Cannock Chase District Council

Environmental Protection Act 1990, Part 2A: Exploratory Site Investigation

Former landfill site off East Cannock Road, Hednesford

October 2011

Prepared for:

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Document Control

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CONTENTS

INTRODUCTION1
Terms of Reference1
BACKGROUND INFORMATION
Site Setting 2
Previous Reports 4
INITIAL INTRUSIVE INVESTIGATION7
Scope and Methodology7
Results7
Ground Conditions7
Adequacy of Investigation Depth and Coverage8
Field Evidence of Contamination8
Soil Analysis Results9
Ground Gas Monitoring11
Safety of Water Supply Pipes14
FURTHER ASSESSMENT OF RISK 15
PAHs in Soil, BH0215
Introduction15
Additional Soil Sampling15
Controlled Waters 16
Examination of Drinking Water Quality19
UPDATED CONCEPTUAL SITE MODEL
SUMMARY AND CONCLUSION



FIGURES

Figure 2.1 -	Site Location	4
Figure 4.1 –	Surface Water Sampling Locations1	7

TABLES

Table 2.1 - Site Setting	2
Table 2.2 - Potential Pollutant Linkages	5
Table 3.1 - Groundwater Observations	8
Table 3.2 - Field Evidence of Potential Contamination	8
Table 3.3 - Soil Analysis Results Summary	10
Table 3.4 - Summary of Gas Monitoring Data	12
Table 3.5 - Carbon Dioxide Values Recorded in BH02, WS05 and WS09	13
Table 4.1 – Summary of PAH Concentrations at / around BH02	16
Table 4.2 - Surface Water Analysis Results	18
Table 4.3- Tap Water Analysis Results	20
Table 5.1 – Pollutant Linkages, Post-Site Investigation	22

DRAWINGS

Drawing 1: Exploratory Hole Location Plan

APPENDICES

Initial Desktop Study and Site Walkover Report, January 2010
Limitations Statement
Exploratory Hole and Hand Pit Logs
Chemical Analysis Results
Gas Monitoring Data
Severity and Probability of Risk (after CIRIA 552)
Initial Screen Against WRAS Criteria
Surface Water Sampling Memo 6/9/11



1 INTRODUCTION

1.1 Terms of Reference

In January 2010, Grontmij Limited (Grontmij) was appointed by Cannock Chase District Council (the Council) to assist in the implementation of the Council's Part 2A Contaminated Land inspection strategy. Part 2A of the Environmental Protection Act 1990 (Part 2A) requires each local authority to inspect areas of land which it believes may constitute Part 2A Contaminated Land.

Contaminated Land is defined in Section 78(2) of Part 2A of the Environmental Protection Act 1990 as:

"any land which appears to the local authority in whose area the land is situated to be in such a condition, by reason of substances in, on or under the land, that

- significant harm is being caused or there is a significant possibility of such harm being caused; or
- pollution of controlled waters is being, or is likely to be, caused".

Further information is provided in the Act and associated statutory guidance (DEFRA Circular 01/2006 – EPA 1990, Part 2A: Contaminated Land).

Grontmij worked with the Council to prioritise a list of sites which could constitute Part 2A contaminated land for inspection, on the basis of the Council's Part 2A Inspection Strategy. The site subject to this report, located off East Cannock Road, Hednesford. Staffordshire (hereafter referred to as 'the site') was identified as a priority for inspection as:

- The site comprises an area of land which appears to have been infilled with waste material
- The site is considered to be sensitive as:
 - approximately 400 residential properties with gardens and a large area of open space overly the inferred extent of landfill
 - o the site is partially underlain by a principal aquifer, and
 - o a surface watercourse is present on site.

Following the completion of a desktop study (see Appendix A) and a successful application for funding from DEFRA, Grontmij was subsequently appointed by the Council to implement a site investigation, which was undertaken in September 2010. Following a review of the investigation findings, supplementary fieldwork was undertaken in May to July 2011, as included in Sections 3 and 4.

This report presents the findings of the Exploratory Investigation, assesses the significance of the contaminant concentrations detected, and makes recommendations for further work.

This report is subject to the limitations presented in Appendix B.



2 BACKGROUND INFORMATION

2.1 Site Setting

The site's setting and location are summarised in Table 2.1 and Figure 2.1.

Table 2.1 - Site Setti				
Data	Information			
Address	Infilled ground off East Cannock Road, Cannock, Staffordshire. Nearest postcode is WS12 1UE.			
Current site use:	Predominantly comprises residential houses and gardens with grass covered public open space. A leisure centre and public house are located in the south western corner of the site.			
Grid Reference:	Located around 399822, 311597			
Site Area:	Approximately 18 Ha			
Topography:	Prevailing gradient is down towards the north west, although the southern fringe of the site slopes down to the south			
Surrounding land use	with gardens and open space to the south east, north and west. Schools located approximately 20m to the east 120m to the north and 120m to the west			
Geology	The British Geological Survey (BGS) 1:63,360 map sheet 154 (Lichfield) indicates that alluvium superficial deposits underlie the centre of the site and glacial sand and gravel underlies the north-eastern corner of the site, whereas the BGS website Geoindex tool suggests that Glacial Till (Diamicton) underlies the southern half of the site. The likely thickness of deposits is not stated. The BGS map sheet and Geoindex indicate that the underlying solid geology comprises the middle coal measures, with Triassic sandstone deposits beneath			
Hydrogeology	the north-eastern corner of the site. The north-eastern corner of the site is classified as a principal aquifer, which is likely to be within the Triassic Sandstone. Principal aquifers potentially yield large amounts of water for abstraction, and are thus the most sensitive units in terms of groundwater vulnerability. The coal measures, glacial sand and gravel and alluvium are normally regarded as secondary aquifers.			
Coal mining	 Within a coalfield area. For background purposes only, given the age of the report: a Coal Authority ground stability report obtained by the Council in October 2000 indicates the following: The site is within the likely zone of influence from workings at 90 – 320m depth which ceased in 1957. Any movement associated with these workings is likely to have ceased (and, subsequently, is unlikely to have recommenced as it is unlikely that coal workings have been undertaken at / near the site since 2000) As of 2000, there were no known coal mine entries within, or within 20m of the boundary of the site, and; As of 2000, at the surface, there were no known faults or other lines of weakness caused by coal mining that have made the site unstable. 			
Source Protection Zones (SPZs)	The Environment Agency website indicates that the north-eastern corner of the site lies within Zone 3 (outermost zone) of a SPZ. Such SPZs indicate an area of groundwater around a potable abstraction borehole, within which the Environment Agency is likely to place a heightened onus on groundwater quality. <i>The nearest abstraction well is approximately 4km to the north east</i>			
Surface Waters	Ridings Brook, flowing north east to south west and a pond are located in the north western half of the site. A further stream is located 150m to the south. Further ponds are located 200m to the north, 500m to the south, 675m to the south east and 950m to the north			



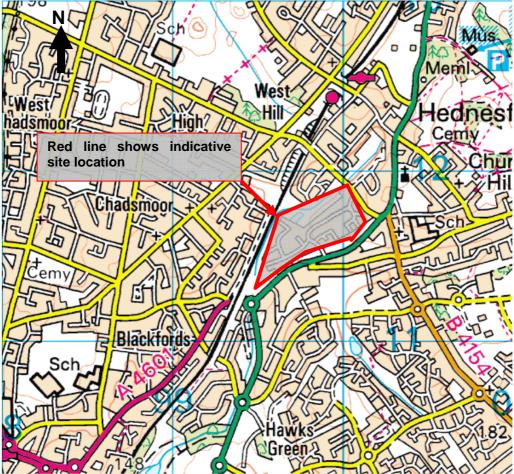


Data	Information
Historical Land Use	<u>On site</u> : the data provided and information held on the Environment Agency's "What's In Your Back Yard" website indicates that the site was formerly occupied by East and West Cannock Collieries, with principal opencast workings / cuttings for rail lines and slag heaps in the south and western parts of the site. The site became a landfill site, becoming filled prior to the mid-1970s and subsequently being developed as residential housing / public open space in the 1970s and 1980s. There is no information about the site's license, operational period or the date the site was developed.
	Surrounding area: there are numerous other historic colliery workings and landfill sites within 1km of the site, the closest of which is located adjacent to the northern boundary of the site. Further sites are located 50m to the south, 75m to the south west and 150m to the north east. All are recorded as having received household waste, and last received waste 50 or more years ago.



3





Reproduced from Ordnance Survey Map under licence AL549878 with permission from the Controller of HMSO, © Crown Copyright Plan is not to scale.

2.2 Previous Reports

Grontmij has previously completed a desktop assessment of the site, as presented as Appendix A. The assessment included the review of information available from, on-line data resources, inhouse mapping and records provided by the council including details of a previous site investigation, and a site walkover.

The Desk Study report included an initial Conceptual Site Model (CSM) of potential pollutant linkages, developed in accordance with the model procedures^{1,} and statutory guidance². The CSM is re-presented as Table 2.2 overleaf.

² DEFRA Circular 02/2006, Environmental Protection Act 1990: Part 2A Contaminated Land:, September 2006.



¹ CLR11 Model Procedures for the Management of Land Contamination (EA & DEFRA September 2004)

Table 2.2 - Potential Pollutant Linkages

No.	Receptor	Contaminant(s)	Pathway(s)	Risk of Pollutant Linkage Being Realised	Comments			
Hum	an Health							
1	Residents of properties above infilled ground – including children playing in gardens & vegetable consumption	Contaminants including (but not limited to) metals, hydrocarbons, PAHs, VOCs, SVOCs within the made ground.	Direct ingestion/dermal contact/inhalation of dust/inhalation of vapours/consumption of home- grown vegetables	Medium to high risk	Existing logs suggest presence of landfilled material and evidence of contaminants beneath study site; testing carried out to date is not extensive. Properties are constructed directly above a potentially significant contamination source.			
2	Residents of properties above infilled ground	Methane and carbon dioxide from decomposition of deleterious elements of the made ground.	Movement into buildings, subsequent asphyxiation and explosion risk.	Medium to high risk.	Site likely to overlie infill but no gas monitoring has been undertaken. Investigation and monitoring required to determine risk.			
3	Children playing on recreation land	Contaminants including (but not limited to) metals, hydrocarbons, PAHs, VOCs, SVOCs within the made ground	Direct ingestion of soil /dermal contact with soil /inhalation of dust/inhalation of vapours	Medium to high risk	Recreational land overlies landfilled material (as per housing)			
Prop	perty		·	·				
4	Subsurface services serving the buildings (principally water supply)	Contaminants including (but not limited to) metals, hydrocarbons, PAHs, VOC, SVOCs within the made ground	Chemical attack and tainting of water supply could occur at high contaminant concentrations / severe pH levels	Medium to high risk.	Risk suggested by existing data; will depend on depth and concentration of contaminants and material(s) used for water pipes.			
5	Property (Structures) – sub- surface concrete	Sulphate and pH	Contact between contaminants and concrete	Medium risk	Possible risk but could only reasonably be established if concrete class used to construct buildings can be established (unlikely) –more relevant for any new planned buildings.			
Con	Controlled Waters							



No.	Receptor	Contaminant(s)	Pathway(s)	Risk of Pollutant Linkage Being Realised	Comments
6	Major aquifer (& SPZ) and minor aquifer beneath site	Contaminants including metals, hydrocarbons, PAHs, VOCs and SVOCs within the made ground	Leaching of chemicals to aquifers	Medium risk	Risk will depend upon depth and concentration of contaminants, presence/absence of low permeability layers between contaminants and the aquifers, leaching potential etc. Site data needed.
7	Surface waters (closest is Ridings Brook and pond on site then a further stream 150m to the south and a pond 200m to the north)	Contaminants including (but not limited to) metals, hydrocarbons, PAHs, VOCs and SVOCs within the made ground	Groundwater flow in permeable strata which are in continuity with watercourses	Medium risk	Risk depends on depth/presence of contaminated groundwater, hydraulic gradient within any impacted groundwater unit, and continuity between impacted groundwater and watercourse. Site data needed.



EXPLORATORY INTRUSIVE INVESTIGATION 3

In order to further examine the potential pollutant linkages identified in Table 2.2, and following a successful application for DEFRA funding, an exploratory site investigation was undertaken between the 20th September and 4th October 2010. This section describes the site investigation undertaken and results obtained.

3.1 Scope and Methodology

The scope of the exploratory intrusive site investigation included the following:

- A consultation exercise with residents living at the site, including a mailshot and a public open evening;
- Obtaining plans of underground services and CAT-scanning proposed drilling locations, using a Radiodetection CAT1 and signal generator;
- Drilling of three boreholes with tracked window sampler (BH1-BH3) to a maximum depth of • 6.0m bgl, sixteen hand held window sample holes (WS1 - WS16) to a maximum depth of 5.0m bgl, and eleven hand pits to a maximum depth of 1.0m bgl at the locations shown on Drawing 1:
 - o All exploratory holes, which were drilled by Sherwood Drilling Services, were positioned in the gardens of housing / open verge areas located above the extent of infill, as indicated on historical mapping.
 - o Positions were selected on the basis of achieving representative coverage of the site.
 - The purpose of the window sample holes was to examine shallow and deeper soil 0 conditions, enable the retention of samples for laboratory testing, and facilitate the installation of 50mm diameter dedicated gas monitoring wells in each borehole;
- Logging soil arisings in accordance with BS5930:1999, and additionally noting any visual • or olfactory evidence of potential contamination;
- Retaining representative soil samples of the strata encountered, which were selected on • the basis of field observations of potential contamination and achieving good spatial and depth coverage of the site, in accordance with BS10175:2001 (updated in 2011);
- Submitting retained samples to Alcontrol Geochem in cooled coolboxes and under chain • of custody documentation, and instructing the analysis of samples;
- Undertaking four initial ground gas monitoring rounds at all 19 wells, using a Geotechnical Instruments GA2000 gas analyser and flow pod, and four follow-up gas monitoring rounds at three targeted monitoring wells, using a Gas Data Limited GFM435 analyser.

Leachate and / or groundwater analyses were not scheduled as the investigation comprised an initial assessment only and mapping indicates that the site is mostly underlain by a Secondary aquifer, i.e. of lower sensitivity.

3.2 Results

3.2.1 Ground Conditions

The ground conditions encountered at the site generally comprised Made Ground over Glacial Deposits, encountered as sand and gravel with some clay and silt content.



7

Made Ground

Made Ground was encountered to a maximum depth of 5.0m bgl (in WS11 – termination depth for this hole) and was predominantly granular in nature, consisting of interbedded sand, gravel and clay layers and pockets of clay. The gravel content of the Made Ground was variable, and included, burnt shale, coal, quartz, concrete, brick, metal, pottery and clinker.

Glacial Deposits

Encountered across the site, from 0.15m to 4.6m bgl, and proven to borehole termination at a maximum of 5.0m bgl. The Glacial Deposits comprised sands and gravels with some clay pockets and layers. Gravel comprised subrounded to rounded quartz.

Groundwater

Groundwater was encountered in four locations across the site:

Exploratory Hole	Groundwater details
BH3	Standing at 1.9m bgl on completion
WS4	Seepage at 3.8m bgl
WS11	Seepage at 1.0m bgl standing at 2.55m bgl on completion
HP8	Groundwater noted at 1.0m bgl

Table 3.1 - Groundwater Observations

The above findings are discussed further in Section 4 (updated CSM). Logs for all locations, providing full details of the strata encountered, are included within Appendix C.

3.2.2 Adequacy of Investigation Depth and Coverage

Glacial deposits (i.e. natural ground) were proven in 23 of the 30 exploratory holes. Natural deposits were generally encountered at shallower depths towards the north eastern part of the site, with a greater thickness of made ground encountered towards the south west. Natural ground was proven in a number of locations across the site (i.e. boreholes terminated in Made Ground were not clustered together), and the full depth of infill material present is likely to have been assessed. Gas monitoring (Section 3.2.5) is therefore likely to be representative of the body of fill material investigated.

3.2.3 Field Evidence of Contamination

The drilling arisings were inspected for visual and olfactory evidence of potential contamination. A summary of field observations recorded is presented in Table 3.2:

Exploratory Hole Visual and Olfactory Evidence of Contamination				
HP4	0.0-0.3m bgl: Fragments of rusted metal noted			
HP9	0.25-1.0m bgl: Gravel of clinker within matrix			
WS1	0.0-0.3m bgl: Fragments of metal within matrix			
WS3	0.65-1.6m bgl: Black staining			
WS4	0.6-4.6m bgl: Gravel of clinker within matrix			
WS9	0.05-0.35m bgl: Gravel of clinker within matrix			
WS11	0.0-4.50m bgl: Gravel of clinker within matrix			
WS12	0.3-5.0m bgl: Occasional clinker within matrix			
WS15	1.0-2.0m bgl: Rare gravel of clinker			
BH1	0.55-1.80m bgl: Cemented colliery waste			
BH2	0-0.8m bgl: Gravel of clinker within matrix			
BH3	0.7-1.0m bgl: Gravel of clinker within matrix			

Table 3.2 - Field Evidence of Potential Contamination





Gravel of coal and shale was also noted in numerous exploratory holes.

3.2.4 Soil Analysis Results

Forty-eight samples were submitted for laboratory analysis, under chain of custody documentation and within chilled coolboxes, to ALcontrol Geochem of Deeside. ALcontrol is UKAS accredited and holds MCERTS accreditation for most analyses performed. The samples were selected for analysis on the basis of field observations and to achieve good spatial coverage of the site.

Table 3.3 presents a summary of the analysis results. The results have been compared to screening values protective of human health, assuming the receptor is a residential property where plant uptake of contaminants occurs, and the plants (vegetables) are subsequently ingested by humans. The screening values used, in order of preference, comprised:

- 2009 Soil Guideline Values (SGVs) published by the Environment Agency / DEFRA, generated using the Contaminated Land Exposure Assessment (CLEA) model, version 1.04 (now available as V1.06)
- Generic Assessment Criteria (GAC) published by Land Quality Management Limited¹ (LQM) and the Environmental Industries Commission² (EIC), or calculated by Grontmij, all using CLEA³
- SGVs published by the Environment Agency / DEFRA between 2002 and 2007, calculated using prior versions of the CLEA model. This only applies to lead.
- Dutch Intervention Value for cyanide.

Full analytical testing results are included as Appendix D.

³ EIC used CLEA V1.06, LQM and Grontmij used CLEA 1.04



¹ The LQM/CIEH Generic Assessment Criteria for Human Health Risk Assessment (2nd Edition). Land Quality Press, 2009

² Soil Generic Acceptance Criteria for Human Health Risk Assessment. Environmental Industries Commission / AGS / CL:AIRE, January 2010

Table 3.3 - Soil Analysis R			NA 1	001//040	1
Determinand	No. of Samples Tested	Minimum Value	Maximum Value	SGV / GAC (using 2.5% SOM where SOM- dependant) ¹	Locations where SGV or GAC are exceeded
Arsenic	42	3.1	31	32	-
Antimony	6	<0.60	1.7	550	-
Beryllium	42	0.22	11	51	-
Boron (water-soluble)	42	<1.0	7.4	291	-
Cadmium	42	0.20	3.9	10	-
Chromium, hexavalent	42	<0.60	<1.2	4.3	-
Chromium, total	42	8.6	33	3000 ²	-
Copper	42	9.2	160	2330	-
Lead	42	10	190	450 ³	-
Mercury	42	<0.14	0.56	170 ⁴	
Nickel	42	6.7	120	130	-
Selenium	42	<1.0	2.0	350	-
Vanadium	42	12	100	75	WS4 1.65-1.85m bgl and 3.5-3.80m bgl
Zinc	42	31	1400	3750	-
Cyanide	7	<1.0	<1.0	20	-
Asbestos screen	9	No fibres detected in any sample			
Benzene	27	< 0.01	0.03	0.16	-
Toluene	27	<0.01	0.69	270	-
Ethyl Benzene	27	<0.01	0.07	150	-
Xylene	27	<0.01	0.07	98 ⁵	-
TPH – CWG Hydrocarbons	7	None of the banded aliphatic/aromatic TPH-CWG screening criteria were exceeded. Full speciated results are presented in Appendix D			
Phenols	5	< 0.03	0.42	290	-
Volatile Organic Compounds and 13 Semi-Volatile Organic Compounds		None at concentrations in excess of GACs (with the exception of PAHs below)			-
Polyaromatic Hydrocarbons (PAHs)	13	Other than the two compounds below, none of the speciated PAH screening criteria were exceeded. Full speciated results are presented in Appendix D			
Benzo(a)pyrene	14	<0.10	1.6	0.94	BH2 0.0-0.65m bgl
Naphthalene	14	<0.10	8.6	3.7	BH2 0.0-0.65m bgl

Table 3.3 - Soil Analysis Results Summary

Values presented in mg/kg, correct to two significant figures (screening values presented without any rounding). Bold values indicate locations where observed concentrations exceed the screening value.

¹ Forty one samples were tested for Soil Organic Matter (%SOM) content. A minimum value of <0.35% and a maximum of 10.7% were recorded, with a mean of 4.95% and a median of 5.12%. Where dependant upon SOM content, SGVs and GAC generated using a 2.5% SOM value in CLEA have therefore been used in an initial screen, as a representative assessment

2 Value is for trivalent chromium; a screening value for total chromium has not been published. Screening a total chromium laboratory result against a trivalent chromium screening value is a conservative measure. Hexavalent chromium, the form considered to be of greater toxicity, was not detected at a concentration above the detection limit of the laboratory.

³ Earlier (2002) SGV published by DEFRA. An updated SGV may be published once the EA has evaluated a recent European Food Safety Authority toxicology report and confirmed the approach to be adopted for lead (CLEA may not be used).

⁴ Testing results presented represent total mercury, whereas SGV presented is for inorganic mercury. Although the most stringent of the SGVs is for elemental mercury, the Environment Agency SGV for mercury in soil science report SC050021/Mercury SGV indicate that in cases where preliminary risk assessment has not identified a mercury issue at the site or conditions such as peaty or flooded soils then '*For general surface contamination and to simplify the assessment, the SGVs for inorganic mercury can normally be compared with chemical analysis for total mercury content because the equilibrium concentrations of elemental and methyl mercury compounds are likely to be very low*'. ⁵ SGV for para-xylene quoted (worst case of the three isomers)





Concentrations of two PAHs (naphthalene and benzo(a)pyrene) and vanadium exceeded the generic screening values adopted.

Moderately elevated vanadium concentrations were recorded within two of a total of 42 samples taken. The two moderately elevated concentrations were recorded in samples taken from >1m depth, and hence both are unlikely to pose a risk to human health during normal use of the site. The samples do, however, indicate a potential source that could pose a risk to controlled waters. This is discussed further in Section 4.

3.2.5 Ground Gas Monitoring

Four rounds of initial ground gas monitoring were undertaken in all 19 wells, using a Geotechnical Instruments GA2000 gas analyser with flow pod. On completion of the monitoring, a further four monitoring rounds were undertaken at three wells (BH02, WS05 and WS09) where moderately elevated carbon dioxide concentrations had been recorded, using a Gas Data Ltd GFM435 analyser. A summary of the maximum gas concentrations and flow rates recorded in each well is presented in Table 3.4, with full monitoring data in Appendix E:



Well Maximum Values Recorded During Monitoring Events: Worst-Case Situation "A"										
Well				onitoring E Steady	vents: Flow	Worst-Case	Situation "A"			
	Peak	Steady CO ₂ (%)	Steady	Gas	Characteristic					
	CH₄		CO (ppm)	H₂S	(l/hr)	Screening	Situation ¹			
	(%)			(ppm)		Value ¹ (I/hr)				
BH01	0	3.8	0	0	0.2	0.0076	CS1			
							Possible CS2 –			
BH02	0	11.5	2	0	0.1	0.0115	see below			
BH03	0	4.1	0	0	0.2	0.0082	CS1			
WS01	0	3.8	0	0	0.1	0.0038	CS1			
WS02	0	3.5	0	0	0.1	0.0035	CS1			
WS03	0	3.1	0	0	0.2	0.0062	CS1			
WS04	0	2.9	0	0	0.1	0.0029	CS1			
							Possible CS2 –			
WS05	0	8.8	0	0	0.1	0.0088	see below			
WS06	0	4	0	0	0.2	0.0080	CS1			
WS07	0	4.3	0	0	0.1	0.0043	CS1			
WS08	0	3.1	0	0 0		0.0031	CS1			
							Possible CS2 –			
WS09	0	6.2	1 0 0.4			0.0248	see below			
WS10	0	1.3	0	0 0 0		0.0013	CS1			
WS11	0	2.7		0 0 0.1		0.0027	CS1			
WS12	0	2.9	0 0 0.1		0.0029	CS1				
WS13A	0	3.2	0	0 0.1		0.0032	CS1			
WS14	0.2	2.9	0	0	0.1	0.0029	CS1			
WS15	0	4.4	0	0	0.1	0.0044	CS1			
WS16	0	2.9	0	0	0.2	0.0058	CS1			
Atmos	oheric	12/10/2010	1003 (Steady th	roughout a wh	nole day of	ⁱ monitoring)				
Press	sure:	26/10/2010	997 (Steady three	oughout a who	ole day of i	monitoring)				
		09/11/2010	988 (Rapid rising trend reported ² - up to 30mb increase in 48 hrs)							
		23/11/2010	1010 (Steady trend reported ²)							
		31/05/2011	1010 (Rising trend reported ² – approx 10mb rise in 24 hour period)							
		20/06/2011	1010 (Falling trend reported ² approx 7mb fall in 24 hours)							
		01/07/2011	1014 (Falling trend reported ² approx 5mb fall in 24 hours))							
		15/07/2011	1004 (Falling tre	end reported ²	approx 5m	b fall in 24 hours))				
		ithin a 3 minute measu	·							

Table 3.4 - Summary of Gas Monitoring Data

Readings obtained within a 3 minute measurement period, obtained with a Geotechnical Instruments GA2000 and a Gas Data GFM435 gas analyser.

Bold values indicate locations and gases where a characteristic situation other than CS1 is indicated.

 CH_4 – methane; O_2 – oxygen; CO_2 carbon dioxide;

e; CO – carbon monoxide;

H₂S – hydrogen sulphide; mbgl – metres below ground level mb – millibars l/hr – litres per hour. ¹CIRIA Gas Screening Value and Characteristic Situation based on methodology presented in CIRIA Report C665, Assessing Risks Posed by Hazardous Gases to Buildings. Where the flow rate recorded in the field is zero or negative, a flow of 0.1 l/hr is assumed ²Trend information taken from pressure observations at weather stations in Coalville <u>http://www.photoweather.com/aws/</u> and Alvechurch <u>http://alvechurchweather.metsite.com/</u>. While data from these sites is likely to be reliable, both sites contain a disclaimer that the information provided should not be used for decision making purposes. However, the data is considered likely to be sufficiently reliable to allow general pressure trends in the W Midlands to be determined

The summary data presented above indicates that, in regard to *methane and carbon dioxide*, CIRIA characteristic situation CS1 should be applied to the majority of the wells. This is the lowest risk category (of six) presented in CIRIA report 665, and indicates that no special gas precautions would be required in the construction of new buildings.

<u>In regard to BH02, WS05 and WS09</u> - CIRIA report 665, Table 8.5, indicates that the assessor should *consider* increasing the applied characteristic situation from CS1 to CS2 if the recorded CO2 concentration is not "typically <5%". The CO2 concentrations recorded on each gas monitoring event (see Appendix E) were as follows:



Location	CO2 Cond							
	Round	Round	Round	Round	Round	Round	Round	Round
	1	2	3	4	D	Ö	1	ð
BH02	3.8	10.7	2.7	1.4	10.0	3.0	11.5	11.4
WS05	1.4	8.8	7.8	2.1	5.5	NM ¹	NM ¹	7.3
WS09	4.6	6.2	3.5	2.8	1.4	NM ¹	2.9	2.7

|--|

¹ Not Measured – not possible to access the well as gate / house was locked

The above data suggests that the carbon dioxide concentration within WS09 is not "typically above 5%" as quoted in CIRIA665, suggesting that CS1 should apply. This would mean that no special gas protection measures would be required if a new building was constructed at the WS09 location.

The concentrations of carbon dioxide in BH02 and WS05 are "typically above 5%". As discussed above, CIRIA665 indicates that in this situation, the assessor should consider increasing the applied characteristic situation from CS1 to CS2. However, Grontmij considers that CS1 should apply because:

- low gas flow rates were recorded during the monitoring period. This suggests that minimal diffusive flow to the well is occurring, which in turn suggests that there is only a minimal pressure gradient between general ground gas and the well and therefore, generally small volumes of CO₂ in the ground
- some of the monitoring events occurred in favourable gas generation conditions, meaning close-to worst case readings are likely to have been obtained and there is only a low risk that the worst-case condition has not been assessed (see paragraph below),.

Some (three) of the monitoring events were undertaken in periods of falling atmospheric pressure, meaning that observations in favourable (if not optimal) gas generation pressure conditions have been made (optimal conditions being during a rapid fall to a very low pressure). As such, the data obtained is likely to be representative of gas conditions beneath the site during most days in a given year. As the recorded flow rates are very flow, it is unlikely that even optimal gas generation conditions would cause sufficient carbon dioxide (CO_2) to enter the housing at the site to cause health effects (e.g. CIRIA665 Table 2.2 quotes that 3% v/v of CO_2 can cause headaches and shortness of breath).

Although a maximum concentration of 2ppm *carbon monoxide* (CO) was recorded during the monitoring period, CO was typically not detected at a concentration in excess of the gas analyser detection limit (of 75 gas readings taken at the 19 wells installed, 2ppm was recorded once and 1ppm once, the remainder of readings being 0ppm). Table 2.2 of CIRIA665 indicates a long-term (i.e. most stringent) occupational exposure limit (OEL) of 30ppm for CO, and a long-term (i.e. most stringent) Environmental Exposure Limit (EAL) of 0.35mg/m³ (1.15ppm CO). The former of these two values is protective of people in the workplace, the latter of the general public – considered to be a benchmark of protection while not having a statutory basis¹. Given that CO was typically below the limit of detection, it is unlikely to pose a risk to human health.

¹ The last paragraph of p27 of Environment Agency Horizontal Guidance Note H1 – Integrated Pollution Prevention and Control: Environmental Assessment and Appraisal of BAT (V6, 2003) states that "Although these (EALs) do not carry any statutory basis, they are, again, a benchmark for harm against which any exceedance should be viewed as unacceptable.



13



Table 2.2 of CIRIA665 indicates a long-term (i.e. most stringent) occupational exposure limit of 5ppm hydrogen sulphide (H₂S) and a long-term (i.e. most stringent) Environmental Exposure Limit (EAL) of 0.14 mg/m³ (1.39 ppm H₂S). Hydrogen sulphide was not detected at a concentration in excess of the gas analyser detection limit during the entire monitoring period, and is therefore unlikely to pose a risk to human health.

3.2.6 Safety of Water Supply Pipes

As a preliminary assessment, soil quality data was screened against WRAS guidelines¹ (current at the time of the exploratory investigation, but now superseded) and UKWIR parameters². This preliminary assessment, included as Appendix G, indicated that the concentration of contaminants in soil could potentially permeate into water supply pipes. The WRAS and UKWIR guidelines are conservative and are normally used for the selection of materials when laying new pipes.

The results of the intrusive investigation and monitoring are discussed in more detail in the following section.



¹ 9-04-03 The Selection of Materials for Water Supply Pipes to be Laid in Contaminated Land. Water Regulations

Advisory Scheme, October 2002. ² 10/WM/03/21 Guidance for the Selection of Water Supply Pipes to be Used in Brownfield Sites. UK Water Industry Research, 2010 (as re-issued)

4 FURTHER ASSESSMENT OF RISK

4.1 PAHs in Soil, BH02

4.1.1 Introduction

The site investigation has established that the concentrations of benzo(a)pyrene ("b(a)p") and naphthalene in one sample, taken from BH02, exceed the generic screening values applicable to the generic residential housing scenario, where plants are grown for human consumption. The concentrations of contaminants across the site were otherwise less than the adopted SGVs / GAC (elevated concentrations of vanadium at >1m bgl do not pose a risk to human health during normal residential use of the site).

BH02 is located in an area of grassed public open space, between two areas of housing. While exposure to contaminants in open space areas may be less than within residential gardens, particularly as the open space is covered by grass, the identified PAH concentrations in BH02 may nonetheless pose a risk to users of the open space. The PAH concentrations identified in BH02 may also be characteristic of soils within nearby residential properties. Therefore, as a reasonable assumption, GAC based upon exposure in a residential garden have been used in this assessment.

Generic SGVs and GAC are used to examine whether significant possibility of significant harm ("SPOSH" - i.e. unacceptable risk to human health or the environment) <u>may</u> be posed at any given site in the UK. The SGVs and GAC have been derived using the CLEA model by various parties (see Section 3.2.3), using conservative input parameter values to generate screening values applicable, theoretically, to all UK sites. If contaminant concentrations in soil are below SGVs, significant harm to human health is very unlikely to occur, thus in laymans terms, the SGV approximates to a "safe" contaminant concentration. Conversely, if a SGV or GAC is exceeded by a measured soil contaminant concentration, it does not necessarily mean that SPOSH exists - only that the generic, conservative screening value has been exceeded, and further assessment, normally in the form of statistical analysis of data, is required.

While the intrusive investigation is considered to have achieved representative coverage of the site, the area of open space is currently characterised by only a single exploratory hole and sample (BH02). As the PAH results at BH02 suggest that a localised area of contamination may be present, further samples were required around BH02 in order to further characterise this area of the site, as described below.

4.1.2 Additional Soil Sampling

Five further soil samples (S01 to S05) were obtained on 20th June 2011 from 0.1m to 0.5m depth within a 5m radius of BH02 by means of hand-digging. These samples were characteristic of the shallow made ground, which human users of the site are most likely to encounter.

The strata encountered was generally consistent with that previously observed in BH02, i.e. made ground soils comprising sandy gravelly clay with secondary constituents including ash, clinker and burnt shale encountered in some locations. Summary logs of the hand-dug holes are included in Appendix C.

The samples were analysed for speciated PAHs at Alcontrol Laboratories of Hawarden. The results of the analysis are summarised in Table 4.1, along with the results of the initial analysis from BH02:



Determinand	No. of Samples Tested	Minimum Value	Maximum Value	GAC (using 2.5% SOM where SOM- dependant)	Locations where SGV or GAC are exceeded
Benzo(a)pyrene	6	0.05	1.6	0.94	BH2 0.0-0.65m bgl
Naphthalene	6	0.05	8.6	3.7	BH2 0.0-0.65m bgl
All other PAHs	6	All concentrati GAC		various	-

Table 4.1 – Summary of PAH Concentrations at / around BH02

Values presented in mg/kg, correct to two significant figures (screening values presented without any rounding). Bold values indicate locations where observed concentrations exceed the screening value.

¹ Forty one samples were tested for Soil Organic Matter (%SOM) content during the exploratory investigation. A minimum value of <0.35% and a maximum of 10.7% were recorded, with a mean of 4.95% and a median of 5.12%. GAC generated using a 2.5% SOM value in CLEA have therefore been used in an initial screen, as a conservative assessment

The additional round of analysis identified low PAH concentrations. Only the original BH02 sample contained PAH concentrations in excess of the GAC adopted.

The above results indicate that PAH concentrations in excess of the adopted GAC are confined to a very localised area at BH02. On this basis, it is unlikely that the localised PAHs recorded pose a significant possibility of significant harm to human health.

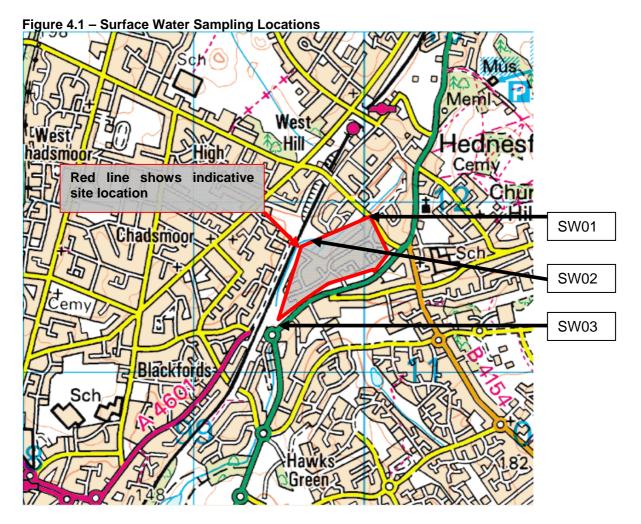
4.2 Controlled Waters

The exploratory investigation identified concentrations of contaminants in soil that could theoretically pose a leaching risk to controlled waters. As the site is principally underlain by secondary aquifers, groundwater is not considered to be a sensitive receptor beneath the majority of the site (i.e. drinking water is not abstracted), whereas contaminant concentrations above the north-eastern section of the site, above a principal aquifer, were low. Thus, with the exception of the north-eastern corner of the site, discussed below, groundwater is not deemed to require further assessment (see Conceptual Model in Section 5). However, given surface topography, it is possible that dissolved contaminants which have leached to the shallower secondary aquifers could migrate to Ridings Brook and a pond, located within the north-western portion of the site. Therefore, sampling of Ridings Brook was undertaken on 20/06/11 to examine water quality within the brook.

Three samples were obtained from the brook by means of grab sampling. The samples were obtained from an upflow position (SW01 - in order to examine the quality of water entering the site) plus a position midway along the site and at the downgradient site boundary (SW02 and SW03 - to examine the contribution of the site to water quality). Sample locations are shown in Figure 4.1:







The three samples were submitted to Alcontrol of Hawarden for chemical analysis for chemical analysis for metals and PAHs (i.e. the soil-borne contaminants identified in earlier phases of investigation and/or representing common contaminants for which surface water screening values have been published).

The results of the analyses are summarised in Table 4.2, along with a comparison to the most stringent Tier 1 screening values published in the Water Framework Directive Directions 2010 or UK Environmental Quality Standards protective of surface water quality.



Contaminant	No of Samples Tested	Minimum Value µg/l	Maximum Value µg/l	WFD or EQS Tier 1 Screening Value µg/l	Samples >Tier 1 Screening Value
Arsenic (diss.filt)	3	0.62	0.99	25	-
Boron (diss.filt)	3	150	350	2000	-
Cadmium (diss.filt)	3	0.10	0.13	0.15*	-
Chromium (diss.filt)	3	4.5	7.3	7.2	SW03
Copper (diss.filt)	3	2.9	4.8	10*	-
Lead (diss.filt)	3	0.15	0.27	7.2	-
Nickel (diss.filt)	3	<0.15	0.65	20	-
Vanadium (diss.filt)	3	<0.24	<0.24	20-60	-
Zinc (diss.filt)	3	8.1	23	75*	-
Mercury (diss.filt)	3	<0.01	<0.01	0.05	-
PAHs	3	(0.03ug/l or below	limit of detection /) with exception of wing:	Various	-
Naphthalene (aq)	3	<0.10	0.11	1.2	
Fluoranthene (aq)	3	0.02	0.05	No standard	-
Chrysene (aq)	3	<0.01	0.05	No standard	-
Benzo(a)pyrene (aq)	3	<0.01	0.03	0.05	
Pyrene (aq)	3	<0.02	0.06	No standard	-
Benzo(a)anthracene (aq)	3	<0.02	0.04	No standard	-
Benzo(b)fluoranthene (aq)	3	<0.02	0.03	-	-
Benzo(k)fluoranthene (aq)	3	<0.03	0.04	-	-
Sum of above two compounds	-	<0.05	0.07**	0.03	SW01
Benzo(ghi)perylene	3	<0.016	0.0226	-	-
Indeno(1,2,3- cd)pyrene (aq)	3	<0.014	0.0198	-	-
Sum of above two compounds	-	<0.030	0.0424**	0.002	SW01***
Hardness, Total as CaCO3 (mg/l) adopted value selected	3	146 mg/l	254 mg/l	No standard	

Table 4.2 - Surface Water Analysis Results

* adopted value selected on the basis of the hardness results, in accordance with the WFD Directions

** Highest value for the paired samples was recorded in the same sample (i.e. summed result is fair)

*** Samples from SW02 and SW03 produced non-detect results of 0.03ug/l. While these values exceed the Tier 1 value, they are not considered further as these results are considered to be acceptably low

The only Tier 1 screening value exceeded is that for total chromium within the downflow sample, SW03. The concentration of chromium recorded is only marginally in excess of the adopted screening value (exceeds by 0.1ug/l). We do not consider that this result represents clear evidence that pollution of controlled waters is being caused by virtue of contaminants beneath the site, nor that contaminants beneath the site pose a SPOSH to controlled waters. However, it is recommended that a repeat sample is obtained in order to understand whether chromium concentrations are stable, increasing or decreasing.

The concentration of "sum of benzo(b)fluoranthene and benzo(b)fluoranthene" and "sum of benzo(ghi)perylene and indeno(1,2,3-cd)pyrene" within the upflow sample, SW01, was in excess



of the adopted Tier 1 screening value, while the concentrations of the above four compounds in the adjacent and downflow samples (SW02 and SW03) were below the laboratory detection limit. These results indicate that there is a minor source of PAH contamination upflow of the site (i.e. from a source other than the site), but the site is not significantly worsening the concentrations of PAHs in Ridings Brook.

October 2011 update: a repeat monitoring visit was undertaken on 6th September 2011, as recommended in the above paragraph. Samples were taken from positions SW01 to SW03 and were submitted to Alcontrol for analysis; all three samples contained dissolved chromium concentrations below the screening value of 7.2ug/l, indicating that dissolved chromium concentrations have decreased since the previous monitoring round. This gives further confidence that the made ground beneath the site is not having a significant adverse effect on surface water quality in the brook. Full details of the monitoring visit are provided in a monitoring memo, included as Appendix H.

4.3 Examination of Drinking Water Quality

Earlier preliminary testing and screening indicated that the concentrations of contaminants in soil could potentially permeate into drinking water supply pipes. As water distribution pipework is typically laid at approximately 1m bgl, with local connections typically shallower, water distribution pipes are likely to be located within made ground. Although some water pipework materials are resistant to contaminant ingress, it is difficult to obtain records of pipework materials used (particularly those installed by builders to connect individual houses to distribution mains), while it may not be possible to determine pipework materials used in the field without performing invasive tests. Therefore, as a pragmatic measure, samples of drinking water quality were taken a residents' taps as a measure of current drinking water quality, and thus contaminant ingress, at the site.

To confirm whether the concentrations of contaminants in the shallow Made Ground pose a risk to drinking water quality at the site, samples of drinking water were collected from taps from five properties (110 Stafford Lane, 41 Swallowfields Drive, 21 Herondale, 8 Stagborough Way and 73 Stagborough Way) on 31st May 2011. The samples were taken from properties where the highest concentrations of contaminants were encountered in soil, i.e. at locations where the greatest risk to drinking water quality may be posed and/or positions allowing good coverage of the site.

As agreed with Cannock Chase Council, samples were obtained after allowing the tap to run for one minute. The samples were submitted to Alcontrol Laboratories for chemical analysis for metals, BTEX and PAHs as commonly occurring contaminants and parameters for which drinking water standards can be applied. The results of the analyses are summarised in Table 4.3, along with a comparison to UK Drinking Water Standards (UKDWS) taken from the Water Supply (Water Quality) Regulations 2000 (as amended). Full testing results are included in Appendix D:



Contaminant	No of Samples Tested	Minimum Value µg/l	Maximum Value µg/l	UKDWS µg/l	Locations Where UKDWS Exceeded	
Arsenic	5	2.0	2.3	10	-	
Boron	5	110	140	1000	-	
Cadmium	5	0.11	0.28	5.0	-	
Chromium	5	11	14	50	-	
Copper	5	9.2	120	2000	-	
Lead	5	0.12	0.4	10	-	
Nickel	5	0.59	15	20	-	
Zinc	5	2.7	360	5000	-	
Mercury	5	<0.01	<0.01	1.0	-	
Sum of Benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, indeno(1,2,3- cd)pyrene*	5	<0.08	<0.08	0.10	-	
Benzo(a)pyrene*	5	<0.009	<0.009	0.01	-	

Table 4.3- Tap Water Analysis Results

*There are no screening values in the WSWQ Regulations 2010 for the remaining commonly analysed 16 PAH compounds

The maximum recorded metal and PAH concentrations within tap water did not exceed the corresponding UK Drinking Water Standards, where standards exist.

The findings of the exploratory investigation, supplementary work and statistical analysis are summarised in an updated Conceptual Site Model, presented in Section 5.



5 UPDATED CONCEPTUAL SITE MODEL

The CSM presented in the earlier Grontmij Desk Study report (Appendix A) was updated, using the findings of the site investigation, as presented in the following sections.



