<	0.005	<	0.005
Ammoniacal Nitrogen as NH4	mg/l	<0.03	0.6		0.05		0.03		0.04	<	0.03		0.06		0.1		0.44		0.03	<	0.03		0.03	<	0.03
Metals																									
Dissolved Arsenic	ug/l	<0.9	50	<	0.9		6.6		1.5	<	0.9	<	0.9		12.3		17.5		1.7		2.2		2.8		5.5
Dissolved Boron	ug/l	<12	1000	<	12		39		26		14	<	12		35		29	<	12		33		70		14
Dissolved Cadmium	ug/l	<0.03	0.9	<	0.03	<	0.03	<	0.03	<	0.03	<	0.03	<	0.03	<	0.03	<	0.03	<	0.03	<	0.03	<	0.03
Dissolved Chromium	ug/l	<0.2	50		11.2		1		4.8	<	0.2		0.5	<	0.5		2.2		0.5		0.4	<	0.2		0.6
Dissolved Copper	ug/l	<3	1	<	**3**		12	<	**3**	<	**3**	<	**3**		6		31	<	**3**	<	**3**	<	**3**	<	**3**
Dissolved Lead	ug/l	<0.4	14		68.7		6.6	<	0.4	<	0.4	<	0.4	<	0.4		6.6	<	<0.4	<	0.4	<	0.4	<	0.4
Dissolved Nickel	ug/l	<0.2	34	<	0.2	<	0.2	<	0.2	<	0.2		0.2		1.1		3.5		1.4		0.4	<	0.2		0.7
Dissolved Selenium	ug/l	<1.2	10	<	1.2	<	1.2	<	1.2	<	1.2	<	1.2	<	1.2	<	1.2	<	1.2	<	1.2	<	1.2	<	1.2
Dissolved Zinc	ug/l	<1.5	10.9		6	<	3	<	3	<	3		5		4		3		6		5	<	3	<	3
Dissolved Mercury Dissolved by CVAF	ug/l	<0.01	0.07		0.06		0.04	<	0.01	<	0.01	<	0.01		0.02	<	0.01	<	0.01		0.02	<	0.01	<	0.01

KEY

Drinking Water Standards
Environmental Quality Standard (EQS) - River Water
Bold text indicates TSV value lower than LOD

			Sample ID		BH102		BH102		BH103		BH104		BH105		BH105		DS01		DS01		DS14
			Sample Location		Land North of Chuch Street		Land North of Chuch Street		Former Reservoirs		Former Reservoirs		CHP and Landfill		CHP and Landfill		Wilton Mill		Wilton Mill		Former Paper Mill
			Date		09/02/2017		09/03/2017		09/02/2017		09/02/2017		09/02/2017		09/03/2017		09/02/2017		09/03/2017		09/02/2017
Determinand	**Units**	**LOD**																			
pH	pH	<0.01	>6 <9		7.47		NA		7.09		7.31		8.75		NA		7.34		NA		7.54
Total Alkalinity as CaCO3	mg/l	<1			1986		NA		128		244		566		NA		2738		NA		2322
Total Hardness Dissolved (as CaCO3)	mg/l	<1			245		NA		139		230		127		NA		405		NA		575
Sulphate	mg/l	<0.5	250		75.1		NA		51.7		127.9		26.9		NA		121.3		NA		195.6
Chloride	mg/l	<0.3	250		84.9		NA		10.2		71.9		23.4		NA		38.5		NA		9.9
Nitrate as NO3	mg/l	<0.2	50		0.6		NA		0.3	<	0.2		1.8		NA		0.5		NA		0.4
Nitrite as NO2	mg/l	<0.02	0.5	<	0.02		NA	<	0.02	<	0.02		0.03		NA	<	0.02		NA	<	0.02
Free Cyanide	ug/l	<1	1		1		NA		7		2		5	<	10		9	<	10		8
Total Cyanide	ug/l	<1	1		4		NA		10		7		22	<	10		16	<	10		15
Ammoniacal Nitrogen as NH3	mg/l	<0.03	0.6		0.17		NA		0.13		7.01		5.45		NA		2.56		NA		0.24
Ammoniacal Nitrogen as NH4	mg/l	<0.03	0.6		0.18		NA		0.14		7.43		5.77		NA		2.71		NA		0.25
Dissolved Organic Carbon	mg/l	<2			4		NA		3		4		244		NA		8		NA		15
Sulphide	ug/l	<10		<	10		NA	<	10	<	10		30		NA	<	10		NA	<	10
Formaldehyde	mg/l	<0.5	0.05	<	0.5		NA	<	0.5	<	0.5	<	0.5		NA	<	0.5		NA	<	0.5
Phenol	ug/l	<0.5	46	<	0.5		NA	<	0.5	<	0.5	<	0.5		NA		0.5		NA	<	0.5
Bromide	mg/l	<0.05		<	0.05		NA	<	0.05	<	0.05		0.26		NA		0.13		NA		0.09
Fluoride	mg/l	<0.3	1.5	<	0.3		NA	<	0.3		0.7	<	0.3		NA		0.3		NA	<	0.3
Ortho Phosphate as PO4	mg/l	<0.06		<	0.06		NA	<	0.06		3.55	<	0.06		NA	<	0.06		NA	<	0.06
Metals																					
Aluminium	ug/l	<1.5	200		3.9		NA		1.6		1.8		1123		NA		5.9		NA		6.2
Antimony	ug/l	<2	5	<	2		NA	<	2	<	2		2		NA	<	2		NA	<	2
Arsenic	ug/l	<0.9	50	<	0.9		NA	<	0.9	<	0.9		36.4		12.3		6.4		NA		4.7
Barium	ug/l	<1.8	700		179.9		NA		121.7		336		440.1		290.5		179.4		NA		70.8
Beryllium	ug/l	<0.5		<	0.5		NA	<	0.5	<	0.5		2.8	<	0.5	<	0.5		NA	<	0.5
Boron	ug/l	<12	1000		34		NA		41		80		106		158		747		NA		123
Cadmium	ug/l	<0.03	0.9	<	0.03		NA	<	0.03	<	0.03	<	0.03	<	0.03	<	0.03		NA	<	0.03
Total Chromium	ug/l	<0.2	50	<	0.2		NA	<	0.2	<	0.2		76.6		15.9		0.2		NA	<	0.2
Copper	ug/l	<3	1	<	3		NA	<	3	<	3		155	<	3	<	3		NA	<	3
Total Iron	ug/l	<4.7	1000		8.7		NA		22.4		34		2353		NA		88.3		NA		14.5
Lead	ug/l	<0.4	14	<	0.4		NA	<	0.4	<	0.4		127.7	<	0.4	<	0.4		NA	<	0.4
Molybdenum	ug/l	<0.2	70		3		NA		0.4	<	0.2		18.2		NA		12.5		NA		17.9
Nickel	ug/l	<0.2	34		4		NA		1.5		2.3		46.5		2.9		3.6		NA		3.5
Selenium	ug/l	<1.2	10	<	1.2		NA	<	1.2	<	1.2		20.3	<	1.2	<	1.2		NA	<	1.2
Zinc	ug/l	<1.5	10.9		2.9		NA		15.2	<	1.5		125.1	<	1.5		2.9		NA		2
Vanadium	ug/l	<0.6	20		NA		NA		NA		NA		25.9		NA		NA		NA		NA
Mercury Dissolved by CVAF	ug/l	<0.01	0.07	<	0.01		NA	<	0.01	<	0.01		0.02	<	0.5	<	0.01		NA	<	0.01
PAH																					
Acenaphthene	ug/l	<0.01			0.02		NA	<	0.01	<	0.01		0.13	<	0.01		0.17		NA		3.39
Acenaphthylene	ug/l	<0.01		<	0.01		NA	<	0.01	<	0.01		0.05	<	0.01	<	0.01		NA		0.35
Anthracene	ug/l	<0.01	0.1		0.02		NA	<	0.01	<	0.01		0.16	<	0.01		0.02		NA		5.06
Benzo(a)anthracene	ug/l	<0.01			0.03		NA	<	0.01	<	0.01		0.61	<	0.01		0.02		NA		13.96
Benzo(a)pyrene	ug/l	<0.01	0.27		0.03		NA	<	0.01	<	0.01		0.65	<	0.01		0.02		NA		14.76
Benzo(b)fluoranthene	ug/l	<0.01	0.017		0.04		NA	<	0.01	<	0.01		0.81	<	0.01		0.03		NA		18.25
Benzo(ghi)perylene	ug/l	<0.01	0.0082		0.02		NA	<	0.01	<	0.01		0.41	<	0.01		0.01		NA		10.71
Benzo(k)fluoranthene	ug/l	<0.01	0.017		0.02		NA	<	0.01	<	0.01		0.32	<	0.01		0.01		NA		7.1
Chrysene	ug/l	<0.01			0.04		NA	<	0.01	<	0.01		0.69	<	0.01		0.03		NA		15.5
Dibenzo(ah)anthracene	ug/l	<0.01		<	0.01		NA	<	0.01	<	0.01		0.06	<	0.01	<	0.01		NA		2.41
Fluoranthene	ug/l	<0.01	0.12		0.09		NA	<	0.01	<	0.01		1.38		0.01		0.07		NA		29.54
Fluorene	ug/l	<0.01			0.01		NA	<	0.01	<	0.01		0.17	<	0.01		0.03		NA		1.81
Indeno(123cd)pyrene	ug/l	<0.01			0.02		NA	<	0.01	<	0.01		0.37	<	0.01		0.01		NA		8.52
Naphthalene	ug/l	<0.1	130	<	0.1		NA	<	0.1	<	0.1		0.2	<	0.1		0.1		NA		1.2
Phenanthrene	ug/l	<0.01			0.05		NA	<	0.01	<	0.01		0.92	<	0.01		0.02		NA		15.49
Pyrene	ug/l	<0.01			0.08		NA	<	0.01	<	0.01		1.33		0.02		0.06		NA		26.82
TPH CWG																					
Aliphatics																					
>C5-C6	ug/l	<10	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
>C6-C8	ug/l	<10	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
>C8-C10	ug/l	<10	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
>C10-C12	ug/l	<5	10	<	5	<	5	<	5	<	5	<	5	<	5	<	5	<	5	<	5
>C12-C16	ug/l	<10	10		90	<	10	<	10	<	10		70	<	10	<	10	<	10	<	10
>C16-C21	ug/l	<10	10		490	<	10	<	10	<	10		200	<	10		110	<	10	<	10
>C21-C35	ug/l	<10	10		1510	<	10	<	10	<	10		1190	<	10		1390	<	10	<	10
Total aliphatics C5-35	ug/l	<10			2090	<	10	<	10	<	10		1460	<	10		1500	<	10	<	10
Aromatics																					
>C5-EC7	ug/l	<10	50	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
>EC7-EC8	ug/l	<10	74	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
>EC8-EC10	ug/l	<10	20	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
>EC10-EC12	ug/l	<5	2	<	5	<	5	<	5	<	5	<	5	<	5	<	5	<	5	<	5
>EC12-EC16	ug/l	<10	10	<	10	<	10	<	10	<	10	<	10	<	10		50	<	10	<	10
>EC16-EC21	ug/l	<10	0.27		80	<	10	<	10	<	10		20	<	10		400	<	10	<	10
>EC21-EC35	ug/l	<10	0.0082		650	<	10	<	10	<	10		510	<	10		1570	<	10	<	10
Total aromatics C5-35	ug/l	<10			730	<	10	<	10	<	10		530	<	10		2020	<	10	<	10
Total TPH	ug/l	<10			2820	<	10	<	10	<	10		1990	<	10		3520	<	10	<	10
BTEX/MTBE MS																					
Methyl Tertiary Butyl Ether	ug/l	<0.1	15	<	0.1	<	5	<	0.1	<	0.1	<	0.1	<	5	<	0.1	<	5	<	0.2
Benzene	ug/l	<0.5	50	<	0.5	<	5	<	0.5	<	0.5	<	0.5	<	5	<	0.5	<	5	<	1
Toluene	ug/l	<5	74	<	5	<	5	<	5	<	5	<	5	<	5	<	5	<	5	<	10
Ethylbenzene	ug/l	<1	200	<	1	<	5	<	1	<	1	<	1	<	5	<	1	<	5	<	2
Total Xylene	ug/l	<3	30	<	3	<	5	<	3	<	3	<	3	<	5	<	3	<	5	<	6
Gycol Suite																					
Monoethylene glycol	ug/l	<1		<	1		NA		1		1		1		NA		1		NA	<	1
Propylene glycol	ug/l	<1		<	1		NA		1		1		1		NA		1		NA	<	1
Diethylene glycol	ug/l	<1		<	1		NA		1		1		1		NA		1		NA	<	1
Triethylene glycol	ug/l	<1		<	1		NA		1		1		1		NA		1		NA	<	1
Thiodiglycol	ug/l	<1		<	1		NA		1		1		1		NA		1		NA	<	1

KEY

Drinking Water Standards

River Water EQS - (where DWS not available) - Maximum Allowable Concentration (MAC) where published & hardness values

			Sample ID		SW1		SW1		SW2		SW2		SW3		SW4		SW5		SW6
			Sample Location		Upstream River Irwell		Upstream River Irwell		Downstream River Irwell		DownstreamRiver Irwell		Upstream Hutchinson's Goit		Onsite Reservoir		Downstream Hutchinson's Goit		Crow Tree Farm Brook
			Date		09/02/2017		09/03/2017		09/02/2017		09/03/2017		09/02/2017		09/02/2017		09/02/2017		09/02/2017
Determinand	**Units**	**LOD**																	
pH	pH	<0.01	>6 <9		7.37		NA		7.48		NA		7.07		6.77		7.9		7.6
Total Alkalinity as CaCO3	mg/l	<1			80		NA		76		NA		70		28		140		98
Total Hardness Dissolved (as CaCO3)	mg/l	<1			108		NA		110		NA		82		32		180		124
Sulphate	mg/l	<0.5	250		35.1		NA		35		NA		22.8		10.3		56.1		28.2
Chloride	mg/l	<0.3	250		33.3		NA		35.3		NA		22.9		7.2		25.3		35.6
Nitrate as NO3	mg/l	<0.2	50		18.1		NA		19.6		NA		1.9		1.2		0.8		7.1
Nitrite as NO2	mg/l	<0.02	0.5		0.13		NA		0.14		NA	<	0.02	<	0.02	<	0.02		0.05
Free Cyanide	ug/l	<1	1		1	<	10	<	1	<	10	<	1	<	1		1	<	1
Total Cyanide	ug/l	<1	1		2		10		1	<	10		1	<	1		1		2
Ammoniacal Nitrogen as NH3	mg/l	<0.03	0.6		0.28		NA		0.3		NA	<	0.03		0.08	<	0.03		0.17
Ammoniacal Nitrogen as NH4	mg/l	<0.03	0.6		0.3		NA		0.32		NA		0.03		0.08		0.03		0.18
Dissolved Organic Carbon	mg/l	<2			5		NA		5		NA		4		4		3		5
Sulphide	ug/l	<10		<	10		NA	<	10		NA		NA	<	10		NA		NA
Formaldehyde	mg/l	<0.5	0.05	<	0.5		NA	<	0.5		NA		NA	<	0.5		NA		NA
Phenol	ug/l	<0.5	46	<	0.5		NA	<	0.5		NA	<	0.5	<	0.5	<	0.5	<	0.5
Bromide	mg/l	<0.05			0.09		NA		0.12		NA		NA	<	0.05		NA		NA
Fluoride	mg/l	<0.3	1.5	<	0.3		NA	<	0.3		NA		NA	<	0.3		NA		NA
Ortho Phosphate as PO4	mg/l	<0.06			0.31		NA		0.39		NA		NA	<	0.06		NA		NA
Metals																			
Aluminium	ug/l	<1.5	200		13		NA		12.7		NA		NA		6.7		NA		NA
Antimony	ug/l	<2	5		2		NA	<	2		NA	<	2	<	2	<	2	<	2
Arsenic	ug/l	<0.9	50	<	0.9	<	0.9		1.3	<	0.9		1.3		1.3		10.5	<	0.9
Barium	ug/l	<1.8	700		40.4		34.9		39.7		33.3		52.6		31.6		36.8		48.2
Beryllium	ug/l	<0.5		<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Boron	ug/l	<12	1000		47		32		42		27		50		17		71		38
Cadmium	ug/l	<0.03	0.9	<	0.03	<	0.03	<	0.03	<	0.03	<	0.03	<	0.03	<	0.03	<	0.03
Total Chromium	ug/l	<0.2	50	<	<0.2	<	0.2	<	0.2	<	0.2		0.7	<	0.2	<	0.2	<	0.2
Copper	ug/l	<3	1	<	3	<	3	<	3	<	3	<	3	<	3	<	3		4
Total Iron	ug/l	<4.7	1000		206.6		NA		182.2		NA		NA		254.9		NA		NA
Lead	ug/l	<0.4	14	<	0.4	<	0.4	<	0.4	<	0.4	<	0.4	<	0.4	<	0.4	<	0.4
Molybdenum	ug/l	<0.2	70		0.7		NA		0.2		NA		0.7		0.5		2.1	<	0.2
Nickel	ug/l	<0.2	34		2.2	<	0.2		2.1		0.5		1.5		1.3		1.2		2.2
Selenium	ug/l	<1.2	10	<	1.2	<	1.2	<	1.2	<	1.2	<	1.2	<	1.2	<	1.2	<	<.2
Zinc	ug/l	<1.5	10.9		11.6		6.7		13.1		7.1		9.6		4.3		7.8		13.5
Vanadium	ug/l	<0.6	20		NA	<	0.6		NA		1.3		NA		NA		NA		NA
Mercury Dissolved by CVAF	ug/l	<0.01	0.07	<	0.01	<	0.5	<	0.01	<	0.5	<	0.01	<	0.01	<	0.01	<	0.01
PAH																			
Acenaphthene	ug/l	<0.01		<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Acenaphthylene	ug/l	<0.01		<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Anthracene	ug/l	<0.01	0.1	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Benzo(a)anthracene	ug/l	<0.01		<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Benzo(a)pyrene	ug/l	<0.01	0.27	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Benzo(b)fluoranthene	ug/l	<0.01	0.017	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Benzo(ghi)perylene	ug/l	<0.01	0.0082	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Benzo(k)fluoranthene	ug/l	<0.01	0.017	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Chrysene	ug/l	<0.01		<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Dibenzo(ah)anthracene	ug/l	<0.01		<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Fluoranthene	ug/l	<0.01	0.12	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Fluorene	ug/l	<0.01		<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Indeno(123cd)pyrene	ug/l	<0.01		<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Naphthalene	ug/l	<0.1	130	<	0.1	<	0.1	<	0.1	<	0.1	<	0.1	<	0.1	<	0.1	<	0.1
Phenanthrene	ug/l	<0.01		<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01	<	0.01
Pyrene	ug/l	<0.01		<	0.01	<	0.01	<	0.01		0.02	<	0.01	<	0.01	<	0.01	<	0.01
TPH CWG																			
Aliphatics																			
>C5-C6	ug/l	<10	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
>C6-C8	ug/l	<10	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
>C8-C10	ug/l	<10	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
>C10-C12	ug/l	<5	10	<	5	<	5	<	5	<	5	<	5	<	5	<	5	<	5
>C12-C16	ug/l	<10	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
>C16-C21	ug/l	<10	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
>C21-C35	ug/l	<10	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
Total aliphatics C5-35	ug/l	<10		<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
Aromatics																			
>C5-EC7	ug/l	<10	50	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
>EC7-EC8	ug/l	<10	74	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
>EC8-EC10	ug/l	<10	20	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
>EC10-EC12	ug/l	<5	2	<	5	<	5	<	5	<	5	<	5	<	5	<	5	<	5
>EC12-EC16	ug/l	<10	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
>EC16-EC21	ug/l	<10	0.27	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
>EC21-EC35	ug/l	<10	0.0082	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
Total aromatics C5-35	ug/l	<10		<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
Total TPH	ug/l	<10		<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
BTEX/MTBE MS																			
Methyl Tertiary Butyl Ether	ug/l	<0.1	15	<	0.1	<	5	<	0.1	<	5	<	0.1	<	0.1	<	0.1	<	0.1
Benzene	ug/l	<0.5	50	<	0.5	<	5	<	0.5	<	5	<	0.5	<	0.5	<	0.5	<	0.5
Toluene	ug/l	<5	74	<	5	<	5	<	5	<	5	<	5	<	5	<	5	<	5
Ethylbenzene	ug/l	<1	200	<	1	<	5	<	1	<	5	<	1	<	<	<	1	<	1
Total Xylene	ug/l	<3	30	<	3	<	5	<	3	<	5	<	3	<	3	<	3	<	3
Gycol Suite																			
Monoethylene glycol	ug/l	<1		<	1		NA	<	1		NA		NA	<	1		NA		NA
Propylene glycol	ug/l	<1		<	1		NA	<	1		NA		NA	<	1		NA		NA
Diethylene glycol	ug/l	<1		<	1		NA	<	1		NA		NA	<	1		NA		NA
Triethylene glycol	ug/l	<1		<	1		NA	<	1		NA		NA	<	1		NA		NA
Thiodiglycol	ug/l	<1		<	1		NA	<	1		NA		NA	<	1		NA		NA