No	Receptor	Contaminant(s)	Pathway(s)	Potential Severity of Linkage ¹	Probability of Linkage Occuring ¹	Overall Risk ¹	Comments
1	Residents of properties above infilled ground – including children playing in gardens & vegetable consumption	Contaminants including (but not limited to) metals, hydrocarbons, PAHs, VOCs, SVOCs within the made ground	Direct ingestion/dermal contact/inhalation of dust/inhalation of vapours/consumption of home-grown vegetables	Minor	Low	Very low	Other than vanadium, contaminant concentrations within samples taken within residential gardens were below SGVs/GAC. The concentrations of vanadium in two samples taken from WS04 (at 1.65-1.85m bgl and 3.5-3.8m bgl) exceed the SGV. The SGV is a conservative screening value, is only slightly exceeded, and there is no likely exposure pathway given the depth of the contaminant. No further assessment needed in regard to human health – however, concentrations do pose possible risk to controlled waters – see below
2	Residents of properties above infilled ground	Methane and carbon dioxide from decomposition of deleterious elements of the made ground	Movement into buildings, subsequent asphyxiation and explosion risk	Minor	Low	Very low	Gas concentrations generally low across site, either at lowest CIRIA risk class or typically below OEL and EAL. Where moderately elevated CO2 detected, flow rates were low, even in favourable pressure conditions. No further assessment proposed
3	Children playing on recreation land	Contaminants including (but not limited to) metals, hydrocarbons, PAHs, VOCs, SVOCs within the made ground	Direct ingestion of soil /dermal contact with soil /inhalation of dust/inhalation of vapours	Minor (very locally, moderate)	Low	Low	Concentration of benzo(a)pyrene and naphthalene in a single sample (BH02 0.0-0.65m bgl) exceed generic screening values (at up to 2.5 x GAC). Further sampling around BH02 identified low concentrations, indicating affected area is very small and confined to the recreation land only. Hence, PAHs are unlikely to pose a SPOSH to human health. No further assessment proposed
4	Subsurface services serving the buildings (principally water supply)	Contaminants including metals, hydrocarbons, PAHs, VOC, SVOCs within the made ground	Chemical attack and tainting of water supply could occur at high contaminant concentrations / severe pH levels	Minor	Low	Very Low	Various contaminants present in soil at concentrations in excess of WRAS and UKWIR screening values. However, tap sampling identified dissolved concentrations below drinking water standard. No further work proposed

Table 5.1 – Pollutant Linkages, Post-Site Investigation



No	Receptor	Contaminant(s)	Pathway(s)	Potential Severity of Linkage ¹	Probability of Linkage Occuring ¹	Overall Risk ¹	Comments
5	Property (Structures) – sub-surface concrete	Sulphate and pH	Contact between contaminants and concrete	Mild	Low	Low	Although a potential risk, concrete attack was not considered to be a priority for intrusive investigation and assessment (i.e. risks to human health and the environment were prioritised). To make a full assessment it would be necessary to expose foundations; likely risk of damage to property and disturbance to residents was considered to outweigh the benefit of exposing foundations for assessment.
6a	Principal aquifer (Triassic Sandstone) beneath north- east corner of site	Contaminants including metals, hydrocarbons, PAHs, VOCs and SVOCs within the made ground	Vertical contaminant migration (leaching) through unsaturated zone directly to Principal aquifer in NE part of site. Leaching to groundwater unit beneath remainder of site and subsequent migration to NE part of site	Medium	Low	Low/Moderate	 Moderately elevated vanadium and PAH concentrations were recorded in soil in WS04 and BH02 respectively. However: BH02 and WS04 are located in the central part of the site, approx 150m west of the mapped extent of the principal aquifer. Migration of unacceptable concentrations of contaminants to the aquifer is therefore unlikely (attenuation to acceptable levels is likely to occur along the theoretical flowpath) Topography suggests that hydraulic flow towards the north-west is more likely Contaminant concentrations within infill material directly above sandstone aquifer were not excessively elevated (all < adopted human exposure screening values), suggesting that there is not a significant source of leachable contaminants above the principal aquifer.
6b	Secondary aquifers (alluvium and Coal Measures) beneath majority of site	Contaminants including metals, hydrocarbons, PAHs, VOCs and SVOCs within the made ground	Leaching to aquifers	Mild	Likely (in localised areas)	Low / moderate	Moderately elevated vanadium and PAH concentrations were recorded in soil in WS04 and BH02 respectively, drilled above the secondary aquifers. However, the secondary aquifers are of lower sensitivity (drinking water is not abstracted). The potential risk posed by moderate concentrations of contaminants in the Made Ground is not considered to merit further assessment



No	Receptor	Contaminant(s)	Pathway(s)	Potential Severity of Linkage ¹	Probability of Linkage Occuring ¹	Overall Risk ¹	Comments
7	Surface waters (closest are Ridings Brook and a pond on site (to north of housing) then a further stream 150m to the south and a pond 200m to the north)	hydrocarbons, PAHs,	Leaching, then groundwater flow in shallow permeable strata which are in continuity with watercourses	Mild to minor	Low	Low	Moderately elevated vanadium and PAH concentrations were recorded in soil at WS04 and BH02 respectively. Sampling of Ridings Brook identified low metals concentrations with only a very slight exceedance of the Tier 1 value for chromium in the first monitoring round; a follow up monitoring round indicated low chromium concentrations, below the Tier 1 value. PAH concentrations in surface water samples, likely to representative of leachate from the site plus any background levels, were low. Therefore, the site is unlikely to be significantly contributing to the contaminant loading of Ridings Brook.

1 Taken from Table 6.3, CIRIA report 552 (Contaminated Land Risk Assessment – A Guide to Good Practice. Severity classified as minor, mild, medium or severe. Probability classified as unlikely, low, likely or high. Overall risk considers both the severity and probability of the linkage (very low, low, moderate, high or very high). See Appendix F for further details



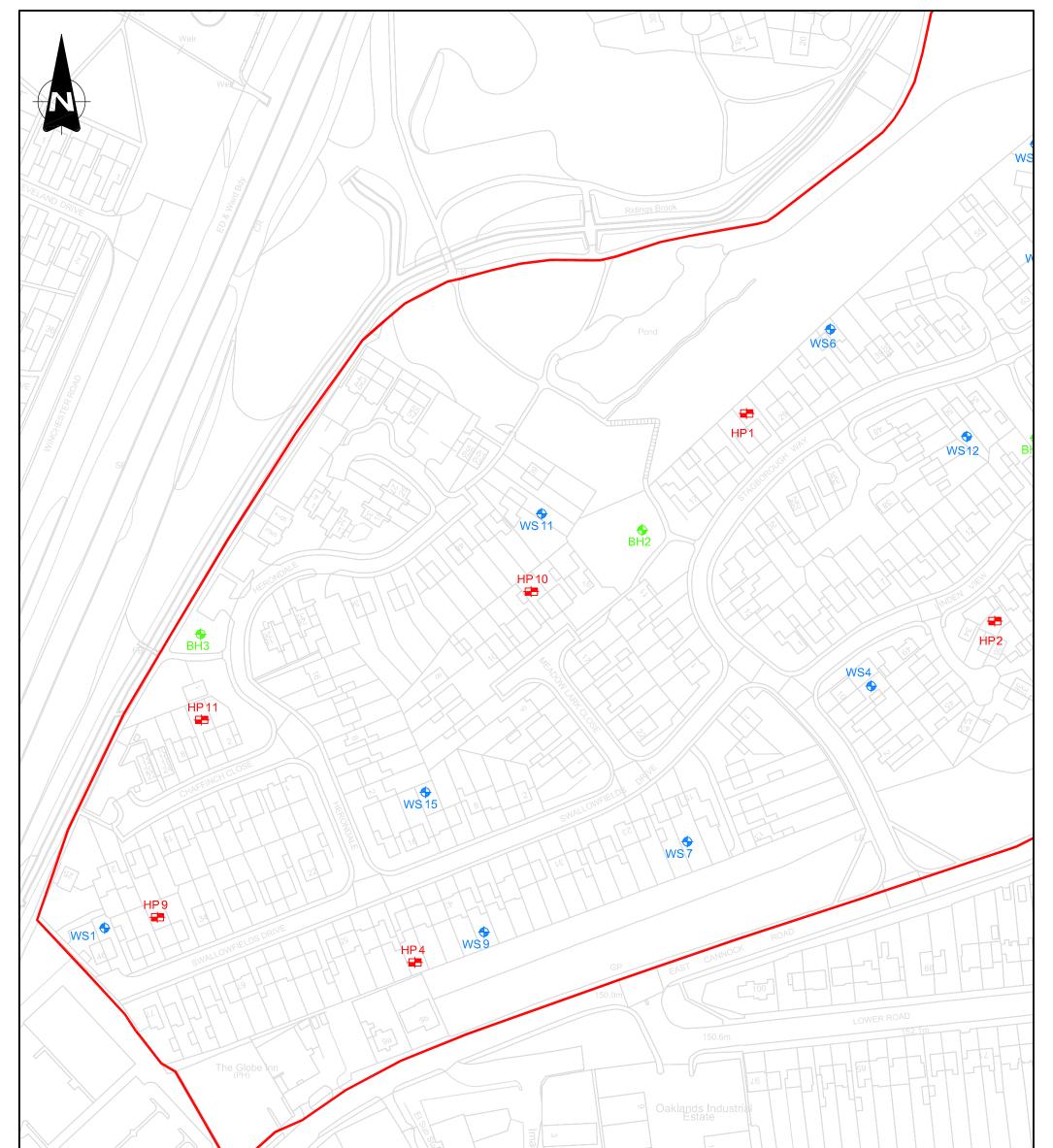
6 SUMMARY AND CONCLUSION

- Review of historical mapping and EA records provided to Cannock District Council, plus anecdotal evidence obtained during public consultation, identified that land off East Cannock road, Hednesford was infilled with unknown waste material which potentially posed a risk to human health and controlled waters.
- An exploratory investigation identified up to 5m of Made Ground over Glacial Deposits. The Made Ground typically comprised sand, gravel and clay layers and pockets of clay; the gravel content including burnt shale, coal, quartz, concrete, brick, metal, pottery and clinker. The Glacial Deposits comprised sands and gravels with some clay pockets and layers.
- The exploratory investigation identified that concentrations of benzo(a)pyrene and naphthalene within one sample of Made Ground exceeded generic human health screening criteria. Upon further sampling, risk assessment and consideration of the conservatism associated with the generic screening values, it was concluded that the concentrations of benzo(a)pyrene and naphthalene beneath the site are unlikely to pose a significant possibility of significant harm to human health.
- As soil-borne contaminants could leach to Ridings Brook, close to the northern site boundary, samples were taken from the brook. Generally low contaminant concentrations were recorded, and the site is unlikely to be causing significant harm to the brook;
- Concentrations of contaminants within made ground exceed the conservative generic screening criteria for contaminant permeation adopted by water companies. Sampling of drinking water at consumers' taps was undertaken to further examine this risk. Acceptable contaminant concentrations were recorded. No further assessment is proposed;
- Generally low gas concentrations have been recorded, and some monitoring events have been undertaken during favourable gas generation pressure conditions. No further assessment is proposed.
- Soil-borne contaminants within soils within the portion of the site above the sandstone aquifer were low. Where higher contaminant concentrations have been recorded in soil, samples were taken a significant distance from the sandstone aquifer and are likely to move away from the aquifer. No further assessment proposed.
- Where higher contaminant concentrations have been recorded in soil, samples were taken above the less sensitive coal measures, which is not used for drinking water supply. No further assessment is proposed.

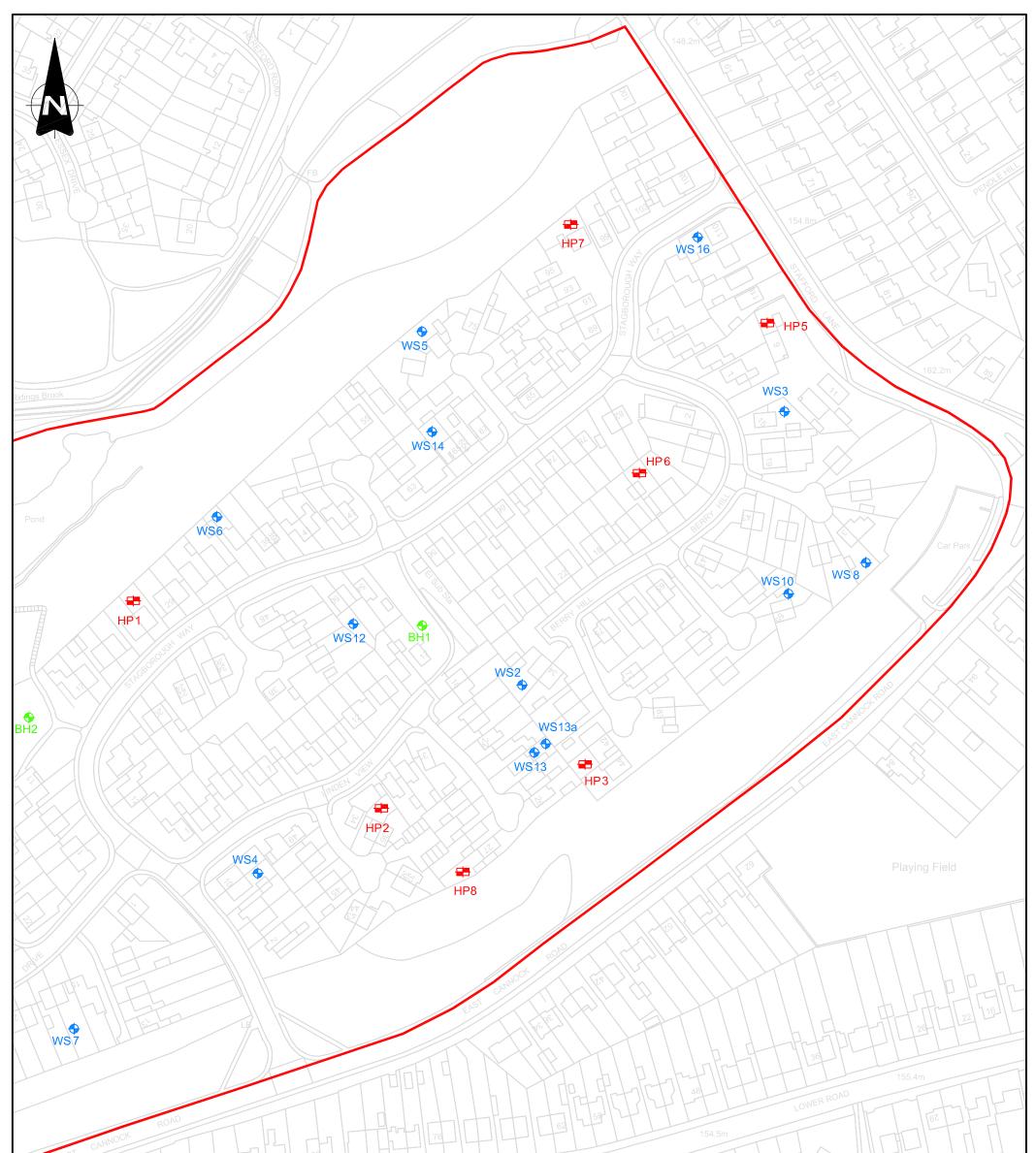
On the basis of the investigation undertaken and information obtained to date, the preceding assessment and the limitations listed in Appendix B, the site is not considered to constitute 'Contaminated Land' under Part 2A of the Environmental Protection Act 1990.



DRAWINGS



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	Ref : 103	Checked: MH 912-003 420x297 - A3	 vate: 4/01/11 WING 1 Rev	KEY: INFERRED EXTENT OF INFILL BH1 BOREHOLE HP1 HANDPIT WS1 WINDOW SAMPLER	EXPLORATORY HOLE LOCATION PLAN ^{Drawing Status} FOR INFORMATION	Grove HouseTel:0113 262 0000Mansion Gate DriveFax:0113 262 0737Leeds LS7 4DNWeb:www.grontmij.co.ukBristol. Cumbria. Dublin.Edinburgh.Glasgow. Leeds.London.Peterborough.Reading.Solihull.



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APPENDIX A

Cannock Chase District Council

Environmental Protection Act 1990, Part IIa: Initial Desktop **Study and Walkover**

Former landfill site off East Cannock Road, Hednesford

January 2010

Prepared for:

Cannock Chase Council PO Box 28 Beecroft Road Cannock Staffordshire WS11 1BG

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Document Control

Report Reference	Issue Date	Reason for Issue		Prepared by	Checked by	Approved by
ECR DTS rpt V1	21/01/10	First Issue				
			Name	Martin Stride	Gareth Taylor	Bryn Thomas
			Position	Consultant	Principal Consultant	Technical Director

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CONTENTS

1	INTRODUCTION1
1.1	Terms of Reference1
2	SITE SETTING
3	SUMMARY OF AVAILABLE SITE INVESTIGATION DATA
3.1	Scope of Investigation5
3.2	Results5
3.2.1	Ground Conditions5
3.2.2	Field Evidence of Contamination5
3.2.3	Analytical Chemistry Results – Soil6
3.2.4	Groundwater Monitoring Data7
3.2.5	Analytical Chemistry Results – Groundwater7
3.2.6	Ground Gas Monitoring7
3.2.7	Safety of Water Supply Pipes8
3.2.8	Regulatory Liaison8
4	PRELIMINARY CONCEPTUAL MODEL9
4.1	Introduction9
4.1.1	Sources of Contaminants9
4.1.2	Receptors10
4.1.3	Pathways11
4.1.4	Potential Pollutant Linkages11
5	CLOSING REMARKS14

FIGURES

Figure 2.1 – Site Location	4
----------------------------	---

TABLES

Table 2.1 – Site Setting	2
Table 3.1 – Field Evidence of Potential Contamination	
Table 3.2 – Analytical Chemistry Results Summary–Soil	7
Table 3.3 – WRAS Threshold Screen	
Table 4.1 - Potential Receptors	10
Table 4.2 - Potential Pollutant Linkages	12

APPENDICES

Appendix A	Existing Site investigation	Data and	Environment	Agency	Correspondence
Held by the Council					
Appendix B	Limitations Statement				



1 INTRODUCTION

1.1 Terms of Reference

In January 2010, Grontmij Limited (Grontmij) was appointed by Cannock Chase District Council (the Council) to assist in the implementation of the Council's Contaminated Land inspection strategy. Part IIa of the Environmental Protection Act 1990 (Part IIa) requires each local authority to inspect areas of land which it believes may be Part IIa Contaminated Land.

The scope of work agreed between Grontmij and the Council included:

- Prioritisation of an initial list of potentially contaminated sites for intrusive investigation work, based upon the sensitivity of each site, using existing limited desktop study data provided by the Council, and
- Production of Desktop Study reports for priority sites, to improve the understanding of the sites and inform the planning of intrusive site investigations.

This report presents the findings of an intrusive investigation at a site located in East Cannock Road , Hednesford.

The site comprises an area of land which appears to have been infilled with waste material. The site is considered to be sensitive as approximately 400 residential properties with gardens and a large area of open space overly the inferred extent of landfill, and the site is underlain by a major aquifer.

This report is subject to the limitations presented in Appendix B.



1



2 SITE SETTING

The site's setting and location are summarised in Table 2.1 and Figure 2.1.

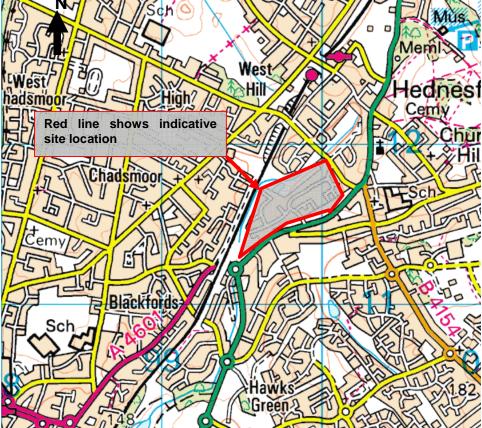
Table 2.1 – Site Sett	
Data	Information
Address	Infilled ground off East Cannock Road, Cannock, Staffordshire. Nearest postcode is WS12 1UE.
Current site use:	Predominantly residential houses and gardens with grass covered public open space. A leisure centre and public house are located in the south western corner of the site.
Grid Reference:	Located around 399822, 311597
Site Area:	Approximately 18 ha
Topography:	Generally towards the south west and north west
Surrounding land use	Industrial estate to the south west, residential housing with gardens and open space to the south east, north and west. Schools located approximately 20m to the east 120m to the north and 120m to the west
Geology	The British Geological Survey (BGS) 1:63,360 map sheet 154 (Lichfield) indicates that alluvium superficial deposits underlie the centre of the site and glacial sand and gravel underlies the north-eastern corner of the site, whereas the BGS website Geoindex tool suggests that Glacial Till (Diamicton) underlies the southern half of the site. The likely thickness of deposits is not stated. The BGS map sheet and Geoindex indicate that the underlying solid geology comprises the middle coal measures, with Triassic sandstone deposits beneath the north-eastern corner of the site.
Hydrogeology	The north-eastern corner of the site is classified as a major aquifer, which is likely to be within the Triassic Sandstone. Major aquifers potentially yield large amounts of water for abstraction, and are thus the most sensitive units in terms of groundwater vulnerability. The coal measures, glacial sand and gravel and alluvium are normally regarded as minor aquifers.
Coal mining	Within a coalfield area. A Coal Authority ground stability report obtained by the Council in October 2000 indicates the following:
	 The site is within the likely zone of influence from workings at 90 – 320m depth which ceased in 1957. Any movement associated with these workings is likely to have ceased by now There are no known coal mine entries within, or within 20m of the boundary of the site At the surface, there are no known faults or other lines of weakness caused by coal mining that have made the site unstable
Zones (SPZs)	The Environment Agency website indicates that the north-eastern corner of the site lies within Zone 3 (outermost zone) of a SPZ. Such SPZs indicate an area of groundwater around a potable abstraction borehole, within which the Environment Agency is likely to place a heightened onus on groundwater quality. The nearest abstraction well is approximately 4km to the north east
Surface Waters	A stream flowing north east to south west and a pond are located in the north western half of the site. A further stream is located 150m to south. Further ponds are located 200m to the north, 500m to the south, 675m to the south east and 950m to the north
Historical Land Use	The data provided and information held on the Environment Agency's "What's In Your Back Yard" website indicates that the site was formerly operated as a landfill site which was infilled prior to 1976 and was subsequently developed as residential housing with some public open space in the 1970s and 1980s. There



	is no information about the site's license, operational period or the date the site was developed. There are numerous other historic landfill sites within 1km of the site, the closest of which is located adjacent to the northern boundary of the site. Further sites are located 50m to the south, 75m to the south west and 150m to the north east. All are recorded as having received household waste, and last received waste 50 or more years ago
Walkover	No evidence of contamination noted - but not surprising, as site has been developed







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3 SUMMARY OF AVAILABLE SITE INVESTIGATION DATA

A summary of existing investigation reports is provided below. The data held by the council is included as Appendix A.

3.1 Scope of Investigation

Two site investigations have previously been carried out on the south western half of the site (Douglas Technical Services on 30th July 1990 and GIP Ltd. on 27th August 1998). The purpose of the investigation carried out by by Douglas Technical Services in 1990 appears to have been geotechnical. The investigation included the following:

- Obtaining plans of underground services and CAT-scanning proposed drilling locations;
- Drilling three cable percussion boreholes (Borehole 1 to 3) to a maximum depth of 15m bgl
- Excavation of nine trial pits (Trial Pit 1 to 9) to a maximum depth of 4m bgl;
- Laboratory analysis

None of the boreholes were installed with monitoring wells.

The purpose of the site investigation carried out by GIP Ltd. was for a combined geotechnical and contamination assessment and included the following:

- Obtaining plans of underground services and CAT-scanning proposed drilling locations;
- Drilling two cable percussion boreholes (BH1 to BH2) to a maximum depth of 7.40m bgl
- Installing combined groundwater and gas monitoring wells in the two boreholes, to intercept any mobile groundwater within potentially contaminated strata and to enable gas monitoring;
- Laboratory analysis, and;
- Carrying out post drilling gas monitoring. The report refers to a programme of landfill gas monitoring taking place but does not specify the number of rounds undertaken.

3.2 Results

3.2.1 Ground Conditions

The ground conditions encountered at the site generally comprised made ground over gravelly sand, over clay.

The Made Ground comprised sand and gravel of mudstone, coal and sandstone down to a depth of at least 5.5m bgl and slightly gravelly silty clay to a depth of at least 4.0m bgl. Slag, ash, metal, glass plastic and timber fragments were encountered in several places. In three of the exploratory holes, ash was encountered down to a depth of 3.80m bgl.

The underlying natural strata comprised gravelly sand interbedded with fine to coarse gravel down to 14m over very stiff silty clay which was proven to a maximum depth of 14.75m bgl. On northern edge of the site, alluvium consisting of soft to firm silty sandy clay was proven to a depth of 3.20m bgl.

3.2.2 Field Evidence of Contamination

A summary of field observations recorded is presented in Table 4.1:



Exploratory Hole	Visual and Olfactory Evidence of Contamination
Douglas site investigation, 30th	July 1990
Borehole 1	1.1 – 3.6m bgl: slag
Trial Pit 1	2.8 – 3.3m bgl: timber fragments
Trial Pit 2	1.5 – 4.0m bgl: timber fragments
Trial Pit 4	1.1 – 4.0m bgl: ash
Trial Pit 8	0 – 1.60m bgl wire, plastic and rags
Trial Pit 9	0.10 – 1.60m bgl wire plastic and rags
GIP site investigation, 19 th Aug	just 1998
TP5	0 – 2.90m bgl: ceramic fragments
TP6	0 – 1. 0m bgl: clinker metal and fabric
TP6	1.0 – 1.60m bgl: ash

Table 3.1 – Field Evidence of Potential Contamination

The above observations indicate the presence of infill, and potentially waste, beneath the site. A wide range of contaminants may be present, including (but not limited to) metals, hydrocarbons (including PAHs), VOCs, SVOCs and asbestos.

3.2.3 Analytical Chemistry Results – Soil

Chemical analysis of soil samples was carried out on a selection of samples recovered from the ground investigation carried out by GIP Ltd in July 1998. A summary of analytical testing results is presented below:



6

Contaminant	No of Samples Tested	Minimum Value	Maximum Value	SGV / GAC using 6% SOM	GAC using 1% SOM value (where lower)	No of exceedances
Arsenic	8	5.2	26	32		None
Beryllium	Not tested	-	-			-
Cadmium	8	0.2	3.3	10		None
Chromium ¹	8	13	18	4.3		8
Copper	8	30	190	2330		None
Lead ²	8	22	190	450		None
Mercury ³	8	0.21	0.95	1	0.17	8
Nickel	8	18	110	130		None
Selenium	8	0.30	1.5	350		None
Vanadium	Not tested	-	-	-		-
Zinc	8	93	1200	3750		None
Benzene ⁴	Not tested	-	-			-
Toluene ⁴	Not tested	-	-	610	120	-
Ethyl Benzene ⁴	Not tested	-	-	350	65	-
Xylene⁴	Not tested	-	-	230	42	-
MTBE	Not tested	-	-	n/s	n/s	-
TPH CWG	Not tested	-	-	various	various	-
Total PAHs	8	<0.5	7.2	n/s	n/s	-
Naphthalene	Not tested	-	-	8.7	1.5	-
Benzo(a)pyrene	Not tested	-	-	1.0	0.83	-

Table 3.2 – Analytical Chemistry Results Summary–Soil

Values presented in mg/kg, correct to two significant figures (unless greater level of accuracy is possible from analysis or published as a screening value). Bold values indicate locations where observed concentrations exceed the screening value.

¹ Testing results are for total chromium, whereas quoted GAC is value for chromium(VI). The GAC for chromium(III) is 3000mg/kg

² SGV quoted was generated by DEFRA using earlier version of CLEA. A value using the latest version of CLEA is awaited

³ Testing results are for total mercury. SGV/GAC for elemental mercury are presented (the most stringent of the elemental, inorganic and methyl mercury SGVs)

⁴ Value for para-xylene quoted (worst case of the three isomers) n/s – no standard

3.2.4 Groundwater Monitoring Data

The investigation reports indicate that groundwater strikes were encountered at between 1.4m and 4.3m bgl. Monitoring wells were installed in the three cable percussion boreholes drilled in the GIP ground investigation of 1998. No records of the groundwater monitoring are available.

3.2.5 Analytical Chemistry Results – Groundwater

No results of groundwater analysis were available (if carried out at all).

3.2.6 Ground Gas Monitoring

No records of ground gas monitoring of the installed boreholes are available.



3.2.7 Safety of Water Supply Pipes

The soil quality data obtained has been screened against Water Regulations Advisory Scheme (WRAS) thresholds, above which "special consideration of the material used" for the water pipe should be given. The results of the screening exercise are presented in Table 4.6:

Analyte	WRAS Threshold Value (mg/kg)	Maximum Test Result (mg/kg)
Sulphate	2000	Not tested for
Sulphur	5000	<10
Sulphide	250	<10
рН	<5 or >8	Range = 7.5 to 8.2
Antimony	10	Not tested for
Arsenic	10	26
Cadmium	3	3.3
Chromium (hexavalent)	25	Not tested for
Chromium (total)	600	18
Cyanide (free)	25	<1
Cyanide (complexed)	250	Not tested for
Lead	500	170
Mercury	1	0.95
Selenium	3	1.5
Thiocyanate	50	Not tested for
Coal Tar	50	Not tested for
Cyclohexane extractable	50	Not tested for
Phenol	5	<0.5
Polyaromatic Hydrocarbons	50	300
Toluene extractable	50	Not tested for
Petroleum Hydrocarbons	50	Not tested for

Table 3.3 – WRAS Threshold Screen

The concentrations of some analytes exceed WRAS threshold values. Further investigation of the materials used for water supply pipes at the site, and possibly testing for further analytes, will be required.

The results of the intrusive investigation and monitoring are discussed in more detail in the following section of this report.

3.2.8 Regulatory Liaison

The Council referred a planning application for the site to the Environment Agency in 1999. In its response to correspondence from the Council, the Environment Agency confirmed that the site is located over a former landfill site and had been subjected to recent fly tipping. Therefore, there is the potential of contamination and landfill gas. The EA recommended that a remediation strategy is carried out to protect on-site receptors (controlled waters and humans). A copy of the EA correspondence is included within Appendix A



4 PRELIMINARY CONCEPTUAL MODEL

4.1 Introduction

This section of the report presents a preliminary contaminated land assessment, on the basis of the available desktop data. The assessment presents an evaluation of the potential risks posed, should contaminants be present in the soil or groundwater beneath the site.

In the context of the Environmental Protection Act 1990 (EPA90), the Water Act 2003 and associated guidance^{1,2}, a preliminary (contaminated land) risk assessment should focus on whether the land at a subject site meets the statutory definition of Contaminated Land. Part IIA of the EPA90, as amended by the Water Act 2003, defines Contaminated Land as:

- "any land which appears to the local authority in whose area it is situated to be in such condition by reason of substances in, on or under the land, that:
- significant harm is being caused or there is a significant possibility of significant harm being caused; or
- significant pollution of controlled waters is being caused or there is significant possibility of such pollution being caused

The procedure for assessing contaminated land involves the development of a Conceptual Site Model (CSM) comprising the assessment of potential Contaminants, Pathways and Receptors.

4.1.1 Sources of Contaminants

The "contaminants" term in the conceptual model has been evaluated by inspection of existing desktop study data provided by Cannock Chase District Council, and a preliminary site walkover. The following potential sources of contaminants have been identified:

- An infilled area of land, demonstrated to contain chromium and mercury concentrations above screening values and which could contain contaminants including (but not limited to) other metals, hydrocarbons, polyaromatic hydrocarbons (PAHs), volatile and semivolatile organic compounds (VOCs and SVOCs)
- Methane and carbon dioxide gas, from the decomposition of any deleterious material within the made ground or from combustible material within the infill

² DEFRA Circular 02/2006, Environmental Protection Act 1990: Part IIA Contaminated Land:, September 2006.



¹ CLR11 Model Procedures for the Management of Land Contamination (EA & DEFRA September 2004)

4.1.2 Receptors

DEFRA Circular 02/2006 defines a Receptor as:

 "either (a) a living organism, a group of organisms, an ecological system or a piece of property which (i) is in a category listed in Table A as a type of receptor, and (ii) is being, or could be, harmed, by a contaminant; or (b) controlled waters which are being, or could be, polluted by a contaminant".

Table 1.1 lists all of the receptors to be considered by a Part IIA or PPS23³ assessment, and assesses whether the receptors are likely to be present at the site.

Receptor Type	Receptors	Present (✓ /≭)	Notes
Humans	On-site residents	 ✓ 	Residential properties (houses and gardens) above indicative extent of landfill. Assumed to have vegetable patches.
	Construction staff and SI personnel.	X	No known redevelopment proposed
	Future occupants of the site	•	(level of risk same as current residents so not considered further)
	Off site commercial workers or residents	•	Possibly exposed to gases migrating off-site through permeable strata
Ecosystems	Any designated ecological system ⁴ , or living organism forming part of such a system	x	Inspection of MAGIC website has identified that the site does not lie within, or within 250m of, an ecologically designated site
Property (Flora	Crops, including timber	Х	Not present
and Fauna)	Produce grown domestically, or on allotments for consumption	✓	Vegetables grown in residential gardens.
	Livestock	X	Not present
	Other owned or domesticated animals	✓	Pets in residential properties.
	Wild animals which are the subject of shooting or fishing rights	✓	Fish may be present in on site stream and pond
Property (Buildings & Structures)	A 'building' means any structure, including any part below ground level, but does not include plant or machinery within a building.	✓	Residential houses above indicative extent of landfill.
	Coastal waters	Х	

Table 4.1 - Potential Receptors

³ Planning Policy Statement (PPS) 23: Planning and Pollution Control, Annex 2: Development on Land Affected by Contamination ⁴ Includes sites designated as SSSI or National Nature Reserve by the Wildlife and Countryside Act 1981, Special Area of Conservation (including candidate sites), Special Protection Area or Ramsar Site by the Conservation (Natural Habitats etc) Regulations 1994, and Local Nature Reserve by the National Parks and Access to the Countryside Act 1949.



Receptor Type	Receptors	Present (✓ /≭)	Notes
	Inland Freshwaters	x	Stream and pond within site boundary; further stream and pond 150m to the south and 200m to the north respectively.
	Groundwater	✓	Major aquifer and SPZ3 beneath north-east corner of site; remainder minor aquifer

¹ as defined in the Water Resources Act Section 104. Generally includes most surface water bodies excluding drains which discharge into sewers.

4.1.3 Pathways

DEFRA Circular 02/2006 defines a Pathway as:

• "one or more routes or means by, or through, which a receptor: (a) is being exposed to, or affected by, a contaminant; or (b) could be exposed or affected"

Pathways are examined as part of Table 3.2, overleaf.

4.1.4 Potential Pollutant Linkages

The pollutant linkages identified are also presented in Table 3.2.



Table 4.2 - Potential Pollutant Linkages

	Table 4.2 - Potential Pollutant Linkages					Commente
No.	Receptor	Contaminant(s)	Pathway(s)	Risk Pollutant Linkage Being Realised	of	Comments
Huma	an Health					
1	Residents of properties above infilled ground – including children playing in gardens & vegetable consumption	Contaminants including (but not limited to) metals, hydrocarbons, PAHs, VOCs, SVOCs within the made ground.	Direct ingestion/dermal contact/inhalation of dust/inhalation of vapours/consumption of home- grown vegetables	Medium high risk	to	Existing logs suggest presence of landfilled material and evidence of contaminants beneath study site; testing carried out to date is not extensive. Grass and/or topsoil coverage likely to mitigate risk to an extent – risk is greatest where possibly impacted soils are exposed or could be encountered, for example, when digging a vegetable patch or when children play outdoors. Properties are constructed directly above a potentially significant contamination source.
2		Methane and carbon dioxide from decomposition of deleterious elements of the made ground.	Movement into buildings, subsequent asphyxiation and explosion risk.	Medium high risk.	to	Site likely to overlie infill but no gas monitoring has been undertaken. Investigation and monitoring required to determine risk.
3	Children playing on recreation land	Contaminants including (but not limited to) metals, hydrocarbons, PAHs, VOCs, SVOCs within the made ground.	Direct ingestion of soil /dermal contact with soil /inhalation of dust/inhalation of vapours (Medium high risk	to	Grass and/or topsoil coverage likely to mitigate ingestion and dermal contact risk to an extent – risk is greatest where possibly impacted soils are exposed or could be encountered, for example, when children play outdoors.
Prop	erty					
4	Subsurface services serving the buildings (principally water supply)	Contaminants including metals, hydrocarbons, PAHs, VOC, SVOCs within the made ground.	Chemical attack and tainting of water supply could occur at high contaminant concentrations / severe pH levels	high risk.	to	Risk suggested by existing data; will depend on depth and concentration of contaminants and material(s) used for water pipes.
5	Property (Structures) – sub-surface concrete	Sulphate and pH	Contact between contaminants and concrete.	Medium ris	k	Possible risk but could only reasonably be established if concrete class used to construct buildings can be established (unlikely) –more relevant for any new planned buildings.
Cont	rolled Waters					
6	Major aquifer (& SPZ) and minor aquifer beneath site	Contaminants including metals, hydrocarbons, PAHs, VOCs and SVOCs within the made ground.	Leaching of chemicals to aquifers	Medium ris	k	Risk will depend upon depth and concentration of contaminants, presence/absence of confining layers between contaminants and the aquifers, leaching potential etc. Site data needed.



No.	Receptor	Contaminant(s)	Pathway(s)	Risk of Pollutant Linkage Being Realised	Comments
7	Surface waters (closest are a stream and pond on site then a further stream 150m to the south and a pond 200m to the north)	Contaminants including metals, hydrocarbons, PAHs, VOCs and SVOCs within the made ground.	Groundwater flow in permeable strata which are in continuity with watercourses	Medium risk	Risk depends on depth/presence of contaminated groundwater, hydraulic gradient within any impacted groundwater unit, and continuity between impacted groundwater and watercourse.

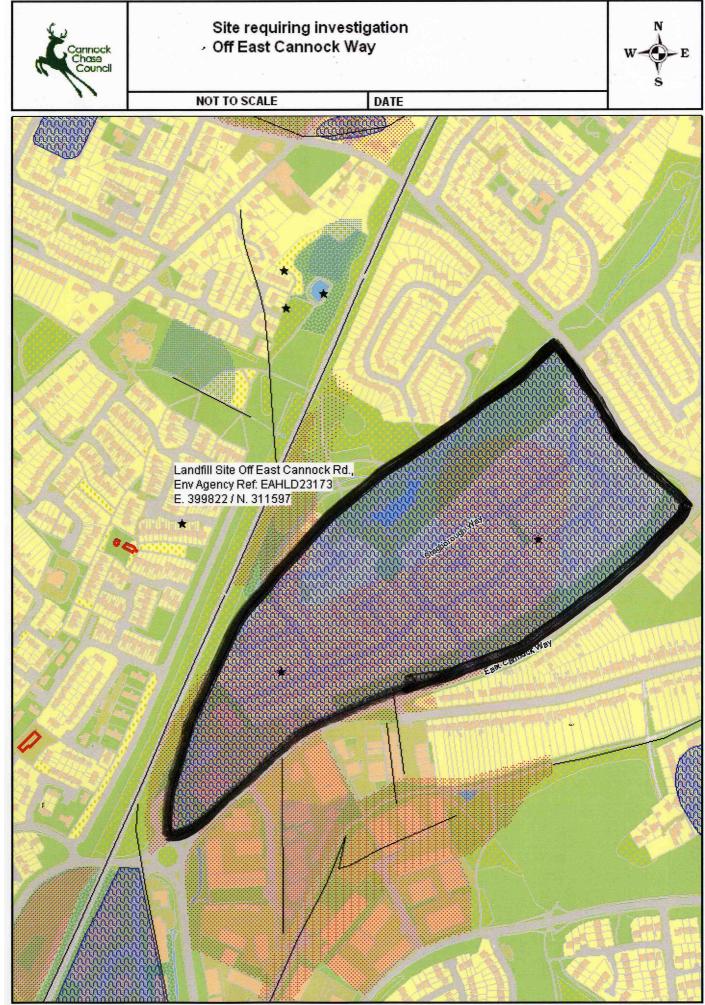


5 CLOSING REMARKS

Potential pollutant linkages affecting the health of on-site residents, controlled waters, and property have been identified, and therefore an initial intrusive investigation should be carried out to examine the likelihood of pollutant linkages existing at the site.



DRAWINGS



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APPENDIX A

Our ref: Your ref:	UT\2000\003998\001 CH/00/0512		ENVIRONMENT AGENCY
Date:	18th October 2000		
Cannock Ch Civic Centre	Building Control Manager ase Council e,		
P O Box 28, Beecroft Rd Cannock Staffordshire WS11 1BG		CANNOCK CHASE DISTRI COUNCIL PLANNING SERVICES 19 OCT 2200	CT
Dear Sir/Ma	dam	allar boss a later i subseri	10

PROPOSAL FOR A3 USE FOOD & DRINK & D2 USE ASSEMBLY & LEISURE LAND ADJACENT TO OLD HEDNESFORD RD, CANNOCK

Thank you for referring the above application, which was received on 13 October 2000.

In previous correspondence dated 19 July 1999 responding to this proposal we notified yourselves of the fact that this application site coincides with a former landfill site and as such there is the potential for the site to be contaminated with materials and landfill gas. This area has also been subjected to recent fly-tipping incidents. We note that the application form states that a site investigation has been undertaken. We trust that this site investigation incorporates a remediation strategy, which will protect all the receptors on site including the Ridings Brook and the public using this site.

With regards to the proposed layout of this development we have the following comments to make:

The proposed access culvert indicated on Drawing No. 420:29 will require a consent to be issued by the Agency under Section 23 of the Land Drainage Act 1991.

The length of the culvert indicated on the plan submitted measures 30 metres. The culvert should be constructed over the shortest length possible and not as indicated. The applicant should be aware that the Agency will refuse to issue consent for a culvert of such length which does not conform to the Agency's culverting policy. In this respect we recommended that this Drawing is amended to show a shorter length culvert. This could alter the proposed layout of the site in this area.

To discuss this issue further please contact the Agency's Land Drainage Officer, John Beckett on 01543 404900.

On-site inspections reveal that the corridor along the Ridings Brook is already established. Any further planting in this area should be of native species.

Drainage from the 162 space car park should pass through a petrol inceptor before discharging into the Ridings Brook in accordance with the following condition (if an

Agency):

CONDITION:

Prior to being discharged into any watercourse, surface water sewer or soakaway system, all surface water drainage from parking areas and hardstandings shall be passed through an oil interceptor designed and constructed to have a capacity and details compatible with the site being drained. Roof water shall not pass through the interceptor.

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LEVEX IN A STRUCT

REASON: To prevent pollution of the water environment.

Yours faithfully

S Hollard

Mr Cliff Dobson Customer Services Manager

D1 1 C C1 TT 11 1



DOUGLAS TECHNICAL SERVICES LIMITED George Road, Erdington, Birmingham B23 7RZ Telephone: 021-344 4888 Fax: 021-344 4801 Telex: 338399

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CONTRACT NO.25-5540

REPORT ON A PRELIMINARY GROUND INVESTIGATION

CARRIED OUT AT

OLD HEDNESFORD ROAD, CANNOCK

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vale Developments Ltd., ley, ls

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Introduction	
Site Location and Description	
General Geology	
Site Work	100 ét
Laboratory Testing	
Discussion	nditio
6.1 Strata Encountered6.2 Groundwater6.3 Foundations	
FIGURES	
ation Plan	Fig.
and Trial Pit Location Plan	Fig.
e Records	Figs.
t Records	Figs.
Size Distribution Curves	Figs.1
of Laboratory Test Results	Table
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OLD HEDNESFORD ROAD, CANNOCK

1.0 INTRODUCTION

Shervale Developments Limited intend to develop an area of redundant land alongside the Old Hednesford Road between the Hill Top and Stoney Lea districts of Cannock.

In order to determine the likely ground conditions a preliminary site investigation comprising three boreholes and nine trial pits plus associated field and laboratory testing was undertaken. It is intended at a later stage to sink more boreholes in connection with individual structures proposed for the site.

This report presents the findings of the investigation and gives brief comment on engineering properties and foundation design.

The investigation and testing carried out can provide information only in relation to the material encountered in the boreholes and trial pits. Conditions can vary between exploratory holes and the Engineer responsible for design is advised to satisfy himself that the location, quantity and type of investigative work is site.

This report does not purport to give any recommendations whatsoever regarding the behaviour of the ground during construction operations or as a result of any decisions taken by the Engineer before or during construction which may affect or alter the behaviour anticipated of the soils in their natural state.

2.0 SITE LOCATION AND DESCRIPTION

The site is located at the junction of the Old Hednesford Road (A460) and Winchester Road, Cannock which lies roughly midway between the Hill Top and Stoney Lea districts of the town, See Figure 1.

The site is an irregular triangle in shape and bounded to its north-west by the Cannock to Hednesford railway new housing estate.

A stream known as Ridings Brook flows across the western part of the site in a roughly north-south direction. To the west of the stream the ground is generally flat and covered with scrub vegetation. To the east the average ground level is 1 to 2 metres higher than in the west, but is also generally flat and covered with scrub vegetation. Old Hednesford Road rises from south to north and the site is therefore lower lying than the surrounding ground on all sides except the extreme southern point by the junction with the Cannock Eastern bypass.

From previous work carried out in the area it is known that Coal Mining activity has been undertaken in the vicinity of the site. A British Coal Mining report is included in Appendix I for completeness. However this report does not comment further on the nature, extent or likelihood of mine workings beneath the site.

3.0 GENERAL GEOLOGY

The British Geological Survey sheet No.154 drift edition of Lichfield shows the site to be covered partially by recent deposits of alluvium from the Ridings Brook. Beneath the alluvium and covering the rest of the site are drift deposits of glacial origin. These deposits are thought to be boulder clays with sand and gravel beds. The underlying solid geology is obscured on the map, but is conjectured to be either middle or upper coal measures.

4.0 SITE WORK

i) Shell and Auger Boreholes

Between the 30th July, and 2nd August, 1990 three boreholes were sunk to depths ranging from 14.55m to 15.00m. The location of these boreholes are shown on the site plan, Figure 2.

The boreholes were formed using standard cable percussion boring equipment of 150mm diameter, temporary casing was inserted as a support where necessary. Regular sampling consisting of disturbed 'bulk' bags was undertaken to provide material for detailed examination and testing. In granular and hard material where undisturbed tube sampling was her investigation is required across areas of where the depth of fill and sequence of nata has not been proven. From such information be possible to assess with greater confidence to of the peaty materials and confirm bility of rafts across the whole site.

to determine the risk of attack by sulphate ground on buried concrete have indicated re fall into Class 1 conditions as define 10 Part 1, 1985.

ouglas Technical Services Ltd.,

ee, B.Sc., ee Geotechnical Engineer ishton B.Sc., M.Sc., C.Eng., MICE iate Director llen, B.Sc., or

0/20th August, 1990

which are then summated to give the N value. Where the size of granular material became too coarse the split tube sampler was replaced by a solid 60° apex cone (CPT). Detailed records of boring are given in Figures 3 to 8.

ii) Trial Pits

Nine trial pits were excavated on the 10th August, 1990 using a JCB 3CX machine. The locations of the pits are also shown on the site plan, Figure 2. Following detailed measurement and examination of material encountered, the pits were backfilled with material arising. Detailed records are given in Figures 9 to 17.

5.0 LABORATORY TESTING

In order to make a broad assessment of the engineering properties of the soils sampled during the field work a small schedule of testing was prepared based on preliminary borehole logs and trial pit records.

Standard laboratory tests were performed in accordance with BS.1377 (1975) and the tests may be sub-divided into two groups as follows:-

Group A - General Soil Classification Tests

- (a) Particle Size Distribution
- (b) Atterberg Limit Determinations

Group B - Chemical Tests

(a) Sulphate and pH Determinations

(b) Dichromate Organic Content

The results of these tests are given in summary as Table I and graphical form where appropriate as Figs. 18 and 19.

6.0 DISCUSSION

6.1 Strata Encountered

Four geological layers of distinctly different

FILL, ALLUVIUM, GLACIAL DRIFT, UPPER COAL MEASURES.