KEY

Drinking Water Standards

River Water EQS - (where DWS not available) - Maximum Allowable Concentration (MAC) where published & hardness values

			Sample ID		BH102		BH103		BH104		BH105		DS01		DS14		SW1		SW2		SW4
			Sample Location		Land north of Chuch Street		Land north of Chuch Street		Former Reservoirs		CHP and Landfill		Wilton Mill		Former Paper Mill		Upstream River Irwell		Downstream River Irwell		Onsite Reservoir
			Date		09/02/2017		09/02/2017		09/02/2017		09/02/2017		09/02/2017		09/02/2017		09/02/2017		09/02/2017		09/02/2017
Determinand	**Units**	**LOD**																			
Dichlorodifluoromethane	ug/l	<2		<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
Methyl Tertiary Butyl Ether	ug/l	<0.1	15	<	0.1	<	0.1	<	0.1	<	0.1	<	0.1	<	0.2	<	0.1	<	0.1	<	0.1
Chloromethane	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
Vinyl Chloride	ug/l	<0.1		<	0.1	<	0.1	<	0.1	<	0.1	<	0.1	<	0.2	<	0.1	<	0.1	<	0.1
Bromomethane	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	2	<	1	<	1	<	1
Chloroethane	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
Trichlorofluoromethane	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
1,1-Dichloroethene (1,1 DCE)	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
Dichloromethane (DCM)	ug/l	<5		<	5	<	5	<	5	<	5	<	5	<	10	<	5	<	5	<	5
trans-1-2-Dichloroethene	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
1,1-Dichloroethane	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
cis-1-2-Dichloroethene	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
2,2-Dichloropropane	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	2	<	1	<	1	<	1
Bromochloromethane	ug/l	<2		<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
Chloroform	ug/l	<2		<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
1,1,1-Trichloroethane	ug/l	<2		<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
1,1-Dichloropropene	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
Carbon tetrachloride	ug/l	<2		<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
1,2-Dichloroethane	ug/l	<2		<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
Benzene	ug/l	<0.5	50	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	1	<	0.5	<	0.5	<	0.5
Trichloroethene (TCE)	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
1,2-Dichloropropane	ug/l	<2		<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
Dibromomethane	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
Bromodichloromethane	ug/l	<2		<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
cis-1-3-Dichloropropene	ug/l	<2		<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
Toluene	ug/l	<5	74	<	5	<	5	<	5	<	5	<	5	<	10	<	5	<	5	<	5
trans-1-3-Dichloropropene	ug/l	<2		<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
1,1,2-Trichloroethane	ug/l	<2		<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
Tetrachloroethene (PCE)	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
1,3-Dichloropropane	ug/l	<2		<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
Dibromochloromethane	ug/l	<2		<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
1,2-Dibromoethane	ug/l	<2		<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
Chlorobenzene	ug/l	<2		<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
1,1,1,2-Tetrachloroethane	ug/l	<2		<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
Ethylbenzene	ug/l	<1	200	<	1	<	1	<	1	<	1	<	1	<	2	<	1	<	1	<	1
p/m-Xylene	ug/l	<2	30	<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
o-Xylene	ug/l	<1	30	<	1	<	1	<	1	<	1	<	1	<	2	<	1	<	1	<	1
Styrene	ug/l	<2		<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
Bromoform	ug/l	<2		<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
Isopropylbenzene	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
1,1,2,2-Tetrachloroethane	ug/l	<4		<	4	<	4	<	4	<	4	<	4	<	8	<	4	<	4	<	4
Bromobenzene	ug/l	<2		<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
1,2,3-Trichloropropane	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
Propylbenzene	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
2-Chlorotoluene	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
1,3,5-Trimethylbenzene	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
4-Chlorotoluene	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
tert-Butylbenzene	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
1,2,4-Trimethylbenzene	ug/l	<3			4	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
sec-Butylbenzene	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
4-Isopropyltoluene	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
1,3-Dichlorobenzene	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
1,4-Dichlorobenzene	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
n-Butylbenzene	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
1,2-Dichlorobenzene	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
1,2-Dibromo-3-chloropropane	ug/l	<2		<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
1,2,4-Trichlorobenzene	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
Hexachlorobutadiene	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
Naphthalene	ug/l	<2		<	2	<	2	<	2	<	2	<	2	<	4	<	2	<	2	<	2
1,2,3-Trichlorobenzene	ug/l	<3		<	3	<	3	<	3	<	3	<	3	<	6	<	3	<	3	<	3
VOC TICs	None				ND		ND		ND		ND		ND		ND		ND		ND		ND