FILL

The first identified layer was the fill which was observed in all boreholes and trial pits.

The composition of the fill found in the boreholes and trial pits can be separated into two basic types. The first type was observed only in the trial pits and can be described as a loose to medium dense grey or black silty sandy fine to coarse <u>GRAVEL</u> of mudstones, coal and shale with ash and occasional cobbles and boulders. Pockets of soft black silty clay were also identified in most trial pits. The second basic type was observed in the boreholes and trial pit 1 and beneath the generally gravelly fill in Trial Pits 6, 8 and 9.

Compositionally the second fill type was typically a soft or very soft grey and black silty clay with fine to coarse gravels of mudstone, coal and shale with peat traces and some organic clay.

The thickness of the fill is variable across the site. The minimum depth observed was 2.30m in Trial Pit 9 and a maximum of 5.50m in Borehole 3. Trial Pits 1, 2, 3, 4, 6 and 7 did not prove the base of the fill and in these areas the depth may exceed 5.50m.

ALLUVIUM

The second identified layer was the alluvium which was observed in Borehole 1 and Trial Pits 5 and 9. In the trial pits this layer was typically a soft brown silty sandy <u>CLAY</u> with some sub-rounded gravels and traces of peat. In Borehole 1, a 0.5m thick layer of dark brown amorphous peat was observed below the fill at a depth of 3.60m.

The thickness of the alluvial clay was only proven in Trial Pit 9 and was found to extend from 2.40-3.00m.

The distribution of the naturally-occurring alluvial clay appears to be fairly sporadic from this preliminary borehole and trial pit information. However, the presence of peat and organic traces towards the base of the fill in Boreholes 2, 3 and within the fill layer in trial pits 1 and 8 suggests that the alluvial clay has been reworked and distributed into the fill and is therefore more wideThe third identified layer is most probably glacial drift and was observed in all boreholes and trial pits 8 and 9. The glacial drift when encountered was typically a medium dense red-brown very sandy fine to coarse sub-angualr to sub-rounded quartzitic <u>GRAVEL</u> with some beds of red brown fine to coarse <u>SAND</u> and soft to firm red brown silty <u>CLAY</u>.

The thickness of this layer was only proved in the boreholes and was found to be a minimum of 8.4m in Borehole 3 and a maximum of 10.4m in Borehole 2. The depth to the top of this layer where encountered ranged from 3.0m in Trial Pit 9 to 5.50m in Borehole 3.

UPPER COAL MEASURES

This stratum, which is thought to form the solid geology of the site was only encountered in the boreholes, being too deep for the trial pits.

In Boreholes 1 and 2 the solid geology was typically a very stiff to hard red-brown mottled grey silty <u>CLAY</u> with fine angular lithorelicts. In Borehole 3 a fresh red-brown fine-grained CONGLOMERATE, moderately strong, was encountered at the bottom of the hole. The clay was encountered at 13.90m in Boreholes 1 and 3 and at 14.20m in Borehole 2.

6.2 Groundwater

Groundwater was encountered in all boreholes and in Trial Pits 1, 2, 3, 4, 7, 8, 9. The groundwater in the boreholes was generally encountered at the top of the Glacial Drift rising to between 3.20m and 3.60m below ground level. In the trial pits seepage occurred from the fill at depths ranging from 1.60m to 4.00m. Particularly strong inflows of water were observed in Trial Pits 1, 3, 2 and 9.

6.3 Foundations

It is considered that the fill in its present state, and the underlying soft alluvial and peaty clays directly beneath it, are not suitable for conventional strips or pad foundations. This is due to the risk of excessive settlement associated with its loose and very soft state, and the substantial long term settlement associated with the degradation and compression of and detail of the specific development proposed together with a more detailed analysis of the ground in specific areas. These are piled foundations, vibroflotation and raft foundations.

(a) Piles

Probably the best foundation solution from an engineering point of view would be to found the structures on (driven) piles which bear into the glacial drift and underlying solid strata. This solution is particularly appropriate where deep fill is overlying significant thicknesses of peaty material. However, the economics of this method are unlikely to be attractive unless the structures are large.

(b) Vibroflotation

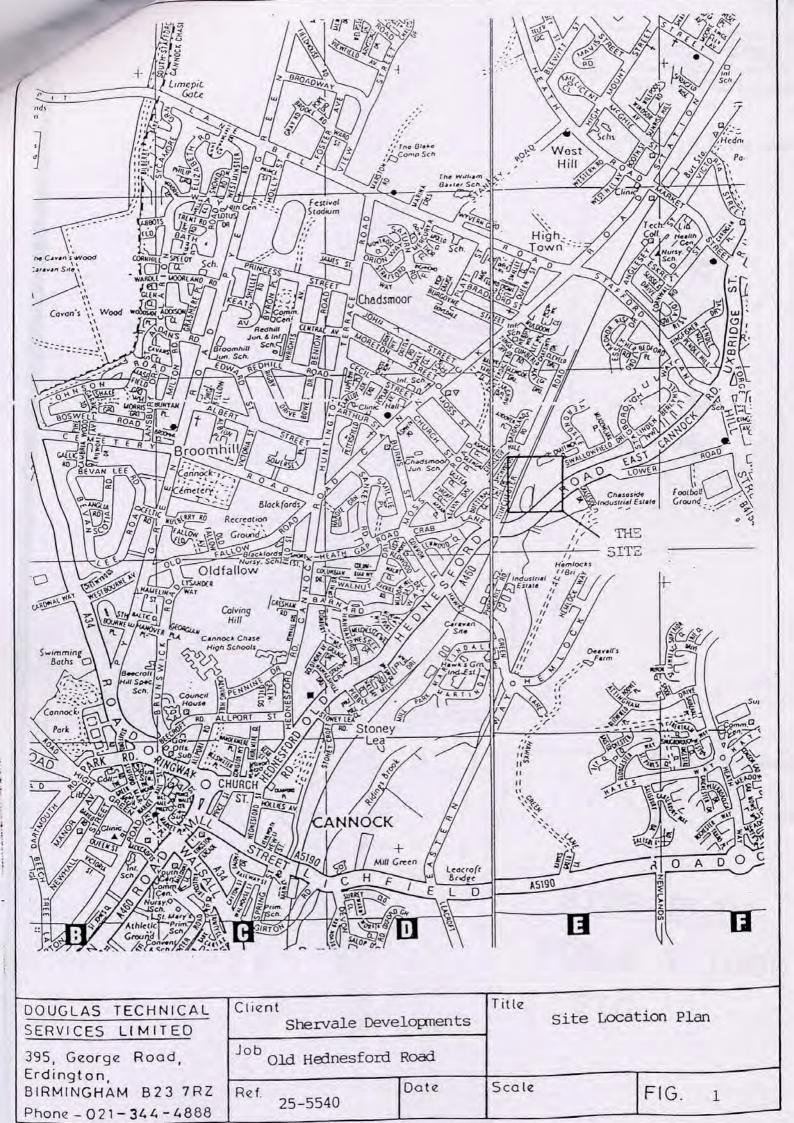
An alternative to a piled foundation would be to improve the ground by means of vibro-replacement stone columns. This method could be used to increase the strength and density of the fill and underlying soft alluvidal clays allowing conventional strip and pad foundations to be used. However the depth of fill and soft material proved by the boreholes and trial pits may limit the suitability of this method in some areas. Further investigation would be required to prove the depth of fill and the succession of natural strata to determine the suitability of this method across the whole site.

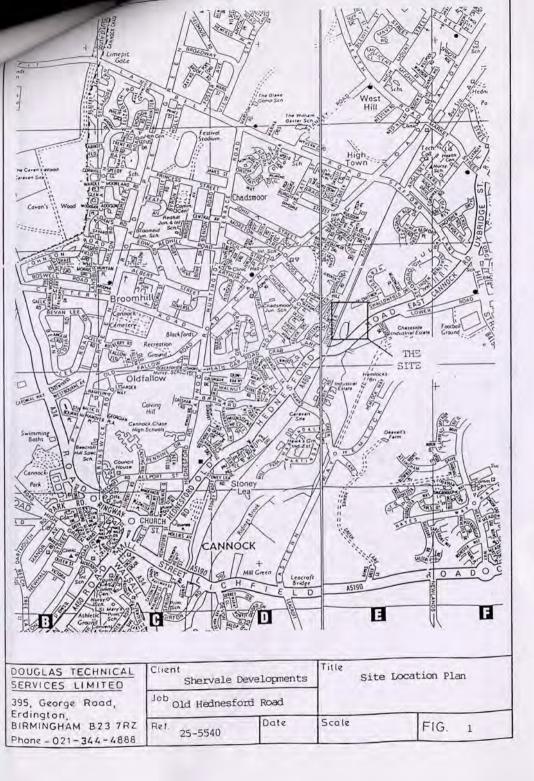
If either vibro-replacement or piling solutions are to be considered further, the advice of specialist contractors should be sought for specific design parameters.

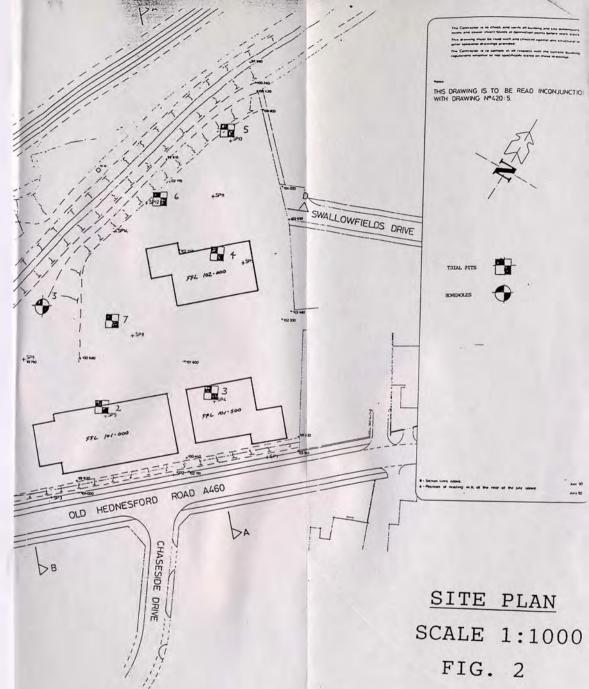
(c) Rafts

Another option would be to consider a raft foundation design for low rise buildings, however, the use of this method is restricted by the distribution of the peaty and organic materials found within and underlying the fill.

These materials are likely to consolidate considerably as a result of applied loads creating excessive differential settlement particularly in locations where large rafts span areas of differing engineering properties. Therefore this foundation solution will







BORED FOR SHERVALE DEVELOPMENTS LTD. LOCATION OLD HEDNESFORD ROAD, CANNOCK

NATIONAL GRID REF. GROUND SURFACE LEVEL DATE STARTED 31/7/90 DATE COMPLETED 1/8/90 BOREHOLE No. 1 (SHEET 1 OF 2)

TYPE OF BORING SHELL & AUGER

DIAMETER 250 mm LINING TUBES TO 14.00 m INCLINATION VERTICAL

DESCRIPTION OF STRATA	SECTION	DEPTH BELOW SURFACE	THICK- NESS	O.D. LEVEL	5	SAMPL		S.P.T.	GROUND WATER	REMARKS
DESCRIPTION OF STRATA		SURFACE	m		TYPE	No.	DEPTH	per 300mn	OBSERVATIONS	
FILL (LOOSE BROWN SILTY SLIGHTLY CLAYEY SAND WITH FINE TO COARSE GRAVELS, ROOTS AND PEAT TRACES)		0 · 00 1 · 10			•в с[]	1	0.00			4/2,2,2,1
FILL (SOFT GREY BROWN & BLACK SILTY SANDY CLAY WITH FINE TO COARSE GRAVELS OF QUARTZITE AND SLAG].	\bigotimes		-		•в	3	1 · 55			
SLAUT.	\bigotimes				с •в w	4 5 8	2 · 30 2 · 75 3 · 20	4	3.20 m 📕	171,1,1,1
DARK BROWN PLASTIC		3 · 60 4 · 10			↓¶ ■	6 7	3 · 60 4 · 05 4 · 10	3	AFTER 15 mins.	1/ 1, 1, 1,
LOOSE TO MEDIUM DENSE GREY BROWN FINE TO COARSE SUB ANGULAR TO SUBROUNDED GRAVEL WITH COBBLES	°.°.°	4 · 60			● в с[]	9 10	4 · 60 5 · 05	11	AT 3.0 m	6/3,3,2,3
LOOSE TO MEDIUM DENSE GREY BROWN <u>SAND</u> WITH FINE TO MEDIUM GRAVELS.	0 0 0 0	6 · 00			• B	11	6.00			
LOOSE RED BROWN SILTY SLIGHTLY CLAYEY FINE TO MEDIUM <u>SAND</u>	×				•в	12 13	6- 45	8		3/2,2,2.2
MEDIUM DENSE RED BROWN FINE TO COARSE <u>SAND</u> AND FINE TO COARSE SUB- ANGULAR TO SUB ROUNDED GRAVEL OF MAINLY	0.00.0	7 · 30			с [] • в	14 15	7 · 30 7 · 75	12		5/3,2,3,4
QUARTZITE	0.000				 c[]	16	8 · 60 9 · 05	16		- 7/4,5,3,4
	• • • • • • • • • • • • • • • • • • •	(10 · 0 0)	*		• B	17	10.00			
	1									FIG

WEATHER

FIG

BORED FOR SHERVALE DEVELOPMENTS LTD. LOCATION OLD HEDNESFORD ROAD, CANNOCK

NATIONAL GRID REF. GROUND SURFACE LEVEL DATE STARTED 31/7/90 DATE COMPLETED 1/8/90

BOREHOLE No. 1 (SHEET 2 OF 2)

TYPE OF BORING SHELL & AUGER

DIAMETER 250 mm LINING TUBES TO 14.00 m INCLINATION VERTICAL

DESCRIPTION OF STRATA	SECTION	DEPTH BELOW SURFACE	THICK- NESS	O.D. LEVEL	-	SAMP		S.P.T.	GROUND WATER	REMARKS
DESCRIPTION OF STRATA	SECTION	SURFACE	m		TYPE	No.	DEPTH	per 300mm	OBSERVATIONS	
		(10 . 00)					10 . 00			
VERY DENSE RED BROWN	000	(10,00)			II cl	18		1	FOR 150 mm	30/22,30,-,-
SLIGHTLY SANDY FINE TO	000				В	19	10.30			
COARSE SUB ANGULAR TO SUB-	0000	10 . 70			1		10.70		-	1
ROUNDED GRAVEL OF		10.70			19	20	10.70	17		5/4.4.5.4
MAINLY QUARTZITE	0.0				11 11		11 . 15			
MEDIUM DENSE RED BROWN					• B	21				1.5.4.5
FINE TO COARSE SAND WITH			-				-			
FINE TO MEDIUM SUB- ROUNDED SUBANGULAR	0:									
GRAVEL OF MAINLY					ІсП	22	12.00	17		7/4,5,4,4
QUARTZITE								-		174, 5, 4, 4
					ll u		1			
	.0.0				●В	23				
						- 1				
	0									
MEDIUM DENSE RED-BROWN		13.40			4		13.40			
CLAYEY SAND AND FINE	0000				•B	24				
TO MEDIUM GRAVEL	-0_0	13 . 90			11 -		13.90		the second second second	20/19,38,-,-
VERY STIFF BECOMING HARD	×-				s	25	11. 20	57	FOR 150 mm	
MOTTLED RED - BROWN,	x-				-		14.20			
CREAM & ORANGE SILTY CLAY	x x	14.75			sП	Z 6	14.60	67	FOR SEATING	67/-, -, -,
WITH FINE ANGULAR LITHORELICTS /	50	14. 15					14.75	0,	DISTANCE ONLY	
							1 1 1 1 1			
END OF BOREHOLE		_								
									01	Laura
									1 1/2 HOUR CHI	
									FROM 13.90	TO 14.60 m
1			1					1		
							1.0			
	1									
					1					
								-		
						114				
the second second second										
					-					
	1									1
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	1		-		1					
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**										1
	1									FIG
WEATHER						VERT	ICAL SC	ALE 1	1:50	1

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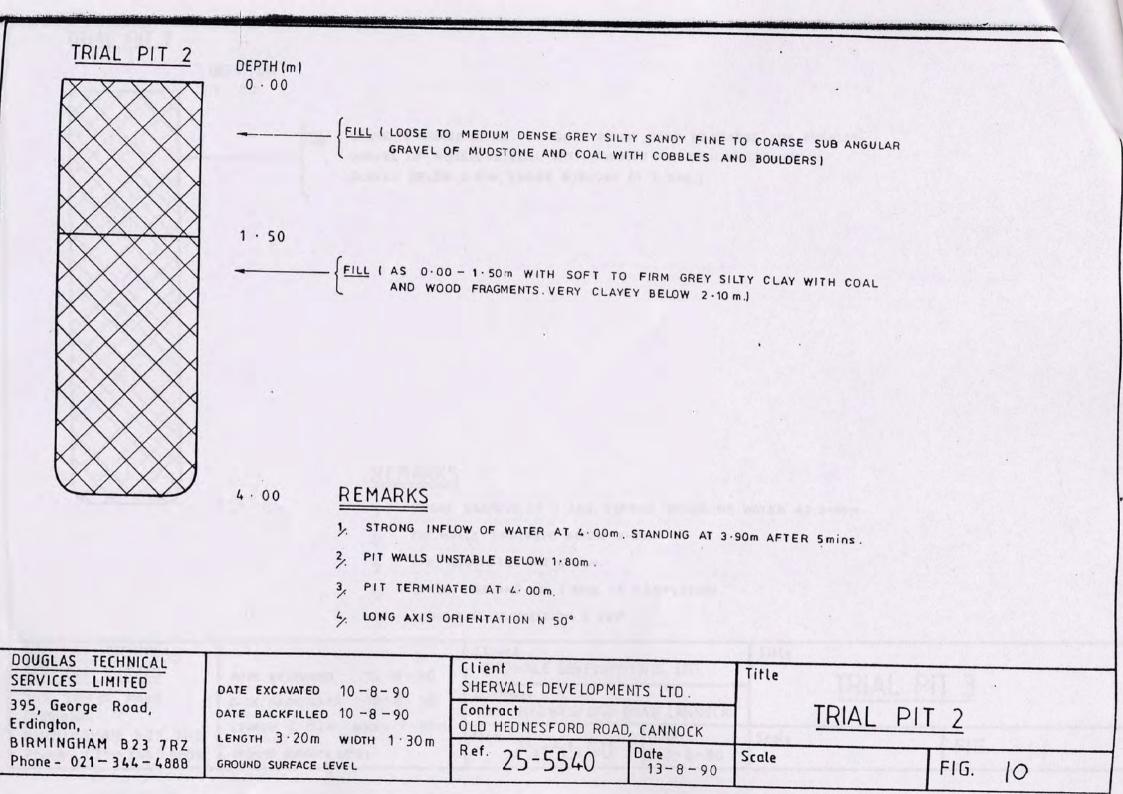
BORED FOR SHERVALE DEVELOPMENTS LTD. LOCATION OLD HEDNESFORD ROAD, CANNOCK

NATIONAL GRID REF. GROUND SURFACE LEVEL DATE STARTED 2/8/90 DATE COMPLETED 2/8/90 BOREHOLE No. 2 (SHEET 1 OF 2)

TYPE OF BORING SHELL & AUGER

DIAMETER 250 mm LINING TUBES TO 14.20m INCLINATION VERTICAL

DESCRIPTION OF STRATA	SECTION	DEPTH BELOW SURFACE	THICK- NESS	O.D. LEVEL		SAMPI		S.P.T. Blows	GROUND WATER OBSERVATIONS	REMARKS
		m	m		TYPE	No.	m	per 300mm	OBSERVATIONS	
	XX	0 .00			1		0.00			
ILL (STIFF BLACK & GREY GLTY CLAY WITH GRAVELS OF COAL AND MUDSTONE COME PEAT TRACES & ROOTS]	\bigotimes				• в	1				
	XX	1 · 20			П	2	1 . 20	4		2/ 1, 2, 1,
ILLISOFT TO VERY SOFT BLACK AND GREY SILTY CLAY WITH POCKETS OF ORGANIC CLAY & PEAT. TRACES OF	\bigotimes		•		• B	3	1 · 65	4		
OAL]	\times				1 0		2 · 30			1/ 1, -, 1.
	\mathbb{X}				C	4	2 . 75	2		
	\Diamond				• в	5				
	\bigotimes				w	10	3.30		AFTER 15 mins.	
	\times	3 · 80					3 · 80		CASING AT	7/4.3.2.
VERY SANDY FINE TO	0.0			,	C B	. 6 .	4.25	12	4.00m ···	
COARSE SUB ANGULAR TO	0.0.				1		4.30			
AAINLY QUARTZITE					• B	8				
	0.0.	91.19				9	5.00	14		8/3.4.4.
	0.0				• B '	11				
		6 · 30			Ісп	12	6 . 30			6/3,2,2,
LOOSE RED BROWN FINE							6 · 75	9		
					• 8	13	0.75			
							7.50		+	
OOSE TO MEDIUM DENSE	0.0	7 . 50			I cl	14	1.50	10		5/3,2,2,
RED BROWN SLIGHTLY SILTY	. 0 0				●B	15	7 · 95			
TINE TO COARSE SUB ANGULAR										
MAINLY QUARTZITE.	.0.0				 kП	16	8 . 80			5/4,4,3,
MEDIUM DENSE BELOW 8.80m	0.0						9 · 25	15		
	.0.0				• 8	17	3 . 25			
	0.0									
		(10 - 00)			1		10 · 00			
WEATHER							CAL SC	ALE 1.	50	FIG



ONTINACT NO 25 5540

1

BORED FOR SHERVALE DEVELOPMENTS LTD. LOCATION OLD HEDNESFORD ROAD, CANNOCK

NATIONAL GRID REF. GROUND SURFACE LEVEL DATE STARTED 2/8/90 DATE COMPLETED 2/8/90

BOREHOLE No. 2 (SHEET 2 OF 2)

TYPE OF BORING SHELL & AUGER

DIAMETER 250 mm LINING TUBES TO 14.20 m INCLINATION VERTICAL

DESCRIPTION OF STRATA	SECTION	DEPTH BELOW SURFACE	THICK- NESS	O.D. LEVEL			AMPLES		GROUND WATER OBSERVATIONS	REMARKS
		m	m		TYPE	No.	m	per 300mm	UBSERVATIONS	
MEDIUM DENSE RED BROWN FINE TO COARSE <u>SAND</u> AND FINE TO'COARSE SUBANGULAR	0.0	(10 00)			C B	18 19	10 . 00	22		4/7,4,5,6
TO SUB ROUNDED <u>GRAVEL</u> OF MAIN LY QUARTZITE	000	-			• B	20	10 - 90			
	.0.0				c []	21	12 · 00	15	-	6/4,3,4,4
	0.00				•8	22	12 45			
MEDIUM DENSE RED BROWN CLAYEY SAND AND FINE TO MEDIUM GRAVEL	0 10 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0	13 · 60				23 24	13 · 60	24		10/5,6,6,7
VERY STIFF BROWN BECOMING GREY & HARD SILTY <u>CLAY</u> WITH FINE ANGULAR LITHORELICTS		15.00			s []	25 26	14 · 50 14 · 80 15 · 00		FOR 150 mm FOR 75 mm	21/ 21,37,-,· 46/49,-, -, ·
END OF BOREHOLE										
									() ¹ /2 HOUR CHI FROM 14-00-	SELLING 14 · 80 m .
										The state
WEATHER						VERTI	CAL SC	ALE 1	:50	FIG

CONTRACT No 25- 5540

RECORD OF BORING

BORED FOR SHERVALE DEVELOPMENTS LTD. LOCATION OLD HEDNESFORD ROAD, CANNOCK

NATIONAL GRID REF. GROUND SURFACE LEVEL DATE STARTED 30 / 7 / 90 DATE COMPLETED 31 / 7 / 90 BOREHOLE No. 3 (SHEET 1 OF 2)

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TYPE OF BORING SHELL & AUGER

DIAMETER 250 mm LINING TUBES TO 14 · 50 m INCLINATION VERTICAL

	GEGTION	DEPTH BELOW SURFACE m	THICK- NESS m	O.D. LEVEL	5	SAMP		S.P.T.	GROUND WATER	REMARKS
DESCRIPTION OF STRATA	SECTION				TYPE	No.	DEPTH	per 300mm	OBSERVATIONS	
BOOKN SHTY	XX	0 . 00					0 . 10			
FILL (SOFT BROWN SILTY SANDY CLAY WITH QUARTZITE	\times									
RAVELSI	$K \times X$				•B	1				
	\times						1		£.	
	XX						1 . 10			
ILL (SOFT GREY & BLACK	XX	1 . 10				2	1.10	6		4/1.2.1.2
SILTY CLAY WITH FINE TO	KX >				LU		1 . 55			
COARSE GRAVELS OF COAL,	(\land)				В					
SHALE AND MUDSTONE.	XX					3	1			
VERY SOFT FROM 3.40 -	\mathbb{N}						2.20			
- 80m, WITH PEAT TRACES	KX)				c	4		6		2/ 2,1,1,2
AND VERY SOFT BLACK	\times				110		2 . 65			
DRGANIC CLAY).	(X)				•		ł			63
	\wedge				В	5				
	XX						12 10			
	[XX]				sw[6	3 · 40 3 · 60		3 · 60 m _	2/1.1.1
	\mathbb{N}				W	10	3 . 85		Į.	
	KX						3.02		1.	
	$X \times$	1							/	
	S						4. 40		AFTER 15 mins	
	XX			-	S	7		10	/	2/1,1,1,7
	XX	4 . 80			1, 0		4 . 85		/	
FILL (LOOSE TO MEDIUM	KX				11					
DENSE GREY/BROWN VERY CLAYEY SILTY SAND WITH	\times				● B	8			CASING	
FINE GRAVELS)	XX	5 . 50			lісП	9	5 . 50	10	AT 5.50m	
	000				1	3			N1 3 501	3/3.2.3.2
LOOSE TO MEDIUM DENSE RED BROWN SANDY FINE TO	.0 0 0				11 11	5	5 . 95			
COARSE SUB ANGULAR TO	0.0				• B	11				1
SUB ROUNDED GRAVEL WITH										
COBBLES OF MAINLY	0	1			1					
QUARTZITE .	0.0						7.00			
VERY SANDY FROM 7.00-	.0.0.				ΪcΠ	12	11.00	3		1/1.11
8 - 40m AND BECOMING		1					7 . 45			
LOOSE TO VERY LOOSE.	:0.0				1	13	1.43			
	0.				●В	13				1
	0									
-	0				11		1			
SOFT TO FIRM DED BROWN	×	8 . 40			s	14	8.40	10		
SOFT TO FIRM RED BROWN SILTY CLAY	×						-			3/2,2,3,3
SILLI CLAI		1			₽B	15	8 · 85			
		-			1 -		9 . 20			
	×	-	3	1	s	16		11		5/3.2.3.3
	-x -x	19 . 65		1	U		9 . 65			
				1	1	1	1	1		FIG
WEATHER						VERT	ICAL SO	CALE 1	:50	

WEATHER

17

CONTRACT No 25-5540

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RECORD OF DORING

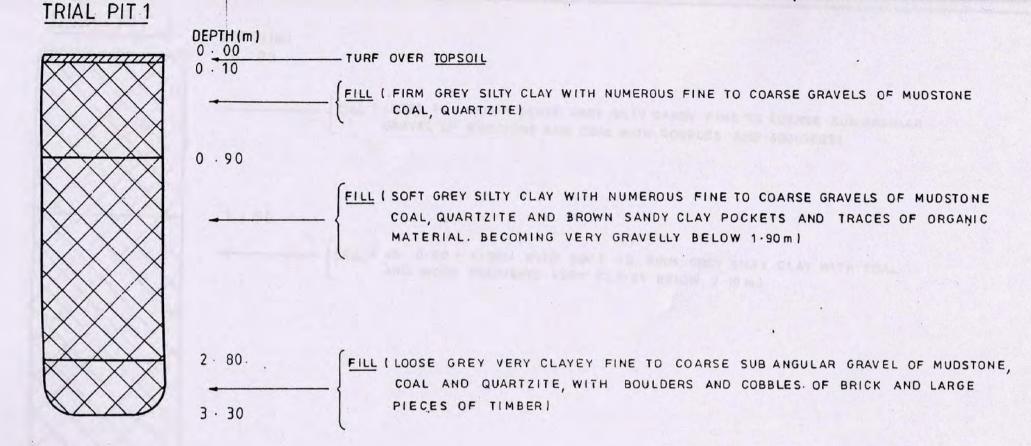
BORED FOR SHERVALE DEVELOPMENTS LTD. LOCATION OLD HEDNESFORD ROAD, CANNOCK BOREHOLE No. 3 (SHEET 2 OF 2)

TYPE OF BORING SHELL & AUGER

NATIONAL GRID REF. GROUND SURFACE LEVEL DATE STARTED 30/7/90 DATE COMPLETED 31/7/90 DIAMETER 250 mm LINING TUBES TO 14 · 50 m INCLINATION VERTICAL

		DEPTH BELOW SURFACE	THICK- NESS	O.D. LEVEL		SAMPL	SAMPLES		GROUND WATER	REMARKS
DESCRIPTION OF STRATA	SECTION	SURFACE	m		TYPE	No.	DEPTH	per 300mm	OBSERVATIONS	
SOFT TO FIRM RED BROWN SILTY CLAY WITH FINE TO COARSE SUB ROUNDED TO SUB ANGULAR GRAVELS	0 0 x 0 0 x	9 · 65			• в	17	9 - 6 5 10 - 80			
LOOSE RED BROWN COARSE SAND WITH FINE TO COARSE SUB ANGULAR TO SUB ROUNDED	° 0 ° 0	10 · 80	•		C B	18 19	11 · 25	9		3/2,2,2,3
QUARTZITE GRAVELS	°°°°°				 C[] ● B	20 21	12 · 00 12 · 45	7		4/2.1.2.2
AS 10-80 - 13-00m BECOMING MEDIUM DENSE BELOW 13-00m	0000	13 - 00			C B	22 23	13 · 00	27		7/4,5,8,10
FRESH RED BROWN FINE GRAINED <u>CONGLOMERATE</u> , MODERATELY STRONG	000000000000000000000000000000000000000	13 · 90			c		13 · 90 14 · 00 14 · 05 14 · 55	50	FOR SEATING DISTANCE ONLY FOR SEATING DISTANCE ONLY	50/ -, -, -,
END OF BOREHOLE				AL AN AL					1 HOUR CHIS FROM 13.90-	ELLING 14 · SOm
						MARK		NACTOR 14	And and a	
				-						FIG

0



REMARKS

1. SLIGHT SEEPAGE AT 1.30m, STRONG INFLOW OF WATER AT 1.60m.

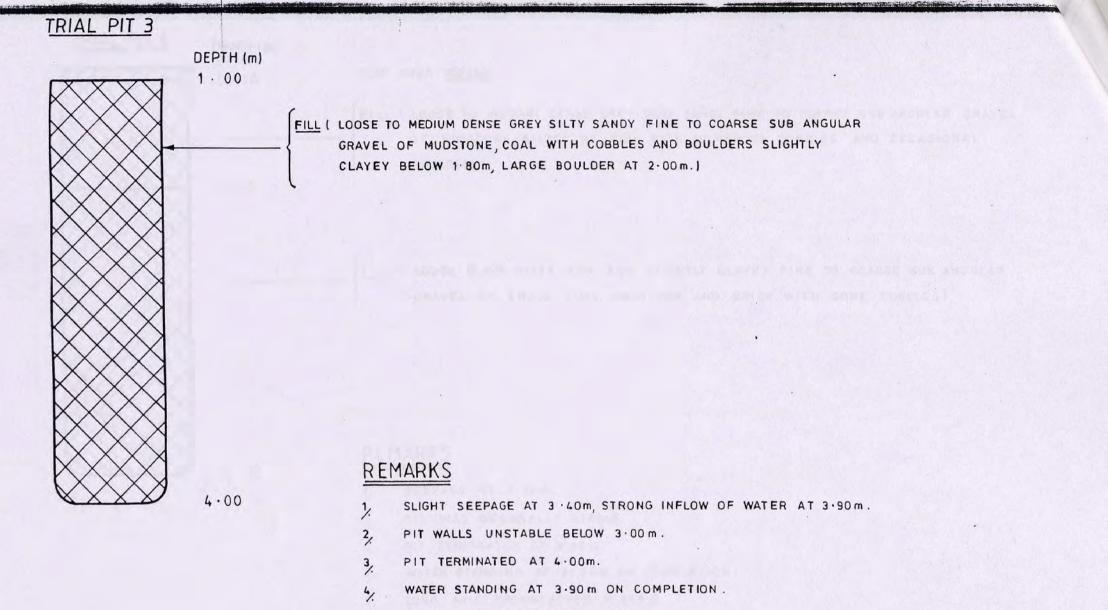
2, PIT WALLS UNSTABLE FROM 0.5 m

3, PIT TERMINATED AT 3.30 m.

4. WATER STANDING AT 1.55 m ON COMPLETION .

5. LONG AXIS ORIENTATION N 260°

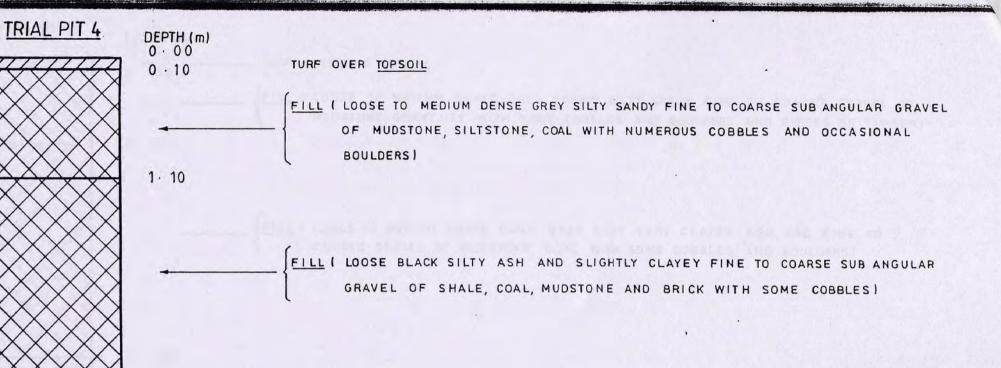
DOUGLAS TECHNICAL			Client SHERVALE DEVELOPMENTS LTD.				
SERVICES LIMITED 395, George Road, Erdington,	DATE EXCAVATED 10 - 8 - 90 DATE BACKFILLED 10 - 8 - 90	Contract OLD HEDNESFORD ROAD		1110	TRIAL P	<u>IT 1</u>	
BIRMINGHAM B23 7RZ Phone - 021 - 344 - 4888	GROUND SURFACE LEVEL	^{Ref.} 25-5540	Date 13-8-90	Scale		FIG.	9



LONG AXIS ORIENTATION N 230°

5,

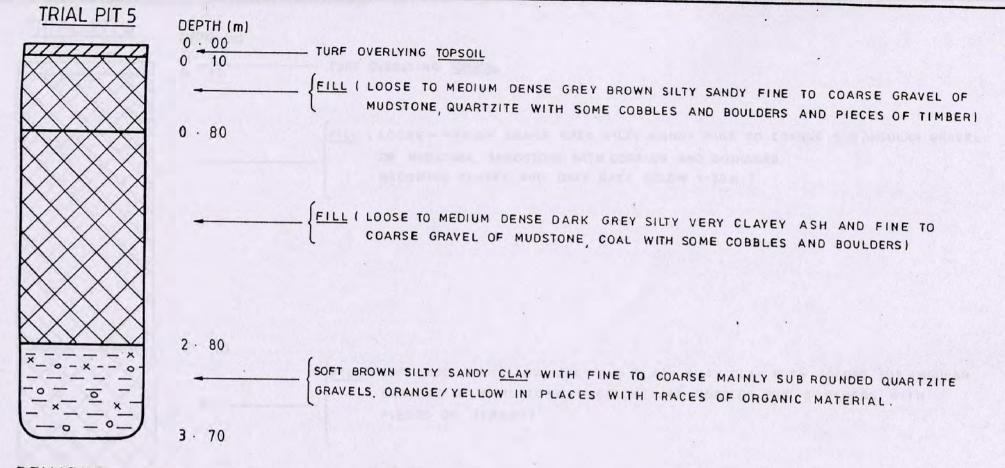
DOUGLAS TECHNICAL SERVICES LIMITED	DATE EXCAVATED 10-8-90 DATE BACKFILLED 10-8-90 LENGTH 2.80 m WIDTH 1.10 m F	Client SHERVALE DEVELOPME	NTS LTD.	Title		
395, George Road, Erdington,	DATE BACKFILLED 10-8-90	Contract OLD HEDNESFORD RC	DAD, CANNOCK	TRIAL PIT 3		
BIRMINGHAM B23 7RZ Phone - 021 - 344 - 4888	stating a state with the second	^{Ref.} 25-5540	Date 13-8-90	Scale	FIG. 11	



3 · 80

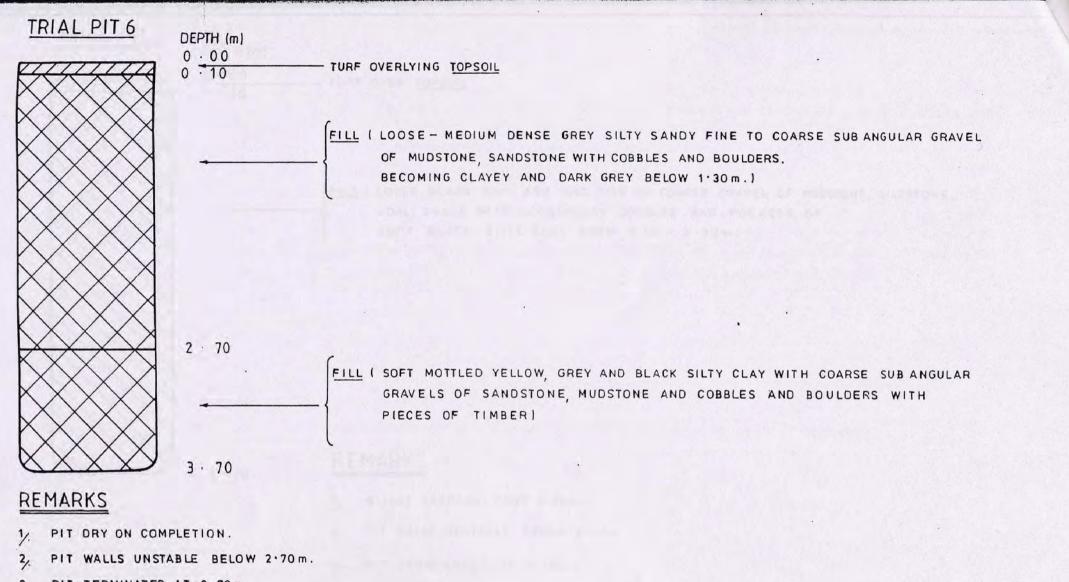
- 1, SEEPAGE AT 3.70 m.
- 2. PIT WAS GENERALLY STABLE.
- 3, PIT TERMINATED AT 3.80 m.
- 4. WATER STANDING AT 3.75m ON COMPLETION .
- 5. LONG AXIS ORIENTATION N 80°

DOUGLAS TECHNICAL SERVICES LIMITED	DATE EXCAVATED 10-8-90	Client SHERVALE DEVELOPME	NTS LTD.	Title	TDIAL DIT /
395, George Road, Erdington, .	DATE BACKFILLED 10-8-90	Contract OLD HEDNESFORD ROA	D, CANNOCK		TRIAL PIT 4
BIRMINGHAM B23 7RZ Phone - 021 - 344 - 4888	LENGTH 3 20 M WIDTH 1 20 M	^{Ref.} 25-5540	Date 13-8-90	Scale	FIG. 12



- 1. PIT DRY ON COMPLETION.
- 2. PIT WALLS GENERALLY STABLE
- 3. PIT TERMINATED AT 3.70m.
- LONG AXIS ORIENTATION N 336°

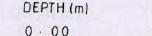
DOUGLAS TECHNICAL SERVICES LIMITED	DATE EXCAVATED 10-8-90	Client SHERVALE DEVELOPME	NTS LTD.	Title	NAL BIT &
395, George Road, Erdington,	DATE BACKFILLED 10 - 8 - 90 LENGTH 3.10 m WIDTH 1.20 m	Contract OLD HEDNESFORD ROA	D, CANNOCK	-	TRIAL PIT 5
BIRMINGHAM B23 7RZ Phone - 021 - 344 - 4888	GROUND SURFACE LEVEL	Ref. 25-5540	Date 13-8-90	Scale	FIG. 13



- 3. PIT TERMINATED AT 3 .70m
- 4. LONG AXIS ORIENTATION N 20°

DOUGLAS TECHNICAL SERVICES LIMITED	DATE EXCAVATED 10-8-90 S DATE BACKFILLED 10-8-90 0	Client SHERVALE DEVELOPME	NTS LTD.	Title TRIAL P	IT 6
395, George Road, Erdington,		Contract OLD HEDNESFORD ROAD	, CANNOCK	INTAL FILO	
BIRMINGHAM B23 7RZ Phone - 021 - 344 - 4888	LENGTH 3.30 m WIDTH 1.30m GROUND SURFACE LEVEL	^{Ref.} 25-5540	Date 13 - 8 - 90	Scale	FIG. 14

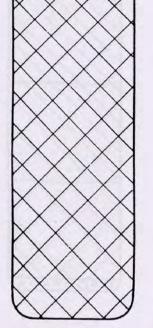
TRIAL PIT 7



3 . 70

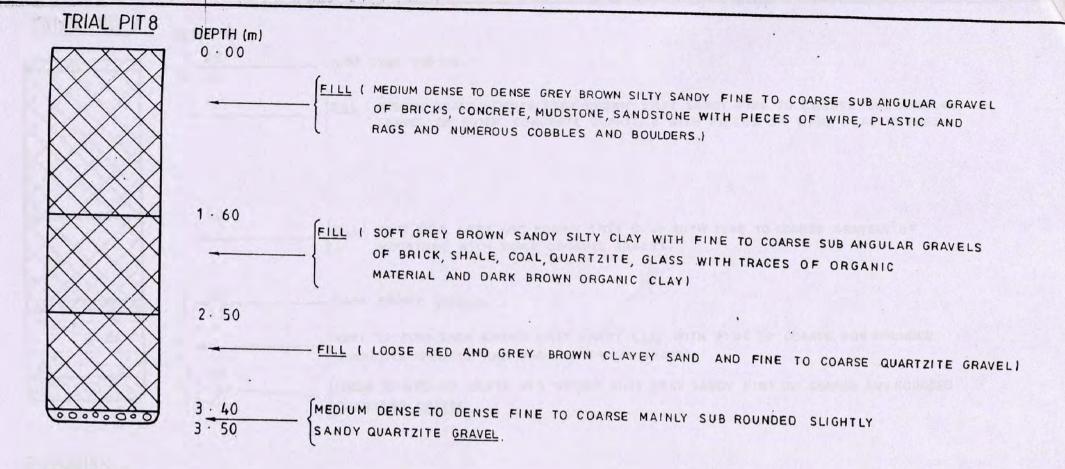
0 10 TURF OVER TOPSOIL

FILL I LOOSE BLACK SILTY ASH AND FINE TO COARSE GRAVEL OF MUDSTONE, SILTSTONE, COAL, SHALE WITH OCCASIONAL COBBLES AND POCKETS OF SOFT BLACK SILTY CLAY FROM 0.10 - 3.30 m)



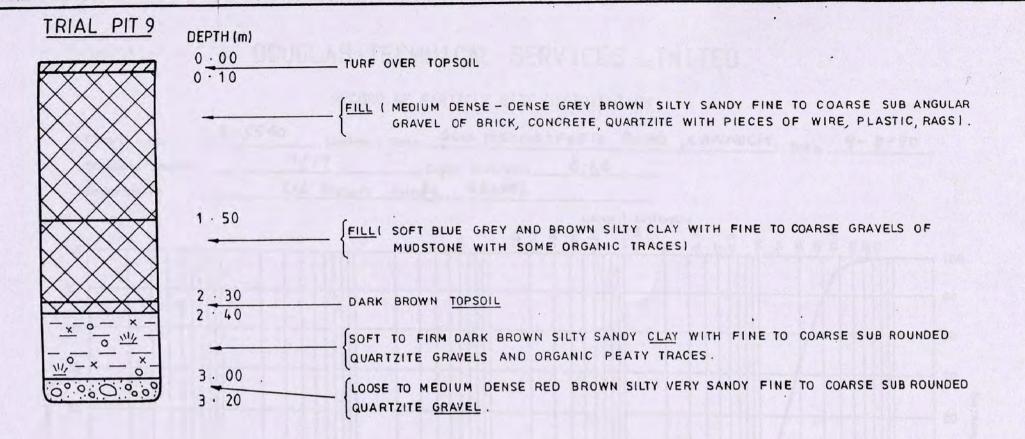
- 1, SLIGHT SEEPAGE FROM 3.30m.
- 2, PIT WALLS UNSTABLE BELOW 3.30m.
- 3, PIT TERMINATED AT 3 70 m.
- 4. LONG AXIS ORIENTATION N 306°

DOUGLAS TECHNICAL SERVICES LIMITED	DATE EXCAVATED 10-8-90	Client SHERVALE DEVELOPMENTS LTD.		Title	
395, George Road, Erdington,	DATE BACKFILLED 10 - 8 - 90 0	Contract OLD HEDNESFORD ROA	AD, CANNOCK	<u>TR</u>	IAL PIT 7
BIRMINGHAM B23 7RZ Phone - 021 - 344 - 4888	GROUND SURFACE LEVEL	^{Ref.} 25-5540	Date 13-8-90	Scale	FIG. 15



- 1. SEEPAGE AT 2.50m.
- 2 PIT WALLS UNSTABLE FROM 1.60 3.40 m
- 3. PIT TERMINATED AT 3 50 m.
- 4. LONG AXIS ORIENTATION N 6°.
- 5. DIFFICULT TO EXCAVATE FROM 0 00 1.60m AND 3.40m 3.50m.
- 6. WATER STANDING AT 3 . 40m ON COMPLETION .

DOUGLAS TECHNICAL SERVICES LIMITED	DATE EXCAVATED 10-8-90	Client SHERVALE DEVELOPM	ENTS LTD	Title	arp()	
895, George Road, Erdington, .	DATE BACKFILLED 10 - 8 - 90	Contract OLD HEDNESFORD ROAD	CANNOCK		RIAL	PIT 8
BIRMINGHAM B23 7RZ Phone - 021 - 344 - 4888	GROUND SURFACE LEVEL	^{Ref.} 25-5540	Date 13-8-90	Scale		FIG. 16



- 1, SLIGHT SEEPAGE AT 2.30m, STRONG INFLOW AT 3.20m.
- 2, PIT WALLS GENERALLY STABLE ABOVE 3.00m.
- 3, PIT TERMINATED AT 3.20m.
- 4 LONG AXIS ORIENTATION N 346°.
- 5, DIFFICULT TO EXCAVATE FROM 0.10 1.50m.

DOUGLAS TECHNICAL SERVICES LIMITED	DATE EXCAVATED 10-8-90	Client SHERVALE DEVELOPMEN	NTS LTD.	TRIAL PIT 9		
395, George Road,	DATE BACKFILLED 10-8-90	Contract OLD HENDESFORD ROAD	, CANNOCK		(IAL PIL)	
SERVICES LIMITED DATE EXCAVATED 10-8-90		^{Ref.} 25-5540	Date 13- 8 - 90	Scale	FIG. 17	

GROUND II & PIL			
ardsons Design to Build Judley Street gley t Midlands	7	Date: Our Ref: Your Ref:	17th September 1998 AJM/JPH/pm/8305

	OANNOGK CHASE DISTRICT
und Investigation for a Chemical C Id Hednesford Road, Cannock.	COUNCIL contamination Nand Candrill Gas Assessment 29 SEP 1999
mical Contamination Report.	letter book no: file no: Loassed to:

Introduction.

1SA

A commercial development is proposed upon an unoccupied plot of land located adjacent to the Old Hednesford Road in Cannock. At the time of this investigation it is understood a public house with associated car parking areas is planned.

| passed to:

Upon the instruction of Design to Build, consulting engineers to the client Richardsons, two phases of exploratory works have been undertaken:

i) Two landfill gas monitoring standpipes have been installed in cable percussion boreholes and engineer verified borehole logs are included within the appendix. Landfill gas monitoring is currently underway and a report upon the findings will be issued upon completion of the monitoring programme.

ii) Six trial pits were mechanically dug on the 27th August 1998 using a JCB excavator in order to assess the potential chemical contamination of the subsoils. The exposed strata were logged by an engineering geologist and samples taken for chemical contamination analyses. Engineer verified trial pit logs are contained within the appendix.

This report contains a factual record of the strata encountered and laborate test results. Comments and recommendations are provided upon the chemic contamination testing with respect to the proposed industrial end use of the si

Ground Conditions.

Published Geological Information.

Within the accuracy of the available geological information¹ the solid geological underlying the area of the site comprises Coal Measures strata of the Carboniferous Period. Recent alluvium together with glacial unbedded sa and gravel mixed with red clay is detailed masking the solid geology in the area of the site.

Strata Encountered.

Reference should be made to the appended borehole and trial pit logs for details of the strata encountered by this investigation, however the salie features of the engineering geology horizons can be summarised as follows:-

Made Ground - Encountered in trial pits 1 to 4 as loose to medium der horizons of granular mudstone fragments including subordinate coal, siltsto and sandstone and in the boreholes as soft and firm clays containing mudsto fragments. Such soils are typical of colliery discard. Trial pits 5 and 6 locat in the western portion of the site revealed more variable deposits comprise firm clays containing fragments of mudstone, gravel, ash and brick togeth with pockets of peat noted with depth. A 1.00m thick near surface horizon sandy granular materials was recorded in TP6.

Glacial Soils - Revealed underlying the made ground in BH1 and TP5 as loc sand and gravel or sand mixed with bands of firm sandy clay. was encountered in TP's 3 to 6 and both bord d distinct standing levels at depths of betwee level. On the basis of a series of temporary es it is difficult to precisely define the pre ever the recorded water entries are likely to

nd Recommended on

Comments And Recommendations.

General Comments.

 Appropriate comments are presented below upon the potential for cher contamination of the subsoils revealed in the trial pits and boreholes of investigation with regard to the commercial end use of the site. Landfill monitoring is currently underway and a report will be issued upon completion the monitoring programme.

Chemical Contamination Assessment.

- Eight samples of the near surface made ground soils were forwarde Analytical and Environmental Services Limited for analysis for a rang chemical contaminants. Both the suite of analyses and the samples te were chosen by Ground Investigation and Piling Limited. It should appreciated that in order to adequately investigate contamination within the in accordance with British Standards Institution Draft Document 175 (19 additional sampling points would be required with at least three samples point being tested. Therefore, the following comments should be regarded general and may need to be amended in the light of further inform becoming available.
- 2. The interpretation of the analytical test results is based upon the cu Department of the Environment ICRCL guidance notes³ for parks, pla fields, open space, buildings and hard cover (i.e. non residential end u The latter guidelines employ tentative trigger and action values which d three concentration zones for each contaminant as follows:

i) Less than the "threshold" concentration - can be regarded as uncontamir for that end use and no remedial action is required.

(mAOD):		rcussive Bo	breho	le Lo	g		LD	Sheet 1 o	of 1
ordinates E: N: pate: 19/08/1998 to Cased: 7.20m. Diameter: 150mm	19/08/1998 Location: Client: Engineer:	Old Hednesfe Richardsons. Design to Bu		ıd, Can	nock.				
DESCRI	PTION OF STRATA	Legend	Depth b.g.l (m)	Level (mAOD)	Water Levels (m)	San TYPE	DEPTH (m b.g.l)	SPT 'N' Value	U100 Piezo/ Blows Gas Pipe
parts brown silty clay with r fragments of mudstone, occa siltstone. From 3.75 becom mixed with grave carbonaceous mu	asional coal, sandstone and hing dark grey and black el sized fragments of adstone		(m)		(m) 3.50 ▼ 4.30	B B B B B B	(mb.g.l) 0.00 0.75 1.75 2.75 3.75 4.75 5.75	Value	
	ND with some quartz gravel.		7.40			B	6.75		
SAMPLES / TESTS U Undisturbed D Disturbed B Bulk W Water S/C SPT/CPT ☑ Water Strike ¥ Water Level	Borehole Complete OTHER INFORMATION 1. Groundwater struck at 4.3 2. Landfill gas monitoring st				utes, ca	sing 4	4.00m.		

ii) Value between the "threshold" and "action" concentrations - informed professional judgement is required to decide whether or not action is required.

iii) Greater than or equal to the "action" concentration - site can be regarded as contaminated and remedial action or a change of end use is required.

3. The full test results are included within the appendix however Table 1 summarises the results of the analyses when compared to appropriate "threshold levels" and the Kelly classification system.

Table 1 - Summary of Soil Contamination Testing (8 samples tested).

Parameter	Trigger Value ¹ (mg/kg)	No. of Results > Trigger Value	Max Value (mg/kg)	Kelly2,3 Classification
Arsenic (Total)	40	0	26	Uncontaminated
Boron (Water Soluble)	3	3	7.0	Contaminated
Cadmium (Total)	15	0	3.3	Contaminated
Chromium (Total)	1000	0	18	Uncontaminated
Copper (Total)	130	19 100000	190	N/A
Cyanide (Total)	250	0	<1	Uncontaminated
Lead (Total)	2000	0	190	Uncontaminated
Mercury (Total)	20	0	0.95	Uncontaminated
Nickel (Total)	70	1 ad lovels	110	N/A
PAH (Total)	1000	0	<5	N/A
Phenol (Total)	5	0	<0.5	Uncontaminated
Selenium (Total)	6	0	1.5	Uncontaminated
Sulphide (Total)	250	0	12	Slight Contaminatio
Sulphur (Elemental)	5000	0	<10	Uncontaminated
Zinc (Total)	300	1	1200	N/A

- 1. Interdepartmental Committee on the Redevelopment of Contaminated Land (ICRCI (1987) Guidance Note 59/83, Guidance on the Assessment and Redevelopment of Contaminated Land, Department of the Environment.
- 2. Kelly R.T. (1980) Site Investigation and Material Problems in: Reclamation Contaminated Land, B2/4 B2/13, Society of Chemical Industry.
- 3. The classification presented is for the maximum value recorded.
- N/A Not Applicable.

able 1 and the appended results show that the soil samples teste vels of contaminants that are below the trigger concentrations sidential end uses with the following exceptions:-

oron: BH2 TP3 TP4 opper: TP3 ckel: TP3

nc: TP3

ction concentrations for boron, copper, nickel and zinc have not been date by the ICRCL notes. The Kelly guidelines indicate the contar e present at levels ranging from 'uncontaminated' to 'contaminated;. e noted that while the Kelly guidelines indicate cadmium to ontaminated' levels the concentrations recorded do not exceed the gger value.

can be seen that TP3 contains elevated levels of boron, copper, r nc. The soil type tested from this position was granular colliery s bils being recorded across the site. Hence the likelihood for similar oncentrations of the above contaminants elsewhere upon the site of scounted.

- 3.2.6. Boron, copper, nickel and zinc are contaminants which do not normally pose a hazard to health but are phytotoxic and can, if present in sufficient concentrations in notably acidic soils restrict plant growth. The recorded phyalues are all near neutral and in the light of the fact that much of the area will be covered by buildings and hardstanding following completion of the development the results are not considered to pose a significant risk. However, should landscaping be required, in view of the elevated levels of boron, copper nickel and zinc identified by the testing, it would be prudent to provide a nomina 150mm of topsoil and use plant species which exhibit some resistance to phytotoxic conditions.
- 3.2.7. As a whole therefore no special precautionary measures are considered necessary with respect to on site contamination. However as elevated levels of certain contaminants have been revealed it would be good working practice that during the course of construction the following procedures were adopted:-

i) Personnel involved in site development works should observe a high standard of personal hygiene. Gloves, boots and overalls should be worn by workers in contact with the made ground. Washing facilities should be provided and smoking prohibited to prevent hand to mouth transfer of toxic materials. The requirement for protective clothing is made due to the potential for more serious unidentified contamination but would otherwise be necessary in accordance with a health risk assessment.

ii) Should material require removal off site a copy of the analytical data together with an estimate of the volume of material should be submitted to the appropriate waste disposal authority for classification and designation to a suitable tip.

3.2.8. It should be appreciated that in any areas where extensive deposits of made ground are present localised 'contamination' can occur which is not identified during investigation works. Hence should any suspect materials be encountered during development works then further specialist advice should be sought and additional testing possibly undertaken.

GROUND INVESTIGATION AND PILING LIMITED.

A. J. McHugh M.Sc. B.Sc. ENGINEERING GEOLOGIST.

Indrew Milly

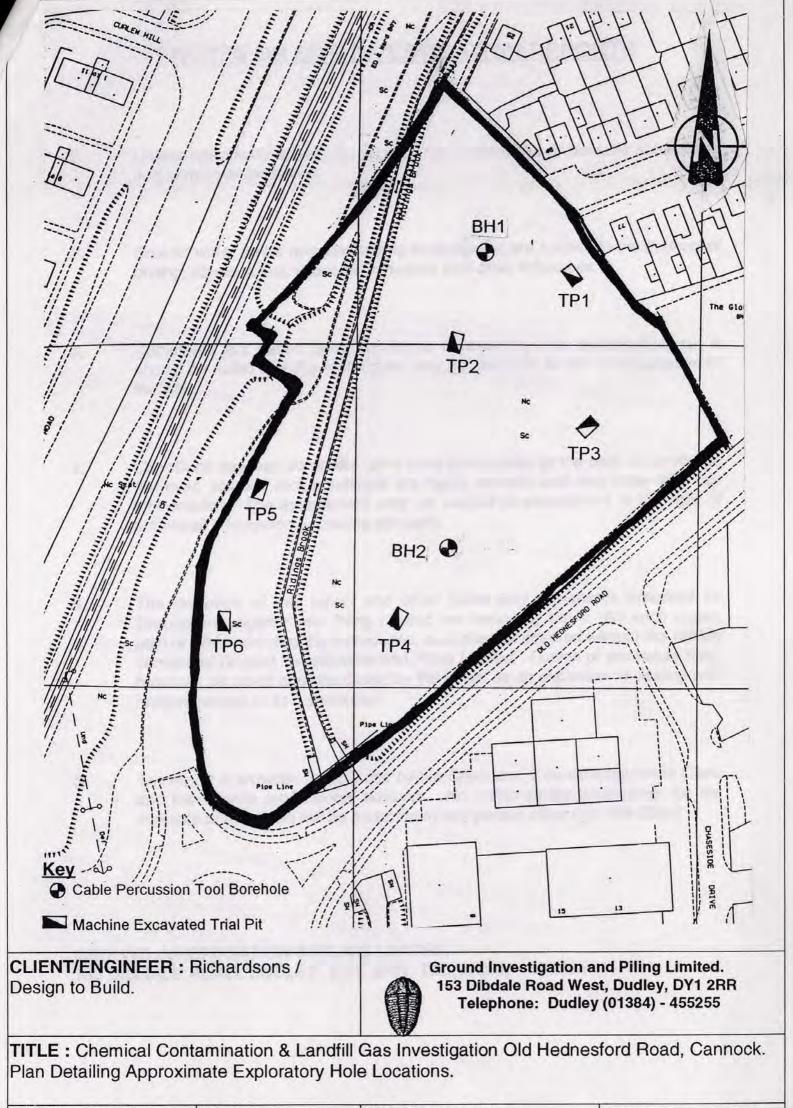
ordinates E: N Date: 19/08/1998 to Cased: 6.00m. Diameter: 150mm	19/08/1998	Location: Client: Engineer:	Richa	lednesfo rdsons. n to Bui	ild.						
DESCR	IPTION OF STR	ATA	-	Legend	Depth b.g.l (m)	Level (mAOD)	Water Levels (m)	San TYPE		SPT 'N' Value	U100 Piezo Blows Gas Pipe
MADE GROUND - Soft ar clay with many gravel sized occasional coal and siltston	nd firm light to dan l fragments of mu e [up to cobble size in the size of	rk grey silty dstone, red].			(m) 5.50 6.00		1.95 ▼ 3.00	B B B B B	(m b.g.l) 0.00 1.00 2.00 3.00 4.00 5.50	Value	
SAMPLES / TESTS U Undisturbed D Disturbed B Bulk W Water S/C SPT/CPT	2. Chiselling		6.00m; ().50 hou	ırs.		utes zer	ro casi	ng.	-	

		GROUND INVES	STIGATION & PILING LIMITED Trial Pit Log	Trial Pit No. Sheet 1 of 1	TP1	
vel(mAD) Coordinates I Date:	27/08/199		Old Hednesford Road, Cannock. Richardsons. Design to Build.			
Plant: Depth Reduced b.g.l. level (m)	JCB 3CX		CRIPTION OF STRATA	Samp Tests	les Depth (m)	
(m) 2.70		D	0.50			
		ANNOTATED SKE	Trial Pit Complete ETCH DRAWING (Not to scale)			
		Subhorizontal strata, no	sketch required.			
SAMPLES / U Undistur D Disturbe B Bulk W Water HV Hand V ⊽ Water St V Water L	rbed ed Yane (KPa) trike	3.The densit		d visually and can		

			GROU	ND INVES	STIGATION & PILING LIMITED Trial Pit Log) Trial Pit No. Sheet 1 of 1		
		E: N 27/08/1 JCB 3C	998	Location: Client: Engineer:	Old Hednesford Road, Cannock. Richardsons. Design to Build.			
epth R	Reduced		-A				Samples Tests	Depth (m)
2.70		Legend DESCRIPTION OF STRATA MADE GROUND - Grass onto [Medium dense] light to dark grey and in parts black sand to gravel and some cobble sized fragments of mudstone with some carbonaceous mudstone, siltstone, sandstone and some pockets of friable grey clay. From 1.70 mix e d with firm friable grey silty clay with many gravel sized fragments of mudstone.						
					Trial Pit Complete ETCH DRAWING (Not to scale)			
SAM				ORMATION				

		GROUND INVE		rial Pit No. TP3 heet 1 of 1					
evel(mAD) Coordinates I Date: Plant:			A						
Depth Reduced b.g.l. level (m)	Legend	DES	SCRIPTION OF STRATA	1-1-1	Samples Tests	Depth (m)			
2.50		MADE GROUND - Grass onto [medium dense] light to dark grey and in parts black sand to gravel sized fragments of mudstone and carbonaceous mudstone, occasional cobble sized sandstone and siltstone and pockets of friable grey clay.							
		ANNOTATED SKI	Trial Pit Complete ETCH DRAWING (Not to scale)						
		Subhorizontal strata, no	o sketch required.						
SAMPLES / U Undistur D Disturbe B Bulk W Water HV Hand V ☑ Water St ▼ Water LA	rbed ed Yane (KPa) trike	3.The densi		d visually a	nd can				

		GROUND IN	VESTIGATION & PILING LIMITED Trial Pit Log	Trial Pit No. Sheet 1 of 1	TP4
Date: Plant:	nAD) nates E: N 27/08/1 JCB 3C	1998 Client:	Richardsons.		
Depth Red b.g.l. leve (m)	uced el Legend		DESCRIPTION OF STRATA	Sample Tests	cs Depth (m)
2.80		sized fragments of mud sized siltstone and sand	ass onto [medium dense] light to dark grey sand to grav stone and carbonaceous mudstone, occasional cobble stone, mixed with pockets of firm friable light to a many gravel sized fragments of mudstone.	rel D D	0.40
		ANNOTATED S	Trial Pit Complete SKETCH DRAWING (Not to scale) no sketch required.		
D Distur B Bulk W Water	turbed rbed Vane (KPa) Strike	2.Modera 3.The den		sed visually and can only	-



SCALE NTS	DBG: 1	CONTRACT: 8305	DATE:August 1998
SLAF NIS	URG' I	LUNIBALL: 0303	UALE: AUGUST 1990

		GROUND INVES	STIGATION & PILING LIMITED Trial Pit Log	Trial Pit Sheet 1 o		TP5
Date: Plant:	D) :s E: N: 27/08/1 JCB 3C	998 Client:	Old Hednesford Road, Cannock. Richardsons. Design to Build.			
Depth Reduce			CRIPTION OF STRATA		Samples Tests	Depth (m)
2.80 3.00		MADE GROUND - Grass of silty clay with many gravel quartz gravel and cobble siz sand with quartz gravel, brid From 2.50 w very sandy c	onto firm friable light to dark grey and in parts black sized fragments of mudstone, occasional brick, ted fragments of siltstone. Some pockets of brown		D	0.50
		ANNOTATED SKI	Trial Pit Complete			
		Subhorizontal strata, no	sketch required.			
SAMPLES U Undist D Distur B Bulk W Water HV Hand ∑ Water ¥ Water	turbed bed Vane (KPa) Strike	3.The densit		sed visually an	id can on	ly

		GROUND INVESTIGATION & PILING LIMITED Trial Pit Log						
vel(mAD) coordinates Date:		Location: Old Hednesford Road, Cannock. 8 Client: Richardsons.						
Plant:	JCB 3CX	Engineer: Design to Build.	Comple	Donth				
Depth Reduced b.g.l. level (m)	Legend	DESCRIPTION OF STRATA	Tests	es Depth (m)				
		MADE GROUND - Grass onto [loose] dark brown clayey silty sand and sand to gravel sized fragments of ash with some gravel to cobble sized fragments of brick, concrete, mudstone, quartz gravel, clay pockets, occasional metal, fabric and clinker	D	0.30				
- 1.00		MADE GROUND - Firm friable brown and dark brown silty sandy clay with some quartz gravel, gravel sized fragments of mudstone, ash and occasional wood.	D	1.10				
1.60		MADE GROUND - Firm light to dark grey and in parts black silty clay with many gravel sized fragments of mudstone.	D	1.70				
2.20		Possible MADE GROUND - Soft brown and grey brown very silty very sandy clay with some quartz gravel and bands / pockets of brown fibrous peat.	D	2.30				
		Trial Pit Complete ANNOTATED SKETCH DRAWING (Not to scale)	2					
		ANNOTATED SKETCH DRAWING (Not to scale)		- 1				
		Subhorizontal strata, no sketch required.						
SAMPLES / U Undistu D Disturbo B Bulk W Water HV Hand V ☑ Water S ¥ Water L	urbed ed Vane (KPa) Strike	OTHER INFORMATION Side Stability: Minor spalling of pit sides. Other Details: 1.Groundwater seepages from 2.90m. 2.Moderately easy excavation. 3.The densities ascribed to the granular horizons have been assessed visually a be regarded as approximate.	and can or	nly				

GIP/4284 Old Hednesford Road, Cannock GROUND INVESTIGATION & PILING SOILS RECEIVED 28/08/98 YOUR REFERENCE 8305 YOUR ORDER NO 14182 FINAL REPORT ANALYSIS RESULTS PAGE 2 OF 4 PA

No X

TESTING No. 1928

1000 0	ADDIC NO 11101										
aes SA SAMPLE	MPLE No No			1 BH1 0.00	2 BH2 1.00	3 TP2 0.20	4 TP3 0.60	5 TP4 0.40	6 TP5 0.50	7 TP6 0.30	8 TP6 1.10
Method	Matali (Doral	as	units	-					2.2		
R002	Arsenic (Total)	As	mg/kg	5.2	6.3	5.7	26	11	7.1	11	6.2
R011	Boron (Water Soluble)	в	mg/kg	2.6	3.6	2.5	7.0	4.3	3.0	2.4	3.0
R002	Cadmium (Total)	Cd	mg/kg	0.30	0.22	0.23	3.3	0.67	0.51	0.74	0.33
R002	Chromium (Total)	Cr	mg/kg	14	14	13	18	12	14	15	13
R002	Copper (Total)	Cu	mg/kg	30	49	51	190	65	71	. 55	47
R004	Cyanide (Total)	CN-	mg/kg	<1	<1	<1	<1	<1	<1	<1	<1
R002	Lead (Total)	Pb	mg/kg	24	22	27	190	43	50	120	. 59
R002	Mercury (Total)	Hg	mg/kg	0.35	0.95	0.26	0.52	0.53	0.23	0.28	0.21
R002	Nickel (Total)	Ni	mg/kg	38	40	39	110	45	36	30	18
R202	PAH (Total)		mg/kg	<5	<5	<5	<5	<5	<5	7.2	<5
R003	рН		pH units	7.5	8.2	7.7	7.6	7.5	7.7	7.6	7.5
R008	Phenol (Total)	PhOH	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
R002	Selenium (Total)	Se	mg/kg	0.37	0.38	0.33	1.5	0.81	0.60	0.69	0.30
R062 *	Sulphate (2:1 Water Soluble)	so4	g/l	0.013	0.057	0.013	0.12	0.029	0.031	0.042	0.14
R014	Sulphide	S	mg/kg	<10	<10	<10	11	<10	<10	. 11	12
R201	Sulphur (Elemental)	S	mg/kg	<10	<10	<10	<10	<10	<10	<10	<10
R002	Zinc (Total)	Zn	mg/kg	110	99	93	1200	280	160	200	120

aes

CHECKED AND ISSUED BY: J. Campbell

Tests marked ' * ' in this report are not included in the UKAS Accreditation Schedule for our laboratory

Analytical & Environmental Services Ltd, AES House, Cottage Leap, Rugby, Warwickshire, CV21 3XP

DATE: 16.09.98

GIP/4284 Old Hednesford Road, Cannock GROUND INVESTIGATION & PILING YOUR REFERENCE 8305 YOUR ORDER NO 14182

TEST METHOD LIST. Method Number Method Name Metals (Total) in Soil R002 pH in Soil R003 Cyanide in Soil R004 Phenols (Total) in Soil R008 Boron (Water Soluble) in Soil R011 Sulphide in Soil R014 Sulphate (2:1 Water Soluble) in Soil R062 * Sulphur (Elemental) in Soil R201 PAH in Soil R202

CHECKED AND ISSUED BY: J. Comptell

DATE: 16.09.98

NOTES ON SITE INVESTIGATION REPORTS

- 1. Unless specifically stated, no account has been taken of possible subsidence due to mineral extraction.
- 2. Ground water levels recorded during investigation are subject to the method of drilling, observations, seasonal variations and other influences.
- 3. Comments are based upon conditions revealed by this investigation but it should be noted that the techniques may not disclose all the circumstances of the site.
- 4. Conditions between boreholes have been interpolated to the best of our ability, however, soil and rock conditions are highly variable and may differ from our interpolation. The assessment may be subject to amendment in the light of additional information becoming available.
- 5. The copyright of this report and other plans and documents prepared by Ground Investigation and Piling Limited are owned by them. No such report, plan or document may be reproduced, published or adapted without the written consent of Ground Investigation and Piling Limited. Copies of this report may, however, be made and distributed by the Client as an expedient in dealing with matters related to its commission.
- 6. The report is provided for sole use by the Client and is confidential to the Client and the Client's professional advisors. No responsibility whatsoever for the contents of the report will be accepted to any person other than the Client.

GROUND INVESTIGATION & PILING LIMITED, 153 DIBDALE ROAD, DUDLEY, DY1 2RN TEL(01384) - 455255

APPENDIX B

Appendix B: Limitations Statement

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- 2. This report and/or opinions have been prepared for the specific purpose stated in the document. The recommendations should not be used for other schemes on or adjacent to the site without further reference to Grontmij Limited.
- 3. Observations were made of the site and of structures on the site as indicated within the report.
- 4. Grontmij has relied upon the existing data provided by Cannock Chase District Council to be accurate, and has not taken steps to independently check the accuracy of the data provided.
- 5. Our interpretation of any regulatory database information (including the MAGIC and British Geological Survey websites) assumes that the data provided is accurate. A disclaimer provided by database search companies is as follows: '...the data is derived from historical sources or information available in public records or from third parties and is supplied to us without warranty by data suppliers and we cannot warrant the accuracy or completeness of the data or the reports.' We cannot therefore accept any responsibility for the accuracy of the data used in this study, only that its interpretation has been carried out with due skill, care and diligence.



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- 2. This report and/or opinions have been prepared for the specific purpose stated in the document. The recommendations should not be used for other purposes or adjacent sites without further reference to Grontmij Limited.
- 3. Observations were made of the site and soil arisings as indicated within the report. Where access to portions of the site was unavailable or limited, Grontmij Limited renders no opinion as to the environmental status of such parts of the site.
- 4. Grontmij has relied upon the existing desktop study data provided by Cannock Chase District Council to be accurate, and has not taken steps to independently check the accuracy of the data provided.
- 5. Our interpretation of any regulatory database information (including the MAGIC and British Geological Survey websites) within an earlier report, and relied upon in this report, assumes that the data provided is accurate. A disclaimer provided by database search companies is as follows: ' the data is derived from historical sources or information available in public records or from third parties and is supplied to us without warranty by data suppliers and we cannot warrant the accuracy or completeness of the data or the reports.' We cannot therefore accept any responsibility for the accuracy of the data used in this study, only that its interpretation has been carried out with due skill, care and diligence.
- 6. The conclusions and recommendations submitted in this report are based in part upon the data obtained from soil samples from exploratory holes. The nature and extent of variations between the exploratory holes is inferred in the report and could only be confirmed by further investigation. If variations or other latent conditions become evident, it will be necessary to re-evaluate the recommendations of this report.
- 7. The generalised soil profile described in the text is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealised and have been developed in interpretations of widely spaced explorations and samples; actual soil transitions may be more gradual. For specific information, refer to the exploration logs.
- 8. Water levels and/or gas readings have been taken in the borings and/or observation wells at times and under conditions stated on the exploration logs. These data have been reviewed and interpretations have been made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater or gas may occur due to variations in rainfall, atmospheric pressure and other factors different from those prevailing at the time the measurements were made.
- 9. The conclusions and recommendations of this report are based in part upon various types of chemical analysis of soil, water or gases, and are contingent upon their validity. These data have been reviewed and interpretations made in the report. Variations in the types and concentrations of contaminants and variations in their flow paths may occur due to seasonal water table fluctuations, past disposal practices, the passage of time and other factors. Should additional analytical or monitoring data



become available in the future, these data should be reviewed and conclusions and recommendations presented herein modified accordingly.

10. Chemical analyses have been performed for specific parameters during the course of this study, as detailed in the text. It must be noted that additional constituents not searched for during the current study may be present in soil, groundwater and soil voids at the site.



www.grontmij.co.uk

APPENDIX C

4	Grontmi	ij
		•

BOREHOLE LOG

BOREHOLE No BH1

						ı					
Project							Client		Logg	jed By	
East Cann	ock Ro						Cannock Ch	1		MJH	
Job No 10391	2-002	Da	- 22	2-09-10 3-09-10		Ground L	evel (m)	Co-ordinates	Chee	cked By KAS	
SAMPLE	S & TI	ESTS	5					STRATA			ient Fil
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)		DESCRIPTION	١		Instrument Backfill
0.00-0.00	ES					× 0.25		JND Grass over brown ver			
0.30-0.30	ES				XXX	5	auartzita and	rootlets. Gravel is sub-rou quartz. (Topsoil)	inded to rounded fine	to coarse of	
					KXX	0.55	MADE GROU	JND Dark brown and dark b-rounded fine to coarse C	orange slightly clayey	very sandy	
0.70-0.70	ES				\bigotimes	1 ×	occasional b	ick and rare coal. Rare an	gular cobbles of sand	stone and	
					\bigotimes	×– × (1.25)	half bricks.	JND Dark grey and grey co	emented colliery wast]	
					\bigotimes	× ´	Recovered a	s very sandy (fine to coars	e) angular fine to coar	se GRAVEL	
					\bigotimes	* * 1.80		sandstone with rare coal.	(Colliery waste)		
					0-0	2.00	Brown orang	e angular fine to coarse Gl	RAVEL of shale and s	andstone	
2.00-3.00	ES				0.00	' 	with rare coa Brown orang	e sandy (fine to coarse) an	ogular fine to coarse G	RAVEL of	
					0000	4		ndstone with rare coal.	.g		
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					0.0°0	7					
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					0.0.0	5					
-						<u>6.00</u> -	End of Hole a	at 6m bgl.			1
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	Gro	undwate	<u> </u>				Jarka			Einel De	nth
Strike Depth: (m) R	ising to: (m)	Groundwa	ater Rer	narks		neral Rem ated in grass ver		No 17 Linden View. Hand dug pit to 1.00 n	n bgl.	Final De	
		ountered							1	6m bạ	gi
Contractor S	Sherwo	od Drilli	ing			lethod/ lant Used	Win	dow sampling	All dimensions in	metres Scale 1:50	1 of 1
								· · · · · · · J	1	Sheet	1 01 1



BOREHOLE LOG

BOREHOLE No BH2

1000-000 ES Image: Construction of the constr							ı					
Lob No Date 24-09-10 Ground Level (m) Co-ordinates Checked By KAS SAMPLES & TESTS Depth Type No Type No<										Log		
103912-002 24-03-10 KAS SAMPLES & TESTS Duph Time Noi Result	East Cann	ock Ro	bad					Cannock Ch	ase DC		MJH	
13312:002 24-09-10 Press SAMPLES & TESTS Depth Press Reduced Legend Depth DESCRIPTION 000-000 ES Reduced Legend Depth Depth Time is angular to sub-rounded fine to carse of final coal and rare coale and rare coales 0.06:0.06 ES Image: Stratcal Coales Image: Stratcal Coales Image: Stratcal Coales 0.06:0.06 ES Image: Stratcal Coales Image: Stratcal Coales Image: Stratcal Coales 0.06:0.06 ES Image: Stratcal Coales Image: Stratcal Coales Image: Stratcal Coales 0.06:0.06 ES Image: Stratcal Coales Image: Stratcal Coales Image: Stratcal Coales 2.00-2:30 ES Image: Stratcal Coales Image: Stratcal Coales Image: Stratcal Coales 2.00-2:30 ES Image: Stratcal Coales Image: Stratcal Coales Image: Stratcal Coales 2.00-2:30 ES Image: Stratcal Coales Image: Stratcal Coales Image: Stratcal Coales 2.00-2:30 ES Image: Stratcal Coale Image: Stratcal Coales Image: Stratcal Coales 2.00-2:30 ES Image: Stratcal Coale Image: Stratcal Coale Image: Stratcal Coale 2.00-2:30 ES Image: Stratcal Coale Image: Stratcal Coale Image: Stratcal Coale <td>Job No</td> <td></td> <td>Dat</td> <td>te 24</td> <td>4-09-10</td> <td></td> <td>Ground L</td> <td>_evel (m)</td> <td>Co-ordinates</td> <td>Che</td> <td></td> <td></td>	Job No		Dat	te 24	4-09-10		Ground L	_evel (m)	Co-ordinates	Che		
Depth Type No Test Service Description 0.000-000 ES MADE GROUND Crass over firm fibile dark brown alightly sandy (fine to coarse of state coarse) of shale and quark (COPSOL) Coarse over firm fibile dark brown alightly sandy (fine to coarse of state coarse) GRAVEL. 0.65-0.65 ES MADE GROUND Crass over firm fibile dark brown alightly sandy (fine to coarse) GRAVEL. 0.65-0.65 ES Gravel is angular to sub-ounded fine to coarse of state coarse (dravel is angular to sub-angular fine to coarse) angular fine to coarse (dravel is angular to sub-angular fine to coarse) angular fine to coarse (dravel is angular to sub-angular fine to coarse) angular fine to coarse (dravel is angular to sub-angular fine to coarse) angular fine to coarse (dravel is angular time to coarse of state. 2.00-2.30 ES (dravel is angular time to coarse) angular fine to coarse (dravel is angular fine to coarse of state. 2.00-2.30 ES (dravel is angular time to coarse) to coarse (dravel is angular time to coarse of state. 2.00-2.30 ES (dravel is angular time to coarse) to coarse (dravel is angular time to coarse of state. 2.00-2.30 ES (dravel is angular time to coarse of state. 2.00-2.30 ES (dravel is angular time to coarse of state. 2.00-2.30 ES (dravel is angular tis coarse) state and travel state and trave sandy (fine to coarse	10391	2-002									KAS	
0.000-000 ES MOE GROUND Gress over firm fibible dark brows signify sandy (fine bible dark prove (farse sand) and to sub-nounded fine to coarse of shale and quart. (TOPSOIL) 0.85-0.65 ES 0.58 0.58 MOE GROUND Dark grey very clays sandy (fine to coarse) of shale coal of rate clauser. At 0.55 m big loce of limber encountered with strong creecede clauser. At 0.55 m big loce of limber encountered with strong creecede clauser. At 0.55 m big loce of limber encountered with strong creecede clauser. At 0.55 m big loce of limber encountered with strong creecede clauser. At 0.55 m big loce of limber encountered with strong creecede clauser. At 0.55 m big loce of limber encountered with strong creecede clauser. At 0.55 m big loce of limber encountered with strong creecede clauser. At 0.55 m big loce of limber encountered with strong creecede clauser. At 0.55 m big loce of limber encountered with strong creecede clauser. At 0.55 m big loce of limber encountered with strong creecede clauser. At 0.55 m big loce of limber encountered with strong creecede clauser. At 0.50 m big loce one encountered with strong creecede clauser. At 0.50 m big loce one encountered with strong creecede clauser. At 0.50 m big loce one encountered with strong creecede clauser. At 0.50 m big loce one encountered with strong creecede clauser. At 0.50 m big loce one encountered with strong creecede clauser. At 0.50 m big loce on an other encountered with strong creecede clauser. At 0.50 m big loce on a strong clauser in the one coarse of shale. Encountered clauser. At 0.50 m big loce on a strong clauser is the one on a strong clauser is an other at 0 strong clauser is the one on a strong clauser. The other encountered m big loce on a strong clauser. The other encountered m big loce on a strong clauser is the other one	SAMPLE	S & T	ESTS	<u>ب</u>					STRATA			ent
0.000.000 ES Image: Construction of the con	Depth	Type No		Vate		Legend	Depth		DESCRIPTIO	N		Instrument Backfill
0.30.0.30 ES Costs) in coarse gravely CLAY. Gravel is angular to sub-counded fire to coarse 0.66.0.65 ES Costs) in coarse gravely CLAY. Cravel is angular to sub-counded fire to coarse 0.66.0.65 ES Costs) in coarse gravely CLAY. Cravel is angular to sub-counded fire to coarse 0.66.0.65 ES Costs) in coarse gravely CLAY. Cravel is angular to sub-counded fire to coarse 0.66.0.65 ES Costs) in coarse gravely CLAY. Cravel is angular to sub-counded fire to coarse 0.66.0.65 ES Costs) Costs in Coarse gravely CLAY. Cravel is angular to sub-coarse in the source of subal coal and rare coarse 2.00-2.30 ES Costs) NOE GROUND Grey sandy (fire to coarse) angular fire to coarse 2.00-2.30 ES Costs) NOE GROUND Grey sandy (fire to coarse) angular fire to coarse 2.00-2.30 ES Costs) NOE GROUND Grey sandy (fire to coarse) angular fire to coarse 2.00-2.30 ES Costs) NOE GROUND Grey sandy (fire to coarse) angular fire to coarse 2.00-2.30 ES Costs) Sith fiable brown gravely CLAY. Cravel is angular fire to coarse 2.00-2.30 ES Costs) Sith fiable brown gravely CLAY. Cravel is angular fire to coarse 2.00-2.30 Grey Cast grey clayey sandy (fire to coarse) angular fire to coarse Grey Cast grey clayey sa	0.00-0.00	ES	Result	>	Level		(Thickness)		IND Grass over firm fright	o dark brown clightly	candy (fino	-
0.65-0.65 ES And Balance MaDE GROUND Dark grey very clayey sandy (fine to coarse) GRAVEL classes MaDE GROUND Cange sandy differ to coarse) of shale coal and rare classes. All 0.65 m big piece of timber encountered with strong crosole differ. All 0.65 m big piece of timber encountered with strong crosole (0.45) 2.00-2.30 ES (0.60) MADE GROUND Cange sandy (fine to coarse) angular fine to coarse (GRAVEL of shale. Balaw 1.0 m big becomes dark grey. 2.00-2.30 ES (0.60) MADE GROUND Cange sandy (fine to coarse) angular fine to coarse (GRAVEL of shale. Balaw 1.0 m big becomes dark grey. 2.00-2.30 ES (0.60) MADE GROUND Cange sandy (fine to coarse) angular fine to coarse (GRAVEL of shale. Balaw 1.0 m big becomes dark grey. 2.00-2.30 ES (0.60) MADE GROUND and grey black wey clayey sandy (fine to coarse) angular fine to coarse) (GRAVEL of shale and coal. 3.00 Fim brown sightly sandy (fine to coarse) gravely CLAY. Gravel is angular fine to coarse of shale. (0.60) 3.00 Fim brown sightly sandy (fine to coarse) angular fine to coarse (GRAVEL of shale and rear coal. (0.60) 3.00 Fim brown gravely CLAY. Gravel is angular fine to coarse (GRAVEL of shale and rear coal. (0.60) 3.00 Final Dep (Grave dark grey clayey sandy (fine to coarse) angular fine to coarse (GRAVEL of shale and coal. (0.60) 3.00 Final Dep (Gravedar grey clayer tene							1	to coarse) gr	avelly CLAY. Gravel is and			
2.00-2.30 ES 2.00-2.30 ES 2.00-2.30 ES Control of the second secon	0.65-0.65	ES					0.80	MADE GROU Gravel is and	gular to sub-angular fine to	coarse of shale coal	and rare	
2:00-2:30 ES (0.60)	-							Nodour - possi	ible railway sleeper. JND Orange sandy (fine to	o coarse) angular fine	/	
2.00-2.30 ES ES 2.00 MADE GROUND Firm to stiff flable grey gravely (CAM, Gravel is any use to coal. 0.050 MADE GROUND Dark grey black very days sandy (fine to coarse) MADE GROUND Dark grey black very days sandy (fine to coarse) 0.050 Stiff flable coarse GRAVEL of shale and coal. MADE GROUND Dark grey black very days sandy (fine to coarse) 0.050 Stiff flable coarse GRAVEL of shale and coal. No recovery. 0.050 Stiff flable brown gravely CLAY. Gravel is angular fine to medium of shale. 0.70 Stiff flable brown gravely CLAY. Gravel is angular fine to coarse of shale. 0.70 Stiff flable brown gravely CLAY. Gravel is angular fine to medium of shale and crare coal. 0.70 Stiff flable brown gravely CLAY. Gravel is angular fine to coarse of shale ond coarse. 0.70 Grav dark grey clayey sandy (fine to coarse) angular fine to coarse of shale ond coarse. 0.70 Stiff flable brown gravely CLAY. Gravel is angular fine to coarse of shale ond coarse. 0.70 Gravel dark grey clayey sandy (fine to coarse) angular fine to coarse of shale ond coarse. 0.70 Stiff flable brown gravely CLAY. Gravel is angular fine to coarse. 0.70 Gravel dark grey clayey sandy (fine to coarse) angular fine to coarse. 0.70 Gravel dark grey clayey sany dark grey clayey sandy (fine to coarse. <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><</td> <td>Arrian Series (MADE GROU</td> <td>JND Grey sandy (fine to c</td> <td>oarse) angular fine to</td> <td>coarse</td> <td></td>							<	Arrian Series (MADE GROU	JND Grey sandy (fine to c	oarse) angular fine to	coarse	
Contractor Sherwood Drilling Centractor Second Remarks Centractor Second Remarks Final Dep Contractor Sherwood Drilling Method/ Panel Janel Method/ Mindrow camping Admension	2.00-2.30	ES					-	MADE GROU	JND Firm to stiff friable gr	ey gravelly CLAY. Gra	avel is	
State laget: rop. Revery the row of Share Central Remarks Central Remarks Final Dept. Sol. State laget: rop. Revery the row of Share Central Remarks Final Dept. Sol. Final Dept. Sol.						\bigotimes		angular fine t	JND Dark grey black very to coarse GRAVEL of shal	clayey sandy (fine to le and coal.	coarse)	
Contractor Sherwood Drilling Centractor Sherwood Drilling Contractor Sherwood Drilling Contractor Sherwood Drilling Method/ Mindow sampling At determine to method to	· · ·											
Stiff frable brown gravely CLAY. Gravel is angular fine to medium of shale coal and rare sandstone. T	-					[<u> </u>		angular to su			avel is	
Since Legistic on Decision Ceneral Remarks Ceneral Remarks Calculater Benarks Contractor Sherwood Drilling Final Dep Final Dep Since						[-	Stiff friable b	rown gravelly CLAY. Grav	el is angular fine to m	edium of	
State Depth: (m) Reing to (m) Coundwater Remarks General Remarks Contractor Sherwood Drilling General Remarks Final Depth (m) Reing to (m) Coundwater Remarks Final Depth (m) Reing to (m) Rei	-					I — —	- -(1.00)					
Groundwater General Remarks Final Depth (m) Reing to (1.0) Groundwater Remarks Final Depth (m) Reing to (1.0) m bgl. Final Remark (1.0) m bgl. Final Remark (1.0) m	- -					<u> </u>	4.50					
End of Hole at 5m bgl.							(0.50)	GRAVEL of s	ey clayey sandy (fine to co shale and rare coal.	arse) angular fine to	coarse	
Strike Depth: (m) Groundwater Remarks Located in grass area inbetween Nos 11 and 17 stagborough Way. Hand dug pit to 1.00 m bgl. 5m bg None Encountered Method/ Plant Used Mindow sampling All dimensions in metres Scale 1:50	-					.0 . 0	- 3.00		at 5m bgl.			
Strike Depth: (m) Groundwater Remarks Located in grass area inbetween Nos 11 and 17 stagborough Way. Hand dug pit to 1.00 m bgl. 5m bg None Encountered Method/ Plant Used Mindow sampling All dimensions in metres Scale 1:50												
Strike Depth: (m) Rising to: (m) Groundwater Remarks Located in grass area inbetween Nos 11 and 17 stagborough Way. Hand dug pit to 1.00 m bgl. 5m bg None Encountered Method/ Plant Used Mindow sampling All dimensions in metres Scale 1:50	-	Gro	undwate	 r		 Cor	heral Rom	 arks			Final Dor	
Contractor Sherwood Drilling Method/ Plant Used Window sampling All dimensions in metres Scale 1:50	Strike Depth: (m) Ri				narks				d 17 stagborough Way. Hand dug pit to 1	1.00 m bgl.		
Plant Used Window sampling										1	5m bọ	gl
Silver 1 Silver 1	Contractor S	sherwo	od Drilli	ng				Wir	ndow sampling	All dimensions	in metres Scale 1:50 Sheet	1 of 1

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BOREHOLE LOG

BOREHOLE No BH3

L										
Project							Client		Logged	-
East Cann	ock Ro	bad					Cannock Ch	1		MJH
Job No		Da	- 2	4-09-10		Ground	Level (m)	Co-ordinates	Checke	d By KAS
10391	2-002		2	4-09-10						
SAMPLE	S & T	ESTS	er					STRATA		nent
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)		DESCRIPTION	N	Instrument
0.00-0.00	ES					0.10	MADE GRO	UND Grass over brown silt	y gravelly fine to medium	
0.30-0.30	ES				\bigotimes	× × (0.60)	with rootlets.	Gravel is sub-rounded to	rounded fine to coarse of	
0.60-0.60	ES				\boxtimes	× (0.00) × 0.70	MADE GRO	UND Brown silty fine to coa	arse SAND and GRAVEL	. Gravel
. 0.00-0.00					\hat{X}]	is angular to	rounded fine to coarse of eleow 0.50 m bgl angular m	quartzite shale and rare b	
. 1.00-1.35	ES				KXX	1.00	sandstone a	nd sandstone cobbles.	-	
-					\boxtimes	× × (0.70)		UND Dark grey grey very c shale clinker and coal. Ver	layey angular fine to coar v rare angular cobbles of	clinker
-					\bigotimes	× 1.70	MADE GRO	UND Soft to firm friable da	rk grey grey gravelly CLA	Y. Gravel
-			⊥			-		e to coarse of shale and o Evidence of pink coarse g		stone.
-			Ŧ			F	to 3.50 m bg			pusited
-						F				
-						[- (1.80)				
-										
-						F				
-						F				
-					0.00	<u> </u>		eam sandy angular fine to	coarse GRAVEL of siltsto	one and
-						上(0.50)	shale.			
-						<u>} 4.00</u>		quartzite and quartz.		
-					0 1 0			1		
-					000	2 (1.00)				
-					°0 00					
-					0 1 0	5.00	End of Hole	at 5m bgl.		
-						E		C C		
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-						E				
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						E				
						Ē				
	Gro	undwate	er		 Ge	<u>t</u> neral Ren	narks			Final Depth
Strike Depth: (m) R 1.9	ising to: (m)	Groundwa Standing		marks				ondale. Hand dug pit to 1.00 m bgl.		
										5m bgl
Contractor S	Sherwo	od Drilli	ina		M	lethod/				
Strike Depth: (m) R 1.9						lant Used	Wir	ndow sampling	All dimensions in metr	es Scale 1:50 Sheet 1 of 1