KEY

	Drinking Water Standards
	River Water EQS

			Sample ID		BH102		BH103		BH104		BH105		DS01		DS14		SW1		SW2		SW4
			Sample Location		Land north of Chuch Street		Land north of Chuch Street		Former Reservoirs		CHP and Landfill		Wilton Mill		Former Paper Mill		Upstream River Irwell		Downstream River Irwell		Onsite Reservoir
			Date		09/02/2017		09/02/2017		09/02/2017		09/02/2017		09/02/2017		09/02/2017		09/02/2017		09/02/2017		09/02/2017
Determinand	**Units**	**LOD**	**TSV**																		
Phenols																					
2-Chlorophenol	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
2-Methylphenol	ug/l	<0.5		<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
2-Nitrophenol	ug/l	<0.5		<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
2,4-Dichlorophenol	ug/l	<0.5		<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
2,4-Dimethylphenol	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
2,4,5-Trichlorophenol	ug/l	<0.5		<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
2,4,6-Trichlorophenol	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
4-Chloro-3-methylphenol	ug/l	<0.5		<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
4-Methylphenol	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
4-Nitrophenol	ug/l	<10		<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10	<	10
Pentachlorophenol	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
Phenol	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
PAHs																					
2-Chloronaphthalene	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
2-Methylnaphthalene	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
Phthalates																					
Bis(2-ethylhexyl) phthalate	ug/l	<5		<	5		**8**	<	5		**8**	<	5	<	5	<	5	<	5	<	5
Butylbenzyl phthalate	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
Di-n-butyl phthalate	ug/l	<1.5		<	1.5	<	1.5	<	1.5	<	1.5	<	1.5	<	1.5	<	1.5	<	1.5	<	1.5
Di-n-Octyl phthalate	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
Diethyl phthalate	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
Dimethyl phthalate	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
Other SVOCs																					
1,2-Dichlorobenzene	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
1,2,4-Trichlorobenzene	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
1,3-Dichlorobenzene	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
1,4-Dichlorobenzene	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
2-Nitroaniline	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
2,4-Dinitrotoluene	ug/l	<0.5		<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
2,6-Dinitrotoluene	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
3-Nitroaniline	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
4-Bromophenylphenylether	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
4-Chloroaniline	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
4-Chlorophenylphenylether	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
4-Nitroaniline	ug/l	<0.5		<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Azobenzene	ug/l	<0.5		<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Bis(2-chloroethoxy)methane	ug/l	<0.5		<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Bis(2-chloroethyl)ether	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
Carbazole	ug/l	<0.5		<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Dibenzofuran	ug/l	<0.5		<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Hexachlorobenzene	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
Hexachlorobutadiene	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
Hexachlorocyclopentadiene	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
Hexachloroethane	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
Isophorone	ug/l	<0.5		<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
N-nitrosodi-n-propylamine	ug/l	<0.5		<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5	<	0.5
Nitrobenzene	ug/l	<1		<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1	<	1
SVOC TICs	None				ND		ND		ND		ND		ND		ND		ND		ND		ND

KEY

	Drinking Water Standards
	River Water EQS

			DS20 CHP and Landfill				DS20 CHP and Landfill	
Determinand	**Units**	**LOD**		09/03/2017	**Units**	**LOD**		09/03/2017
VOC MS								
Vinyl Chloride	ppbv	<1.5	<	1.5	ug/m3	<3.8	<	3.8
VOC USEPA MS								
Dichlorodifluoromethane (F-12)	ppbv	<2.5	<	2.5	ug/m3	<12.4	<	12.4
Chloromethane	ppbv	<1.5	<	1.5	ug/m3	<3.1	<	3.1
Bromomethane	ppbv	<1.5	<	1.5	ug/m3	<5.8	<	5.8
Chloroethane	ppbv	<1.5	<	1.5	ug/m3	<4.0	<	4
Trichlorofluoromethane (F-11)	ppbv	<1.5	<	1.5	ug/m3	<8.4	<	8.4
1,1-Dichloroethene (1,1 DCE)	ppbv	<1.5	<	1.5	ug/m3	<5.9	<	5.9
Dichloromethane (DCM)	ppbv	<14.4	<	14.4	ug/m3	<50	<	50
Trans-1,2-Dichloroethene	ppbv	<1.5	<	1.5	ug/m3	<5.9	<	5.9
1,1-Dichloroethane	ppbv	<1.5	<	1.5	ug/m3	<6.1	<	6.1
cis-1,2-Dichloroethene	ppbv	<1	<	1	ug/m3	<4	<	4
2,2-Dichloropropane	ppbv	<1.5	<	1.5	ug/m3	<6.9	<	6.9
Chloroform	ppbv	<1.5	<	1.5	ug/m3	<7.3	<	7.3
1,1,1-Trichloroethane	ppbv	<1.5	<	1.5	ug/m3	<8.2	<	8.2
1,1-Dichloropropene	ppbv	<1.5	<	1.5	ug/m3	<6.8	<	6.8
Carbon Tetrachloride	ppbv	<1.5	<	1.5	ug/m3	<9.4	<	9.4
1,2-Dichloroethane	ppbv	<1.5	<	1.5	ug/m3	<6.1	<	6.1
Benzene	ppbv	<1.5	<	1.5	ug/m3	<4.8	<	4.8
Trichloroethene (TCE)	ppbv	<1.5	<	1.5	ug/m3	<8.1	<	8.1
1,2-Dichloropropane	ppbv	<1.5	<	1.5	ug/m3	<6.9	<	6.9
Dibromomethane	ppbv	<1.5	<	1.5	ug/m3	<10.7	<	10.7
Bromodichloromethane	ppbv	<1.5	<	1.5	ug/m3	<10.1	<	10.1
cis-1,3-Dichloropropene	ppbv	<1.5	<	1.5	ug/m3	<6.8	<	6.8
Toluene	ppbv	<1.5		**5.4**	ug/m3	<5.7		**20.3**
trans-1,3-Dichloropropene	ppbv	<1.5	<	1.5	ug/m3	<6.8	<	6.8
1,1,2-Trichloroethane	ppbv	<1.5	<	1.5	ug/m3	<8.2	<	8.2
Tetrachloroethene (PCE)	ppbv	<1.5	<	1.5	ug/m3	<10.2	<	10.2
1,3-Dichloropropane	ppbv	<1.5	<	1.5	ug/m3	<6.9	<	6.9
Dibromochloromethane	ppbv	<1.5	<	1.5	ug/m3	<12.8	<	12.8
1,2-Dibromoethane	ppbv	<1.5	<	1.5	ug/m3	<11.5	<	11.5
Chlorobenzene	ppbv	<1.5	<	1.5	ug/m3	<6.9	<	6.9
1,1,1,2-Tetrachloroethane	ppbv	<1.5	<	1.5	ug/m3	<10.3	<	10.3
Ethylbenzene	ppbv	<1.5	<	1.5	ug/m3	<6.5	<	6.5
m&p - Xylenes	ppbv	<1.5	<	1.5	ug/m3	<6.5	<	6.5
o-Xylene	ppbv	<1.5	<	1.5	ug/m3	<6.5	<	6.5
Styrene	ppbv	<1.5		**2.7**	ug/m3	<6.4		**11.5**
Bromoform	ppbv	<1.5	<	1.5	ug/m3	<15.5	<	15.5
Isopropylbenzene	ppbv	<1.5	<	1.5	ug/m3	<7.4	<	7.4
1,1,2,2-Tetrachloroethane	ppbv	<1.5	<	1.5	ug/m3	<10.3	<	10.3
Bromobenzene	ppbv	<1.5	<	1.5	ug/m3	<9.6	<	9.6
1,2,3-Trichloropropane	ppbv	<1.5	<	1.5	ug/m3	<9.0	<	9
Propylbenzene	ppbv	<1.5	<	1.5	ug/m3	<7.4	<	7.4
2-Chlorotoluene	ppbv	<1.5	<	1.5	ug/m3	<7.8	<	7.8
1,3,5-Trimethylbenzene	ppbv	<1.5	<	1.5	ug/m3	<7.4	<	7.4
4-Chlorotoluene	ppbv	<1.5	<	1.5	ug/m3	<7.8	<	7.8
Tert-Butylbenzene	ppbv	<1.5	<	1.5	ug/m3	<8.2	<	8.2
1,2,4-Trimethylbenzene	ppbv	<1.5	<	1.5	ug/m3	<7.4	<	7.4
Sec-Butylbenzene	ppbv	<1.5	<	1.5	ug/m3	<8.2	<	8.2
4-Isopropyltoluene	ppbv	<1.5	<	1.5	ug/m3	<8.2	<	8.2
1,4-Dichlorobenzene	ppbv	<1.5	<	1.5	ug/m3	<9.0	<	9
1,3-Dichlorobenzene	ppbv	<1.5	<	1.5	ug/m3	<9.0	<	9
n-Butylbenzene	ppbv	<1.5	<	1.5	ug/m3	<8.2	<	8.2
1,2-Dichlorobenzene	ppbv	<1.5	<	1.5	ug/m3	<9.0	<	9
1,2-Dibromo-3-chloropropane	ppbv	<1.5	<	1.5	ug/m3	<14.5	<	14.5
1,2,4-Trichlorobenzene	ppbv	<1.5	<	1.5	ug/m3	<11.1	<	11.1
Hexachlorobutadiene	ppbv	<1.5	<	1.5	ug/m3	<16.0	<	16
Naphthalene	ppbv	<0.32	<	0.32	ug/m3	<1.7	<	1.7
1,2,3-Trichlorobenzene	ppbv	<1.5	<	1.5	ug/m3	<11.1	<	11.1
Methyl tertiary butyl ether	ppbv	<1.5	<	1.5	ug/m3	<5.4	<	5.4
Sum of VOC USEPA compounds	ppbv			8.1	ug/m3			31.8

Bulk Composition	**Units**	**LOD**		**DS20**
Carbon Dioxide	%	<0.05		20.01
Carbon Monoxide	%	<0.05	<	0.05
Methane	%	<0.05		22.31
Methane	ppmV	<5		207630
Nitrogen	%	<0.5		48.2
Oxygen	%	<0.5		9.5