Grontm	i	j
		,

Project						Client		Lo	gged By
East Canr	nock I					Cannock Ch	1		MJH
Job No 10391	2-00	Da 2	20	0-09-10 0-09-10	Ground L	.evel (m)	Co-ordinates	Ch	Necked By KAS
SAMPL	ES &	TESTS	er -				STRATA		nent fill
Depth	Туре	Test Result	Water	Reduced Lege	end Depth (Thickness)		DESCRIPTION	1	Instrument Backfill
0.00-0.00	ES					MADE GROU	JND Grass over brown ver	y clayey very gravel	lly slightly silty
0.30-0.30	ES				× 0.30	angular fine	m SAND. Gravel is of sub- coal and angular medium p	angular to rounded	fine to coarse ce of tabular /
0.65-0.65	ES			· · · · · · · · · · · · · · · · · · ·	° ·	\metal. Orange brow	n very gravelly medium to to rounded fine to coarse of	coarse SAND. Grav	/el is
- - - - -					. · · ·	Soft to firm q	rey blue mottled black sligl	ntly gravelly CLAY b	ecoming firm
 2.10-2.30	ES				 (1.00) 	grey mottled coal tabular a	black below 2.50 m bgl. Ğ angular medium shale and andstone. (GLACIAL TILL)	ravel is of angular fin rare angular to sub	ne to medium
ł						End of Hole	at 2.8m bal		
Strike Depth: (m)		(m) Groundwate		narks			s Drive. Hand dug pit to 1.00 m bgl. Hole t	terminated at 2.80 m bgl due to	
		ncounterec			refusal.				2.8m bgl
Contractor :	Sherw	vood Drilli	ing		Method/ Plant Used	Hand he	ld window sampling	All dimension	s in metres Scale 1:50 Sheet 1 of 1



Project							Client		L	ogged By		
East Canr	Date 23-09-10						Cannock Ch	nase DC		MJH		
Job No 10391	2-00		- 2	3-09-10 3-09-10		Ground L	evel (m)	Co-ordinates	C	hecked By KAS		
								STRATA				
SAMPLE Depth	ΞΟ & Type	Test	Water	Reduced	Legend	I Depth		DESCRIPTI	ON	Instrument		
0.00-0.00	ES	Result	3	Level		(Thickness)			·			
0.30-0.30	ES					× 0.20	0.20 MADE GROUND Decorative gravel and Terram over brown silty slig gravelly fine to medium SAND. Gravel is sub-rounded - rounded fine medium of quartzite. MADE GROUND Red brown gravelly fine to coarse SAND. Gravel is					
0.65-0.65	ES					¥ (0.80) ¥ 1.00	sub-rounded	UND Red brown gravelly to rounded fine to coars rete block 100mm in dia	e of quartzite and qu	artz. At 0.80 ,		
 - - -					× × . 	(0.50) 1.50	Red brown s	ilty fine to medium SANE).			
1.50-2.00 -	ES					(0.50)	Light brown to rounded fi	fine to medium SAND an ne to coarse of quartzite	d GRAVEL. Gravel is			
-					0. 0. 0	2.00 -	End of Hole	at 2m bgl.				
9007			1			F						
-		roundwata	<u> </u>									
Strike Depth: (m) F		Groundwate		marks	Loca	neral Rem ated in rear Gard	den No 53 Berry Hill. H	and dug pit to 1.00 m bgl. Hole termina	ated at 2.00 m bgl due to refusal.			
	None Encountered					apseu to 1.80 m	by on completion.			2m bgl		
Contractor (ntractor Sherwood Drilling						Hand he	ld window sampling	All dimensio	ons in metres Scale 1:50 Sheet 1 of 1		

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Project							Client	50		Logged By	
East Can	nock I						Cannock Ch			MJH	
Job No 1039 ²	12-00			3-09-10 3-09-10		Ground L	₋evel (m)	Co-ordinates		Checked By KAS	
SAMPLI	ES &	TESTS)					STRATA			ient
Depth	Туре	Test Result	Water	Reduced Level	Legend	(Thickness)		DESCRIPTIC	N		Instrument Backfill
0.00-0.00	ES	rtcourt	-			-	MADE GROU	IND Grass over firm bec	oming soft grey slig	ahtly sandy (fine	=
- 0.30-0.30	ES					* (0.60) * 0.60	to coarse) gra	avelly CLAY. Gravel is ar er with occasional whole	ngular fine to coars	e of shale brick	
0.65-0.65	ES		Ţ			* (0.40) * 1.00	MADE GROU to coarse sha	IND Very soft brown gravile coal brick and occasion	onal clinker with so	me whole bricks.	_[]
- - -			-) (0.50) 1.50	gravelly CLA	IND Soft dark grey slight Y. Gravel is angular to su dstone.	tly sandy (fine to co ub-angular fine to n	arse) slightly nedium of shale	
-						<u>≰ 1.50</u> ≰	MADE GROU	IND Soft friable dark gre	y gravelly CLAY. G	iravel is angular	_ :.⊟:. :::∃::
						≮ ⊈(1.00)	fine to coarse	of coal shale and brick.			
-						2.50					
2.50-3.00	ES				XX	2.30	MADE GROU	IND Brown silty slightly o		o coarse)	
-						f.	angular fine t	o coarse GRAVEL of sha	ale.		
-					\bigotimes	*- {					
-						* - - (2.00)					
-					\bigotimes	(<u>-</u>)					
-					\bigotimes	¢.					
-											
-					\bigotimes	<u>≮ 4.50</u> }	MADE GROU	IND Soft friable dark gre	y gravelly CLAY. G	avel is angular	_
-						(0.50) 5.00	fine to coarse	of coal shale and brick.		-	
-						- 0.00	End of Hole a	it 5m bgl.			_
						- -					
-						-					
-						-					
						-					
-						-					
						- -					
- -						-					
2 - 2 - -						-					
						-					
						-					
5-						-					
						-					
						-					
						-					
-						-					
						-					
						- - -					
Strike Depth: (m)			Iter dwater Rer	narks		neral Rem				Final D	Depth
1	aony tu.	Ground V		nans	Loca 3.00	ated in rear Garo m bgl on comp	den No 56 Herondale. Ha letion.	and dug pit to 1.00 m bgl.Standing wat	er at 2.55 m bgl. Hole collaps	ed to 5m l	bgl
Strike Depth: (m) F	Sherv	ood Dri	illing			ethod/ ant Used	Hand hel	d window sampling	All dimen	sions in metres Scale 1:50	
										She	eet 1 of 1

	4	Grontm	ij
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Project			_		_		Client		1	Logged By	_
East Cann	nock F		4.0				Cannock Cl				
Job No 10391	2-002	Da 2	20	8-09-10 8-09-10		Ground L	evel (m)	Co-ordinates		Checked By KAS	
SAMPLE			er					STRATA			ment kfill
Depth	Туре	Test Result	Water	Reduced Level	Legend	Depth (Thickness)		DESCRIPTION	N		Instrument Backfill
0.05-0.05	ES					0.05		UND Pea gravel over Terra		/	
0.30-0.30	ES				\bigotimes	* <u>0.30</u>		UND Very soft friable dark LAY with occasional rootle	brown gravelly sli ts. Gravel is angu	ghtly sandy (fine lar to	
0.60-0.60	ES				\bigotimes		\sub-angular	fine to coarse of shale slat	e coal brick and q	juartzite.	
3.00-3.50	ES					 (4.70) 5.00 	fine to coars bgl occasion	UND Dark grey very clayey e GRAVEL of shale coal an al angular fine to medium of at 5m bgl.	nd rare sandstone	arse) angular e.From 3.40 m	
	tising to:	ncountered	ater Ren	narks	Loca			n Way. Hand dug pit to 1.00 m bgl.		Final De	
Contractor §	Snerw	ood Drilli	ng			ethod/ lant Used	Hand he	ld window sampling	All dimens	sions in metres Scale 1:50 Sheet	t1 of 1

Gr	o	nt	m	i	
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Project							Client		Logg	ged By	
East Cann	lock I						Cannock Ch			MJH	
Job No		[Date 29	9-09-10		Ground L	evel (m)	Co-ordinates	Che	cked By KAS	
10391	2-002	2	29	9-09-10						CAN	
SAMPLE	S &		ы Б					STRATA			Instrument Backfill
Depth	Туре	Test Result	Water	Reduced Level	Legend	(Thickness)		DESCRIPTIO	N		Bac
0.00-0.00	ES	libbalt				0.10	MADE GROU	JND Grass over brown cla	iyey slightly gravelly fir	ne SAND.	
- 0.30-0.30	ES				\bigotimes	₹ 	Gravel is of a	ngular fine to medium sha zite, (TOPSOIL)	ale and sub-rounded fi	ne to	
	ES				\bigotimes	(0.84)	MADE GROU	JND Brown silty gravelly fi brick sandstone and sha	ne SAND, Gravel is of	angular	
- 0.65-0.65	ES				\bigotimes	< ↓ 0.94	quartzite.	e brick sandstone and sha	le and sub-rounded fir	ie to coarse	
-						0.95	MADE GROU	JND 10 mm diameter pea	gravel.	7	
-						-	End of Hole a	at 0.95m bgl.			
-						-					
						-					
-						-					
-						-					
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Strike Depth: (m) R		(m) Ground		marks	Loca	neral Rem ated in rear Gard	len No 24 Linden View.	Hand dug pit to 1.00 m bgl. Hole termina	ated at 0.95 m bgl due to	Final Dep	oth
Strike Depth: (m) R	None Encountered						edding gravel. Hole relo	cated.		0.95m l	bgl
Contractor S	Sherw	vood Dr	illing			ethod/ ant Used	Hand hel	d window sampling	All dimensions in	n metres Scale 1:50 Sheet 1	1 of 1
P										001	_

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	Gronum	J

WINDOW SAMPLE No **WS13a**

Project							Client			Logged By
East Canno	ock F	Road					Cannock Ch	ase DC		MJH
Job No 103912	2-002	Dat	23	9-09-10 9-09-10		Ground	Level (m)	Co-ordinates	(Checked By KAS
SAMPLE	S & 1	TESTS						STRATA		
	Туре	Test	Water	Reduced	Legend	Depth		DESCRIP	TION	Instrument Backfill
Depth	ES	Test Result	Wat	Reduced Level		1 Depth (Thickness) 2 0.10 2 (0.60) 2 (0.80) 1.50 1.80 	Gravel is of a coarse quart MADE GROU fine to coarse coarse quart Very stiff des	JND Grass over brown angular fine to medium zite. (TOPSOIL) JND Brown silty grave e brick sandstone coal zite. icated red brown CLA m gravelly medium to o ne to coarse of quartzi	n clayey slightly gravel shale and sub-round lly fine SAND, Gravel and shale and sub-ro Y.	lly fine SAND. ed fine to is of angular punded fine to
-						-				
Strike Depth: (m) Ris		m) Groundwater		narks		neral Ren ated in rear Ga		Hand dug pit to 1.00 m bgl. Hole te	erminated at 1.80 m bgl due to refu	Final Depth
No	one Ei	ncountered								1.8m bgl
Contractor S	herw	ood Drillin	ng			lethod/ lant Used	Hand he	d window sampling	C All dimens	sions in metres Scale 1:50 Sheet 1 of 1



Project Control Control Chase DC Conge B MU Jab No Date 20-09-10 Ground Level (m) Co-ordinates Checked By KAS SMMPLES ATTESTS 0000000 B Image: Control Chase DC Image: Control Chase DC Co-ordinates Checked By KAS 0000000 ES Image: Control Chase DC Image: Control Chase DC Checked By KAS 0000000 ES Image: Control Chase DC Checked By KAS Image: Control Chase DC Checked By KAS 0000000 ES Image: Control Chase DC Checked By KAS Image: Control Chase DC Checked By KAS 0000000 ES Image: Control Chase DC Checked By KAS Image: Control Chase DC Checked By KAS 0000000 ES Image: Control Chase DC Image: Control Chase DC Checked By KAS Image: Control Chase DC Checked By KAS 200000 ES Image: Control Chase DC Image: Control Chase DC Checked By KAS Image: Control Chase DC Checked By KAS 2000000 ES ES Image: Control Chase DC Image: Control Chase DC Checked By KAS Image: Cont											
Lob No Date Date Co-ordinates Checked By 300 No 29-09-10 Ground Level (m) Co-ordinates Checked By SAMPLES & TESTS B Reduced Legend Depth DESCRIPTION 000-000 ES Reduced Legend Depth Detx grey to black sitly sandy (fine to coarse) angular fine to coarse GRAVEL of shale. 0.00-000 ES S V Q V Dark grey to black sitly sandy (fine to coarse) angular fine to coarse 0.03-0.30 ES V Q V I.80 Orange sitly sandy (fine to coarse) angular fine to coarse GRAVEL of shale. 2.00-2.50 ES V Q V I.80 Orange sitly sandy (fine to coarse) angular fine to coarse GRAVEL of shale. 2.00-2.50 ES V Q V I.80 Orange sitly sandy (fine to coarse) angular fine to coarse GRAVEL of shale. 2.00-2.50 ES V Q V I.80 Orange sitly sandy (fine to coarse) angular fine to coarse GRAVEL of shale. 2.00-2.50 ES I.80 Orange sitly sandy (fine to coarse) angular fine to coarse GRAVEL of shale. 2.00-2.50 ES I.80 Orange sitly sandy (fine to coarse) angular fine to coarse GRAVEL of shale. 0.02 I.80 I.80 I.80 I.80 0.02 I.80 I.80 I.80 0.02 I.80	Project							Client		Logg	-
103912-002 29-09-10 KAS SAMPLES & TESTS Depth B B Reduced Legend Depth Result STRATA 000-00 ES 0.05 MADE GROUND (MULCH) Dark brown peat Dark grey to black silty sandy (fine to coarse) angular fine to coarse 0.05-0.65 ES 8 0 8 0 GRAVEL of shale. 20.0-2.50 ES 9 0 9 0 0 20.0-2.50 ES 9 0 9 0 0 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 </td <td></td> <td>nock I</td> <td></td> <td>Data</td> <td></td> <td></td> <td>Ground</td> <td></td> <td></td> <td>Choc</td> <td></td>		nock I		Data			Ground			Choc	
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$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Depth	Туре		Wat		Legend	(Thickness)		DESCRIPTIO	N	Instru
0.30-0.30ES $x = y = y$ <th< td=""><td>0.00-0.00</td><td>ES</td><td></td><td></td><td></td><td>× 0.x0 0</td><td>, 0.05</td><td></td><td></td><td></td><td>/</td></th<>	0.00-0.00	ES				× 0.x0 0	, 0.05				/
$\begin{bmatrix} 2.00-2.50 \\ ES \end{bmatrix} ES \begin{bmatrix} \begin{bmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 &$	0.30-0.30	ES				8 1.8	ł	Dark grey to	black silty sandy (fine to co shale.	parse) angular fine to o	coarse
$\begin{bmatrix} 2.00-2.50 \\ ES \end{bmatrix} ES \begin{bmatrix} \begin{bmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 &$	- 0.65-0.65	ES				×0 =×0 \$ \$ \$	7r ★ ↓				
2.00-2.50ESImage: Sector of the secto	-						2 (1.75)				
T2.00-2.50ES	-					0000	<_ ≫				
22:00:2:50 ES ES Image: single and grey sandy (fine to coarse) angular fine to coarse GRAVEL of State. 22:00:2:50 Image: single and grey sandy (fine to coarse) angular fine to coarse GRAVEL of State. Image: single and grey sandy (fine to coarse) angular fine to coarse GRAVEL of State. 2:00:2:50 Image: single and grey sandy (fine to coarse) angular fine to coarse GRAVEL of State. Image: single and grey sandy (fine to coarse) angular fine to coarse GRAVEL of State. Image: single and grey sandy (fine to coarse) angular fine to coarse GRAVEL of State. Image: single and grey sandy (fine to coarse) angular fine to coarse GRAVEL of State. Image: single and grey sandy (fine to coarse) angular fine to coarse GRAVEL of State. Image: single and grey sandy (fine to coarse) angular fine to coarse GRAVEL of State. Image: single angle an	-					D & D	A				·] ·] ·]
2.00-2.50 ES	-					N N N	∡T 180)			
Image: Index of the provide of the	- 2.00-2.50	ES				0.00	ŗĻ		sandy (fine to coarse) ang	ular fine to coarse GRA	AVEL of
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$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	-					°0 0°0	3.40				
$ \begin{array}{c} $	-					0.00			rey sandy (fine to coarse)	angular fine to coarse	GRAVEL of
Contractor Sherwood Drilling General Remarks Final Depth Methods General Remarks Second and the completon None Encountered Methods Hend hald window sampling Aldemastics to meters Sole 1:9	-					0000	, E				
Coundwater Coundwater Coundwater Coundwater Coundwater Final Depth Sinte Depth: m) Rang to: (m) Coundwater Remarks Ceneral Remarks Final Depth Final Depth None Encountered Method Distribution the Gibility of the Stategories (Market States State 120 At dimensions to metrice State 120 Contractor Sherwood Drilling Method Method Hand hald window sampling At dimensions to metrice State 120	-					0.0.0	∠ 2 - (1.60)				
End of Hole at 5m bgl.	-					0000	4				
End of Hole at 5m bgl.	-					0.00	ł				
	-					°0°0°.0	5.00		·- · ·		
Groundwater Enclose Strike Deght: (m) Relang to: (m) - Groundwater Remarks Enclose to: Statewood by the compression of the comp	-							End of Hole a	at 5m bgl.		
Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling Al dimensions in meters Scale 1:50	-						-				
Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling At dimensions in metres State 159	-						F				
Croundwater Eneral Remarks Final Depth Strike Depth: (m) Groundwater Remarks Located in rear Garden No 65 Stagborough Way. Hand dug pit to 1.00 m bgl. Poor recovery from 4.00 m gl to 5.00 m Final Depth Strike Depth: (m) General Remarks Located in rear Garden No 65 Stagborough Way. Hand dug pit to 1.00 m bgl. Poor recovery from 4.00 m gl to 5.00 m Final Depth None Encountered Method/ Final Depth Sm bgl Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling All dimensions in metres Scale 1.20	-						-				
Croundwater General Remarks Final Depth Strike Depth: (m) Rising to: (m) Groundwater Remarks Contractor Sherwood Drilling Final Method/ Contractor Sherwood Drilling Method/ Hand held window sampling At demensions in metres Scale 1:50	-										
Strike Depth: (m) Rising to: (m) Groundwater Remarks General Remarks Final Depth Strike Depth: (m) Rising to: (m) Groundwater Remarks Located in rear Garden No 65 Stageborough Way. Hand dug pit to 1.00 m bgl. Poor recovery from 4.00 m gl to 5.00 m bgl. Hole collapsed to 3.00 m bgl on completion. Final Depth None Encountered Method/ Plant Used Hand held window sampling At dimensions in metres Scale 1:59 Plant Used	-						-				
Strike Depth: (m) Rising to: (m) Groundwater Remarks General Remarks Final Depth None Encountered General Remarks Contractor Sherwood Drilling Final Depth Method/ Plant Used Hand held window sampling All dimensions in metres Scale 1:59	-						Ē				
Strike Depth: (m) Rising to: (m) Groundwater Remarks General Remarks Final Depth None Encountered General Remarks Final Depth Ocntractor Sherwood Drilling Method/ Plant Used Hand held window sampling All dimensions in metres Scale 1:50	-						Ē				
Groundwater General Remarks Strike Depth: (m) Rising to: (m) Groundwater Remarks General Remarks None Encountered General Remarks Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling	-						-				
Groundwater Strike Depth: (m) Rising to: (m) Groundwater Remarks Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling	-						Ę				
Groundwater Strike Depth: (m) Rising to: (m) Groundwater Remarks Strike Depth: (m) Rising to: (m) Groundwater Remarks Located in rear Garden No 65 Stagborough Way. Hand dug pit to 1.00 m bgl. Poor recovery from 4.00 m gl to 5.00 m bgl. Hole collapsed to 3.00 m bgl on completion. None Encountered Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling							E				
Groundwater General Remarks Strike Depth: (m) Rising to: (m) Groundwater Remarks General Remarks None Encountered General Remarks Contractor Sherwood Drilling Method/ Plant Used Method/ Plant Used Hand held window sampling	-						E				
Groundwater General Remarks Strike Depth: (m) Rising to: (m) Groundwater Remarks Central Remarks None Encountered Located in rear Garden No 65 Stagborough Way. Hand dug pit to 1.00 m bgl. Poor recovery from 4.00 m gl to 5.00 m bgl. Hole collapsed to 3.00 m bgl on completion. Final Depth Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling All dimensions in metres Scale 1:50	-						Ē				
Groundwater General Remarks Final Depth Strike Depth: (m) Rising to: (m) Groundwater Remarks Ceneral Remarks Final Depth None Encountered Method/ Plant Used Hand held window sampling All dimensions in metres Scale 1:50	_						Ē				
Groundwater General Remarks Final Depth Strike Depth: (m) Rising to: (m) Groundwater Remarks Cocated in rear Garden No 65 Stagborough Way. Hand dug pit to 1.00 m bgl. Poor recovery from 4.00 m gl to 5.00 m bgl. Hole collapsed to 3.00 m bgl on completion. Final Depth None Encountered Method/ Plant Used Method/ Hand held window sampling All dimensions in metres Scale 1.50	-						È				
Groundwater General Remarks Final Depth Strike Depth: (m) Rising to: (m) Groundwater Remarks Located in rear Garden No 65 Stagborough Way. Hand dug pit to 1.00 m bgl. Poor recovery from 4.00 m gl to 5.00 m bgl. Hole collapsed to 3.00 m bgl on completion. Final Depth None Encountered Method/ Plant Used Hand held window sampling	-						F				
Groundwater General Remarks Excated in rear Garden No 65 Stagborough Way. Hand dug pit to 1.00 m bgl. Poor recovery from 4.00 m gl to 5.00 m bgl. Hole collapsed to 3.00 m bgl on completion. Final Depth None Encountered Method/ Plant Used Method/ Hand held window sampling All dimensions in metres Scale 1.50	-										
Groundwater General Remarks Final Depth Strike Depth: (m) Rising to: (m) Groundwater Remarks Located in rear Garden No 65 Stagborough Way. Hand dug pit to 1.00 m bgl. Poor recovery from 4.00 m gl to 5.00 m Final Depth None Encountered Method/ Method/ Plant Used Hand held window sampling All dimensions in metres Scale 1:50	-										
Strike Depth: (m) Groundwater Remarks Located in rear Garden No 65 Stagborough Way. Hand dug pit to 1.00 m bgl. Poor recovery from 4.00 m gl to 5.00 m bgl. Hole collapsed to 3.00 m bgl on completion. 5m bgl None Encountered Method/ Plant Used Method/ Hand held window sampling All dimensions in metres Scale 1:50					I	Ge	neral Ren	narks			Final Depth
None Encountered Still Dgi Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling					narks	Loc	ated in rear Gar	rden No 65 Stagborough	Way. Hand dug pit to 1.00 m bgl. Poor re tion.	ecovery from 4.00 m gl to 5.00 m	
Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling	Ν	lone E	ncounter	ed							
	Contractor	Sherw	vood Dr	illing				Hand he	d window sampling	All dimensions in	

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Project							Client Cannock Ch		Lo	gged By MJH
East Canr Job No	IOCK I		ate o			Ground L		Co-ordinates	Ch	lecked By
10391	2-002		30	0-09-10 0-09-10				Co-ordinates		KAS
SAMPLE			e					STRATA		ment
Depth	Туре	Test Result	Water	Reduced Level	Legend	(Thickness)		DESCRIPTION	N	Instrument
_ 0.00-0.00 -	ES				\bigotimes	0.10		ilty gravelly fine SAND wit fine to medium of brick ar		angular to
0.30-0.30	ES ES					(0.90)	Brown clayey	gravelly fine to medium S fine to coarse of brick sha	AND. Gravel is ang	ular to
- - - - - - -	ES					1.00 (1.00)	Soft to firm fr Gravel is ang quartzite with	iable dark grey brown san ular to sub-rounded fine to rare clinker. (MADE GRC	o coarse of shale sa PUND)	ravelly CLAY. ndstone and
						(1.00)		layey angular medium GR	AVEL of quartz.	
-						-	End of Hole a	at 3m bgl.		
Strike Depth: (m) R		roundwat		narks	Loca	neral Rem ated in rear Garc	den No 12 Swallowfields	Drive. Hand dug pit to 1.00 m bgl. Poor	recovery from 2.00 m bgl to 3.0	Final Depth
N	one E	ncountere	ed		bgl.	Hole collapsed t	to 1.80 m bgl on comple	tion.		3m bgl
Contractor S	Sherw	ood Dri	lling			ethod/ ant Used	Hand hel	d window sampling	All dimension	s in metres Scale 1:50 Sheet 1 of 1

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Project							Client	DC	Lc	gged By
East Cann	ock F						Cannock Ch	1		MJH
Job No 10391	2 00'			0-09-10 0-09-10		Ground L	.evel (m)	Co-ordinates	Ci	necked By KAS
				09-10						
SAMPLE Depth	Type	Test	Water	Reduced	Legend	Depth		STRATA DESCRIPTIO	N	Instrument Backfill
0.00-0.00	ES	Result	>	Level		(Thickness)				
-						}0.05/ ↓	\frequent root	JND Grass over brown ve lets (TOPSOIL)	· ·	
0.30-0.30 -	ES				\bigotimes	* (0.75)	MADE GROU	JND Light brown clayey sa AVEL of quartzite brick and	andy slightly cobbley	/ angular to
0.60-0.60 -	ES					0.80	to sub-round	ed of concrete and quartzi	te.	
1.00-1.50 	ES					 	sub-rounded	lightly silty gravelly fine to to rounded fine to coarse ecoming clayey.	coarse SAND. Grav of quartzite and qua	
- - - - -						(2.20)				
- - - - -						- - - - - - - -				
-					a .	- 3.00	End of Hole a	at 3m hal		
-						-		at 511 byl.		
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Strike Depth: (m) R	G ising to:	(m) Ground	ter water Rer	narks	Loca	neral Rem ated in rear Gard	len 110 Stafford Lane.	Hand dug pit to 1.00 m bgl. Hole termina	ited at 3.00 m bgl due to refusa	Final Depth
		ncountere			Hole	e collapsed to 1.8	30 m bgl on completion		1	3m bgl
Contractor S	Sherw	ood Dri	lling			ethod/ ant Used	Hand hel	d window sampling	All dimension	ns in metres Scale 1:50 Sheet 1 of 1

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Project						Client			Logged By	
East Cannock						Cannock Ch	1		MJH	
Job No 103912-0	Dat 02	20)-09-10)-09-10		Ground L	evel (m).	Co-ordinates		Checked By KAS	
SAMPLES 8	& TESTS	Sr.					STRATA			fill
Depth Typ	e Test Result	Water	Reduced Level	Legend	(Thickness)		DESCRIP	TION		Instrument Backfill
0.00-0.00 ES					- - -	Grass over b	rown very clayey grav	elly silty fine to mediu	m SAND. Gravel	
0.30-0.30 ES	;			<u> </u>	<u>0.30</u> 0.50	\sub-rounded	fine to coarse quartzi		/	
0.60-0.60 ES	;			°0 °0 °0 °0 °0 °0		Firm friable g Gravel is of a fine to coarse (GLACIAL TI	rey brown slightly sar angular fine to mediun e sandstone and quar LL)	ndy (fine to coarse) gra n shale sub-angular to tzite and angular fine angular fine to coarse	o sub-rounded to medium coal.	
: [1.50-1.70 ES :	;		,		(2.15)	shale and co	al with occasional and	gular ironstone and sh n bgl. (GLACIAL GRA	ale cobbles.	
- - - - -			ľ	0000 0000						
				AA	-	End of Hole a	at 2.65m bgl.			
Strike Depth: (m) Rising t										
	Groundwate			Gei	heral Rem	arks			Final De	pth
Strike Depth: (m) Rising t	o: (m) Groundwa		narks	Loca	ated in rear Gard	len No 32 Berry Hill. Ha	and dug pit to 1.00 m bgl. Hole terr	minated at 2.65 m bgl due to refus		
Contractor Sher	rwood Drilli	ng			ethod/ ant Used	Hand he	d window samplin	g All dimen	nsions in metres Scale 1:50 Sheet	t 1 of 1

4	Grontm	i	j
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Project Client Logged 9; Last Cannock Road Cannock Chase DC MUH 103012-002 Date 20-09-10 Ground Level (m) Co-ordinates Checked by KAS SAMPLES A TESTS Beeture Logend Depth The equal to the contract of the cont											
Job No Date 20-09-10 Ground Level (m) Co-ordinates Checked By SAMPLES & TESTS By Reduced Legend Depth DESCRIPTION DESCRIPTION 000-000 ES 0.00-00 ES (0.50) MADE GROUND Brown very sity slightly gravelly fine to medium Quartize and sandstone with occasional sub-rounded fine to medium Quartize and sandstone with occasional sub-rounded cobies of quartize and sandstone with occasional sub-angular to rounded fine to coarse of quartize and sandstone with occasional sub-angular to rounded fine to coarse of quartize and sandstone with occasional sub-angular to rounded cobies of quartize and sandstone with occasional sub-angular to rounded cobies of quartize and sandstone with occasional sub-angular to rounded cobies of quartize and sandstone with occasional sub-angular to rounded cobies of quartize and sandstone with occasional sub-angular to rounded cobies of quartize and sandstone. 120-1.50 ES 160 Coarse of quartize and sandstone with occasional sub-angular to sub-rounded cobies of quartize and sandstone. 120-1.50 ES 160 Coarse of quartize and sandstone with occasional sub-angular to sub-rounded cobies of quartize and sandstone. 120-1.50 ES 160 Coarse of quartize and sandstone. Coarse of quartize and sandstone. 120-1.50 ES 160 Coarse of quartize and sandstone. Coarse of quartize and sandstone. 120-1.50 ES	Project								50	Lo	
103912-002 20-09-10 KAS SAMPLES & TESTS Breadth Breadth Breadth DESCRIPTION Breadth Breadth DESCRIPTION 0.00-0.00 ES Image: Control of the second seco		ock I							1		
ICOSP 12-002 SAMPLES & TESTS Depth Type Reduced Legend Depth Image: Colspan="2">DESCRIPTION 0.000.00 ES Image: Colspan="2">STRATA 0.000.00 ES Image: Colspan="2">Stream: Colspan="2">Stream: Colspan="2">Transpan="2">Reduced Image: Colspan="2">Colspan="2">Colspan="2">Colspan="2">Stream: Colspan="2">Transpan="2">Colspan="2">Colspan="2">Stream: Colspan="2">Stream: Colspan="2">Stream: Colspan="2">Stream: Colspan="2">Stream: Colspan="2">Stream: Colspan="2">Stream: Colspan="2">Stream: Colspa				20			Ground L	evel (m)	Co-ordinates	С	
0.00-0.00 ES 0.30-0.30 ES 0.660-0.66 ES 1.20-1.50 ES 0.55 (0.95) (0.95) (0.95) 1.20-1.50 ES 0.55 (0.95) (0.95)<	10391	2-002	2	20	0-09-10						NA0
0.00-0.00 ES 0.30-0.30 ES 0.660-0.66 ES 1.20-1.50 ES 0.55 (0.95) (0.95) (0.95) 1.20-1.50 ES 0.55 (0.95) (0.95)<	SAMPLE	S &	TESTS	٩ ۲					STRATA		nent fill
0.00-0.00 ES 0.30-0.30 ES 0.660-0.66 ES 1.20-1.50 ES 0.55 (0.95) (0.95) (0.95) 1.20-1.50 ES 0.55 (0.95) (0.95)<	Depth	Туре		Wate		Legend	Depth (Thickness)		DESCRIPTION	J	nstrur Back
0.30-0.30 ES 0.65-0.65 ES 1.20-1.50 ES 1.20-1.50 ES 0.30-0.31 ES 1.20-1.50 ES 1.20-1.50 ES 1.20-1.50 ES 1.20-1.50 ES 1.20-1.50 ES 1.20-1.50 ES 1.20-1.50 ES 1.20-1.50 EG 1.20-1.50 EG	_ 0.00-0.00	ES	Robult	-	2010	XXX	-	MADE GROL	JND Brown verv silty slight	lv gravelly fine to n	
0.65-0.65 ES 1.20-1.50 ES 1.	- 0 30-0 30	FS				\bigotimes		with rootlets.	Gravel is of sub-rounded f	ine to medium qua	irtzite and
and GRAVEL. Gravel is sub-angular to rounded fine to coarse of quartzite and sandstone with occasional sub-angular to sub-rounded cobbles of quartzite and sandstone. Occasional dark brown black cobble size commented clasts of gravel cement appearing iron rich. (POSSIBLE MADE GROUND) Light brown slightly slity fine to coarse SAND and GRAVEL. Gravel is sub-rounded to rounded fine to coarse of quartzite and quartz. End of Hole at 2m bgl.	-						4 0.65			. ,	Gravel is
and GRAVEL. Gravel is sub-angular to rounded fine to coarse of quartzite and sandstone with occasional sub-angular to sub-rounded cobles of quartzite and sandstone. Occasional dark brown black cobble size commented clasts of gravel cement appearing iron rich. (POSSIBLE MADE GROUND) Light brown slightly slity fine to coarse SAND and GRAVEL. Gravel is sub-rounded to rounded fine to coarse of quartzite and quartz. End of Hole at 2m bgl.	- 0.65-0.65 -	ES				6.000	1	sub-angular t	o rounded fine to coarse o	of quartzite and san	dstone with
and GRAVEL. Gravel is sub-angular to rounded fine to coarse of quartzite and sandstone with occasional sub-angular to sub-rounded cobles of quartzite and sandstone. Occasional dark brown black cobble size commented clasts of gravel cement appearing iron rich. (POSSIBLE MADE GROUND) Light brown slightly slity fine to coarse SAND and GRAVEL. Gravel is sub-rounded to rounded fine to coarse of quartzite and quartz. End of Hole at 2m bgl.	-					0.0.0	 			cobbles of qualitzi	
Image: Section of the section of th	1.20-1.50	ES				0.000	(0.00) 				
Light brown slightly silty fine to coarse SAND and GRAVEL. Gravel is sub-rounded to rounded fine to coarse of quartzite and quartz. End of Hole at 2m bgl.	-					200.0.0	∉ 1.60	quartzite and	sandstone with occasiona	I sub-angular to su	ib-rounded
Light brown slightly silty fine to coarse SAND and GRAVEL. Gravel is sub-rounded to rounded fine to coarse of quartzite and quartz. End of Hole at 2m bgl.	-					0000	2 (0.40)	size cemente	d clasts of gravel cement		
sub-rounded to rounded fine to coarse of quartzite and quartz. End of Hole at 2m bgl.	-					0.0.0.0	<u>2.00</u> -				
Image: second							Ē	sub-rounded	to rounded fine to coarse		
	E .						ļ.	End of Hole a	at 2m bgl.		_
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OF Groundwater General Remarks Final Depth Strike Depth: (m) Rising to: (m) Groundwater Remarks Located in rear Garden No. 15 Benty Hill. Hand dug pit to 1.00 m bgl. Hole terminated at 2.00 m bgl due to refusal. Hole Final Depth	Strike Depth: (m) Ri				narks	Loca	ated in rear Gard	len No 15 Berry Hill. Ha	nd dug pit to 1.00 m bgl. Hole terminated	at 2.00 m bgl due to refusal.	
None Encountered collapsed to 1.40 m bgl on completion. 2m bgl	N	one E	ncountered			colla	apsed to 1.40 m	bgi on completion.			
	Contract C						a 4 la c - 1 /				
Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling All dimensions in metres Scale 1:50 Sheet 1 of 1		nerw	vooa Driilii	ng				Hand hel	d window sampling	All dimensio	

5	Gro	ntm	ij
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Project							Client		1.	ogged By	
East Canr	ook I	Dood					Client Cannock Ch	ase DC		оддеа ву MJH	
Job No	IOCK F		Date _			Ground I	_evel (m)	Co-ordinates	C	Checked By	
10391	2-002		2	1-09-10 1-09-10		Ciouna		00-0rumates		KAS	
SAMPLE	ES &	TESTS	s s					STRATA		ţ	nent
Depth	Туре	Test Result		Reduced Level	Legend	(Thickness)		DESCRIPTION	N		Instrument
0.00-0.00	ES					0.30	fine to mediu	IND Dark brown and black m SAND with frequent roc quartzite with occasional	tlets. Gravel is sub	lightly gravelly	
0.65-0.65	ES					* <u>0.60</u>	MADE GROU GRAVEL of s	IND Dark brown silty sand ub-angular to rounded fin	ly (fine to coarse) c e to medium quartz	zite and //:	
-						*_(0.60) * <u>1.20</u>	sandstone an	o coarse bricks and sands d whole and half bricks. IND Soft friable dark grey			
						(0.40) <u>1.60</u>	angular sub-r	ounded fine to mediumsa and angular fine to coarse	ndstone and angulate shale.	ar fine to	
1.65-1.85	ES					1.65 *_ ≮_	GRAVEL. Gra	IND Light brown silty med avel is sub-angular to sub- ale brick and occasional o	-rounded fine to me		
						< (0.95)	GRAVEL of b				
					XXX	<u>2.60</u> (0.40)	angular fine to	IND Orange fine to coarse o medium of shale brick a			
-						3.00		IND Oronac firsts		(EL Orevel)	ΞĒ
						(0.50) 3.50	angular fine to	IND Orange fine to coarse o medium of shale brick a			
3.50-3.80	ES		Ţ			* - * -	fine to coarse	IND Black and dark browr GRAVEL of clinker with c ack sandy (fine) silt.			
						*_(1.10) ≮					
					××××	× 4.60	Blue arev bec	coming light blue below 4.	75 m bgl slightly cla	ayey gravelly	
-					· · · ·	(0.40) 5.00	fine to coarse	SAND. Gravel is sub-ang quartz. (POSSIBEL NATU	ular to rounded fin	e to coarse of	
						-		it om by:			
· ·						-					
						-					
						- - -					
						-					
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-						- - -					
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						-					
Strike Depth: (m) F 3.8		(m) Ground Ground	ndwater Rer	narks	Loca	neral Rem ated in rear Gar collapsed to 3.		/ay. Hand dug pit to 1.00 m bgl. No reco	very between 2.60 to 3.00 m b	Final Dept 5m bgl	
									1		•
Contractor §	Sherw	ood Di	rilling			ethod/ ant Used	Hand hele	d window sampling	All dimensio	ons in metres Scale 1:50 Sheet 1 c	of 1



Project							Client		Lo	ogged By MJH	
East Cann	lock		4				Cannock Ch				
Job No 10391	2-00	Da 2	2	1-09-10 1-09-10		Ground L	evel (m)	Co-ordinates	Cr	necked By KAS	
SAMPLE	ES &	TESTS						STRATA			ent
Depth	Туре	Test Result	Water	Reduced Level	Legend	(Thickness)		DESCRIPTIO	N		Instrument Backfill
_ 0.00-0.00	ES	Result	-	Levei	<u>x1/</u> <u>x1/</u>		Brown clave	silty fine SAND with root	lets. (TOPSOIL)		-
- 0.30-0.30	ES				0.00	t	Brown claye	/ sandy (fine to coarse) G	. ,	occasional	
- 0.65-0.65	ES				10-A: 0	Ł	cobble size	lasts.			
- 0.05-0.05	ES					(0.95)					
Ē											
1.30-1.55	ES						Grey and bla GRAVEL of	ck very clayey angular to shale and sandstone.	sub-angular fine to c	coarse	
-					200	t l					
-						¢ (1.30) −					
					0-10	Æ					
-						2.50	End of Hole	at 2 Em hal			
						-	End of Hole	at 2.5m bgi.			
E E						-					
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-		Groundwate	er			- neral Rem	arke			Final Dep	
Strike Depth: (m) R	tising to:	(m) Groundwald	ater Rei	marks		ated in rear Gard		Way. Hand dug pit to 1.00 m bgl. Hole	terminated at 2.50 m bgl due to		
	one E	ncountered	t							2.5m b	gl
Strike Depth: (m) R	Sherv	vood Drill	ing			ethod/ ant Used	Hand he	ld window sampling	All dimension	ns in metres Scale 1:50 Sheet	1 of 1

Gr	0.00	Imil			۱.	/1					OOW SAMPLE No
S Gr	on	unij			V	VIN	ЪО	W 2A	MPLE LC	JG	WS6
Project								Client		Logge	d By
East Canr	nock l	Road						Cannock Ch	ase DC		MJH
Job No			Date	² 2	1-09-10		Ground	Level (m)	Co-ordinates	Check	
10391	2-00	2		2′	1-09-10						KAS
SAMPLE	ES &	TEST	S	er					STRATA		nent
Depth	Туре	Test Resu		Water	Reduced Level	Legend	Depth (Thickness)		DESCRIPTION	N	Instrument
0.00-0.00	ES					\times		MADE GROU	JND Black and dark broan	silty peaty fine SAND v	
0.35-0.35	ES					X X X	0.3 0.4	5 MADE GROU	ets (TOPSOIL) JND Light brown fine sand	ly sub-angular to rounde	ed fine to
- 0.70-0.70	ES					\otimes		MADE GROU	/EL of quartzite and sands JND Brown silty very grave	elly fine to medium SAN	D with
-						\times	-	rare coarse o	ravel size pockets of grey o coarse shale sub-angula	brown gravelly clay. Gr	avel is of 🛛 🚺 🖡
-						\boxtimes	(1.40)	quartzite and	sandstone and angular fir	ne to coarse concrete w	ith 🗌 🖯 🖯
						\otimes		Below 1.50 m	bbles of quartzite. Below bgl shale becomes infred	luent.	
-						\times	1.8				
-							2.0	Firm friable d	ark grey slightly gravelly C al.	LAY. Gravel is angular	fine of
-							-	End of Hole a			/
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Strike Depth: (m) F	C Rising to:	Groundv (m) Grou	vater	er Rem	narks		neral Rei		Way Excavated in raised bed 200 mm al	2004 Surrounding ground level Hand	Final Depth
N		ncounte				dug p	bit to 1.00 m l	bgl. Hole terminated at 2.0	0 m bgl due to refusal.	sono sanoanang groundi tever ridilu	2m bgl
Strike Depth: (m) F	Sherv	vood E	Drillin	ıg			ethod/ ant Useo	d Hand hel	d window sampling	All dimensions in m	etres Scale 1:50 Sheet 1 of 1

5	Grontm	i	j

Project						Client			Logged By	
East Cannocl	k Road			,		Cannock Cha			MJH	
Job No 103912-0	002		2-09-10 2-09-10		Ground L	.evel (m)	Co-ordinates		Checked By KAS	
SAMPLES	& TEST	S _					STRATA	·		ent
Depth Typ		ate 1	Reduced Level	Legend	(Thickness)		DESCRIPTIC	DN		Instrument Backfill
0.00-0.00 ES					0.25	and rootlets. (•		
0.30-0.30 ES 0.70-0.70 ES				<u> </u>	- 0.55 -	gravelly CLAY	ND Stiff becoming firm I C Gravel is of angular fir to coarse quartzite angu	ne to coarse brick s lar fine to medium	sub-rounded to	
 [1.10-1.50	S			 	(0.95)	Stiff red brown fine to coarse	b-rounded to rounded que n slightly gravelly CLAY. of quartz and quartzite ve b-rounded to rounded co	Gravel is sub-rour with rare angular fi	ne coal and	
					1.50 (0.50)	GLACIAL TIL		•	•	
					- 2.00	End of Hole a	t 2m bgl.			<u>; · </u> ; ·
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					-					
Strike Depth: (m) Rising	Groundy to: (m) Grou	vater undwater Ren	narks	Loca	neral Rem ated in rear Gard		Drive. Hand dug pit to 1.00 m bgl. Hol	e terminated at 2.00 m bol du	ue to	Depth
None	Encounte	ered		refus	sal.				2m	bgl
Strike Depth: (m) Rising None	erwood D	Drilling			ethod/ ant Used	Hand held	d window sampling	All dimen	sions in metres Scale 1:50	eet 1 of 1