Key
LOD Limit of Detection
Bold text indicates determinand greater than LOD

	BH101 (TP112)	BH101 (TP112)	BH102	BH102	BH103	BH104	TP101	TP102	TP102	TP103	TP106	TP108	TP108	TP110	TP110	TP111	TP111	TP113	TP113	TP114
Depth (m)	0.20	1.00	0.20	1.30	1.20	0.50	0.50	0.50	1.60	0.80	0.50	0.50	2.0	0.20	1.80	0.40	0.50	0.50	1.20	0.50
Benzo(a)Anthracene	1.54	3.74	0.06	0.06	2.18	0.06	3.95	4.57	0.61	0.06	8.88	0.28	0.63	34.85	2.15	0.12	1.98	0.06	11.32	0.06
Chrysene	1.8	3.94	0.02	0.02	2.39	0.02	5.74	5.65	0.91	0.02	12.19	0.32	0.84	34.14	2.44	0.08	2.39	0.02	11.42	0.02
Benzo(b)fluoranthene	1.92	4.11	0.05	0.05	2.63	0.05	6.57	7.67	0.93	0.05	13.36	0.39	0.86	36.6	2.85	0.1	4.01	0.05	9.68	0.05
Benzo(k)fluoranthene	0.75	1.6	0.02	0.02	1.02	0.02	2.56	2.98	0.36	0.02	5.19	0.15	0.34	14.24	1.11	0.04	1.56	0.02	3.76	0.02
Dibenzo(ah)anthracene	0.12	0.25	0.04	0.04	0.26	0.04	0.79	0.87	0.13	0.04	1.7	0.06	0.12	3.07	0.24	0.04	0.38	0.04	0.7	0.04
Indeno(123cd)pyrene	0.78	1.81	0.04	0.04	1.23	0.04	3.37	3.76	0.43	0.04	6.48	0.18	0.52	19.1	1.36	0.04	2.32	0.04	4.29	0.04
Benzo(ghi)Perylene	0.87	1.8	0.04	0.04	1.31	0.04	3.43	4	0.44	0.04	6.22	0.19	0.41	16.11	1.27	0.04	2.27	0.04	3.49	0.04
Benzo(a)Pyrene	1.4	3.55	0.04	0.04	2.22	0.04	5.64	6.67	0.77	0.04	10.56	0.28	0.63	28.58	2.26	0.08	2.97	0.04	7.25	0.04
Ratio to B(a)P	**BH101 (TP112)**	**BH101 (TP112)**	**BH102**	**BH102**	**BH103**	**BH104**	**TP101**	**TP102**	**TP102**	**TP103**	**TP106**	**TP108**	**TP108**	**TP110**	**TP110**	**TP111**	**TP111**	**TP113**	**TP113**	**TP114**
	0.20	1.00	0.20	1.30	1.20	0.50	0.50	0.50	1.60	0.80	0.50	0.50	2.0	0.20	1.80	0.40	0.50	0.50	1.20	0.50
Benzo(a)Anthracene	1.10	1.05	1.50	1.50	0.98	1.50	0.70	0.69	0.79	1.50	0.84	1.00	1.00	1.22	0.95	1.50	0.67	1.50	1.56	1.50
Chrysene	1.29	1.11	0.50	0.50	1.08	0.50	1.02	0.85	1.18	0.50	1.15	1.14	1.33	1.19	1.08	1.00	0.80	0.50	1.58	0.50
Benzo(b)fluoranthene	1.37	1.16	1.25	1.25	1.18	1.25	1.16	1.15	1.21	1.25	1.27	1.39	1.37	1.28	1.26	1.25	1.35	1.25	1.34	1.25
Benzo(k)fluoranthene	0.54	0.45	0.50	0.50	0.46	0.50	0.45	0.45	0.47	0.50	0.49	0.54	0.54	0.50	0.49	0.50	0.53	0.50	0.52	0.50
Dibenzo(ah)anthracene	0.09	0.07	1.00	1.00	0.12	1.00	0.14	0.13	0.17	1.00	0.16	0.21	0.19	0.11	0.11	0.50	0.13	1.00	0.10	1.00
Indeno(123cd)pyrene	0.56	0.51	1.00	1.00	0.55	1.00	0.60	0.56	0.56	1.00	0.61	0.64	0.83	0.67	0.60	0.50	0.78	1.00	0.59	1.00
Benzo(ghi)Perylene	0.62	0.51	1.00	1.00	0.59	1.00	0.61	0.60	0.57	1.00	0.59	0.68	0.65	0.56	0.56	0.50	0.76	1.00	0.48	1.00

	TP115	TP116	TP117	TP117	TP117	TP118	TP118	TP119	TP119	TP119	TP120	TP120	TP121	TP123	TP124	TP124	TP127	TP128	TP130	TP133	TP133	TP134	TP134
Depth (m)	0.50	0.50	0.50	1.20	1.50	0.10	1.00	0.50	1.20	2.50	0.50	2.80	0.50	1.50	0.20	1.20	1.20	2.50	1.50	0.40	1.50	0.50	1.10
Benzo(a)Anthracene	0.06	0.06	0.06	0.06	0.06	0.2	0.06	0.7	0.59	0.06	0.19	0.06	0.52	0.3	3.64	2.48	0.06	0.06	0.11	0.4	0.06	0.06	0.06
Chrysene	0.02	0.02	0.02	0.02	0.02	0.25	0.02	0.83	0.67	0.02	0.22	0.02	0.68	0.34	4.82	2.38	0.02	0.02	0.09	0.42	0.02	0.04	0.02
Benzo(b)fluoranthene	0.05	0.05	0.05	0.05	0.05	0.26	0.05	0.97	0.77	0.05	0.22	0.05	0.73	0.28	5.27	3.31	0.05	0.05	0.1	0.5	0.05	0.05	0.05
Benzo(k)fluoranthene	0.02	0.02	0.02	0.02	0.02	0.1	0.02	0.38	0.3	0.02	0.09	0.02	0.29	0.11	2.05	1.29	0.02	0.02	0.04	0.2	0.02	0.02	0.02
Dibenzo(ah)anthracene	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.07	0.05	0.04	0.04	0.04	0.1	0.04	0.49	0.29	0.04	0.04	0.04	0.06	0.04	0.04	0.04
Indeno(123cd)pyrene	0.04	0.04	0.04	0.04	0.04	0.11	0.04	0.53	0.36	0.04	0.14	0.04	0.38	0.13	2.67	1.81	0.04	0.04	0.05	0.26	0.04	0.04	0.04
Benzo(ghi)Perylene	0.04	0.04	0.04	0.04	0.04	0.11	0.04	0.43	0.35	0.04	0.11	0.04	0.35	0.15	2.52	1.53	0.04	0.04	0.06	0.24	0.04	0.04	0.04
Benzo(a)Pyrene	0.04	0.04	0.04	0.04	0.04	0.2	0.04	0.87	0.67	0.04	0.2	0.04	0.61	0.24	4.43	2.81	0.04	0.04	0.1	0.45	0.04	0.04	0.04
Ratio to B(a)P	**TP115**	**TP116**	**TP117**	**TP117**	**TP117**	**TP118**	**TP118**	**TP119**	**TP119**	**TP119**	**TP120**	**TP120**	**TP121**	**TP123**	**TP124**	**TP124**	**TP127**	**TP128**	**TP130**	**TP133**	**TP133**	**TP134**	**TP134**
	0.50	0.50	0.50	1.20	1.50	0.10	1.00	0.50	1.20	2.50	0.50	2.80	0.50	1.50	0.20	1.20	1.20	2.50	1.50	0.40	1.50	0.50	1.10
Benzo(a)Anthracene	1.50	1.50	1.50	1.50	1.50	1.00	1.50	0.80	0.88	1.50	0.95	1.50	0.85	1.25	0.82	0.88	1.50	1.50	1.10	0.89	1.50	1.50	1.50
Chrysene	0.50	0.50	0.50	0.50	0.50	1.25	0.50	0.95	1.00	0.50	1.10	0.50	1.11	1.42	1.09	0.85	0.50	0.50	0.90	0.93	0.50	1.00	0.50
Benzo(b)fluoranthene	1.25	1.25	1.25	1.25	1.25	1.30	1.25	1.11	1.15	1.25	1.10	1.25	1.20	1.17	1.19	1.18	1.25	1.25	1.00	1.11	1.25	1.25	1.25
Benzo(k)fluoranthene	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.44	0.45	0.50	0.45	0.50	0.48	0.46	0.46	0.46	0.50	0.50	0.40	0.44	0.50	0.50	0.50
Dibenzo(ah)anthracene	1.00	1.00	1.00	1.00	1.00	0.20	1.00	0.08	0.07	1.00	0.20	1.00	0.16	0.17	0.11	0.10	1.00	1.00	0.40	0.13	1.00	1.00	1.00
Indeno(123cd)pyrene	1.00	1.00	1.00	1.00	1.00	0.55	1.00	0.61	0.54	1.00	0.70	1.00	0.62	0.54	0.60	0.64	1.00	1.00	0.50	0.58	1.00	1.00	1.00
Benzo(ghi)Perylene	1.00	1.00	1.00	1.00	1.00	0.55	1.00	0.49	0.52	1.00	0.55	1.00	0.57	0.63	0.57	0.54	1.00	1.00	0.60	0.53	1.00	1.00	1.00

	TP135	TP136	TP137	TP137	TP138	TP139	TP139	DS01	DS01	DS02	DS02	DS02	DS03	DS03	DS04	DS05	DS07	DS10HP	DS11	DS14	DS17
Depth (m)	1.00	0.20	0.50	1.00	0.20	0.50	1.20	0.50	1.40	0.50	0.70	0.90	0.50	1.70	0.5	0.50	0.20	0.40	0.50	0.80	0.30
Benzo(a)Anthracene	0.06	0.06	0.06	0.06	0.06	0.06	0.56	0.07	1.63	3.21	55.83	0.22	0.35	0.92	1.2	1.12	0.4	0.06	0.06	0.45	0.36
Chrysene	0.06	0.03	0.02	0.02	0.05	0.05	0.6	0.08	2.03	3.55	53.49	0.25	0.41	1.09	1.63	1.21	0.52	0.02	0.02	0.48	0.36
Benzo(b)fluoranthene	0.06	0.05	0.05	0.05	0.05	0.05	0.64	0.08	2.2	5.62	78.14	0.32	0.51	1.39	1.73	1.35	0.61	0.05	0.05	0.6	0.35
Benzo(k)fluoranthene	0.03	0.02	0.02	0.02	0.02	0.02	0.25	0.03	0.86	2.19	30.39	0.12	0.2	0.54	0.67	0.53	0.24	0.02	0.02	0.24	0.14
Dibenzo(ah)anthracene	0.04	0.04	0.04	0.04	0.04	0.04	0.1	0.04	0.33	0.94	11.16	0.05	0.07	0.21	0.23	0.25	0.08	0.04	0.04	0.1	0.04
Indeno(123cd)pyrene	0.04	0.04	0.04	0.04	0.04	0.04	0.29	0.04	1.23	3.93	53.39	0.16	0.27	0.7	0.77	0.71	0.34	0.04	0.04	0.31	0.19
Benzo(ghi)Perylene	0.04	0.04	0.04	0.04	0.04	0.04	0.24	0.04	0.98	2.93	43.85	0.15	0.27	0.61	0.8	0.64	0.28	0.04	0.04	0.33	0.16
Benzo(a)Pyrene	0.06	0.04	0.04	0.04	0.04	0.04	0.49	0.07	1.83	5.31	75.48	0.28	0.39	1.13	1.52	1.06	0.52	0.04	0.04	0.46	0.29
Ratio to B(a)P	**TP135**	**TP136**	**TP137**	**TP137**	**TP138**	**TP139**	**TP139**	**DS01**	**DS01**	**DS02**	**DS02**	**DS02**	**DS03**	**DS03**	**DS04**	**DS05**	**DS07**	**DS10HP**	**DS11**	**DS14**	**DS17**
	1.00	0.20	0.50	1.00	0.20	0.50	1.20	0.50	1.40	0.50	0.70	0.90	0.50	1.70	0.5	0.50	0.20	0.40	0.50	0.80	0.30
Benzo(a)Anthracene	1.00	1.50	1.50	1.50	1.50	1.50	1.14	1.00	0.89	0.60	0.74	0.79	0.90	0.81	0.79	1.06	0.77	1.50	1.50	0.98	1.24
Chrysene	1.00	0.75	0.50	0.50	1.25	1.25	1.22	1.14	1.11	0.67	0.71	0.89	1.05	0.96	1.07	1.14	1.00	0.50	0.50	1.04	1.24
Benzo(b)fluoranthene	1.00	1.25	1.25	1.25	1.25	1.25	1.31	1.14	1.20	1.06	1.04	1.14	1.31	1.23	1.14	1.27	1.17	1.25	1.25	1.30	1.21
Benzo(k)fluoranthene	0.50	0.50	0.50	0.50	0.50	0.50	0.51	0.43	0.47	0.41	0.40	0.43	0.51	0.48	0.44	0.50	0.46	0.50	0.50	0.52	0.48
Dibenzo(ah)anthracene	0.67	1.00	1.00	1.00	1.00	1.00	0.20	0.57	0.18	0.18	0.15	0.18	0.18	0.19	0.15	0.24	0.15	1.00	1.00	0.22	0.14
Indeno(123cd)pyrene	0.67	1.00	1.00	1.00	1.00	1.00	0.59	0.57	0.67	0.74	0.71	0.57	0.69	0.62	0.51	0.67	0.65	1.00	1.00	0.67	0.66
Benzo(ghi)Perylene	0.67	1.00	1.00	1.00	1.00	1.00	0.49	0.57	0.54	0.55	0.58	0.54	0.69	0.54	0.53	0.60	0.54	1.00	1.00	0.72	0.55

	DS17	DS17	DS20	DS25	DS26	DS26	DS27	SP1	SP2	SP3	SP4	SP5	SP6	HP5	HP6	HP7	HP8
Depth (m)	1.60	3.80	1.50	0.50	0.60	1.80	0.30	0.80	0.80	0.80	0.80	0.80	0.80	0.40	0.60	0.70	0.50
Benzo(a)Anthracene	0.06	0.24	2.13	0.06	0.17	0.09	0.12	0.29	0.17	0.16	1.29	2.13	3.44	0.52	2.43	0.11	11.58
Chrysene	0.06	0.26	2.01	0.02	0.17	0.07	0.1	0.34	0.24	0.14	1.21	2.32	3.35	0.47	2.06	0.09	11.23
Benzo(b)fluoranthene	0.05	0.24	2.4	0.05	0.16	0.05	0.12	0.38	0.23	0.14	1.1	3.09	3.85	0.58	2.78	0.09	13.45
Benzo(k)fluoranthene	0.02	0.1	0.93	0.02	0.06	0.02	0.04	0.15	0.09	0.06	0.43	1.2	1.5	0.22	1.08	0.03	5.23
Dibenzo(ah)anthracene	0.04	0.04	0.34	0.04	0.04	0.04	0.04	0.05	0.05	0.04	0.2	0.52	0.54	0.17	0.78	0.04	3.71
Indeno(123cd)pyrene	0.04	0.11	1.35	0.04	0.05	0.04	0.04	0.21	0.12	0.07	0.58	2.03	2.52	0.45	2.03	0.04	10.69
Benzo(ghi)Perylene	0.04	0.11	1.07	0.04	0.07	0.04	0.05	0.21	0.11	0.08	0.49	1.72	1.98	0.33	1.55	0.04	7.59
Benzo(a)Pyrene	0.04	0.21	0.52	0.04	0.1	0.04	0.11	0.32	0.18	0.12	1.01	2.6	3.3	0.34	1.57	0.07	7.6

Ratio to B(a)P	DS17	DS17	DS20	DS25	DS26	DS26	DS27	SP1	SP2	SP3	SP4	SP5	SP6	HP5	HP6	HP7	HP8	Min	Max	Culp study limits	
	1.60	3.80	1.50	0.50	0.60	1.80	0.30	0.80	0.80	0.80	0.80	0.80	0.80	0.40	0.60	0.70	0.50			**Lower Limit**	**Upper Limit**
Benzo(a)Anthracene	1.50	1.14	4.10	1.50	1.70	2.25	1.09	0.91	0.94	1.33	1.28	0.82	1.04	1.53	1.55	1.57	1.52	0.60	4.10	0.12	12.43
Chrysene	1.50	1.24	3.87	0.50	1.70	1.75	0.91	1.06	1.33	1.17	1.20	0.89	1.02	1.38	1.31	1.29	1.48	0.50	3.87	0.12	11.61
Benzo(b)fluoranthene	1.25	1.14	4.62	1.25	1.60	1.25	1.09	1.19	1.28	1.17	1.09	1.19	1.17	1.71	1.77	1.29	1.77	1.00	4.62	0.11	10.85
Benzo(k)fluoranthene	0.50	0.48	1.79	0.50	0.60	0.50	0.36	0.47	0.50	0.50	0.43	0.46	0.45	0.65	0.69	0.43	0.69	0.36	1.79	0.04	3.72
Dibenzo(ah)anthracene	1.00	0.19	0.65	1.00	0.40	1.00	0.36	0.16	0.28	0.33	0.20	0.20	0.16	0.50	0.50	0.57	0.49	0.07	1.00	0.01	1.38
Indeno(123cd)pyrene	1.00	0.52	2.60	1.00	0.50	1.00	0.36	0.66	0.67	0.58	0.57	0.78	0.76	1.32	1.29	0.57	1.41	0.36	2.60	0.07	7.27
Benzo(ghi)Perylene	1.00	0.52	2.06	1.00	0.70	1.00	0.45	0.66	0.61	0.67	0.49	0.66	0.60	0.97	0.99	0.57	1.00	0.45	2.06	0.08	8.22