0.30.0.0 ES											
Lost counted in the control of the c	Project							Client		Lo	gged By
103912-002 22-09-10 KAS SAMPLES & TESTS Depth B Reduced Legend Depth Result Depth Depth DESCRIPTION 0.00-000 ES 0.00 0.00 0.30-0.30 ES 0.00 0.00 0.65-0.65 ES 0.00 0.00 1.50-1.80 ES 1.50 Red uced I agend Depth Dark brown silty fine to medium SAND. Gravel is sub-rounded to rounded fine to medium of quartize and quartz (TOPSOIL) 1.50-1.80 ES 1.50 Red brown silty fine to medium SAND. 1.50 1.50 1.50 Red brown silty fine to medium SAND. 1.50 1.50 1.50 Red brown silty fine to medium SAND. 1.50 1.50 1.50 Red brown silty fine to medium SAND. 1.50 1.50 1.50 Red brown silty fine to medium SAND. 1.50 1.50 1.50 Red brown silty fine to medium SAND. 1.50 1.50 1.50 Red brown silty fine to medium SAND. 1.50 1.50 1.50 Red brown silty fine to medium SAND. 1.50 1.50 1.50 Red brown silty fine to medium SAND. 1.50 1.50 Red brown silty fine to medium SAND. Red brown silty fine to medium SAND.	East Can	nock I	Road					Cannock Ch	ase DC		MJH
103912-002 23-09-10 TMS SAMPLES & TESTS Depth Type Result Reduced legend Level Depth Level STRATA 0.000.000 ES 0.00 0.00 0.00 0.00 0.30-0.30 ES 0.00 0.00 0.00 0.65-0.65 ES 0.00 0.00 1.50-1.80 ES 1.50 Red brown silty fine to medium SAND. 1.50-1.80 ES 1.50 Red brown silty fine to coarse of quartzile and quartz with some sub-angular to	Job No		Da	ate 2	2 00 10		Ground L	evel (m)	Co-ordinates	Ch	ecked By
SAMPLES & TESTS Depth Type Test Description 0.00-0.00 ES 0.10 Dark brown and brown silty peaty slightly gravelly fine SAND with frequent rootlets. Gravel is sub-rounded to rounded fine to medium of quartize and quartz with some sub-rounded to rounded fine to medium of quartize and quartz with some sub-rounded cobbles of quartz and some sub-rounded cobbles of quartz and quartz with some sub-rounded to rounded fine to coarse of quartz and quartz with some sub-rounded to rounded	1039 ⁻	12-00	2	2	3-09-10 3-09-10						KAS
0.00-0.00 ES 0.30-0.30 ES 0.65-0.65 ES 0.85-0.65 ES 1.50-1.80 ES 2.50-1.80 ES											t
0.00-0.00 ES 0.30-0.30 ES 0.65-0.65 ES 0.85-0.65 ES 1.50-1.80 ES 2.50-1.80 ES				ater	Reduced	Legend	Depth			N	trume
0.30-0.30 ES 0.65-0.65 ES 1.50-1.80 ES ES 	-		Result	≥			(Thickness)				
0.65-0.65 ES ES ES ES ES ES ES ES ES ES	-					· • · · ·		frequent root	lets. Gravel is sub-rounde	tly gravelly fine SANI d to rounded fine to	D with medium of
1.50-1.80 ES 1.50-1.80 ES 1.50-1.80 ES 1.50-1.80 ES 1.50-1.80 ES 1.50-1.80 ES 1.50-1.80 ES 1.50-1.80 ES 1.50-1.80 ES 1.50 Red brown fine to coarse of quartz and quartz with some quartz ite. 1.80 rounded fine to coarse of quartz and quartz ite. End of Hole at 1.8m bgl.	_							Brown slight	v clayey very gravelly fine	to medium SAND. G	bravel is
1.50-1.80 ES ISO-1.80 ES Red brown silty fine to medium SAND. ISO-1.80 Red brown fine to coarse SAND and GRAVEL. Gravel is sub-rounded to rounded fine to coarse of quartz and quartzite. End of Hole at 1.8m bgl.	- 0.65-0.65 - -	ES				`.`.×. ×`.`.	- - - - (0.90)	sub-rounded sandstone ar quartzite.	to rounded fine to coarse nd occasional sub-angular	of quartzite and qua to sub-rounded cob	rtz with some / ⊖ ⊖
1.50-1.80 ES 1.80 Red brown fine to coarse SAND and GRAVEL. Gravel is sub-rounded to rounded fine to coarse of quartz and quartzite. End of Hole at 1.8m bgl.	-					× 1.1	-		Ity fine to medium SAND.		
End of Hole at 1.8m bgl.	1.50-1.80	ES				· · · × ·	1.50	Red brown fi	ne to coarse SAND and G	RAVEL Gravel is su	ib-rounded to
Contractor Sherwood Drilling Mend M	- - -						. <u>c 1.80</u> _	rounded fine	to coarse of quartz and q		
Small bagets (m) Bairgo at (m) General Remarks Final Depth None Encountered General Remarks Final Depth Contractor Sherwood Drilling Method/ Hand held window sampling Method// sampling	-						Ē				
Contractor Sherwood Drilling	-						F				
Strike Depth: (m) Groundwater Remarks Located in rear Garden No 31 Berry Hill. Hand dug pit to 1.00 m bgl. Hole terminated at 1.80 m bgl due to refusal. 1.8m bgl None Encountered Method/ Plant Used Hand held window sampling All dimensions in metres Scale 1:50	F						Ē				
Strike Depth: (m) Groundwater Remarks Located in rear Garden No 31 Berry Hill. Hand dug pit to 1.00 m bgl. Hole terminated at 1.80 m bgl due to refusal. 1.8m bgl None Encountered Method/ Plant Used Hand held window sampling All dimensions in metres Scale 1:50	- 						F				
Contractor Sherwood Drilling							E				
Stee Dept: on Ring to ring. Coundwater Remarks Final Depth Stee Dept: on Ring to ring. Coundwater Remarks Exceed in new Carden No 31 Berry Hit. Hend dag pits 1:00 migl. Hole terminated at 1:00 migl due to refut. None Encountered Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling At demetered in meter Sets 1:00							E				
Contractor Sherwood Drilling Method/ Contractor Sherwood Drilling Method/	-						-				
Strike Depth: (m) Groundwater Remarks Located in rear Garden No 31 Berry Hill. Hand dug pit to 1.00 m bgl. Hole terminated at 1.80 m bgl due to refusal. 1.8m bgl None Encountered Method/ Plant Used Hand held window sampling All dimensions in metres Scale 1:50	-						-				
Strike Depth: (m) Groundwater Remarks Located in rear Garden No 31 Berry Hill. Hand dug pit to 1.00 m bgl. Hole terminated at 1.80 m bgl due to refusal. 1.8m bgl None Encountered Method/ Plant Used Hand held window sampling All dimensions in metres Scale 1:50	-						Ę				
Strike Depth: (m) Rising to: (m) Groundwater Remarks Located in rear Garden No 31 Berry Hill. Hand dug pit to 1.00 m bgl. Hole terminated at 1.80 m bgl due to refusal. 1.8m bgl None Encountered Method/ Plant Used Hand held window sampling All dimensions in metres Scale 1:50	-						Ē				
	ŀ						Ę				
Strike Depth: (m) Rising to: (m) Groundwater Remarks Located in rear Garden No 31 Berry Hill. Hand dug pit to 1.00 m bgl. Hole terminated at 1.80 m bgl due to refusal. 1.8m bgl None Encountered Method/ Plant Used Hand held window sampling All dimensions in metres Scale 1:50	—										
Strike Depth: (m) Groundwater Remarks Located in rear Garden No 31 Berry Hill. Hand dug pit to 1.00 m bgl. Hole terminated at 1.80 m bgl due to refusal. 1.8m bgl None Encountered Method/ Plant Used Hand held window sampling All dimensions in metres Scale 1:50	-						F				
Strike Degth: (m) Reting to (m) Groundwater General Remarks Located in rear Garden No 31 Berry Hill. Hand dug pit to 1.00 m bgl. Hole terminated at 1.80 m bgl due to refusal. Final Depth None Encountered Method/ Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling	-						Ē				
Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling At dimensions in metres Scale 1:80	F						F				
Strike Depth: (m) Groundwater Remarks Located in rear Garden No 31 Berry Hill. Hand dug pit to 1.00 m bgl. Hole terminated at 1.80 m bgl due to refusal. 1.8m bgl None Encountered Method/ Plant Used Hand held window sampling All dimensions in metres Scale 1:50	- 						F				
Croundwater General Remarks Strike Depth: (m). Rising to: (m). Groundwater Remarks Located in rear Garden No 31 Berry Hill. Hand dug pit to 1.00 m bgl. Hole terminated at 1.80 m bgl due to refusal. None Encountered Final Depth Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling All dimensions in metres Scale 1:59	Ê						E				
Groundwater General Remarks Strike Depth: (m) Rising to: (m) Groundwater Remarks General Remarks None Encountered Located in rear Garden No 31 Berry Hill. Hand dug pit to 1.00 m bgl. Hole terminated at 1.80 m bgl due to refusal. Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling	-						Ę				
Groundwater General Remarks Strike Depth: (m). Rising to: (m). Groundwater Remarks General Remarks None Encountered Located in rear Garden No 31 Berry Hill. Hand dug pit to 1.00 m bgl. Hole terminated at 1.80 m bgl due to refusal. Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling							Ē				
Groundwater General Remarks Strike Depth: (m) Rising to: (m) Groundwater Remarks Located in rear Garden No 31 Berry Hill. Hand dug pit to 1.00 m bgl. Hole terminated at 1.80 m bgl due to refusal. None Encountered Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling	-						F				
Strike Depth: (m) Rising to: (m) Groundwater Remarks General Remarks Final Depth Strike Depth: (m) Rising to: (m) Groundwater Remarks General Remarks Final Depth None Encountered Method/ Plant Used Hand held window sampling All dimensions in metres Scale 1:50							E				
Groundwater Strike Depth: (m) Groundwater Remarks Strike Depth: (m) Groundwater Remarks Decaded in rear Garden No 31 Berry Hill. Hand dug pit to 1.00 m bgl. Hole terminated at 1.80 m bgl due to refusal. Final Depth None Encountered Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling	-						F				
Final Depth Groundwater Strike Depth: (m) Rising to: (m) Groundwater Remarks None Encountered Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling	-						Ē				
Groundwater General Remarks Strike Depth: (m) Groundwater Remarks None Encountered Located in rear Garden No 31 Berry Hill. Hand dug pit to 1.00 m bgl. Hole terminated at 1.80 m bgl due to refusal. Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling	-						-				
Groundwater General Remarks Strike Depth: (m) Rising to: (m) Groundwater Remarks General Remarks None Encountered Located in rear Garden No 31 Berry Hill. Hand dug pit to 1.00 m bgl. Hole terminated at 1.80 m bgl due to refusal. Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling	-						Ē				
Groundwater General Remarks Final Depth Strike Depth: (m) Groundwater Remarks Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling	-						Ę				
Groundwater General Remarks Strike Depth: (m) Rising to: (m) Groundwater Remarks General Remarks None Encountered Located in rear Garden No 31 Berry Hill. Hand dug pit to 1.00 m bgl. Hole terminated at 1.80 m bgl due to refusal. Contractor Sherwood Drilling Method/ Plant Used							E				
Groundwater General Remarks Final Depth Strike Depth: (m) Rising to: (m) Groundwater Remarks General Remarks Final Depth None Encountered Method/ Plant Used Hand held window sampling All dimensions in metres Scale 1:50	-						F				
Groundwater General Remarks Final Depth Strike Depth: (m) Rising to: (m) Groundwater Remarks Located in rear Garden No 31 Berry Hill. Hand dug pit to 1.00 m bgl. Hole terminated at 1.80 m bgl due to refusal. Final Depth None Encountered Method/ Plant Used Method/ Hand held window sampling All dimensions in metres Scale 1:50	-						Ē				
Groundwater General Remarks Final Depth Strike Depth: (m) Rising to: (m) Groundwater Remarks Central Remarks Final Depth None Encountered Method/ Plant Used Hand held window sampling	-						F				
Groundwater General Remarks Strike Depth: (m) Rising to: (m) Groundwater Remarks Coated in rear Garden No 31 Berry Hill. Hand dug pit to 1.00 m bgl. Hole terminated at 1.80 m bgl due to refusal. None Encountered Method/ Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling							Ē				
Strike Depth: (m) Rising to: (m) Groundwater Remarks Located in rear Garden No 31 Berry Hill. Hand dug pit to 1.00 m bgl. Hole terminated at 1.80 m bgl due to refusal. 1.8m bgl None Encountered Method/ Plant Used Hand held window sampling All dimensions in metres Scale 1:50					<u> </u>						Final Depth
None Encountered I.om Dgi Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling All dimensions in metres Scale 1:50	Strike Depth: (m)				marks				and dug pit to 1.00 m bgl. Hole terminate	d at 1.80 m bgl due to refusal.	
Contractor Sherwood Drilling Method/ Plant Used Hand held window sampling All dimensions in metres Scale 1:50	٢	lone E	ncountered	d							
Sheet 1 of 1	Contractor	Sherw	ood Drill	ing				Hand hel	d window sampling	All dimensions	s in metres Scale 1:50 Sheet 1 of 1

4	Grontmi	j

Project							Client Cannock C	base DC		Logged By MJH	
East Cann Job No	lock I	Road Da	te			Ground L		Co-ordinates		MJH Checked By	
10391	2-002			3-09-10 3-09-10				Co-ordinates		KAS	
SAMPLE			ter	_				STRATA			Instrument Backfill
Depth	Туре	Test Result	Water	Reduced Level	Legend	(Thickness)		DESCRIPT	ION		Instru Bac
_ 0.00-0.00 -	ES					0.05		OUND Grass over brown nt rootlets. (TOPSOIL)	sandy (fine to coars	se) clayey SILT	
0.30-0.30	ES				Ŕ	- 0.35 - *	MADE GRO	OUND Firm friable red br	own slightly sandy (fine to coarse)	
- 0.65-0.65	ES					< < -	quartzite ar	AY. Gravel is of sub-rour ngular fine to medium coa le with occasional sub-ro	al and clinker and ar	ngular fine to	
_ 1.00-1.40 -	ES					← { (1.65)	quartzite. Stiff red bro	own gravelly CLAY. Grav	el is sub-rounded to	rounded fine to	
- - -						* - -	coarse of q cobbles of	uartzite quartz and sand quartzite. Below 1.00 m t	stone with occasion	al sub-rounded (fine to medium).	
- -						√ 2.00	,	OUND - POSSIBLE RE-		- 11LL)	
 - -						-	End of Hole	e at 2m bgl.			
- -						-					
-						-					
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-						-					
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2- 						-					
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						 -					
						-					
-		Froundwate	<u> </u>		Ge	E neral Rem	arks			Final De	
Strike Depth: (m) R	ising to:	(m) Groundwa	ater Ren	narks				elds Drive. Hand dug pit to 1.00 m bgl.		2m b	
		ncountered								2111 0	3,
Contractor S	Sherw	ood Drilli	ing			ethod/ ant Used	Hand h	eld window sampling	All dime	nsions in metres Scale 1:50 Sheet	et 1 of 1

-	1.12	Lab.						HAND PIT No
Gr Gr	ontr	nij		⊢	łΔ	ΝΓ) PIT LOG	HP1
Project							Client	Logged By
East Cann	ock Ro		10				Cannock Chase DC	MJH
Job No	0 000	Dat	- 2	2-09-10		Ground L	evel (m) Co-ordinates	Checked By KAS
10391			2	2-09-10				-
SAMPLE	1		ter	Poducad		Donth	STRATA	
Depth	Type No ES	Test Result	Water	Reduced Level		(Thickness)	DESCRIPTIO	
0.00-0.00					XXX	<u>+0.10</u> ≮	SAND with frequent rootlets. Gravel is	sub-rounded to rounded fine to /
0.30-0.30	ES				\bigotimes	(0.60)	medium with occasional coarse quartzi	te clasts.
0.70-0.70	ES				××××	* 0.70 0.75/	below 0.35 m bgl very gravelly fine to c sub-rounded to rounded fine to coarse	oarse SAND. Gravel is
					· · · · ·	 - 1.10	cobbles of quartzite.	//
							Black silty fine organic rich SAND with decaying grass. (RELICT TOPSOIL)	frequent rootlets and clumps of
							Brown slightly clayey gravelly fine to co	arse SAND. Gravel is
						E	sub-rounded to rounded fine to coarse End of Trial Pit at 1.1m bgl.	
-							č	
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-						E		
-						- -		
-								
			-			Hand F	Pit Length = m	Ν
							A	360 0"
		Pit Width	T	П		НДИГ) PIT DIMENSIONS	315" 45"
		= m		-				270 90"
			V				C	225° V 135°
								180 Bearing from North
Shoring					St	ability		=
	Gro	undwate	r		Ge	neral Rem	arks	Final Depth
Strike Depth: (m) Ri	sing to: (m)	Groundwa	ter Rer	narks			en No 27 Stagborough Way.	
No	one Enco	ountered						1.1m bgl
Contractor S	herwoo	od Drilli	ng		M	ethod/		
Shoring Strike Depth: (m) Ri No Contractor S			3			ant Used	Hand Tools	All dimensions in metres Scale 1:50 Sheet 1 of 1

Gre Gre	ontr	nij		⊢	łΑ	ΝΓ) PIT LOG	HAND PIT No HP10	
					- <i>-</i> 1				
Project		od					Client Cannock Chase DC	Logged By MJH	
East Canno Job No	JCK KO	ad Dat	e			Ground L		Checked By	
103912	2-002	Dat	- 04	4-10-10 4-10-10				KAS	
SAMPLE		ESTS					STRATA		
Depth	Туре	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	DESCRIPTIO	N	
0.00-0.00	No ES	. toodit	~			0.10		ry silty gravelly fine SAND with	
0.30-0.30	ES				\bigotimes	0.40	and sub-rounded fine to medium quart	zite. (TOPSOIL)	
0.60-0.60	ES					(0.45)	MADE GROUND Dark grey and brown fine to coarse shale coal occasional bri	i very clayey gravel of angular ick and sub-rounded fine to	
					XXX	<u>1.00</u>	Madium quartzite. MADE GROUND Firm to stiff red brown CLAY. Gravel is of angular fine to coar sub-rounded fine to coarse quartzite.	n sandy (fine to coarse) gravelly	
-						Ę	MADE GROUND Dark grey and black	very clayey angular to	
- - -							subangular fine to coarse GRAVEL of a End of Trial Pit at 1m bgl.	shale and coal.	
						E			
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-						F			
- -									
						Ę			
-						T Hand F	Pit Length = m	N	
							A	360",0"	
		Pit Width =	T	D		HAND	DIT DIMENSIONS	B 315 45 90	
		m	¥				С	225 135"	
			₹ L				v	V 180°	
Shoring					St	ability		Bearing from North = °	
Strike Depth: (m) Ris				narks		neral Rem		Final Depth	
Nc		ountered	<u>e re</u> r	ndinə	Located in rear Garden No 14 Meadow Lark Close. 1m bg				
Shoring Strike Depth: (m) Ris Nc Contractor S	herwoo	od Drillin	ng			ethod/ ant Used	Hand Tools	All dimensions in metres Scale 1:50 Sheet 1 of 1	

Gr	ontn	nij		Н	Δ	ΝΓ) PI]	۲ LOG	HAND PI	
										I
Project		1					Client Cannock Cha	asa DC	Logged By MJH	
East Canno Job No	оск Ко	ad Dat	<u>م</u>			Ground L		Co-ordinates	Checked By	
103912	2-002		- 04	4-10-10 4-10-10					KAS	
SAMPLE		STS						STRATA		
Depth	Туре	Test	Water	Reduced	egend	Depth				Backfill
	No	Result	3	Level	\sim	(Thickness)	MADE GROU	DESCRIPTIC IND Black brown clayey	silty slightly gravelly fine SAND	
0.30-0.30 0.35-0.35 0.65-0.65	ES ES					0.30 (0.70)	Quartzite. (TO MADE GROU of angular fin	PSOIL) IND Red brown very clay e to coarse shale and su tone with occasional ang	ne to coarse of quartz and yey sandy (fine to coarse) gravel b-angular to sub-rounded fine to gular fine to medium coal.	
Shoring Strike Depth: (m) Rit No Contractor S						Hand F	Pit Length = m			
							A		360"0"	
	:	Pit Width = m		D		HAN	D PIT DIME	INSIONS	B	2"
Shoring					St	ability			Bearing from North = °	
Strike Depth: (m) Ris	Grou sing to: (m)	undwater Groundwa	r ter Rer	narks		neral Rem	arks den 4 Chaffinch Close.		I Final	Depth
		ountered			LOCA	aco in real Gall	un - Unammun Giuse.		1m	bgl
Contractor S	herwoo	od Drilli	ng			ethod/ ant Used	F	land Tools	All dimensions in metres Scale 1:5	50 Sheet 1 of 1

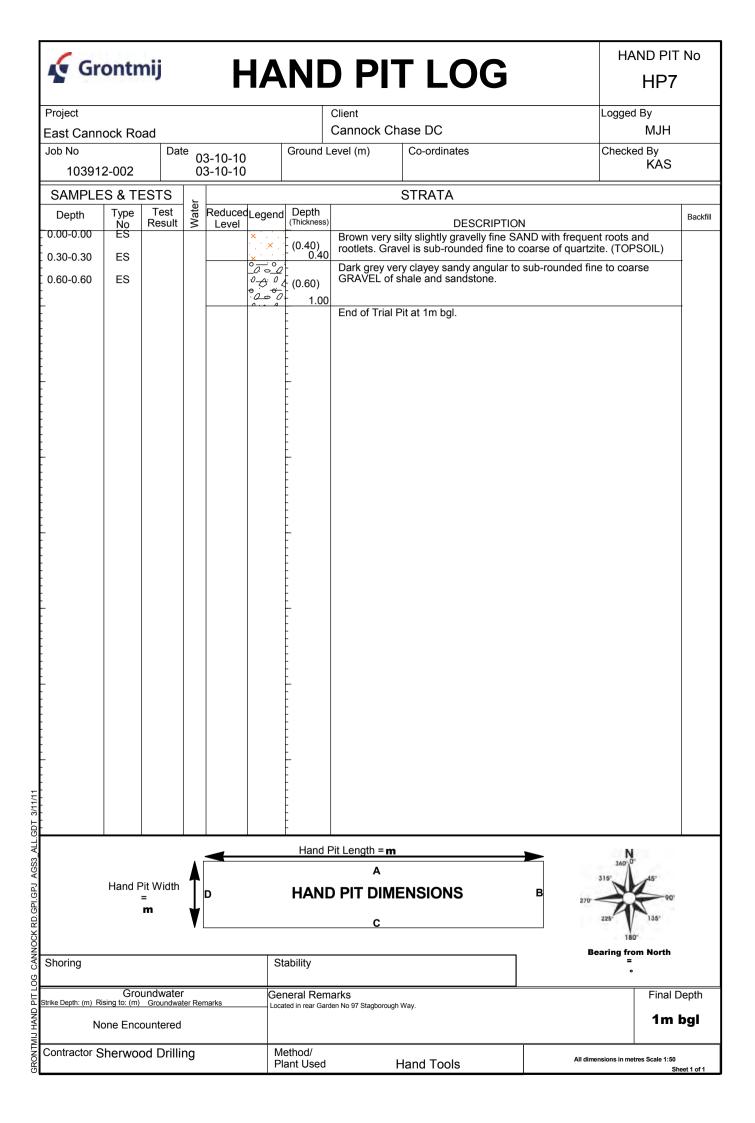
Gro	ontr	nij		Н	A	NC) PI	۲ LOG	HAND PI	
Project							Client		Logged By	
East Cann	ock Ro	ad					Cannock Ch	ase DC	MJH	
Job No		Dat	e n	3-10-10		Ground L	evel (m)	Co-ordinates	Checked By	
103912	2-002		0	3-10-10					KAS	
SAMPLE	S&TE	ESTS	L					STRATA		
Depth	Type No	Test Result	Water	Reduced _{Le}	egend	Depth (Thickness)		DESCRIPTIO	N	Backfill
0.00-0.00 0.05-0.05	ES	rtooun			\mathbf{X}	0.05	MADE GROL	IND Igneous aggregate o	over Terram.	/
0.30-0.30	ES				XX	0.25	sub-rounded	IND Brown clayey gravell to rounded fine to coarse	y fine to coarse SAND. Gravel is of quartzite.	1
- 0.65-0.65	ES					0.60	MADE GROU	IND Red brown very grav	relly fine to coarse SAND. Gravel oncrete and sub-rounded to	
-					<u>.</u>	- (0.40) 1.00	\rounded fine	to coarse of quartzite. Oc	casional whole and half bricks.]
-						- - -	Red brown ve angular fine to End of Trial P	o coarse shale and sub-ro	coarse SAND. Gravel is of ounded fine to coarse quartzite.	
-						-		it at 111 byl.		
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						-				
	I	I				Hand F	Pit Length = m		Ν	1
							A		360",0"	
		Pit Width	T	D		ΗΔΝΓ		NSIONS	315° 45°	
		= m		-		/ 11 4 6			270 200 90	
			V				С		225" 135"	
									Bearing from North	
Shoring					St	ability			•	
		undwater				neral Rem			Final	Depth
Strike Depth: (m) Ris			er Rer	narks	Loca	ted in rear Gard	den No 35 Linden View.			bgl
No	one Enco	ountered								
Contractor Sherwood Drilling Method/ Plant Used Hand Tools All dimensions in metres Scale 1:50 Sheet 1 of 1										

Gro	ntm	nij		Н		NC) Pl	T LOG	HAND F	
Project							Client		Logged By	-
East Cannot	ck Roa	ad					Cannock C	hase DC	MJ	Н
Job No		Dat	e or	2 10 10		Ground L	evel (m)	Co-ordinates	Checked By	
103912-	002		0.	3-10-10 3-10-10					KA	S
SAMPLES	& TE	STS	L					STRATA		
Depth	Type No	Test Result	Water	ReducedL Level	egend	Depth (Thickness)		DESCRIF	ΡΤΙΟΝ	Bac
	NO	recount	_	×	(0.25	Grass over o	dark brown very silty s	lightly gravelly fine to medium SANI	5 –
0.65-0.65	ES						sub-rounded occasional s	very clayey fine to coa d to rounded fine to co sub-rounded quartzite Pit at 1m bgl.	rse SAND and GRAVEL. Gravel is arse of quartzite and quartz with cobbles.	
	land Pit						Pit Length = m A D PIT DIM	ENSIONS	B	
Shoring trike Depth: (m) Rising	= n Grou	ndwater	∀ [D	Ger	ability neral Rem	C		270° 225° 180° Bearing from Nor = 0	th
		Groundwat	er Ken	narks	Locat	ted in rear Gard	en No 42 Berry Hill.			m bgl
Contractor She	erwoo	d Drilliı	ng			ethod/ ant Used		Hand Tools	All dimensions in metres Scale	

Gro	ontr	nij		HA	١N) PI	F LOG		D PIT № 1P4
Project						Client		Logged By	y
East Canno	ock Ro	ad				Cannock Ch	ase DC	1	MJH
Job No 103912	2-002	Dat	0.	3-10-10 3-10-10	Ground	Level (m)	Co-ordinates	Checked	^{By} KAS
SAMPLE	S & TE	ESTS			1		STRATA		
Depth	Туре	Test Result	Water	ReducedLege Level	nd Depth (Thickness		DESCRIPTI		Backfill
0.00-0.00	≥o ES ES ES				0.3	MADE GROU fine organic r coarse of qua (TOPSOIL) Stiff red brow Gravel is of s	JND Grass over dark brain rich SAND with rootlets. artz and quartzite with or n slightly gravelly slightl sub-rounded to rounded fine shale. (POSSIBLE C	own very clayey slightly grave Gravel is sub-rounded fine to ccasional fragments of rusty n y sandy (fine to coarse) CLAY fine to coarse guartzite and g	netal.
					Hand	Pit Length = m		N	
Shoring Strike Depth: (m) Ris No Contractor S		Pit Width = m)		A D PIT DIME c	ENSIONS	B 270° 225° 180° Bearing from	45" > 90" 135" North
Shoring		undwater		0	Stability General Rei				Final Depth
Strike Depth: (m) Ris		Groundwat	er Ren	iarks L	ocated in rear Ga	arden No 49 Swallowfields	s Drive.		1m bgl
Contractor S	herwoo	od Drillii	ng		Method/ Plant Usec	i ł	Hand Tools	All dimensions in metres \$	Scale 1:50 Sheet 1 of 1

10	1.17	5.						HAN	D PIT No
Gro	ontr	nıj		H	ANI) PI	T LOG	1	HP5
Project						Client		Logged B	SV.
East Canno	ock Ro	ad				Cannock Ch	nase DC		MJH
Job No		Dat	e 0:	3-10-10	Ground	Level (m)	Co-ordinates	Checked	
103912	2-002			3-10-10					KAS
SAMPLE	S & TE	ESTS					STRATA		
Depth	Type No	Test Result	Water	ReducedLeg	gend Depth (Thickness)	DESCRIPTIO	N	Backfill
0.00-0.00	ËŠ			×	0.1		very silty fine organic SAN	ID with rootlets. (TOPSOIL)	
0.30-0.30	ES ES			0 0 0 0 0 0 0 0 0 0	, o, - (0.65)	sub-rounded	lightly clayey fine to coars to rounded fine to coarse quartzite cobbles.	e SAND and GRAVEL. Gra of quartzite and quartz with	vel is n rare
0.05-0.05	Eð				<u>0.80</u>	Firm red bro	wn gravelly CLAY. Gravel	is sub-rounded fine to medi	ium of
-					-	quartzite.	Pit at 1m bol		
-					-		in at inn ogi.		
-					-				
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					Hand	Pit Length = m			
					i lanu	A A		360"0"	
		Pit Width	T	D	ЦЛМ	D PIT DIM		B 315	45"
		= m			I IAAN			270	-90
			V			С		225	135"
								180 Bearing from	North
Shoring					Stability			= •	
Strike Depth: (m) Ris	Gro sing to: (m)	undwate Groundwa	ter Ren	narks	General Rer	narks rden No 9 Berry Hill.			Final Depth
		ountered							1m bgl
Contractor S	herwoo	od Drilli	ng		Method/ Plant Used		Hand Tools	All dimensions in metres	Scale 1:50 Sheet 1 of 1

60				•						HAND PIT	No
Gro	ontr	nıj		┣	IA	NE) PIT l	_UG		HP6	
Project							Client			_ogged By	
East Canno	ock Ro	ad					Cannock Chase D	С		MJH	
Job No		Dat	0.	3-10-10		Ground L	evel (m) Co-or	dinates	(Checked By KAS	
103912				3-10-10						rA3	
SAMPLE			er			Deat	STRA	TA			
Depth	Type No ES	Test Result	Water	Reduced Level	Legend	(Thickness)		DESCRIPTIC			Backfill
. 0.00-0.00					XXX	+	MADE GROUND Da	rk brown very cla	yey fine organic SA	ND.	ł
0.30-0.30	ES ES					(0.40) 0.50 (0.50) 1.00	Dark brown very clay angular fine to coars to coarse sandstone quartzite and quartz GROUND)	e shale and brick and sub-rounded	sub-angular to sub I to rounded fine to	o-rounded fine coarse	
-						-	Firm friable orange b	orown gravelly CL	AY. Gravel is angu	lar fine to	
-						-	coarse of shale. End of Trial Pit at 1m	ı bgl.		/	
Shoring Strike Depth: (m) Ris Contractor S											
				-		Hand F	Pit Length = m			N	
				-			Α		3	360"0" 45"	
		Pit Width =		D		HAND	PIT DIMENSIO	ONS	B 270 -		
		m	V				C		Bea	180" 135"	
Shoring					St	ability				- •	
Strike Depth: (m) Ris		undwatei Groundwa		narks		neral Rem ated in rear Gard	arks en No 10 Berry Hill.			Final D	epth
No	ne Enco	ountered					-			1m I	bgl
Contractor S	herwoo	od Drilli	ng			ethod/ ant Used	Hand T	ools	All dimens	sions in metres Scale 1:50	eet 1 of 1



Gr	ontr	nij			Λ	ΝΙΓ	רוס ר	LOG		HAND PIT	No
							<i>」</i> 「			HP8	
Project			_				Client			Logged By	
East Cann	ock Ro					Orayund	Cannock Ch			MJH	
Job No 10391					KAS						
SAMPLE		ESTS				L		STRATA	I		
Depth	Type No	Test Result	Water	Reduced Level	egend	Depth (Thickness)	DESCRIPTIC	DN		Backfill
0.00-0.00	ËŠ		-		XX	× 0.20	MADE GROU	JND Grass over brown cl potlets. Gravel is sub-rour		ravelly fine	,
0.30-0.30 -	ES			.		 - (0.80)	\quartzite.	Ity gravelly fine to coarse		/	
	ES		1 Į				rounded fine angular to su	to coarse of quartzite wit b-angular fine to coarse s obbles of quartzite. Brick	h some angular co sandstone. Occasi	arse brick and onal	
-						- - - - - - -					
						Hand	Pit Length = m			N	
Shoring Strike Depth: (m) Ri 1	Hand F	Pit Width = m		D		HAN	A D PIT DIME c	ENSIONS	B 270 -	105 45° 225° 135°	
Shoring					St	tability			Bea	aring from North = °	
<u>Strike Depth: (m)</u> Ri 1		Undwate Groundwa Ground water	ter Ren	narks		neral Ren ated in rear Gar	narks Iden No 27 Linden View.			° Final D 1m k	
Contractor S	herwo	od Drilli	ng			lethod/ lant Used	ŀ	Hand Tools	All dimen	sions in metres Scale 1:50	eet 1 of 1

60							HAND PIT No
Gr	ontr	nij		H	ANL) PIT LOG	HP9
Project						Client	Logged By
East Cann	ock Ro	bad				Cannock Chase DC	MJH
04-10-10				Checked By KAS			
10391	2-002			4-10-10			KAS
SAMPLE		1	er			STRATA	
Depth	Type No	Test Result	Water	ReducedLeg Level	end Depth (Thickness)	BEGGI III IIG	
0.00-0.00	ES				0.25		sional roots. Gravel is of
0.30-0.30 -	ES					sub-rounded fine to medium quartzite sanstone shale and rare brick. (TOPS)	and angular fine to medium
0.65-0.65	ES				(0.75)	MADE GROUND Firm friable grey grav	velly CLAY with occasional roots.
-					<u> </u>	sub-rounded fine to coarse sandstone	and angular fine to medium
					-	End of Trial Pit at 1m bgl.	/
-					-		
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-					-		
					Hand I	Pit Length = m	N
						Α	315"45"
	Hand F	Pit Width =		D	HAN	D PIT DIMENSIONS	B 270' - 90'
		m	¥			С	225 135"
							180"
Shoring					Stability		Bearing from North = °
	0	undwata	~		Cancerla		
Strike Depth: (m) Ri		Groundwate		narks	General Rem Located in rear Gard	I arks den No 38 Swallowfields Drive.	Final Depth
No	one Enc	ountered					1m bgl
Contractor S	herwo	od Drilli	ng		Method/		
Shoring Strike Depth: (m) Ri No Contractor S			5		Plant Used	Hand Tools	All dimensions in metres Scale 1:50 Sheet 1 of 1

Hand Dug Pits - 20/6/11. Logged by: RH

S01	
	MADE GROUND: Brown sandy gravelly clay topsoil with many roots. Gravel is fine to course subangular
0 - 0.1m	to subrounded quartz, brick, limestone and ash
	MADE GROUND: Brown sandy gravelly clay. Gravel is medium to coarse subangular to subrounded
0.1-0.5m	brick, tile, quartz, sandstone, ash and clinker.
0.5m	End of hand pit

S02

	MADE GROUND: Brown sandy gravelly clay topsoil with many roots. Gravel is fine to course subangular
0 - 0.07m	to subrounded quartz, brick, limestone and ash
	MADE GROUND: Brown sandy gravelly clay. Gravel is medium to coarse subangular to subrounded
0.07-0.3m	brick, tile, quartz, sandstone, ash and clinker.
0.3m	Hand pit aborted - solid obstruction

S03

503	
0 - 0.05m	MADE GROUND: Brown sandy topsoil
	MADE GROUND: Brown sandy gravelly clay. Gravel is fine to coarse subangular to subrounded brick,
0.05 - 0.2m	quartz, burnt shale. Metal wire observed at 0.2m.
0.2m	Hand pit aborted - strata too stiff to penetrate with spade

S04

0 - 0.05m	MADE GROUND: Brown sandy topsoil
	MADE GROUND: Brown sandy gravelly clay. Gravel is medium to coarse subangular to subrounded
0.05 - 0.2m	brick, tile, quartz, sandstone, ash and clinker.
0.2 - 0.25m	Possible MADE GROUND: Stiff brown clay with gravel of coal
0.25m	Hand pit aborted - strata too stiff to penetrate with spade

S05	
0 - 0.1m	MADE GROUND: Brown sandy, slightly gravelly topsoil
	Possible MADE GROUND: Brown fine to medium slightly clayey sand with some fine to medium
0.1 - 0.45m	subangular to subrounded gravel of quartz, sandstone and some coal
0.45m	Hand pit aborted - strata too stiff to penetrate with spade

APPENDIX D



Grontmij Radcliffe House 3rd Floor Blenheim Court, Lode Iane Solihull West Midlands B912AA Attention:

Gareth Taylor

CERTIFICATE OF ANALYSIS

Date:	18 October 2010		
Customer:	H_GRONTMIJ_SOL-27		
Sample Delivery Group (SDG):	101004-23	Report No.:	100214
Your Reference:			
Location:	Stagborough		

We received 20 samples on Saturday October 02, 2010 and 8 of these samples were scheduled for analysis which was completed on Friday October 15, 2010. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Asbestos testing - we are not accredited for screening soil samples for asbestos fibres. We are only accredited to identify asbestos fibres in bulk material (ACM).

Approved By:

enton

Iain Swinton Operations Director - Land UK & Ireland



Validated	ALcontrol La	boratories Analy	vtical Services
SDG:	101004-23	Customer:	Grontmij
Job:	H_GRONTMIJ_SOL-27	Attention:	Gareth Taylor
Client Reference:		Order No.:	
Location:	Stagborough	Report No:	100214

Received Sample Overview

		-		
Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
2180866	WS12		0.30	28/09/2010
2180910	WS12		3.00 - 3.50	28/09/2010
2180692	WS13		0.65	29/09/2010
2180960	WS14		0.65	29/09/2010
2180787	WS15		0.60	30/09/2010
2180811	WS15		1.00 - 1.50	30/09/2010
2180594	WS16			30/09/2010
2180626	WS16		0.30	30/09/2010

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated		ALcontrol L	abora	to	rie	es	Α	na	aly	/ti	са	1			
SDG:	101004-23		Customer:							Grontmij					
Job: Client Reference:		MIJ_SOL-27				tter rde				Gareth					
Location:	Stagborougl	n						No:			100	214			
SOLID															
Results Legend				2180594											
Kesuits Legend		Lab Sample	Lab Sample No(s)			2180626	2180692	2180787	2180811	2180866	210012	2180910			
X Test		Customer Sample Ref.				WS16	WS13	WS15	WS15	WS12	71044	WS12			
N Possible	e	AGS Re	AGS Ref.			╈	+					+			
									1.0			2			
		Depth (m)				0.30	0.65	0.60	1.00 - 1.50	0.30	0 - 3.30	3 00 - 3 50			
		Container			250g Amber Jar	250g Amber Jar 400g Tub	400g Tub	400g Tub 250n Amber Jar	60g VOC 250g Amber Jar	400g Lub 250g Amber Jar	250g Amber Jar	250g Amber Jar 60a VOC			
Asbestos Containing Material Screen		All	NDPs: 0 Tests: 1				, ,	ĸ							
Boron Water Soluble		All	NDPs: 0 Tests: 6	x	x	X) 	x		x		x			
EPH CWG (Aliphatic) GC (S)		All	NDPs: 0 Tests: 2						x		x				
EPH CWG (Aromatic) GC (S)		All	NDPs: 0 Tests: 2	Π					x		x				
		All	NDPs: 0 Tests: 2						x			×			
Hexavalent Chromium (s)		All	NDPs: 0 Tests: 6	,		<mark>x</mark>	x	x		×					
Metals by iCap-OES (Soil)		Arsenic	NDPs: 0 Tests: 6	x	x	x) 	×		x		x			
		Barium	NDPs: 0 Tests: 6	x	x	×)	×		x		x			
		Beryllium	NDPs: 0 Tests: 6	x	x	x) 	×		x		x			
		Cadmium	NDPs: 0 Tests: 6	x	x	×)	×		x		x			
		Chromium	NDPs: 0 Tests: 6	x	x	x	,	ĸ		x		×			
		Copper	NDPs: 0 Tests: 6	x	x	x)	×		×		x			
		Lead	NDPs: 0 Tests: 6	x	x	x	,	×		x		×			
		Mercury	NDPs: 0 Tests: 6	x	x	x	,	×		x		×			
		Nickel	NDPs: 0 Tests: 6	x	x	x	,	×		x		×			
		Selenium	NDPs: 0 Tests: 6	x	x	x)	×		x		×			

Validated		ALcontrol Laboratories Analytical									al	S		
SDG: Job: Client Reference: Location:	Job: H_GRONTMIJ_SOL-27 Client Reference:		Customer: Attention: Order No.: Report No:							Grontmij Gareth T 100214				
SOLID														
Results Legend		Lab Sample No(s) Customer Sample Ref.			0.000	2180626	2180692	2180787		2180811	2180866		2180910	2180960
	X Test No Determination					WS16	WS13	CLSM		WS15	WS12		WS12	WS14
			AGS Ref.											
		Depth ((m)			0.30	0.65	U.BU		1.00 - 1.50	0.30	000	3.00 - 3.50	0.65
		Contair	ner	250g Amber Jar	250g Amber Jar	400 g Tub	400g Tub 250g Amber Jar	250g Amber Jar	250g Amber Jar	60g VOC	400g Tub 250n Amber Jar	250g Amber Jar	60g VOC	400g Tub
Metals by iCap-OES (Soil)		Vanadium	NDPs: 0 Tests: 6	x	x		×	x)	×.		,	<mark>(</mark>
		Zinc	NDPs: 0 Tests: 6	x	X		×	x)	K		,	
pH		All	NDPs: 0 Tests: 6		<u>د</u>	x	x	,			X			x
Sample description		All	NDPs: 0 Tests: 8	x	X		×	x	x)	K	x	,	
Semi Volatile Organic Compou	unds	All	NDPs: 0 Tests: 2						x	Ī		x		
Total Organic Carbon		All	NDPs: 0 Tests: 6	x	x		×	x)	×.)	<pre></pre>
TPH CWG GC (S)		All	NDPs: 0 Tests: 2						x	Ī		x		
VOC MS (S)		All	NDPs: 0 Tests: 2							x			x	

18/10/2010, 11:29:28

Validated] ALcontrol La	boratories Analy	ytical Services
SDG:	101004-23	Customer:	Grontmij
Job:	H_GRONTMIJ_SOL-27	Attention:	Gareth Taylor
Client Reference	:	Order No.:	
Location:	Stagborough	Report No:	100214

Sample Descriptions

irain Sizes									
very fine <0.	063mm fine 0.0	063mm - 0.1mm n	nedium	0.1mm - 2	2mm	coarse	2mm - 10mm	very coarse	>10mm
Lab Sample No(s)	Customer Sample Ref.	Depth (m)	С	olour	Descript	ion	Grain size	Inclusions	Inclusions 2
2180594	WS16		Dar	k Brown	Sand		0.1 - 2 mm	Stones	Vegetation
2180626	WS16	0.30	Dar	rk Brown	Sand		0.1 - 2 mm	Stones	Vegetation
2180692	WS13	0.65	Dar	rk Brown	Sand		0.1 - 2 mm	Stones	N/A
2180787	WS15	0.60	Dar	rk Brown	Sandy Clay I	Loam	0.1 - 2 mm	Crushed Brick	Vegetation
2180811	WS15	1.00 - 1.50	Dar	rk Brown	Sandy Loa	am	0.1 - 2 mm	Stones	Vegetation
2180866	WS12	0.30		Grey	Silty Clay L	oam	0.063 - 0.1 mm	Stones	None
2180910	WS12	3.00 - 3.50	Dar	rk Brown	Sandy Cla	ay	0.1 - 2 mm	Stones	N/A
2180960	WS14	0.65		Black	Sand		0.1 - 2 mm	Stones	N/A

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated	ALcontrol Laborator	ies Analy	tical Services
SDG Job: Client Reference: Location:	101004-23 H_GRONTMIJ_SOL-27 Stagborough	Customer: Attention: Order No.: Report No:	Grontmij Gareth Taylor 100214

Test Completion Dates

Lab Sample No(s)	2180594	2180626	2180692	2180787	2180811	2180866	2180910	2180960
Customer Sample Ref.	WS16	WS16	W\$13	W\$15	WS15	W\$12	W\$12	WS14
AGS Ref.								
Depth		0.30	0.65	0.60	1.00 - 1.50	0.30	3.00 - 3.50	0.65
Туре	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Asbestos Containing Material Screen				11/10/2010				
Boron Water Soluble	11/10/2010	11/10/2010	11/10/2010	13/10/2010		12/10/2010		11/10/2010
EPH CWG (Aliphatic) GC (S)					13/10/2010		13/10/2010	
EPH CWG (Aromatic) GC (S)					13/10/2010		13/10/2010	
GRO by GC-FID (S)					12/10/2010		12/10/2010	
Hexavalent Chromium (s)	11/10/2010	11/10/2010	11/10/2010	13/10/2010		11/10/2010		11/10/2010
Metals by iCap-OES (Soil)	12/10/2010	12/10/2010	12/10/2010	14/10/2010		12/10/2010		12/10/2010
рН	11/10/2010	11/10/2010	11/10/2010	12/10/2010		13/10/2010		13/10/2010
Sample description	08/10/2010	08/10/2010	08/10/2010	08/10/2010	08/10/2010	08/10/2010	08/10/2010	08/10/2010
Semi Volatile Organic Compounds					13/10/2010		13/10/2010	
Total Organic Carbon	11/10/2010	11/10/2010	11/10/2010	13/10/2010		12/10/2010		11/10/2010
TPH CWG GC (S)					13/10/2010		13/10/2010	
VOC MS (S)					15/10/2010		15/10/2010	

SDG Job: Client Locati	Reference: on:	101004-2 H_GRON Stagboro	ITMIJ_SO	L-27		Atter Orde	omer: ntion: r No.: ort No:	Gror Gare	eth Taylor		
M m aq Ad diss.filt Di tot.unfilt To * su ** % of in th fo	Results Legend O17025 accredited. CERTS accredited. Uncous / settled sample. ssolved / filtered sample. tai / unfiltered sample. bibcontracted test. recovery of the surrogate andard to check the efficiency the method. The results of the dividual compounds within e samples are not corrected r this recovery.	Lab S A(Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s) GS Reference Method	WS12 0.30 Soil/Solid 28/09/2010 02/10/2010 101004-23 2180866	WS13 0.65 Soli/Solid 29/09/2010 02/10/2010 101004-23 2180692		WS14 0.65 Soil/Solid 29/09/2010 02/10/2010 101004-23 2180960	D D 3	WS15 0.60 Soli/Solid 30/09/2010 02/10/2010 101004-23 2180787		
Compone Asbestos	Containing	LOD/Units	TM001						No ACM Detecte	d	
Material		<0.35 %	TM132	9.41	1.59	#	10.7	#	5.76	#	
pН		1 pH Units	TM133	5.88	8.61	м	6.93	м	7.96	м	
Chromiu	n, Hexavalent	<0.6 mg/kg	TM151	M <0.6 #	<0.6	#	<0.6	#	<0.6	#	
Arsenic		<0.6 mg/kg	TM181	10.4	7.37		8.28		10.4		
Barium		<0.6 mg/kg	TM181	216	84.4	M #	126	M #	108	<u>M</u>	
Beryllium		<0.01	TM181	# 1.76	0.711	#	2.47	#	1.18	#	
Cadmiun	1	mg/kg <0.02	TM181	1.37	0.465		2.18		0.852	м	
Chromiu		mg/kg <0.9 mg/kg	TM181	M 14.4	13	м	19.8	м	20.2	м	
Copper		<1.4 mg/kg	TM181	57.5	18	м	57.6	м	31.2	м	
Lead		<0.7 mg/kg	TM181	45.3	10	м	88.8	м	35.8	м	
		<0.7 mg/kg	TM181	45.3 M 0.245	0.463	м	0.277	м	<0.14	м	
Mercury		mg/kg		М		м		м		м	
Nickel		<0.2 mg/kg	TM181	36.4 M	16.3	м	47.5	м	27	м	
Selenium		<1 mg/kg	TM181	1.81 #	<1	#	1.33	#	1.18	#	
Vanadiur	n	<0.2 mg/kg	TM181	28.1 #	17.7	#	29.1	#	24.7	#	
Zinc		<1.9 mg/kg	TM181	231 M	54.7	м	1090	м	174	м	
Boron, w	ater soluble	<1 mg/kg	TM222	4.36 M	<1	м	1.19	м	1.3	м	
	I							I			