			Sample Location		TP101			TP102			TP108			TP113			DS01			DS02	
			Depth (m bgl)		0.50			0.50			2.0			1.20			1.40			0.70	
			Date		24/01/2017			24/01/2017			20/01/2017			17/01/2017			24/01/2017			24/01/2017	
			Strata		MG: Granular			MG: Granular			MG: Granular			MG: Cohesive			MG: Granular			MG: Granular	
Field Observations					Ash and Clinker			Ash and Paper Waste			NA			Hydrocarbon Odours			Paper Waste			Ash	
TPH CWG																					
Aliphatic >C5-6	mg/kg	<0.1	42	<	0.1	0.002	<	0.1	0.002	<	0.1	0.002	<	0.1	0.002		0.1	0.002	<	0.1	0.002
Aliphatic >C6-8	mg/kg	<0.1	100	<	0.1	0.001	<	0.1	0.001	<	0.1	0.001	<	0.1	0.001		0.1	0.001	<	0.1	0.001
Aliphatic >C8-10	mg/kg	<0.1	27	<	0.1	0.004	<	0.1	0.004	<	0.1	0.004	<	0.1	0.004		0.1	0.004	<	0.1	0.004
Aliphatic >C10-12	mg/kg	<0.2	130	<	0.2	0.002	<	0.2	0.002	<	0.2	0.002		3.8	0.029		0.2	0.002	<	0.2	0.002
Aliphatic >C12-16	mg/kg	<4	1100	<	4	0.004	<	4	0.004	<	4	0.004		30	0.027		6	0.005		6	0.005
Aliphatic >C16-35	mg/kg	<14	65000		551	0.008		214	0.003		425	0.007		1202	0.018		225	0.003		225	0.003
Aliphatic >C35-C44	mg/kg	<7	65000		178	0.003		11	0.000		289	0.004		1127	0.017		32	0.000		37	0.001
Aromatic >EC5-7	mg/kg	<0.1	70	<	0.1	0.001	<	0.1	0.001	<	0.1	0.001	<	0.1	0.001	<	0.1	0.001	<	0.1	0.001
Aromatic >EC7-8	mg/kg	<0.1	130	<	0.1	0.001	<	0.1	0.001	<	0.1	0.001	<	0.1	0.001	<	0.1	0.001	<	0.1	0.001
Aromatic >EC8-10	mg/kg	<0.1	34	<	0.1	0.003	<	0.1	0.003	<	0.1	0.003	<	0.1	0.003	<	0.1	0.003	<	0.1	0.003
Aromatic >EC10-12	mg/kg	<0.2	74		0.6	0.008		0.8	0.011		1	0.014	<	0.2	0.003		7.5	0.101		3.6	0.049
Aromatic >EC12-16	mg/kg	<4	140		21	0.150		19	0.136		15	0.107		20	0.143		104	0.743		64	0.457
Aromatic >EC16-21	mg/kg	<7	260		156	0.600		156	0.600		73	0.281		469	1.804		540	2.077		954	3.669
Aromatic >EC21-35	mg/kg	<7	1100		823	0.748		591	0.537		353	0.321		1190	1.082		1545	1.405		4060	3.691
Aromatic > EC35-EC44	mg/kg	<7	1100		620	0.564		349	0.317		296	0.269		984	0.895		582	0.529		1591	1.446
Total aliphatics and aromatics (C5-44)	mg/kg	<52			**2350**			**1341**			**1452**			**5026**			**3042**			**6941**	
TOTAL Aliphatic	mg/kg					0.023			0.016			0.023			0.099			0.018			0.018
TOTAL Aromatic	mg/kg					2.075			1.606			0.997			3.931			4.860			9.317
HAZARD INDEX	mg/kg					**2.099**			**1.622**			**1.020**			**4.030**			**4.878**			**9.336**

KEY

Concentration exceeds TSV
S4UL 1% SOM
C4SL 1% SOM

Zone 1 - Human Health Assessment
Soil Statistical Analysis (Outliers Included)

Parameter	TSV	TP101 (0.5m) MG Granular	TP102 (0.5m) MG Granular	TP102 (1.6m) MG Granular	TP103 (0.8m) - MG Cohesive	DS01 (0.5m) MG Granular	DS01 (1.4m) MG Granular	DS02 (0.5m) MG Granular	DS02 (0.7m) MG Granular	DS02 (0.9m) - MG Cohesive	No. of Samples	UCL	Arithmetic Mean	Geometric Mean	No. of LN Samples	Standard Deviation	LN Standard Deviation	Coeff. Variability	Distribution	LN Arithmetic Mean	Applicable 95% UCL	95% UCL LogNormal	95% UCL Normal	Max	Min	Max Ln	Tcalc	Tcrit (10%)	Critical Value Test	(Max val test) Outlier?	Mean Value Test
Lead	200	214	139	102	90	57	89	41	36	899	9	0.95	185.22	107.00	9	273.22	0.98	1.48	LOGNORMAL	4.67	196.15	196.15	354.58	899.00	36.00	6.80	2.18	1.977	YES	YES	Pass
Arsenic	37	18.3	18.8	73.2	9.5	21.9	21.9	10.3	21.2	3.9	9	0.95	22.11	16.64	9	20.21	0.80	0.91	NORMAL	2.81	34.64	27.26	34.64	73.20	3.90	4.29	1.86	1.977	NO	NO	Pass
Beryllium	1.2	1.7	1.5	1.8	1	1.5	1.4	1.1	0.8	2.1	9	0.95	1.43	1.38	9	0.41	0.31	0.29	NORMAL	0.32	1.69	1.67	1.69	2.10	0.80	0.74	1.37	1.977	NO	NO	Fail
Zinc	3700	411	208	3821	52	71	261	150	51	84	9	0.95	567.67	180.39	9	1225.77	1.36	2.16	LOGNORMAL	5.20	418.99	418.99	1327.46	3821.00	51.00	8.25	2.25	1.977	YES	YES	Pass
Benzo(a)pyrene	5	5.64	6.67	0.77	0.04	0.07	1.83	5.31	75.48	0.28	9	0.95	10.68	1.37	9	24.44	2.42	2.29	LOGNORMAL	0.31	6.11	6.11	25.83	75.48	0.04	4.32	1.66	1.977	NO	NO	Fail
Naphthalene	2.3	0.63	0.7	0.18	0.04	0.04	0.29	0.45	4.62	0.04	9	0.95	0.78	0.24	9	1.46	1.62	1.88	LOGNORMAL	-1.41	0.67	0.67	1.68	4.62	0.04	1.53	1.82	1.977	NO	NO	Pass

Zone 1 - Human Health Assessment
Soil Statistical Analysis (Outliers Excluded)

Parameter	TSV	TP101 (0.5m) MG Granular	TP102 (0.5m) MG Granular	TP102 (1.6m) MG Granular	TP103 (0.8m) - MG Cohesive	DS01 (0.5m) MG Granular	DS01 (1.4m) MG Granular	DS02 (0.5m) MG Granular	DS02 (0.7m) MG Granular	DS02 (0.9m) - MG Cohesive	No. of Samples	UCL	Arithmetic Mean	Geometric Mean	No. of LN Samples	Standard Deviation	LN Standard Deviation	Coeff. Variability	Distribution	LN Arithmetic Mean	Applicable 95% UCL	95% UCL LogNormal	95% UCL Normal	Max	Min	Max Ln	Tcalc	Tcrit (10%)	Critical Value Test	(Max val test) Outlier?	Mean Value Test
Lead	200	214	139	102	90	57	89	41	36		8	0.95	96.00	82.00	8	58.60	0.60	0.61	LOGNORMAL	4.41	122.88	122.88	135.25	214.00	36.00	5.37	1.59	1.909	**NO**	**NO**	**Pass**
Zinc	3700	411	208		52	71	261	150	51	84	8	0.95	161.00	123.16	8	126.96	0.78	0.79	NORMAL	4.81	246.05	208.20	246.05	411.00	51.00	6.02	1.54	1.909	**NO**	**NO**	**Pass**
Benzo(a)pyrene	5	5.64	6.67	0.77	0.04	0.07	1.83	5.31		0.28	8	0.95	2.58	0.83	8	2.81	2.02	1.09	LOGNORMAL	-0.19	3.20	3.20	4.46	6.67	0.04	1.90	1.03	1.909	**NO**	**NO**	**Pass**

Zone 2 - Human Health Assessment
Soil Statistical Analysis (Outliers Included)