	Validated]	ALco	ntrol Lab	oratories	Analy	tical	Services	5	
	t Reference:	101004-2 H_GRON	23 NTMIJ_SC		Cu Ati Or	istomer: tention: der No.:	Gront Garet	tmij th Taylor		
Loca		Stagboro			Re	port No:	1002	14		_
Semi	Volatile Organic Results Legend		1 dS Sample Ref.	WS12	WS15					_
diss.filt tot.unfilt * **	ISO17025 accredited. mCERTS accredited. Aqueous / settled sample. Dissolved / filtered sample. Total / unfiltered sample. subcontracted test. % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	r Lab : A	Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s) GS Reference	3.00 - 3.50 Soil/Solid 28/09/2010 02/10/2010 101004-23 2180910	1.00 - 1.50 Soii/Solid 30/09/2010 02/10/2010 101004-23 2180811					
Compo Phenol		LOD/Units <100 µg/kg	Method TM157	<100	<100					 \rightarrow
Pentac	chlorophenol	<100 µg/kg	TM157	<100	<100					_
	so-n-dipropylamine	<100 µg/kg	TM157	<100	<100					_
Nitrobe		<100 µg/kg	TM157	<100	<100					 _
										_
Isopho		<100 µg/kg	TM157	<100	<100					
	hloroethane	<100 µg/kg	TM157	<100	<100					
	hlorocyclopentadiene	<100 µg/kg	TM157	<100	<100					
Hexacl	hlorobutadiene	<100 µg/kg	TM157	<100	<100					
Hexacl	hlorobenzene	<100 µg/kg	TM157	<100	<100					
n-Dioc	tyl phthalate	<100 µg/kg	TM157	<100	<100					
Dimeth	yl phthalate	<100 µg/kg	TM157	<100	<100					
Diethyl	phthalate	<100 µg/kg	TM157	<100	<100					
n-Dibu	tyl phthalate	<100 µg/kg	TM157	<100	<100					
Dibenz	cofuran	<100 µg/kg	TM157	<100	<100					
Carbaz	zole	<100 µg/kg	TM157	<100	<100					-
Butylbe	enzyl phthalate	<100 µg/kg	TM157	<100	<100					-
bis(2-E	thylhexyl) phthalate	<100 µg/kg	TM157	149	1920					_
bis(2-C	Chloroethoxy)methane	<100 µg/kg	TM157	<100	<100					_
bis(2-C	Chloroethyl)ether	<100 µg/kg	TM157	<100	<100					_
Azobei	nzene	<100 µg/kg	TM157	<100	<100					_
4-Nitro		<100 µg/kg	TM157	<100	<100					_
4-Nitro		<100 µg/kg	TM157	<100	<100					_
	nylphenol	<100 µg/kg	TM157	<100	<100					
										\square
	rophenylphenylether	<100 µg/kg	TM157	<100	<100					
	roaniline	<100 µg/kg	TM157	<100	<100					
	ro-3-methylphenol	<100 µg/kg	TM157	<100	<100					
	nophenylphenylether	<100 µg/kg	TM157	<100	<100					
3-Nitro	aniline	<100 µg/kg	TM157	<100	<100					
2-Nitro	phenol	<100 µg/kg	TM157	<100	<100					
2-Nitro	aniline	<100 µg/kg	TM157	<100	<100					
2-Meth	ylphenol	<100 µg/kg	TM157	<100	<100					
1,2,4-T	richlorobenzene	<100 µg/kg	TM157	<100	<100					
2-Chlo	rophenol	<100 µg/kg	TM157	<100	<100					
2,6-Dir	nitrotoluene	<100 µg/kg	TM157	<100	<100					\neg
2,4-Dir	nitrotoluene	<100 µg/kg	TM157	<100	<100					 -
2,4-Dir	nethylphenol	<100 µg/kg	TM157	<100	<100					 \dashv
2,4-Dic	chlorophenol	<100 µg/kg	TM157	<100	<100					 -
2,4,6-T	richlorophenol	<100 µg/kg	TM157	<100	<100					 -
	richlorophenol	<100 µg/kg	TM157	<100	<100					 _

Validated]	ALco	ntrol Lab	oratorie	es Analy	tica	I Services	S	
SDG	101004-2	23			Customer:	Gro	ntmij		
Job:	H_GROM	NTMIJ_SC	DL-27		Attention:		eth Taylor		
Client Reference: _ocation:	Stagboro	huah			Order No.: Report No:	100	214		
						100	5 17		
Semi Volatile Organic Results Legend		1 dS Sample Ref.	WS12	WS15					
# ISO17025 accredited. M mCERTS accredited.		·							
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	3.00 - 3.50 Soil/Solid	1.00 - 1.50 Soil/Solid					
* subcontracted test. ** % recovery of the surrogate		Date Sampled Date Received	28/09/2010 02/10/2010	30/09/2010 02/10/2010					
standard to check the efficiency of the method. The results of the		SDG Ref	101004-23	101004-23					
individual compounds within the samples are not corrected	Lau	Sample No.(s) GS Reference	2180910	2180811					
for this recovery.	LOD/Units	Method							
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100	<100					
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100	<100					
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100	<100					
2-Chloronaphthalene	<100 µg/kg	TM157	<100	<100					
2-Methylnaphthalene	<100 µg/kg	TM157	383	168					
Acenaphthylene	<100 µg/kg	TM157	<100	<100					
Acenaphthene	<100 µg/kg	TM157	<100	<100					
Anthracene	<100 µg/kg	TM157	<100	<100					
Benzo(a)anthracene	<100 µg/kg	TM157	<100	162					
Benzo(b)fluoranthene	<100 µg/kg	TM157	<100	124					
Benzo(k)fluoranthene	<100 µg/kg	TM157	<100	<100					
Benzo(a)pyrene	<100 µg/kg	TM157	<100	129					
Benzo(g,h,i)perylene	<100 µg/kg	TM157	<100	<100					
Chrysene	<100 µg/kg	TM157	149	198					
Fluoranthene	<100 µg/kg	TM157	251	374					
Fluorene	<100 µg/kg	TM157	<100	<100					
Indeno(1,2,3-cd)pyrene	<100 µg/kg	TM157	<100	<100					
Phenanthrene	<100 µg/kg	TM157	539	507					
Pyrene	<100 µg/kg	TM157	215	321					
Naphthalene	<100 µg/kg	TM157	399	<100					
Dibenzo(a,h)anthracene	<100 µg/kg	TM157	<100	<100					
	<u> </u>								

SDG lob: Client Reference: Location:	101004-2 H_GRON Stagboro	ITMIJ_SC)L-27		Customer: Attention: Order No.: Report No:	Grontr Gareth 10021	Taylor	
TPH CWG (S)		-			•			
Results Legend # ISO17025 accredited. mCERTS accredited. mcERTS accredited. aq Aqueous / settide sample. oto.unfit Total / unfittered sample. otunfit Total / unfittered sample. subcontracted test. * % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	Lab S	Sample Ref. Depth (m) Sample Type Date Sampled bate Received SDG Ref Sample No.(s) 3S Reference	WS12 3.00 - 3.50 Soil/Solid 28/09/2010 02/10/2010 101004-23 2180910	WS15 1.00 - 1.50 Soil/Solid 30/09/2010 02/10/2010 101004-23 2180811				
Component	LOD/Units	Method						
Aliphatics >C12-C16	<100 µg/kg	TM173	40300	16500				
Aliphatics >C16-C21	<100 µg/kg	TM173	34100	9510				
Aliphatics >C21-C35	<100 µg/kg	TM173	79800	26200				
Aliphatics >C35-C44	<100 µg/kg	TM173	13100	3750				
Aromatics >EC12-EC16	<100 µg/kg	TM173	41100	11500				
Aromatics >EC16-EC21	<100 µg/kg	TM173	86900	25200				
Aromatics >EC21-EC35	<100 µg/kg	TM173	264000	68500				
Aromatics >EC35-EC44	<100 µg/kg	TM173	76300	25500				
Aromatics >EC40-EC44	<100 µg/kg	TM173	28000	10600				
Total Aliphatics >C12-C44	<100 µg/kg	TM173	167000	56000				
Total Aromatics	<100 µg/kg	TM173	468000	131000				
>EC12-EC44 Total Aliphatics >C5-35	<100 µg/kg	TM173	154000	52300				
Total Aliphatics >C5-C44	<100 µg/kg	TM173	167000	56000				
Total Aromatics >C5-35	<100 µg/kg	TM173	392000	105000				
Total Aromatics >C6-C44								
	<100 µg/kg	TM173	468000	131000				
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	546000	158000				
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	636000	187000				
GRO Surrogate % recovery**	%	TM089	14	29				
GRO >C5-C12	<44 µg/kg	TM089	<44	90.9				
Methyl tertiary butyl ether	<5 µg/kg	TM089	<5	<5				
(MTBE) Benzene	<10 µg/kg	TM089	#	<10	#			
Toluene	<2 µg/kg	TM089	M <2	11.5	м			
			м		м			
Ethylbenzene	<3 µg/kg	TM089	<3 M	19.6	м			
m,p-Xylene	<6 µg/kg	TM089	<6 M	<6	м			
o-Xylene	<3 µg/kg	TM089	<3 M	<3	м			
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10				
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	11.5				
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	11.5				
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	12.7				
Total Aliphatics >C5-C12	<10 µg/kg	TM089	26	38				
Aromatics >EC5-EC7		TM089	<10	<10				
	<10 µg/kg							
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	11.5				
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	27.6				
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10				
Total Aromatics	<10 µg/kg	TM089	16.5	52.9				
>EC5-EC12 m,p,o-Xylene	<10 µg/kg	TM089	<10	<10				
BTEX, Total	<10 µg/kg	TM089	<10	31.1				
	1 3.13		-					
Î		l l						

	Validated]	ALco	ntrol Labo	oratories	Analy	tical Serv	vices	
SDG Job: Client	Reference:	101004-2 H_GRON	23 NTMIJ_SC)L-27	At	ustomer: tention: rder No.:	Grontmij Gareth Taylo	r	
ocati		Stagbord	ugh			eport No:	100214		
	AS (S)								
	Results Legend	Customer	Sample Ref.	WS12	WS15				
M mag A diss.filt D tot.unfilt To * su ** % st of in th	ACERTS accredited. queous / settled sample. issolved / filtered sample. otal / unfiltered sample. ubcontracted test. secovery of the surrogate tandard to check the efficiency the method. The results of the adividual compounds within the samples are not corrected or this recovery.	Lab	Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s) GS Reference	3.00 - 3.50 Soil/Solid 28/09/2010 02/10/2010 101004-23 2180910	1.00 - 1.50 Soii/Solid 30/09/2010 02/10/2010 101004-23 2180811				
Compon	ent	LOD/Units	Method						
Dibromo	fluoromethane**	%	TM116	83.8	100				
Toluene-	-d8**	%	TM116	76.4	86.5				
4-Bromo	fluorobenzene**	%	TM116	153	151				
Dichloro	difluoromethane	<4 µg/kg	TM116	<4	<4				
Chlorom	ethane	<7 µg/kg	TM116		N <7				
Vinyl Chl	loride	<10 µg/kg	TM116	# <10	<10	#			
Bromom	ethane	<13 µg/kg	TM116	# <13	<13	#			
Chloroet	hane	<14 µg/kg	TM116	M <14	N <14	VI			
	fluorormethane	<6 µg/kg	TM116		N <6	и			
				м	Ν	и			
	loroethene	<10 µg/kg	TM116	<10 #		#			
Carbon [Disulphide	<7 µg/kg	TM116	9.09 M	23.3 M	N			
Dichloro	methane	<10 µg/kg	TM116	<10 #	<10	#			
Methyl T	ertiary Butyl Ether	<11 µg/kg	TM116	<11 M	<11				
trans-1-2	2-Dichloroethene	<11 µg/kg	TM116	<11	<11				
1.1-Dichl	loroethane	<8 µg/kg	TM116	M <8	N <8	и			
cis-1-2-D	Dichloroethene	<5 µg/kg	TM116	<u>M</u> <5	N <5	N			
2 2-Dich	loropropane	<12 µg/kg	TM116	M <12	<12	N			
	nloromethane		TM116			v			
		<14 µg/kg		м	Ν	v			
Chlorofo		<8 µg/kg	TM116	<8 M	<8 M	M			
1.1.1-Tri	chloroethane	<7 µg/kg	TM116	<7 M	<7 N	v			
1.1-Dichl	loropropene	<11 µg/kg	TM116	<11 M	<11				
Carbonte	etrachloride	<14 µg/kg	TM116	<14	<14				
1.2-Dichl	loroethane	<5 µg/kg	TM116	<5	<5				
Benzene	;	<9 µg/kg	TM116	M <9	N 27				
Trichloro	ethene	<9 µg/kg	TM116	<u>M</u> <9		И			
	loropropane	<12 µg/kg	TM116	M <12	<12	и			
				м	N	и			
	methane	<9 µg/kg	TM116	<9 M	<9 	и			
	chloromethane	<7 µg/kg	TM116	<7 M	<7 M	и			
cis-1-3-D	Dichloropropene	<14 µg/kg	TM116	<14 M	<14	N			
Toluene		<5 µg/kg	TM116	11.4 M	23.5				
trans-1-3	3-Dichloropropene	<14 µg/kg	TM116	<14	<14				
1.1.2-Tri	chloroethane	<10 µg/kg	TM116	<10	<10				
1.3-Dichl	loropropane	<7 µg/kg	TM116	M <7	N <7	VI			
	proethene	<5 µg/kg	TM116	#	<5	#			
	chloromethane		TM116	<13 M	<13 <13	и			
		<13 µg/kg		м	N	и			
	omoethane	<12 µg/kg	TM116	<12 M		и			
Chorobe	nzene	<5 µg/kg	TM116	<5 M	<5 M	и			
1.1.1.2-T	Tetrachloroethane	<10 µg/kg	TM116	<10 M	<10				
Ethylben	zene	<4 µg/kg	TM116	33.7 M	29.8	и			

	Validated		ALco	ntrol La	b	oratori	es Ana	ytio	cal So	ervice	es		
SDG Job:		101004-2 H_GRON					Customer: Attention:	(Grontmij Gareth T				
Clien Locat	t Reference:	Stagboro	uab				Order No.: Report No		00214				
		Staybord	lugn				Report No	•	100214				
VOC	MS (S) Results Legend	Customer	Sample Ref.	WS12		WS15							
м	ISO17025 accredited. mCERTS accredited. Aqueous / settled sample.	Customer											
diss.filt	Dissolved / filtered sample. Total / unfiltered sample.		Depth (m) Sample Type	3.00 - 3.50 Soil/Solid		1.00 - 1.50 Soil/Solid							
**	subcontracted test. % recovery of the surrogate		Date Sampled Date Received	28/09/2010 02/10/2010		30/09/2010 02/10/2010							
	standard to check the efficiency of the method. The results of the	Lab	SDG Ref Sample No.(s)	101004-23 2180910		101004-23 2180811							
	individual compounds within the samples are not corrected		GS Reference										
Compo	for this recovery.	LOD/Units	Method										
p/m-Xy	lene	<14 µg/kg	TM116	20.8	#	<14	#						
o-Xyler	e	<10 µg/kg	TM116	<10		<10							
Styrene	;	<10 µg/kg	TM116	<10	м	<10	M						
Bromot	orm	<10 µg/kg	TM116	<10	м	<10	M						
Isoprop	ylbenzene	<5 µg/kg	TM116	<5	м	<5	M						
1.1.2.2	Tetrachloroethane	<10 µg/kg	TM116	<10	м	<10	M						
1.2.3-T	richloropropane	<17 µg/kg	TM116	<17	#	<17	#						
	penzene	<10 µg/kg	TM116	<10	м	<10	м						
	enzene	<11 µg/kg	TM116	<11	м	<11	м						
	otoluene		TM116	<9	м	<9	м						
		<9 µg/kg			м		м						
	rimethylbenzene	<8 µg/kg	TM116	<8	#	<8	#						
	otoluene	<12 µg/kg	TM116	<12	м	<12	м						
tert-But	ylbenzene	<12 µg/kg	TM116	<12	#	<12	#						
1.2.4-T	rimethylbenzene	<9 µg/kg	TM116	<9	#	<9	#						
sec-Bu	lylbenzene	<10 µg/kg	TM116	<10	м	<10	м						
4-Isopr	opyltoluene	<11 µg/kg	TM116	<11	м	<11	м						
1.3-Dic	hlorobenzene	<6 µg/kg	TM116	<6	м	<6	м						
1.4-Dic	hlorobenzene	<5 µg/kg	TM116	<5	м	<5	м						
n-Butyl	benzene	<10 µg/kg	TM116	<10	м	<10	м						
1.2-Dic	hlorobenzene	<12 µg/kg	TM116	<12		<12							
	romo-3-chloropropan	<14 µg/kg	TM116	<14	м	<14	M						
e Tert-an	nyl methyl ether	<15 µg/kg	TM116	<15	м	<15	M						
1.2.4-T	richlorobenzene	<6 µg/kg	TM116	<6		<6							
Hexach	lorobutadiene	<12 µg/kg	TM116	<12	#	<12	#						
Naphth	alene	<13 µg/kg	TM116	<13		<13							
	richlorobenzene	<6 µg/kg	TM116	<6	м	<6	м						
				-	м	-	м						
					_								

Validated		ALco	ontrol La	abo	oratori	es A	naly	tica	I Service	S	
SDG Job: Client Reference:	101004-2 H_GRON		DL-27			Custo Atten Order	tion:		ntmij eth Taylor		
Location:	Stagboro	ough				Repo		100	214		
											Ţ
Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous' sottled sample. diss.fit Disolved / fittered sample. totunfit Total / unfittered sample. * % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery. for this recovery.	c Lab a A	Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s) GS Reference	WS16 Soil/Solid 30/09/2010 02/10/2010 101004-23 2180594		WS16 0.30 Soil/Solid 30/09/2010 02/10/2010 101004-23 2180626))					
Component Soil Organic Matter (SOM)	LOD/Units <0.35 %	Method TM132	2.1		1.76						+
рН	1 pH Units	TM133	5.83	#	5.63	#					-
Chromium, Hexavalent	<0.6 mg/kg	TM151	0.683	м	<0.6	м					_
Arsenic		TM181	7.03	#	5.89	#					_
	<0.6 mg/kg			м		м					
Barium	<0.6 mg/kg	TM181	70.3	#	81.4	#					
Beryllium	<0.01 mg/kg	TM181	0.685		0.694						
Cadmium	<0.02 mg/kg	TM181	0.467	м	0.371	м					1
Chromium	<0.9 mg/kg	TM181	18	м	16.3	м					
Copper	<1.4 mg/kg	TM181	31		19.3						1
Lead	<0.7 mg/kg	TM181	24	м	20.5	M					
Mercury	<0.14	TM181	0.555	м	0.438	м					-
Nickel	mg/kg <0.2 mg/kg	TM181	16.3	м	14.8	м					-
Selenium	<1 mg/kg	TM181	<1	м	<1	м					-
Vanadium	<0.2 mg/kg	TM181	22.5	#	20.2	#					_
				#		#					
Zinc	<1.9 mg/kg	TM181	66.7	м	57.8	м					
Boron, water soluble	<1 mg/kg	TM222	<1	м	<1	м					
											1
											1
											1
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Table of Results - Appendix

G Nu	mber: 10100	4-23		Client :	H_GRONTMIJ_S	OL		Client Ref :		
POR	ΤΚΕΥ							Results expr	essed as (e.g.) 1.03E-07 is equiv	valent to 1.03x10
DP	No Determination Pos	sible	#	ISO 17025 Accredited		*	Subcontracted Test	м	MCERTS Accred	lited
	No Fibres Detected		PFD	Possible Fibres Detected		»	Result previously reported (Incremental reports only)	EC	Equivalent Carb (Aromatics C8-0	
	etection limits are not alway		circumstance Refere				Description		Wet/Dry Sample ¹	Surrogate Corrected
	PM001				Preparation of Sample	es for Metals	Analysis			
	PM024	Modified BS 1377			Soil preparation inclu Containing Material	ding homoge	nisation, moisture screens of soils for Asb	estos		
	TM001	In - house Method			Determination of asb	estos contain	ng material by screening on solids			
	TM089	Modified: US EPA Met	nods 8020 &	602	Determination of Gas Headspace GC-FID (C		lydrocarbons (GRO) and BTEX (MTBE) co	mpounds by		
	TM116	Modified: US EPA Met 610 & 602	nod 8260, 81	20, 8020, 624,	Determination of Vola	atile Organic (Compounds by Headspace / GC-MS			
	TM132	In - house Method			ELTRA CS800 Operat	ors Guide				
	TM133	BS 1377: Part 3 1990;	BS 6068-2.5		Determination of pH	in Soil and W	ater using the GLpH pH Meter			
	TM151	Method 3500D, AWW	VAPHA, 20th	Ed., 1999	Determination of Hex	avalent Chro	nium using Kone analyser			
	TM157	HP 6890 Gas Chromat 5973 Mass Selective D			Determination of SVC	OC in Soils by	GC-MS extracted by sonication in DCM/Ac	etone		
	TM173	Analysis of Petroleum Environmental Media - Criteria			Determination of Spe	ciated Extrac	able Petroleum Hydrocarbons in Soils by	GC-FID		
	TM181	US EPA Method 6010E			Determination of Rou	itine Metals ir	Soil by iCap 6500 Duo ICP-OES			
	TM222	In-House Method			Determination of Ho Spectrometer	t Water Solub	le Boron in Soils (10:1 Water:soil) by IRIS	5 Emission		

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

APPENDIX

APPENDIX

- Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH₄ by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.
- 2. Samples will be run in duplicate upon request, but an additional charge may be incurred.
- 3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.
- 4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
- 5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
- 6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.
- 7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.
- 8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.
- 9. NDP No determination possible due to insufficient/unsuitable sample.
- 10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals total metals must be requested separately.
- 11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.
- 12. Results relate only to the items tested
- Surrogate recoveries Most of our organic methods include surrogates, the recovery of which is monitored and reported.
 For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 130 %.
- 14. **Product analyses** Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
- 15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).
- 16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).
- 17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
- 18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.
- 19. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
- 19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
- 21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.
- 22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.
- 23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

	LIQUID	MATRICES EXTRACTION SUMMARY	
ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	SISATANA
PAH MS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
PCB 7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
PCB TOTAL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GS MS
SVOC	DCM	LIQUID/LIQUID SHAKE	GC MS
FREE SULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PEST OCP/OPP	DCM	LIQUID/LIQUID SHAKE	GC MS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GC MS
PHENOLS MS TPH by INFRA RED (IR)	DCM TCE	SOLID PHASE EXTRACTION LIQUID/LIQUID EXTRACTION	GC MS HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID EXTRACTION	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GC FID

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
Solvent Extractable Matter	D&C	DCM	SOXTHERM	GRAVIMETRIC
Cyclohexane Ext. Matter	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
Thin Layer Chromatography	D&C	DCM	SOXTHERM	IATROSCAN
Elemental Sulphur	D&C	DCM	SOXTHERM	HPLC
Phenols by GCMS	WET	DCM	SOXTHERM	GC-MS
Herbicides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
Pesticides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Min oil)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Cleaned up)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH CWG by GC	D&C	HEXANE:ACETONE	END OVER END	GC-FID
PCB tot / PCB con	D&C	HEXANE:ACETONE	END OVER END	GC-MS
Polyaromatic Hydrocarbons (MS)	WET	HEXANE:ACETONE	Microwave TM218.	GC-MS
C8-C40 (C6-C40)EZ Flash	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Polyaromatic Hydrocarbons Rapid GC	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Semi Volatile Organic Compounds	WET	DCM:ACETONE	SONICATE	GC-MS

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content.

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -

Trace – Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in

MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Asbestos Type

Common Name

Chrysotile Amosite Crocidolite Fibrous Actinolite Fibrous Anthophyllite Fibrous Tremolite White Asbestos Brown Asbestos Blue Asbestos --



Grontmij Radcliffe House 3rd Floor Blenheim Court, Lode Iane Solihull West Midlands B912AA Attention:

Gareth Taylor

CERTIFICATE OF ANALYSIS

Date:	18 October 2010		
Customer:	H_GRONTMIJ_SOL-27		
Sample Delivery Group (SDG):	100927-62	Report No.:	100308
Your Reference:			
Location:	Stagborough		

We received 35 samples on Saturday September 25, 2010 and 18 of these samples were scheduled for analysis which was completed on Monday October 18, 2010. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Asbestos testing - we are not accredited for screening soil samples for asbestos fibres. We are only accredited to identify asbestos fibres in bulk material (ACM).

Approved By:

enton

Iain Swinton Operations Director - Land UK & Ireland



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Validated	ALcontrol L	tical Services	
SDG:	100927-62	Customer:	Grontmij
Job:	H_GRONTMIJ_SOL-27	Attention:	Gareth Taylor
Client Reference:		Order No.:	
Location:	Stagborough	Report No:	100308

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
2154248	BH1			22/09/2010
2154250	BH1		0.30	22/09/2010
2154246	BH1		0.70	22/09/2010
2154247	BH1		2.00 - 3.00	22/09/2010
2154256	BH2			24/09/2010
2154255	BH2		0.30	24/09/2010
2154254	BH2		0.65	24/09/2010
2154257	BH2		2.00 - 2.30	24/09/2010
2154262	BH3			24/09/2010
2154261	BH3		0.30	24/09/2010
2154260	BH3		0.60	24/09/2010
2154263	ВНЗ		1.00 - 1.35	24/09/2010
2154266	HP1			22/09/2010
2154267	HP1		0.30	22/09/2010
2154265	HP1		0.70	22/09/2010
2154292	WS10			23/09/2010
2154291	WS10		0.30	23/09/2010
2154290	WS10		0.65	23/09/2010
2154289	WS10		1.50 - 2.00	23/09/2010
2154300	WS11			23/09/2010
2154298	WS11		0.30	23/09/2010
2154296	WS11		0.65	23/09/2010
2154297	WS11		2.50 - 3.00	23/09/2010
2154273	WS7			22/09/2010
2154269	WS7		0.30	22/09/2010
2154270	WS7		0.70	22/09/2010
2154272	WS7		1.10 - 1.50	22/09/2010
2154279	WS8			23/09/2010
2154278	WS8		0.30	23/09/2010
2154276	WS8		0.65	23/09/2010
2154277	WS8		1.50 - 1.80	23/09/2010
2154283	WS9			23/09/2010
2154281	WS9		0.30	23/09/2010
2154282	WS9		0.65	23/09/2010
2154286	WS9		1.00 - 1.40	23/09/2010

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated ALcontrol Laboratories Analytical Services																									
	927-62 GRONTM	IJ_SOL-27			At	ter	ome ntio er No	n:		G	Gare	ntmi eth T		or											
Location: Sta	gborough	l		Report No: 100308																					
SOLID						_				_	_				_	_	_					_		_	
Results Legend		Lab Sample N	No(s)	2104247	2104240	0464040	2154254	2154256	2104257	0474074	2154260	2154263	00247012	04 E 4 5 6 E	2154269	2154273	2154278	2154281	2154282	2154290	2154296	2 Uthau 1	2154297	2154298	2154300
X Test No Determinati Possible	on	Customer Sample Ref.				Ę	BH2	BH2	BHZ	5	BH3	вна			WS7	WS7	WS8	WS	WS9	WS10	WS11		WS11	WS11	WS11
		AGS Ref																							
		Depth (m	2.00 - 3.00	200		0.65		2.00 - 2.30	200	0.60	1.00 - 1.35		0 70	0.30		0.30	0.30	0.65	0.65	0.65	1.00 - v.vv	2.50 - 3.00	0.30		
		Containe	r	250g Amber Jar	250g Amber Jar	250g Amber Jar 400g Tub	60g VOC 400g Tub	400g Tub 250g Amber Jar	250g Amber Jar	250g Amber Jar	∠oug Amber Jar 400g Tub	400g Tub	250g Amber Jar	250g Amber Jar 400c Tub	250g Amber Jar 400g Tub	250g Amber Jar 400g Tub	∠oug Antiber Jan 400g Tub	400g Tub	400g Tub 250g Amber Jar	400g Tub 250g Amber Jar	400g Tub 250g Amber Jar	250g Amber Jar	250g Amber Jar 60g VOC	250g Amber Jar 400g Tub	60g VOC 400g Tub
Asbestos Containing Material Scr	reen	All				x				X							x			×					
Boron Water Soluble		All	NDPs: 0 Tests: 15		x	x		x		X	×	, I	x	x	×	×		(x	<mark>x</mark>	x		x	×	
Cyanide Comp/Free/Total/Thiocy	anate	All	NDPs: 0 Tests: 4				x				x							x			x				
EPH CWG (Aliphatic) GC (S)		All	NDPs: 0 Tests: 6			x			×		×	<pre>c</pre>					×	<				×		x	
EPH CWG (Aromatic) GC (S)		All	NDPs: 0 Tests: 6			x			×		×	<mark>د</mark>					×	(×		x	
GRO by GC-FID (S)		All	NDPs: 0 Tests: 6				x)	<mark>(</mark>)	<u>د</u>)	<mark>(</mark>			2	x		×
Hexavalent Chromium (s)		All	NDPs: 0 Tests: 15) 	<mark><</mark>	x	x			x	x)	(×	x	x	x	x	x	x			<mark>x</mark>	<mark>x</mark>
Metals by iCap-OES (Soil)		Antimony	NDPs: 0 Tests: 3			x				x							×	<mark>(</mark>							
		Arsenic	NDPs: 0 Tests: 15		x	x		x		x	×		x	x	x	x	X	(x	x	x		x	x	
		Barium	NDPs: 0 Tests: 15		x	x		x		x	×	•	x	x	x	x	×	<mark>(</mark>	x	×	x		x	x	
		Beryllium	NDPs: 0 Tests: 15		x	x		x		x	×	•	x	x	x	x	×	<mark>(</mark>	x	x	x		x	x	
		Cadmium	NDPs: 0 Tests: 15		x	x		x		x	×	•	x	x	x	x	×	<mark>(</mark>	x	x	x		x	x	
		Chromium	NDPs: 0 Tests: 15		x	x		x		x	×		x	x	×	×			x	x	x		x	×	
		Copper	NDPs: 0 Tests: 15		x	x		x		x	×		x	x	x	x	×	•	x	x	x		x	x	
		Lead	NDPs: 0 Tests: 15		x	x		x		x	×		x	×	x	×	×	•	x	×	x		x	×	
		Mercury	NDPs: 0 Tests: 15		x	x		<mark>x</mark>		x	×	((x	x	x	x	×	<mark>(</mark>	x	x	x		x	x	

Validated ALcontrol Laboratories Analytical Services SDG: 100927-62 Customer: Grontmij																								
Job: H_GF Client Reference:	RONTMIJ_SOL-27						n: 5.:		G	are	th T	i aylo	or											
-	oorough			Re	po	rt N	o:			003	808									_	_	_	_	
SOLID																					Г			
Results Legend	No(s)	2154247	2154248		2154254	2154256	2154257		2154260	2154263	2154265	2154269		2154273	2154278	2154281	2154282	2154290	2154296		2154297	2154298	2154300	
X Test		Customer Sample Ref. AGS Ref.				BH2	BH2	BH2		BH3	BH3	ΗP1	WS7		WS7	WS8	6SM	es.M	WS10	WS11		WS11	WS11	WS11
Possible	AGS Ret																				Γ			
	Depth (m	ו)	2.00 - 3.00			0.65		2.00 - 2.30		0.60	1.00 - 1.35	0.70	0.30))		0.30	0.30	0.65	0.65	0.65)) 1	2.50 - 3.00	0.30	
	Containe	Container		400g Lub 250g Amber Jar	250g Amber Jar	60g VOC 400g Tub	400g Tub 250g Amber Jar	250g Amber Jar	250g Amber Jar	250g Amber Jar 400g Tub	60g VOC 400g Tub	250g Amber Jar	250g Amber Jar	250g Amber Jar	250g Amber Jar 400g Tub	250g Amber Jar 400g Tub	400g Tub	250g Amber Jar	400g Tub 250g Amber Jar	400g Tub 250g Amber Jar	250g Amber Jar	250g Amber Jar 60g VOC	400g Tub	60g VOC 400g Tub 250g Amber Jar
Metals by iCap-OES (Soil)	Nickel	NDPs: 0 Tests: 15		x	x		x		x	×		x	x	x	x	×		x	x	x		x		×
	Selenium	NDPs: 0 Tests: 15		x	x		x		x	×		x	x	x	x	X		x	x	x		x		x
	Vanadium	NDPs: 0 Tests: 15		x	x		x		x	×		x	x	×	x	X		x	x	x		x		×
	Zinc	NDPs: 0 Tests: 15		x	x		x		x	×		x	x	x	x	X		x	x	x		x		x
pH	All	NDPs: 0 Tests: 15		×		x	×			x	x	×			×	x	x		x	x			x	×
Phenols by HPLC (S)	All	NDPs: 0 Tests: 4				x				x							x			x			Π	
Sample description	All	NDPs: 0 Tests: 18	x	x	x		x	x	x	×		x	x	×	x	×		x	x	x	x	×		×
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 7	x		x			x		×						×					x			×
Total Organic Carbon	All	Tests:		x	x		<mark>x</mark>		x			x	x	x	×	x		x	x	x		×		×
TPH CWG GC (S)	All	15 I NDPs: 0 Tests: 6			x			x		×						×					x			x
VOC MS (S)	All	NDPs: 0 Tests: 7	×			×		×			x						×					x		x

ALcontrol Laboratories Analytical Services Validated SDG: 100927-62 Grontmij **Customer:** Job: H_GRONTMIJ_SOL-27 Attention: Gareth Taylor **Client Reference:** Order No.: Stagborough **Report No:** 100308 Location:

Sample Descriptions

very fine <0	.063mm fine (0.063mm - 0.1mm m	edium 0.1	mm - 2mm	coarse	2mm - 10mm	very coarse	>10mm
Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Descr	iption	Grain size	Inclusions	Inclusions 2
2154247	BH1	2.00 - 3.00	Red	Sa	ind	0.1 - 2 mm	Stones	None
2154248	BH1		Dark Brow	n Loamy	/ Sand	0.1 - 2 mm	Vegetation	None
2154254	BH2	0.65	Dark Brow	n Sandy	Loam	0.1 - 2 mm	Stones	None
2154256	BH2		Dark Brow	n Sandy	y Clay	0.1 - 2 mm	Stones	Vegetation
2154257	BH2	2.00 - 2.30	Dark Brow	n Sandy	y Clay	0.1 - 2 mm	Stones	None
2154260	BH3	0.60	Dark Brow	n Sandy	Loam	0.1 - 2 mm	Stones	Vegetation
2154263	BH3	1.00 - 1.35	Light Brow	n Sandy	y Clay	0.1 - 2 mm	Stones	None
2154265	HP1	0.70	Dark Brow	n Sa	ind	0.1 - 2 mm	Stones	Vegetation
2154269	WS7	0.30	Dark Brow	n Sandy Cl	lay Loam	0.1 - 2 mm	Stones	None
2154273	WS7		Dark Brow	n Sa	ind	0.1 - 2 mm	Stones	Vegetation
2154278	WS8	0.30	Dark Brow	n Sa	ind	0.1 - 2 mm	Stones	N/A
2154281	WS9	0.30	Dark Brow	n Sandy	y Clay	0.1 - 2 mm	Stones	Vegetation
2154282	WS9	0.65	Light Brow	n Silty	Clay	0.063 - 0.1 mm	Stones	None
2154290	WS10	0.65	Light Brow	n Sandy	Loam	0.1 - 2 mm	Stones	None
2154296	WS11	0.65	Dark Brow	n Sandy	Loam	0.1 - 2 mm	Stones	None
2154297	WS11	2.50 - 3.00	Dark Brow	n Sa	ind	0.1 - 2 mm	Stones	Brick
2154298	WS11	0.30	Dark Brow	n Sandy	y Clay	0.1 - 2 mm	Stones	Vegetation
2154300	WS11		Dark Brow	n Sandy	y Clay	0.1 - 2 mm	Stones	Vegetation

These descriptions are only intended to act as a cross check if sample identities are guestioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Grain Sizes

Validated	ALcontrol Laboratori	ALcontrol Laboratories Analytical Services											
SDG: Job: Client Reference:	100927-62 H_GRONTMIJ_SOL-27	Customer: Attention: Order No.:	Grontmij Gareth Taylor										
Location:	Stagborough	Report No:	100308										

Test Completion Dates

Lab Sample No(s)	2154247	2154248	2154254	2154256	2154257	2154260	2154263	2154265	2154269	2154273
Customer Sample Ref.	BH1	BH1	BH2	BH2	BH2	BH3	BH3	HP1	WS7	WS7
AGS Ref.										
Depth	2.00 - 3.00		0.65		2.00 - 2.30	0.60	1.00 - 1.35	0.70	0.30	
Туре	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Asbestos Containing Material Screen			11/10/2010			11/10/2010				
Boron Water Soluble		12/10/2010	12/10/2010	13/10/2010		12/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010
Cyanide Comp/Free/Total/Thiocyanate			12/10/2010			12/10/2010				
EPH CWG (Aliphatic) GC (S)			13/10/2010		13/10/2010		13/10/2010			
EPH CWG (Aromatic) GC (S)			13/10/2010		13/10/2010		13/10/2010			
GRO by GC-FID (S)			12/10/2010		15/10/2010		12/10/2010			
Hexavalent Chromium (s)		11/10/2010	13/10/2010	11/10/2010		11/10/2010	11/10/2010	11/10/2010	11/10/2010	11/10/2010
Metals by iCap-OES (Soil)		12/10/2010	14/10/2010	14/10/2010		14/10/2010	13/10/2010	12/10/2010	12/10/2010	12/10/2010
pH		12/10/2010	13/10/2010	12/10/2010		13/10/2010	13/10/2010	13/10/2010	13/10/2010	13/10/2010
Phenols by HPLC (S)			12/10/2010			12/10/2010				
Sample description	08/10/2010	08/10/2010	11/10/2010	08/10/2010	08/10/2010	11/10/2010	08/10/2010	08/10/2010	08/10/2010	08/10/2010
Semi Volatile Organic Compounds	13/10/2010		13/10/2010		13/10/2010		13/10/2010			
Total Organic Carbon		12/10/2010	12/10/2010	12/10/2010		12/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010
TPH CWG GC (S)			13/10/2010		15/10/2010		13/10/2010			
VOC MS (S)	14/10/2010		18/10/2010		14/10/2010		14/10/2010			
Lab Sample No(s)	2154278	2154281	2154282	2154290	2154296	2154297	2454200	0454000	1	
			2104202	2134290	2134290	2154297	2154298	2154300		
Customer Sample Ref.	WS8	WS9	WS9	WS10	WS11	2154297 WS11	2154296 WS11	2154300 WS11		
Customer Sample Ref.	WS8									
Customer Sample Ref. AGS Ref.	WS8									
	ws8									
AGS Ref.		WS9	WS9	WS10	WS11	WS11	WS11			
AGS Ref. Depth	0.30	ws9 0.30	ws9 0.65	ws10	ws11 0.65	ws11 2.50 - 3.00	ws11 0.30	WS11		
AGS Ref. Depth Type	0.30	0.30 SOLID	ws9 0.65	ws10	0.65 SOLID	ws11 2.50 - 3.00 SOLID	ws11 0.30	WS11		
AGS Ref. Depth Type Asbestos Containing Material Screen	0.30 SOLID	ws9 0.30 SOLID 11/10/2010	0.65 SOLID	0.65 SOLID	WS11 0.65 SOLID 11/10/2010	ws11 2.50 - 3.00 SOLID	0.30 SOLID	WS11 SOLID		
AGS Ref. Depth Type Asbestos Containing Material Screen Boron Water Soluble	0.30 SOLID	ws9 0.30 SOLID 11/10/2010 12/10/2010	0.65 SOLID	0.65 SOLID	WS11 0.65 SOLID 11/10/2010 12/10/2010	ws11 2.50 - 3.00 SOLID	0.30 SOLID	WS11 SOLID		
AGS Ref. Depth Type Asbestos Containing Material Screen Boron Water Soluble Cyanide Comp/Free/Total/Thiocyanate	0.30 SOLID	ws9 0.30 SOLID 11/10/2010 12/10/2010 12/10/2010	0.65 SOLID	0.65 SOLID	WS11 0.65 SOLID 11/10/2010 12/10/2010	ws11 2.50 - 3.00 SOLID 11/10/2010	0.30 SOLID	ws11 SOLID 12/10/2010		
AGS Ref. Depth Type Asbestos Containing Material Screen Boron Water Soluble Cyanide Comp/Free/Total/Thiocyanate EPH CWG (Aliphatic) GC (S) EPH CWG (Aromatic) GC (S)	0.30 SOLID	ws9 0.30 SOLID 11/10/2010 12/10/2010 12/10/2010 13/10/2010	0.65 SOLID	0.65 SOLID	WS11 0.65 SOLID 11/10/2010 12/10/2010	ws11 2.50 - 3.00 SOLID 11/10/2010 13/10/2010	0.30 SOLID	ws11 SOLID 12/10/2010 13/10/2010		
AGS Ref. Depth Type Asbestos Containing Material Screen Boron Water Soluble Cyanide Comp/Free/Total/Thiocyanate EPH CWG (Aliphatic) GC (S)	0.30 SOLID	ws9 0.30 SOLID 11/10/2010 12/10/2010 12/10/2010 13/10/2010 13/10/2010	0.65 SOLID	0.65 SOLID	WS11 0.65 SOLID 11/10/2010 12/10/2010	ws11 2.50 - 3.00 SOLID 11/10/2010 13/10/2010 13/10/2010	0.30 SOLID	WS11 SOLID 12/10/2010 13/10/2010 13/10/2010		
AGS Ref. Depth Type Asbestos Containing Material Screen Boron Water Soluble Cyanide Comp/Free/Total/Thiocyanate EPH CWG (Aliphatic) GC (S) EPH CWG (Aromatic) GC (S) GRO by GC-FID (S) Hexavalent Chromium (s)	0.30 SOLID 12/10/2010	ws9 0.30 SOLID 11/10/2010 12/10/2010 13/10/2010 13/10/2010 12/10/2010	ws9 0.65 SOLID 12/10/2010	ws10 0.65 SOLID 12/10/2010	WS11 0.65 SOLID 11/10/2010 12/10/2010 12/10/2010	ws11 2.50 - 3.00 SOLID 11/10/2010 13/10/2010 13/10/2010	ws11 0.30 SOLID 12/10/2010	WS11 SOLID 12/10/2010 13/10/2010 13/10/2010 12/10/2010		
AGS Ref. Depth Type Asbestos Containing Material Screen Boron Water Soluble Cyanide Comp/Free/Total/Thiocyanate EPH CWG (Aliphatic) GC (S) EPH CWG (Aromatic) GC (S) GRO by GC-FID (S)	0.30 SOLID 12/10/2010 11/10/2010	ws9 0.30 SOLID 11/10/2010 12/10/2010 13/10/2010 13/10/2010 13/10/2010 11/10/2010	ws9 0.65 SOLID 12/10/2010 11/10/2010	ws10 0.65 SOLID 12/10/2010 11/10/2010	WS11 0.65 SOLID 11/10/2010 12/10/2010 12/10/2010 13/10/2010	ws11 2.50 - 3.00 SOLID 11/10/2010 13/10/2010 13/10/2010	ws11 0.30 SOLID 12/10/2010 11/10/2010	WS11 SOLID 12/10/2010 13/10/2010 13/10/2010 12/10/2010 11/10/2010		
AGS Ref. Depth Type Asbestos Containing Material Screen Boron Water Soluble Cyanide Comp/Free/Total/Thiocyanate EPH CWG (Aliphatic) GC (S) EPH CWG (Aromatic) GC (S) GRO by GC-FID (S) Hexavalent Chromium (s) Metals by iCap-OES (Soil) pH	0.30 SOLID 12/10/2010 11/10/2010 12/10/2010	WS9 0.30 SOLID 11/10/2010 12/10/2010 12/10/2010 13/10/2010 12/10/2010 11/10/2010 12/10/2010	ws9 0.65 SOLID 12/10/2010 11/10/2010 12/10/2010	ws10 0.65 SOLID 12/10/2010 11/10/2010 12/10/2010	WS11 0.65 SOLID 11/10/2010 12/10/2010 12/10/2010 13/10/2010 14/10/2010	ws11 2.50 - 3.00 SOLID 11/10/2010 13/10/2010 13/10/2010	WS11 0.30 SOLID 12/10/2010 11/10/2010 12/10/2010	WS11 SOLID 12/10/2010 13/10/2010 13/10/2010 12/10/2010 12/10/2010 12/10/2010		
AGS Ref. Depth Type Asbestos Containing Material Screen Boron Water Soluble Cyanide Comp/Free/Total/Thiocyanate EPH CWG (Aliphatic) GC (S) EPH CWG (Aliphatic) GC (S) EPH CWG (Aromatic) GC (S) GRO by GC-FID (S) Hexavalent Chromium (S) Metals by iCap-OES (Soil) pH Phenols by HPLC (S)	0.30 SOLID 12/10/2010 11/10/2010 12/10/2010	ws9 0.30 SOLID 11/10/2010 12/10/2010 12/10/2010 13/10/2010 12/10/2010 11/10/2010 12/10/2010 13/10/2010	ws9 0.65 SOLID 12/10/2010 11/10/2010 12/10/2010	ws10 0.65 SOLID 12/10/2010 11/10/2010 12/10/2010	WS11 0.65 SOLID 11/10/2010 12/10/2010 12/10/2010 13/10/2010 14/10/2010 13/10/2010	ws11 2.50 - 3.00 SOLID 11/10/2010 13/10/2010 13/10/2010	WS11 0.30 SOLID 12/10/2010 11/10/2010 12/10/2010	WS11 SOLID 12/10/2010 13/10/2010 13/10/2010 12/10/2010 12/10/2010 12/10/2010		
AGS Ref. Depth Type Asbestos Containing Material Screen Boron Water Soluble Cyanide Comp/Free/Total/Thiocyanate EPH CWG (Aliphatic) GC (S) EPH CWG (Aliphatic) GC (S) EPH CWG (Aromatic) GC (S) GRO by GC-FID (S) Hexavalent Chromium (s) Metals by iCap-OES (Soil) pH Phenols by HPLC (S) Sample description	0.30 SOLID 12/10/2010 11/10/2010 12/10/2010 12/10/2010	ws9 0.30 SOLID 11/10/2010 12/10/2010 13/10/2010 13/10/2010 12/10/2010 12/10/2010 13/10/2010 13/10/2010	wss 0.65 SOLID 12/10/2010 12/10/2010 12/10/2010 13/10/2010	ws10 0.65 SOLID 12/10/2010 12/10/2010 12/10/2010 12/10/2010	WS11 0.65 SOLID 11/10/2010 12/10/2010 12/10/2010 13/10/2010 13/10/2010 13/10/2010	ws11 2.50 - 3.00 SOLID 11/10/2010 13/10/2010 13/10/2010 12/10/2010	WS11 0.30 SOLID 12/10/2010 12/10/2010 12/10/2010 13/10/2010	WS11 SOLID 12/10/2010 13/10/2010 13/10/2010 12/10/2010 12/10/2010 13/10/2010 13/10/2010		
AGS Ref. Depth Type Asbestos Containing Material Screen Boron Water Soluble Cyanide Comp/Free/Total/Thiocyanate EPH CWG (Aliphatic) GC (S) EPH CWG (Aromatic) GC (S) EPH CWG (Aromatic) GC (S) GRO by GC-FID (S) Hexavalent Chromium (s) Metals by iCap-OES (Soil) pH Phenols by HPLC (S) Sample description Semi Volatile Organic Compounds	0.30 SOLID 12/10/2010 11/10/2010 12/10/2010 12/10/2010	ws9 0.30 SOLID 11/10/2010 12/10/2010 13/10/2010 13/10/2010 12/10/2010 12/10/2010 13/10/2010 12/10/2010 13/10/2010 11/10/2010	wss 0.65 SOLID 12/10/2010 12/10/2010 12/10/2010 13/10/2010	ws10 0.65 SOLID 12/10/2010 12/10/2010 12/10/2010 12/10/2010	WS11 0.65 SOLID 11/10/2010 12/10/2010 12/10/2010 13/10/2010 13/10/2010 13/10/2010	ws11 2.50 - 3.00 SOLID 11/10/2010 13/10/2010 12/10/2010 08/10/2010	WS11 0.30 SOLID 12/10/2010 12/10/2010 12/10/2010 13/10/2010	WS11 SOLID 12/10/2010 13/10/2010 13/10/2010 12/10/2010 12/10/2010 13/10/2010 08/10/2010		
AGS Ref. Depth Type Asbestos Containing Material Screen Boron Water Soluble Cyanide Comp/Free/Total/Thiocyanate EPH CWG (Aliphatic) GC (S) EPH CWG (Aliphatic) GC (S) EPH CWG (Aromatic) GC (S) GRO by GC-FID (S) Hexavalent Chromium (s) Metals by iCap-OES (Soil)	0.30 SOLID 12/10/2010 12/10/2010 12/10/2010 12/10/2010 08/10/2010	WS9 0.30 SOLID 11/10/2010 12/10/2010 12/10/2010 13/10/2010 12/10/2010 12/10/2010 13/10/2010 13/10/2010 13/10/2010	wss 0.65 SOLID 12/10/2010 12/10/2010 12/10/2010 13/10/2010 08/10/2010	ws10 0.65 SOLID 12/10/2010 12/10/2010 12/10/2010 12/10/2010 08/10/2010	WS11 0.65 SOLID 11/10/2010 12/10/2010 12/10/2010 13/10/2010 13/10/2010 13/10/2010 12/10/2010 11/10/2010	ws11 2.50 - 3.00 SOLID 11/10/2010 13/10/2010 12/10/2010 08/10/2010	WS11 0.30 SOLID 12/10/2010 12/10/2010 12/10/2010 13/10/2010 08/10/2010	WS11 SOLID 12/10/2010 13/10/2010 13/10/2010 12/10/2010 12/10/2010 13/10/2010 08/10/2010 13/10/2010		