Parameter	TSV	BH101 (TP112) 0.20m MG Granular	BH101 (TP112) 1.00m MG Granular	TP106 (0.5m) MG Cohesive	TP108 (0.5m) MG Granular	TP110 (0.2m) MG Granular	TP110 (1.8m) MG Granular	TP111 (0.4m) MG Cohesive	TP111 (0.5m) MG Granular	TP113 (0.5m) MG Cohesive	TP113 (1.2m) MG Cohesive	TP119 (0.5m) MG Granular	TP119 (1.2m) MG Granular	TP120 (0.5m) MG Cohesive	TP121 (0.5m) MG Granular	TP123 (1.5m) MG Granular	TP124 (0.2m) MG Cohesive	TP124 (1.2m) MG Granular	DS03 (0.5m) MG Granular	DS04 (0.5m) MG Granular	DS05 (0.5m) MG Granular	DS14 (0.8m) MG Granular	No. of Samples	UCL	Arithmetic Mean	Geometric Mean	No. of LN Samples	Standard Deviation	LN Standard Deviation	Coeff. Variability	Distribution	LN Arithmetic Mean	Applicable 95% UCL	95% UCL LogNormal	95% UCL Normal	Max	Min	Max Ln	Tcalc	Tcrit (10%)	Critical Value Test	(Max val test) Outlier?	Mean Value Test
Lead	200	225	206	526	283	144	166	18	219	34	500	105	172	182	169	136	944	301	1484	1657	282	159	21	0.95	376.76	225.54	21	445.64	1.06	1.18	LOGNORMAL	5.42	336.35	336.35	544.48	1657.00	18.00	7.41	1.88	2.408	NO	NO	Fail
Arsenic	37	28.5	31	70	11.8	10.6	10.5	5	26.2	8.9	18.2	58.2	47.6	39.7	17	47.1	30.7	43.2	11.1	21.5	39.7	27	21	0.95	28.74	23.29	21	17.68	0.71	0.62	NORMAL	3.15	35.39	30.38	35.39	70.00	5.00	4.25	1.56	2.408	NO	NO	Pass
Beryllium	1.2	1.4	1.2	4	1.1	1	0.9	0.9	1.8	1.1	1.5	1.2	1	1.4	0.9	2.6	1.6	2.5	0.9	0.9	1.5	2.1	21	0.95	1.50	1.37	21	0.77	0.41	0.51	NORMAL	0.31	1.79	1.60	1.79	4.00	0.90	1.39	2.59	2.408	YES	YES	Fail
Benzo(a)pyrene	5	1.4	3.55	10.56	0.28	28.58	2.26	0.08	2.97	0.04	7.25	0.87	0.67	0.2	0.61	0.24	4.43	2.81	0.39	1.52	1.06	0.46	21	0.95	3.34	1.07	21	6.35	1.62	1.90	LOGNORMAL	0.07	1.97	1.97	5.74	28.58	0.04	3.35	2.03	2.408	NO	NO	Pass
Naphthalene	2.3	0.13	0.58	0.45	0.05	2.8	0.29	0.04	0.16	0.04	0.13	0.04	0.06	0.04	0.08	0.65	0.23	0.25	0.07	0.31	0.23	0.16	21	0.95	0.32	0.16	21	0.59	1.13	1.84	LOGNORMAL	-1.86	0.24	0.24	0.55	2.80	0.04	1.03	2.57	2.408	YES	YES	Pass

Zone 2 - Human Health Assessment
Soil Statistical Analysis (Outliers Excluded)

Parameter	TSV	BH101 (TP112) 0.20m MG Granular	BH101 (TP112) 1.00m MG Granular	TP106 (0.5m) MG Cohesive	TP108 (0.5m) MG Granular	TP110 (0.2m) MG Granular	TP110 (1.8m) MG Granular	TP111 (0.4m) MG Cohesive	TP111 (0.5m) MG Granular	TP113 (0.5m) MG Cohesive	TP113 (1.2m) MG Cohesive	TP119 (0.5m) MG Granular	TP119 (1.2m) MG Granular	TP120 (0.5m) MG Cohesive	TP121 (0.5m) MG Granular	TP123 (1.5m) MG Granular	TP124 (0.2m) MG Cohesive	TP124 (1.2m) MG Granular	DS03 (0.5m) MG Granular	DS04 (0.5m) MG Granular	DS05 (0.5m) MG Granular	DS14 (0.8m) MG Granular	No. of Samples	UCL	Arithmetic Mean	Geometric Mean	No. of LN Samples	Standard Deviation	LN Standard Deviation	Coeff. Variability	Distribution	LN Arithmetic Mean	Applicable 95% UCL	95% UCL LogNormal	95% UCL Normal	Max	Min	Max Ln	Tcalc	Tcrit (10%)	Critical Value Test	(Max val test) Outlier?	Mean Value Test
Beryllium	1.2	1.4	1.2		1.1	1	0.9	0.9	1.8	1.1	1.5	1.2	1	1.4	0.9	2.6	1.6	2.5	0.9	0.9	1.5	2.1	20	0.95	1.38	1.30	20	0.52	0.34	0.38	NORMAL	0.26	1.58	1.48	1.58	2.60	0.90	0.96	2.04	2.385	NO	NO	Fail
Naphthalene	2.3	0.13	0.58	0.45	0.05		0.29	0.04	0.16	0.04	0.13	0.04	0.06	0.04	0.08	0.65	0.23	0.25	0.07	0.31	0.23	0.16	20	0.95	0.20	0.13	20	0.18	0.93	0.91	NORMAL	-2.01	0.27	0.19	0.27	0.65	0.04	-0.43	1.69	2.385	NO	NO	Pass

Zone 4 - Human Health Assessment
Soil Statistical Analysis (Outliers Included)

Parameter	TSV	TP127 (1.2m) MG Cohesive	TP128 (2.5m) MG Granular	TP130 (1.5m) MG Cohesive	DS17 (0.3m) MG Granular	DS17 (1.6m) MG Cohesive	DS17 (3.8m) MG Cohesive	DS20 (1.5m) MG Cohesive	DS22 (0.3m) MG Granular	No. of Samples	UCL	Arithmetic Mean	Geometric Mean	No. of LN Samples	Standard Deviation	LN Standard Deviation	Coeff. Variability	Distribution	LN Arithmetic Mean	Applicable 95% UCL	95% UCL LogNormal	95% UCL Normal	Max	Min	Max Ln	Tcalc	Tcrit (10%)	Critical Value Test	(Max val test) Outlier?	Mean Value Test
Lead	200	5	7	495	2166	12	49	197	120	8	0.95	381.38	69.13	8	739.58	2.15	1.94	LOGNORMAL	4.24	292.55	292.55	876.77	2166.00	5.00	7.68	1.60	1.909	**NO**	**NO**	**Fail**
Arsenic	37	2.8	3.3	20.6	72.2	2.7	16.4	73.1	34.9	8	0.95	28.25	14.09	8	29.54	1.40	1.05	LOGNORMAL	2.65	36.11	36.11	48.04	73.10	2.70	4.29	1.17	1.909	**NO**	**NO**	**Pass**
Beryllium	1.2	0.5	0.5	1.6	2.2	0.5	0.5	1.5	1.4	8	0.95	1.09	0.91	8	0.67	0.65	0.62	NORMAL	-0.10	1.54	1.40	1.54	2.20	0.50	0.79	1.36	1.909	**NO**	**NO**	**Fail**

Zone 5 - Human Health Assessment
Soil Statistical Analysis (Outliers Included)

Parameter	TSV	BH103 (1.2m) MG Cohesive	BH104 (0.5m) MG Granular	TP117 (0.5m) MG Cohesive	TP117 (1.2m) MG Granular	TP118 (0.1m) MG Cohesive	TP133 (0.4m) MG Cohesive	TP134 (0.5m) MG Granular	TP135 (1.0m) MG Cohesive	TP136 (0.2m) MG Cohesive	TP137 (0.5m) MG Cohesive	TP138 (0.2m) MG Cohesive	TP139 (0.5m) MG Cohesive	TP139 (1.2m) MG Cohesive	DS10HP (0.4m) Natural Granular	DS11 (0.5m) MG Cohesive	DS25 (0.5m) MG Granular	DS26 (0.6m) MG Cohesive	DS26 (1.8m) MG Granular	No. of Samples	UCL	Arithmetic Mean	Geometric Mean	No. of LN Samples	Standard Deviation	LN Standard Deviation	Coeff. Variability	Distribution	LN Arithmetic Mean	Applicable 95% UCL	95% UCL LogNormal	95% UCL Normal	Max	Min	Max Ln	Tcalc	Tcrit (10%)	Critical Value Test	(Max val test) Outlier?	Mean Value Test
Lead	200	84	33	104	9	348	125	9	23	38	45	89	34	200	145	22	19	139	35	18	0.95	83.39	51.77	18	86.15	1.04	1.03	LOGNORMAL	3.95	79.35	79.35	118.71	348.00	9.00	5.85	1.83	2.335	NO	NO	Pass
Arsenic	37	12.7	7.3	33.9	6.9	29.8	17.9	19.4	15.4	22.6	15.6	18	107	54.5	28.8	4.2	51.2	21.7	10.8	18	0.95	26.54	19.62	18	24.39	0.79	0.92	NORMAL	2.98	36.54	27.13	36.54	107.00	4.20	4.67	2.15	2.335	NO	NO	Pass
Beryllium	1.2	2.1	1.1	1.4	0.9	1.5	1.1	1	1	1.3	1	1.2	1.5	3	1.7	0.5	1.9	1.8	2.3	18	0.95	1.46	1.35	18	0.60	0.41	0.41	NORMAL	0.30	1.71	1.60	1.71	3.00	0.50	1.10	1.93	2.335	NO	NO	Fail