Validated		ALcontrol Laboratories Analytical Services										
SDG: Job: Client Reference:	100927-6 H_GRON		DL-27		1	Atte			ntmij eth Taylor			
Location:	Stagboro	ugh						1003	308			
												Τ
Results Legend # ISO17025 accredited.	Customer	Sample Ref.	BH1		BH2		BH2		BH3			1
M mCERTS accredited. aq Aqueous / settled sample. diss.fit Disolved / filtered sample. tot.unfit Total / unfiltered sample. * subcontracted test. * % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	, Lab	Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s) GS Reference	Soil/Solid 22/09/2010 25/09/2010 100927-62 2154248		Soil/Solid 24/09/2010 25/09/2010 100927-62 2154256		0.65 Soil/Solid 24/09/2010 25/09/2010 100927-62 2154254		0.60 Soil/Solid 24/09/2010 25/09/2010 100927-62 2154260			
Component Asbestos Containing	LOD/Units	Method TM001					No ACM Detect	bed	No ACM Detected			+
Material Screen												
Phenols, Total monohydric	<0.025 mg/kg	TM062 (S)					0.422	м	<0.025 M			
Soil Organic Matter (SOM)	<0.35 %	TM132	4.41	щ	5.12	ш	8.4	#	2.83			1
рН	1 pH Units	TM133	6.83	#	8.38	#	7.44		# 8.43			1
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	м	<0.6	М	<0.6	м	M <0.6			-
Cyanide, Total	<1 mg/kg	TM153		#		#	<1	#	#			-
								м	М			
Thiocyanate	<1 mg/kg	TM153					<1	м	<1 M			
Antimony	<0.6 mg/kg	TM181					<6	#	1.69 #			
Arsenic	<0.6 mg/kg	TM181	8.1		10.2		13.1		7.03			1
Barium	<0.6 mg/kg	TM181	103	м	152	м	145	М	M 91.8			
Beryllium	<0.01	TM181	0.717	#	1.3	#	2.3	#	# 0.962			-
	mg/kg					м						
Cadmium	<0.02 mg/kg	TM181	0.578	м	0.848	м	2.92	м	0.551 M			
Chromium	<0.9 mg/kg	TM181	16	м	18	м	10.9	м	26.1 M			
Copper	<1.4 mg/kg	TM181	20.2	м	48.7		34.5	м	24.5 M			1
Lead	<0.7 mg/kg	TM181	37		52	м	48		27.7			1
Mercury	<0.14	TM181	0.203	м	<0.14	М	0.249	м	0.226			-
Nickel	mg/kg <0.2 mg/kg	TM181	15.7	м	26.5	М	34.5	м	M 21			-
				м		м		м	М			
Selenium	<1 mg/kg	TM181	<1	#	1.15	#	<10	#	1.01 #			
Vanadium	<0.2 mg/kg	TM181	22.7	#	23.9	#	30.5	#	37.8 #			
Zinc	<1.9 mg/kg	TM181	86.6		179		424		111			1
Boron, water soluble	<1 mg/kg	TM222	<1	м	1.9	м	7.4	м	M			-
				м		М		м	М			-
												-
												-
												-
												-
												1
												1
												1
												-
												-
												_
												1

Validated]	ALco	ontrol Lab	oratories	Analyt	tical Service	es	
SDG: Job: Client Reference:	100927-6 H_GRON		DL-27	At	istomer: tention: der No.:	Grontmij Gareth Taylor		
Location:	Stagboro	ugh		-	eport No:	100308		
Semi Volatile Organic								
Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aquoous / sottled sample. diss.fitt Disolved / filtered sample. tot.unfitt Total / unfiltered sample. * % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	Lab S	Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s) GS Reference	BH1 2.00 - 3.00 Soli/Solid 22/09/2010 25/09/2010 100927-62 2154247	BH2 0.65 Soil/Solid 24/09/2010 25/09/2010 100927-62 2154254	BH2 2.00 - 2.3 Soil/Soli 24/09/201 25/09/201 100927-6 2154257	1 10 10 12		
Component Phenol	LOD/Units <100 µg/kg	Method TM157	<100	<100	<100			
Pentachlorophenol	<100 µg/kg	TM157	<100	<100	<100			_
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100	<100	<100			 _
Nitrobenzene	<100 µg/kg	TM157	<100	<100	<100			 _
Isophorone		TM157	<100	<100	<100			_
	<100 µg/kg							
Hexachloroethane	<100 µg/kg	TM157	<100	<100	<100			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100	<100	<100			
Hexachlorobutadiene	<100 µg/kg	TM157	<100	<100	<100			
Hexachlorobenzene	<100 µg/kg	TM157	<100	<100	<100			
n-Dioctyl phthalate	<100 µg/kg	TM157	<100	<100	<100			
Dimethyl phthalate	<100 µg/kg	TM157	<100	<100	<100			
Diethyl phthalate	<100 µg/kg	TM157	<100	<100	<100			
n-Dibutyl phthalate	<100 µg/kg	TM157	<100	<100	<100			
Dibenzofuran	<100 µg/kg	TM157	<100	17200	<100			
Carbazole	<100 µg/kg	TM157	<100	5640	<100			
Butylbenzyl phthalate	<100 µg/kg	TM157	<100	<100	<100			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100	778	754			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100	<100	<100			_
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100	<100	<100			
Azobenzene	<100 µg/kg	TM157	<100	<100	<100			
4-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100			
4-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100			_
4-Methylphenol	<100 µg/kg	TM157	<100	<100	<100			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100	<100	<100			
4-Chloroaniline	<100 µg/kg	TM157	<100	<100	<100			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100	<100	<100			
4-Bromophenylphenylether	<100 µg/kg	TM157	<100	<100	<100			
3-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100			
2-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100			 -
2-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100			
2-Methylphenol	<100 µg/kg	TM157	<100	<100	<100			_
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100	<100	<100			_
2-Chlorophenol	<100 µg/kg	TM157	<100	<100	<100			
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100			
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100	367	<100			 _
2,4-Dimethylphenol	<100 µg/kg	TM157	<100	<100	<100			
2,4-Dichlorophenol	<100 µg/kg	TM157	<100	<100	<100			
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100			
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100			
_,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	. oo µgmg		-100	-100	-100			

SDG: Job: Client	Reference:	100927-6 H_GRON		L-27	At	istomer: tention: der No.:	Grontmij Gareth Taylor	
_ocati		Stagboro	ugh			port No:	100308	
Semi '	Volatile Organic	Compour	ds					
# IS M n aq A diss.filt D tot.unfilt T * s ** % s o ir tt	Results Legend S017025 accredited. OCERTS accredited. CERTS accredited. Use of a settled sample. Use of a sample. Use of the sample. Use of the surrogate tandard to check the efficiency of the method. The results of the dividual compounds within re samples are not corrected or this recovery.	Customer	Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s) 3S Reference	BH1 2.00 - 3.00 Soll/Solid 22/09/2010 25/09/2010 100927-62 2154247	BH2 0.65 Soil/Solid 24/09/2010 25/09/2010 100927-62 2154254	BH2 2.00 - 2.33 Soil/Solid 24/09/201 15/09/201 100927-62 2154257	I 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Compon	ent lorobenzene	LOD/Units <100 µg/kg	Method TM157	<100	<100	<100		
· · · · · · · · · · · · · · · · · · ·	lorobenzene	<100 µg/kg	TM157	<100	<100	<100		
	lorobenzene	<100 µg/kg	TM157	<100	<100	<100		
2-Chloro	onaphthalene	<100 µg/kg	TM157	<100	<100	<100		
2-Methy	Inaphthalene	<100 µg/kg	TM157	<100	5410	247		
Acenaph	nthylene	<100 µg/kg	TM157	<100	229	<100		
Acenaph	nthene	<100 µg/kg	TM157	<100	32500	<100		
Anthrace	ene	<100 µg/kg	TM157	<100	9860	<100		
Benzo(a)anthracene	<100 µg/kg	TM157	<100	3330	<100		
Benzo(b)fluoranthene	<100 µg/kg	TM157	<100	1530	<100		
	,)fluoranthene	<100 µg/kg	TM157	<100	1410	<100		
Benzo(a		<100 µg/kg	TM157	<100	1550	<100		
	,h,i)perylene	<100 µg/kg	TM157	<100	603	<100		
Chrysen		<100 µg/kg	TM157	<100	3530	152		
Fluorant	hene	<100 µg/kg	TM157	<100	20500	261		
Fluorene	3	<100 µg/kg	TM157	<100	15700	<100		
Indeno(1	I,2,3-cd)pyrene	<100 µg/kg	TM157	<100	537	<100		
Phenant	hrene	<100 µg/kg	TM157	<100	41800	383		
Pyrene		<100 µg/kg	TM157	<100	15400	237		
Naphtha	lene	<100 µg/kg	TM157	<100	8640	123		
Dibenzo	(a,h)anthracene	<100 µg/kg	TM157	<100	137	<100		

SDG: lob: Client Reference:		ITMIJ_SC)L-27		Customer: Attention: Order No.:	Gare	ntmij eth Taylor	
-ocation:	Stagboro	ugh			Report No:	1003	308	
FPH CWG (S) Results Legend	Customer	Sample Ref.	BH2	BH2				
ISO17025 accredited. M mCERTS accredited. M mCERTS accredited. Gay accredited asmple. diss.fit Dissolved / filtered sample. subcontracted test. * subcontracted test. * frecovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	Lab S	Depth (m) Sample Type Date Sampled Jate Received SDG Ref Sample No.(s) SS Reference	0.65 Soil/Solid 24/09/2010 25/09/2010 100927-62 2154254	2.00 - 2.30 Soil/Solid 24/09/2010 25/09/2010 100927-62 2154257				
Component Aliphatics >C12-C16	LOD/Units <100 µg/kg	Method TM173	59300	20200				
Aliphatics >C16-C21	<100 µg/kg	TM173	141000	15300				
Aliphatics >C21-C35		TM173	142000					
•	<100 µg/kg			37500				
Aliphatics >C35-C44	<100 µg/kg	TM173	16700	6260				
Aromatics >EC12-EC16	<100 µg/kg	TM173	203000	20000				
Aromatics >EC16-EC21	<100 µg/kg	TM173	374000	43400				
Aromatics >EC21-EC35	<100 µg/kg	TM173	291000	124000				
Aromatics >EC35-EC44	<100 µg/kg	TM173	45500	38100				
Aromatics >EC40-EC44	<100 µg/kg	TM173	15000	12700				
Total Aliphatics >C12-C44	<100 µg/kg	TM173	358000	79200				
Total Aromatics	<100 µg/kg	TM173	913000	225000				
>EC12-EC44 Total Aliphatics >C5-35	<100 µg/kg	TM173	344000	72900				
Total Aliphatics >C5-C44	<100 µg/kg	TM173	361000	79200				
Total Aromatics >C5-35	<100 µg/kg	TM173	869000	187000				
Total Aromatics >C6-C44	<100 µg/kg	TM173	914000	225000				
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	1210000	260000				
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	1280000	304000				
GRO Surrogate % recovery**	%	TM089	16	15				
GRO >C5-C12	<44 µg/kg	TM089	4080	<44				
Methyl tertiary butyl ether	<5 µg/kg	TM089	<5	<5	#			
(MTBE) Benzene	<10 µg/kg	TM089	# <10	<10	#			
Toluene	<2 µg/kg	TM089	M 74.1	<2	M			
Ethylbenzene	<3 µg/kg	TM089	M 4.56	<3	м			
m,p-Xylene	<6 µg/kg	TM089	M <6	<6	м			
o-Xylene	<3 µg/kg	TM089	M	<3	м			
Aliphatics >C5-C6		TM089	12.5	<10	м			
	<10 µg/kg							
Aliphatics >C6-C8	<10 µg/kg	TM089	45.6	<10				
Aliphatics >C8-C10	<10 µg/kg	TM089	1070	<10				
Aliphatics >C10-C12	<10 µg/kg	TM089	1300	<10				
Total Aliphatics >C5-C12	<10 µg/kg	TM089	2420	<10				
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10				
Aromatics >EC7-EC8	<10 µg/kg	TM089	74.1	<10				
Aromatics >EC8-EC10	<10 µg/kg	TM089	718	<10				
Aromatics >EC10-EC12	<10 µg/kg	TM089	864	<10				
Total Aromatics	<10 µg/kg	TM089	1660	<10				
>EC5-EC12 m,p,o-Xylene	<10 µg/kg	TM089	<10	<10				
BTEX, Total	<10 µg/kg	TM089	78.7	<10				

SDG:		100927-6	62	ntrol La		Customer:	Gro	rontmij
	t Reference:	H_GRON)L-27		Attention: Order No.:		areth Taylor 00308
Locat		Stagboro	ugn			Report No:	100	JU308
VOC	MS (S) Results Legend	Customer	Sample Ref.	BH1	BH2	BH2		
M aq diss.filt tot.unfilt *	ISO 17025 accredited. mCERTS accredited. Aqueous / settled sample. Dissolved / filtered sample. Dissolved / filtered sample. Subcontracted test. % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	Lab S	Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s) GS Reference	2.00 - 3.00 Soil/Solid 22/09/2010 25/09/2010 100927-62 2154247	0.65 Soil/Solid 24/09/2010 25/09/2010 100927-62 2154254	2.00 - 2.3 Soil/Solic 24/09/201 25/09/201	d 10 10 52	
Compo Dibrom	nent ofluoromethane**	LOD/Units %	Method TM116	108	74.9	113		
Toluene		%	TM116	100	77.6	94.9		
	ofluorobenzene**	%	TM116	101	155	133		
Dichlor	odifluoromethane	<4 µg/kg	TM116		<4 M	<4 M	M	м
Chloror	nethane	<7 µg/kg	TM116	<7	<7 #	<7	#	#
Vinyl C	hloride	<10 µg/kg	TM116	<10	<10 #	# <10		#
Bromor	nethane	<13 µg/kg	TM116	<13	# <13 M	# <13 M		<u>м</u>
Chloroe	ethane	<14 µg/kg	TM116	<14	<14	<14		
Trichlor	ofluorormethane	<6 µg/kg	TM116	<6	M <6	M <6		M
1.1-Dic	hloroethene	<10 µg/kg	TM116	<10	M <10	M <10		M
Carbon	Disulphide	<7 µg/kg	TM116	<7	# 72	# <7	#	#
	omethane	<10 µg/kg	TM116		M 58.5	M <10	N	M
	Tertiary Butyl Ether	<11 µg/kg	TM116		# <11	# <11	#	#
	-2-Dichloroethene		TM116		VI <11	M <11	N	м
		<11 µg/kg			M	м	N	м
1.1-Dic	hloroethane	<8 µg/kg	TM116	<8 I	<8 M	<8 M	N	м
	Dichloroethene	<5 µg/kg	TM116	<5 I	<5 M	<5 M	N	м
2.2-Dic	hloropropane	<12 µg/kg	TM116	<12	<12 M	<12 M	N	м
Bromod	chloromethane	<14 µg/kg	TM116	<14	<14 M	<14 M		M
Chlorof	orm	<8 µg/kg	TM116	<8	<8	<8		
1.1.1-T	richloroethane	<7 µg/kg	TM116	<7	M <7	M <7		M
1.1-Dic	hloropropene	<11 µg/kg	TM116	<11	M <11	M <11	N	M
Carbon	tetrachloride	<14 µg/kg	TM116	<14	M <14	M <14	N	M
	hloroethane	<5 µg/kg	TM116		M <5	M <5	N	M
Benzer		<9 µg/kg	TM116		M 22.8	M <9	N	Μ
	roethene		TM116		M <9	M <9	N	Μ
		<9 µg/kg			M	м	N	м
	hloropropane	<12 µg/kg	TM116		<12 M	<12 M	N	м
	omethane	<9 µg/kg	TM116		<9 M	<9 M	N	м
Bromod	dichloromethane	<7 µg/kg	TM116	<7	<7 M	<7 M	N	м
cis-1-3-	Dichloropropene	<14 µg/kg	TM116	<14	<14 M	<14 M		м
Toluene	e	<5 µg/kg	TM116	<5	693 M	7.53 M		M
trans-1-	-3-Dichloropropene	<14 µg/kg	TM116	<14	<14	<14		
1.1.2-T	richloroethane	<10 µg/kg	TM116	<10	<10	<10		
1.3-Dic	hloropropane	<7 µg/kg	TM116	<7	M <7	M <7		M
Tetrach	loroethene	<5 µg/kg	TM116	<5	# 26.1	# <5	#	#
	ochloromethane	<13 µg/kg	TM116		M <13	M <13	N	M
	romoethane	<12 µg/kg	TM116		M <12	M <12	N	Μ
					M	м	N	м
	enzene	<5 µg/kg	TM116		<5 M	<5 M	N	м
	-Tetrachloroethane	<10 µg/kg	TM116	<10	<10 M	<10 M	M	м
Ethylbe	enzene	<4 µg/kg	TM116	<4	52.6	13.6 M	N	

AS (S) Results Legend SO17025 accredited. ACERTS accredited. ACERTS accredited. ACERTS accredited. Sissolved / filtered sample. Uticontracted test. A recovery of the surrogate tandard to check the efficiency f the method. The results of the	Stagboro					Order Repor		100	0308		
Results Legend SO17025 accredited. OCENTS accredited. OCENTS accredited. Sissolved / filtered sample. Usiontracted test. Sissolved filtered sample. Ubcontracted test. Siscovery of the surrogate tandard to check the efficiency the method. The results of the	Customer					•					
ndividual compounds within the samples are not corrected or this recovery.	E D Lab S	Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s) GS Reference	BH1 2.00 - 3.00 Soii/Solid 22/09/2010 25/09/2010 100927-62 2154247		BH2 0.65 Soil/Solid 24/09/2010 25/09/2010 100927-62 2154254		BH2 2.00 - 2.30 Soil/Solid 24/09/2010 25/09/2010 100927-62 2154257	D D			
ent	LOD/Units	Method	.4.4								
ene	<14 µg/kg	TM116	<14	#	67.4	#	<14	#	¥		
)	<10 µg/kg	TM116	<10	м	65.3	м	<10	м	1		
	<10 µg/kg	TM116	<10	м	<10	м	<10	м	1		
rm	<10 µg/kg	TM116	<10		<10		<10				
lbenzene	<5 µg/kg	TM116	<5		195		<5				
Fetrachloroethane	<10 µg/kg	TM116	<10		<10		<10				
chloropropane	<17 µg/kg	TM116	<17		<17		<17				
enzene	<10 µg/kg	TM116	<10	м	<10	М	<10	М	1		
			<11	м	<11	м	<11	М	1		
				м		м		М	1		
				м		м		М	1		
				#		#		#	*		
otoluene	<12 µg/kg	TM116	<12	м	<12	м	<12	м	1		
lbenzene	<12 µg/kg	TM116	<12	#	<12	#	<12	#	¥		
methylbenzene	<9 µg/kg	TM116	<9		<9		<9				
lbenzene	<10 µg/kg	TM116	<10		<10		<10				
pyltoluene	<11 µg/kg	TM116	<11		1070		<11				
lorobenzene	<6 µg/kg	TM116	<6		<6		<6				
lorobenzene	<5 µg/kg	TM116	<5	м	<5	м	<5	М	1		
enzene	<10 µa/ka	TM116	<10	м	<10	м	<10	М	1		
				м	<12	м	<12	М	1		
				м		м		М	1		
				м		м		М	1		
		TM116	<6	#	<6	#	<6	#	¥		
orobutadiene	<12 µg/kg	TM116	<12		<12		<12				
lene	<13 µg/kg	TM116	<13	м	4760	м	<13	м	n		
chlorobenzene	<6 µg/kg	TM116	<6		<6		<6				
				IVI		IVI		M			
]											
	e mm vibenzene Tetrachloroethane ichloropropane enzene enzene totoluene inethylbenzene otoluene vibenzene vibenzene inorobenzene ilorobenzene	a<10 µg/kga<10 µg/kg	a $<10 \ \mu g/kg$ TM116 $<10 \ \mu g/kg$ TM116 $<10 \ \mu g/kg$ TM116rm $<10 \ \mu g/kg$ TM116//benzene $<5 \ \mu g/kg$ TM116//benzene $<10 \ \mu g/kg$ TM116Tetrachloroethane $<10 \ \mu g/kg$ TM116ichloropropane $<17 \ \mu g/kg$ TM116enzene $<10 \ \mu g/kg$ TM116enzene $<11 \ \mu g/kg$ TM116inethylbenzene $<8 \ \mu g/kg$ TM116inethylbenzene $<12 \ \mu g/kg$ TM116inethylbenzene $<9 \ \mu g/kg$ TM116inethylbenzene $<9 \ \mu g/kg$ TM116inethylbenzene $<9 \ \mu g/kg$ TM116inotobenzene $<9 \ \mu g/kg$ TM116inorobenzene $<6 \ \mu g/kg$ TM116inorobenzene $<5 \ \mu g/kg$ TM116inorobenzene $<10 \ \mu g/kg$ TM116inorobenzene $<12 \ \mu g/kg$ TM116inorobenzene <1	a<10 μ g/kgTM116<10a<10 μ g/kgTM116<10	Image: constraint of the sector of the se	a $< 10 ext{ m}$ \mathbf{m} a $< 10 ext{ m}$ \mathbf{m} $< 10 ext{ m}$ \mathbf{m} a $< 10 ext{ m}$ \mathbf{m} $< 10 ext{ m}$ \mathbf{m} orm $< 10 ext{ m}$ \mathbf{m} $< 10 ext{ m}$ \mathbf{m} \mathbf{m} $< 10 ext{ m}$ \mathbf{m} $< 10 ext{ m}$ \mathbf{m} \mathbf{m} $< 10 ext{ m}$ \mathbf{m} $< 10 ext{ m}$ \mathbf{m} \mathbf{m} $< 10 ext{ m}$ \mathbf{m} $< 10 ext{ m}$ \mathbf{m} \mathbf{m} $< 10 ext{ m}$ \mathbf{m} $< 10 ext{ m}$ \mathbf{m} \mathbf{m} $< 10 ext{ m}$ \mathbf{m} $< 10 ext{ m}$ \mathbf{m} \mathbf{m} $< 10 ext{ m}$ \mathbf{m} $< 10 ext{ m}$ \mathbf{m} \mathbf{m} $< 10 ext{ m}$ \mathbf{m} $< 10 ext{ m}$ \mathbf{m} \mathbf{m} $< 10 ext{ m}$ \mathbf{m} $< 10 ext{ m}$ \mathbf{m} \mathbf{m} \mathbf{m} \mathbf{m} \mathbf{m} $< 10 ext{ m}$ \mathbf{m} <t< td=""><td>Image: Constraint of the second se</td><td>Image: bold in the second s</td><td>Image: Constraint of the second se</td><td>interval interval interval</td><td>Image: second second</td></t<>	Image: Constraint of the second se	Image: bold in the second s	Image: Constraint of the second se	interval interval	Image: second

Validated		ALco	ntrol Lab	oratori	es /	Analyt	ica	l Servic	es				
SDG: Job: Client Reference:	100927-6 H_GRON				Cus Atte	stomer: ention: er No.:	Gror	ntmij eth Taylor					
Location:	Stagboro	bugh				ort No:	1003	308					
											_		
Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample.	Customer	Sample Ref.	BH3	HP1		WS10		WS11		WS11		WS11	
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * subcontracted test. ** % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	Lab	Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s) GS Reference	1.00 - 1.35 Soil/Solid 24/09/2010 25/09/2010 100927-62 2154263	0.70 Soii/Solid 22/09/2010 25/09/2010 100927-62 2154265		0.65 Soil/Solid 23/09/2010 25/09/2010 100927-62 2154290	D D	Soil/Solid 23/09/2010 25/09/2010 100927-62 2154300		0.30 Soil/Solid 23/09/2010 25/09/2010 100927-62 2154298		0.65 Soil/Solid 23/09/2010 25/09/2010 100927-62 2154296	
Component Asbestos Containing	LOD/Units	Method TM001									-	No ACM Detec	ted
Material Screen Phenols, Total monohydric	<0.025 mg/kg	TM062 (S)										<0.025	м
Soil Organic Matter (SOM)	<0.35 %	TM132	6.57	7.5	#	0.465	#	5.53	#	7.91	#	7.02	#
рН	1 pH Units	TM133	8.29	5.78		8.63	" M	7.01	м	7.32		7.84	
Chromium, Hexavalent	<0.6 mg/kg	TM151	■ <0.6 #	<0.6	M #	<0.6	#	<0.6	#	<1.2	м #	<1.2	м #
Cyanide, Total	<1 mg/kg	TM153										<1	м
Thiocyanate	<1 mg/kg	TM153										<1	м
Arsenic	<0.6 mg/kg	TM181	9.97 M	7.32	м	4.69	м	10.7	м	9.52	м	14.2	м
Barium	<0.6 mg/kg	TM181	113	65.6		41.9		145		152		185	
Beryllium	<0.01	TM181	# 1.43	0.697	#	0.322	#	1.51	#	1.87	#	1.84	#
Cadmium	mg/kg <0.02	TM181	0.829	0.662		0.2		0.932		1.36		1.29	
Chromium	mg/kg <0.9 mg/kg	TM181	<u>М</u> 17	14.1	м	9.72	М	20	м	18.4	М	17.6	м
Copper	<1.4 mg/kg	TM181	M 39.8	27.6	м	11.2	м	42.8	м	45.9	м	41.2	м
Lead	<0.7 mg/kg	TM181	M 35.2	70.8	м	15.3	м	42.9	м	84.8	м	83	м
Mercury	<0.14	TM181	0.328	0.268	м	0.382	м	0.161	м	0.206	м	<0.14	м
Nickel	mg/kg <0.2 mg/kg	TM181	M 36.5	15.9	м	8.32	м	35.7	м	45.5	м	34.3	м
Selenium	<1 mg/kg	TM181	M	1.19	м	<1	м	1.13	м	1.66	м	1.42	м
Vanadium	<0.2 mg/kg	TM181	# 22.3	20.2	#	11.5	#	27.2	#	28.7	#	28.7	#
			#	117	#		#	222	#		#	307	#
Zinc	<1.9 mg/kg	TM181	187 M		м	31.2	м		м	336	м		м
Boron, water soluble	<1 mg/kg	TM222	5.58 M	3.11	м	<1	M	<1	м	1.59	M	3.95	M
											+		
											_		

	Validated]	ALco	ontrol Lab	oratorie	s Analy	tical	Services	5	
SDG: Job: Clien	t Reference:	100927-6 H_GRON		DL-27		Customer: Attention: Order No.:	Gror Gare	ntmij eth Taylor		
Loca	tion:	Stagboro	ugh			Report No:	1003	308		
Semi	Volatile Organic			DUG						
tot.unfilt * **	ISO17025 accredited. mCERTS accredited. Marceus / settled sample. Dissolved / filtered sample. Total / unfiltered sample. subcontracted test. % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	Lab ; Ar	Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s) GS Reference	BH3 1.00 - 1.35 Soil/Solid 24/09/2010 25/09/2010 100927-62 2154263	WS11 Soil/Solid 23/09/2010 25/09/2010 100927-62 2154300					
Compo Phenol		LOD/Units <100 µg/kg	Method TM157	<100	<100					
Pentac	hlorophenol	<100 µg/kg	TM157	<100	<100					
n-Nitro	so-n-dipropylamine	<100 µg/kg	TM157	<100	<100					
Nitrobe		<100 µg/kg	TM157	<100	<100					
			TM157	<100	<100					
Isopho		<100 µg/kg								
	nloroethane	<100 µg/kg	TM157	<100	<100					
	nlorocyclopentadiene	<100 µg/kg	TM157	<100	<100					
Hexach	nlorobutadiene	<100 µg/kg	TM157	<100	<100					
Hexach	nlorobenzene	<100 µg/kg	TM157	<100	<100					
n-Dioct	yl phthalate	<100 µg/kg	TM157	<100	<100					
Dimeth	yl phthalate	<100 µg/kg	TM157	<100	<100					
Diethyl	phthalate	<100 µg/kg	TM157	<100	<100					
n-Dibut	tyl phthalate	<100 µg/kg	TM157	<100	<100					
Dibenz	ofuran	<100 µg/kg	TM157	144	<100					
Carbaz	cole	<100 µg/kg	TM157	<100	<100					
Butylbe	enzyl phthalate	<100 µg/kg	TM157	<100	<100					
bis(2-E	thylhexyl) phthalate	<100 µg/kg	TM157	<100	<100					
bis(2-C	hloroethoxy)methane	<100 µg/kg	TM157	<100	<100					
	hloroethyl)ether	<100 µg/kg	TM157	<100	<100					
Azober		<100 µg/kg	TM157	<100	<100					
4-Nitro		<100 µg/kg	TM157	<100	<100					
4-Nitro		<100 µg/kg	TM157	<100	<100					
	ylphenol	<100 µg/kg	TM157	<100	<100					
	rophenylphenylether	<100 µg/kg	TM157	<100	<100					
	roaniline	<100 µg/kg	TM157	<100	<100					
4-Chlo	ro-3-methylphenol	<100 µg/kg	TM157	<100	<100					
4-Brom	nophenylphenylether	<100 µg/kg	TM157	<100	<100					
3-Nitro	aniline	<100 µg/kg	TM157	<100	<100					
2-Nitro	phenol	<100 µg/kg	TM157	<100	<100					
2-Nitro	aniline	<100 µg/kg	TM157	<100	<100					
2-Meth	ylphenol	<100 µg/kg	TM157	<100	<100					
1,2,4-T	richlorobenzene	<100 µg/kg	TM157	<100	<100					
2-Chlo	rophenol	<100 µg/kg	TM157	<100	<100					
2,6-Din	itrotoluene	<100 µg/kg	TM157	<100	<100					
2,4-Din	itrotoluene	<100 µg/kg	TM157	<100	<100					
2,4-Din	nethylphenol	<100 µg/kg	TM157	<100	<100					
	hlorophenol	<100 µg/kg	TM157	<100	<100					
	richlorophenol	<100 µg/kg	TM157	<100	<100					
			TM157	<100	<100					
2,4,5-I	richlorophenol	<100 µg/kg	111157	< 100	<100					

Validated		ALco	ontrol Lab	oratorie	s Analy	tical	Service	S	
SDG:	100927-6				Customer:	Grontr			
Job:	H_GROM	NTMIJ_SC	OL-27		Attention:	Gareth	Taylor		
Client Reference: Location:	Stagboro	uah			Order No.: Report No:	10030	8		
					Report No.	10030	0		
Semi Volatile Organic		1 ds Sample Ref.	BH3	WS11					_
# ISO17025 accredited. M mCERTS accredited.		eunipie nen	Brio	Worr					
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m) Sample Type	1.00 - 1.35 Soil/Solid	Soil/Solid					
tot.unfilt Total / unfiltered sample. * subcontracted test. ** % recovery of the surrogate		Date Sampled Date Received	24/09/2010 25/09/2010	23/09/2010 25/09/2010					
standard to check the efficiency of the method. The results of the		SDG Ref	100927-62	100927-62					
individual compounds within the samples are not corrected	Lau	Sample No.(s) GS Reference	2154263	2154300					
for this recovery.	LOD/Units	Method							
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100	<100					
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100	<100					_
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100	<100					
2-Chloronaphthalene	<100 µg/kg	TM157	<100	<100					-
2-Methylnaphthalene	<100 µg/kg	TM157	316	201					
Acenaphthylene	<100 µg/kg	TM157	<100	<100					 -
Acenaphthene	<100 µg/kg	TM157	<100	<100					
Anthracene	<100 µg/kg	TM157	<100	<100					
Benzo(a)anthracene	<100 µg/kg	TM157	<100	<100					
Benzo(b)fluoranthene	<100 µg/kg	TM157	<100	<100					
Benzo(k)fluoranthene	<100 µg/kg	TM157	<100	<100					
Benzo(a)pyrene	<100 µg/kg	TM157	<100	<100					
Benzo(g,h,i)perylene	<100 µg/kg	TM157	<100	<100					
Chrysene	<100 µg/kg	TM157	<100	<100					
Fluoranthene	<100 µg/kg	TM157	151	125					
Fluorene	<100 µg/kg	TM157	<100	<100					
Indeno(1,2,3-cd)pyrene	<100 µg/kg	TM157	<100	<100					
Phenanthrene	<100 µg/kg	TM157	397	279					
Pyrene	<100 µg/kg	TM157	134	<100					
Naphthalene	<100 µg/kg	TM157	149	<100					
Dibenzo(a,h)anthracene	<100 µg/kg	TM157	<100	<100					 _

lob: Client Reference	:	NTMIJ_SC)L-27		Customer: Attention: Order No.:		eth Taylor	
ocation:	Stagbor	ough			Report No:	100	308	
TPH CWG (S) Results Legend	Quetam	O male Dat	DUG				1	
Bolf 702 accredited. M Bolf 702 accredited. M MCERTS accredited. Aqueous / settled sam, diss.fit Dissolved / filtered san ot.unfit Total / unfiltered samples subcontracted test. * % recovery of the surre standard to check the i of the method. The res individual compounds the samples are not co for this recovery.	ole. pie. e. officiency ults of the within rected d	r Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s) AGS Reference	BH3 1.00 - 1.35 Soil/Solid 24/09/2010 25/09/2010 100927-62 2154263	WS11 Soli/Solid 23/09/2010 25/09/2010 100927-62 2154300				
Component Aliphatics >C12-C16	LOD/Units <100 µg/kg	Method TM173	22500	23100				
Aliphatics >C16-C21	<100 µg/kg	TM173	58600	17800				
Aliphatics >C21-C35	<100 µg/kg		34600	44500				
Aliphatics >C35-C44	<100 µg/kg		5110	10800				
				24700				
Aromatics >EC12-EC16	<100 µg/kg		26400					
Aromatics >EC16-EC21	<100 µg/kg		53500	34900				
Aromatics >EC21-EC35	<100 µg/kg		103000	87000				
Aromatics >EC35-EC44	<100 µg/kg	TM173	34200	33300				
Aromatics >EC40-EC44	<100 µg/kg	TM173	12300	13500				
Total Aliphatics >C12-C4	l4 <100 μg/kg	TM173	121000	96200				
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	217000	180000				
Vec12-EC44 Total Aliphatics >C5-35	<100 µg/kg	TM173	116000	85300				
Total Aliphatics >C5-C44	<100 μg/kg	TM173	121000	96200				
Total Aromatics >C5-35	<100 µg/kg	TM173	183000	147000				
Total Aromatics >C6-C4	4 <100 µg/kg	TM173	217000	180000				
Total Aliphatics & Aroma	tics <100 µg/kg	TM173	299000	232000				
>C5-35 Total Aliphatics & Aroma			338000	276000				
>C5-C44 GRO Surrogate %	%	TM089	32	27				
recovery** GRO >C5-C12	/⁰ <44 µg/kg	TM009	117	<44				
Methyl tertiary butyl ethe (MTBE)		TM089	<5 #	<5	#			
Benzene	<10 µg/kg	TM089	<10 M	<10	м			
Toluene	<2 µg/kg	TM089	3.54 M	2.42	м			
Ethylbenzene	<3 µg/kg	TM089	5.9 M	4.84	м			
n,p-Xylene	<6 µg/kg	TM089	<6 M	<6	м			
o-Xylene	<3 µg/kg	TM089	<3 M	<3	м			
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10				
Aliphatics >C6-C8	<10 µg/kg	TM089	14.2	<10				
Aliphatics >C8-C10	<10 µg/kg	TM089	20.1	<10				
Aliphatics >C10-C12	<10 µg/kg	TM089	30.7	<10				
Total Aliphatics >C5-C12	2 <10 µg/kg	TM089	68.4	<10				
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10				
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10				
Aromatics >EC8-EC10	<10 µg/kg	TM089	22.4	<10				
Aromatics >EC10-EC12		TM089	20.1	<10				
	10 0			<10				
Fotal Aromatics >EC5-EC12	<10 µg/kg	TM089	48.4					
n,p,o-Xylene	<10 µg/kg	TM089	<10	<10				
BTEX, Total	<10 µg/kg	TM089	<10	<10				

SDG:	100927-6		ntrol Labo		Customer:	Grontmij		
Job:		NTMIJ_SC)L-27		Attention:	Gareth Taylo	r	
Client Reference:	Staghoro	uab			Order No.:	100308		
Location:	Stagboro	ugii			Report No:	100306		
VOC MS (S) Results Legend	Customer	Sample Ref.	BH3	WS11				
# ISO17025 accredited. M mCERTS accredited.			2.10					
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.	_	Depth (m) Sample Type	1.00 - 1.35 Soil/Solid	Soil/Solid				
* subcontracted test. ** % recovery of the surrogate		Date Sampled Date Received	24/09/2010 25/09/2010	23/09/2010 25/09/2010				
standard to check the efficiency of the method. The results of the		SDG Ref Sample No.(s)	100927-62 2154263	100927-62 2154300				
individual compounds within the samples are not corrected		GS Reference	2154265	2154300				
for this recovery.	LOD/Units	Method						
Dibromofluoromethane**	%	TM116	88.6	96.5				
Toluene-d8**	%	TM116	93.4	86.5				
4-Bromofluorobenzene**	%	TM116	145	149				
Dichlorodifluoromethane	<4 µg/kg	TM116	<4	<4				
Chloromethane	<7 µg/kg	TM116		<7	M			
Vinyl Chloride	<10 µg/kg	TM116	#	<10	#			
Bromomethane	<13 µg/kg	TM116	<13	<13	#			
Chloroethane		TM116	<10 M	<14	м			
	<14 µg/kg		м		м			
Trichlorofluorormethane	<6 µg/kg	TM116	<6 M	<6	м			
1.1-Dichloroethene	<10 µg/kg	TM116	<10 #	<10	#			
Carbon Disulphide	<7 µg/kg	TM116	42 M	<7	м			
Dichloromethane	<10 µg/kg	TM116	27.5	19.9	#			
Methyl Tertiary Butyl Ether	<11 µg/kg	TM116	<11	<11				
trans-1-2-Dichloroethene	<11 µg/kg	TM116	M <11	<11	M			
1.1-Dichloroethane	<8 µg/kg	TM116	M	<8	M			
cis-1-2-Dichloroethene	<5 µg/kg	TM116	M	<5	м			
2.2-Dichloropropane	<12 µg/kg	TM116	M <12	<12	м			
Bromochloromethane	<14 µg/kg	TM116	<12 <14	<12	м			
			м		м			
Chloroform	<8 µg/kg	TM116	<8 M	<8	м			
1.1.1-Trichloroethane	<7 µg/kg	TM116	<7 M	<7	м			
1.1-Dichloropropene	<11 µg/kg	TM116	<11 M	<11	м			
Carbontetrachloride	<14 µg/kg	TM116	<14 M	<14	м			
1.2-Dichloroethane	<5 µg/kg	TM116	<5	<5				
Benzene	<9 µg/kg	TM116	M 15.2	12.4	M			
Trichloroethene	<9 µg/kg	TM116	M <9	<9	м			
1.2-Dichloropropane	<12 µg/kg	TM116	M <12	<12	м			
Dibromomethane	<9 µg/kg	TM116	<12 M <9	<9	м			
			м		м			
Bromodichloromethane	<7 µg/kg	TM116	<7 M	<7	м			
cis-1-3-Dichloropropene	<14 µg/kg	TM116	<14 M	<14	м			
Toluene	<5 µg/kg	TM116	16.5 M	11.4	м			
trans-1-3-Dichloropropene	<14 µg/kg	TM116	<14	<14				
1.1.2-Trichloroethane	<10 µg/kg	TM116	<10 M	<10	M			
1.3-Dichloropropane	<7 µg/kg	TM116	M <7	<7	M			
Tetrachloroethene	<5 µg/kg	TM116	# 18.8	25	#			
Dibromochloromethane	<13 µg/kg	TM116	M <13	<13	м			
1.2-Dibromoethane	<12 µg/kg	TM116	M	<12	м			
Chorobenzene		TM116	<12 M	<5	м			
	<5 µg/kg		м		м			
1.1.1.2-Tetrachloroethane	<10 µg/kg	TM116	<10 M	<10	м			
Ethylbenzene	<4 µg/kg	TM116	30.7 M	32.7	м			

	Validated		ALco	ntrol La	ab	oratori	es Analy	tica	I Service	S	
SDG: lob:		100927-6 H_GRON	62 NTMIJ_SC)L-27			Customer: Attention:	Gron Gare	ntmij eth Taylor		
lien .ocat	t Reference:	Stagboro	ouah				Order No.: Report No:	1003	308		
	MS (S)	0.0.92010									
	Results Legend ISO17025 accredited.	Customer	Sample Ref.	BH3		WS11					
M aq diss.filt tot.unfilt *	MCERTS accredited. Aqueous / settled sample. Dissolved / filtered sample. Total / unfiltered sample. subcontracted test. % recovery of the surrogate standard to check the efficiency		Depth (m) Sample Type Date Sampled Date Received SDG Ref	1.00 - 1.35 Soil/Solid 24/09/2010 25/09/2010 100927-62		Soil/Solid 23/09/2010 25/09/2010 100927-62)				
	of the method. The results of the individual compounds within the samples are not corrected for this recovery.	A	Sample No.(s) GS Reference	2154263		2154300					
Compo p/m-Xy		LOD/Units <14 µg/kg	Method TM116	20.2		<14					
o-Xyler			TM116	<10	#	<10	#				
		<10 µg/kg			м		м				
Styrene		<10 µg/kg	TM116	<10	м	<10	м				
Bromof	orm	<10 µg/kg	TM116	<10	м	<10	м				
lsoprop	ylbenzene	<5 µg/kg	TM116	<5	м	<5	м				
1.1.2.2	Tetrachloroethane	<10 µg/kg	TM116	<10		<10					
1.2.3-T	richloropropane	<17 µg/kg	TM116	<17	#	<17	#				
Bromot	benzene	<10 µg/kg	TM116	<10	м	<10	M				
Propylb	enzene	<11 µg/kg	TM116	<11	м	<11	M				
	otoluene		TM116	<9	м	<9	м				
		<9 µg/kg			м		м				
1.3.5-T	rimethylbenzene	<8 µg/kg	TM116	<8	#	<8	#				
4-Chlor	otoluene	<12 µg/kg	TM116	<12	м	<12	м				
ert-But	ylbenzene	<12 µg/kg	TM116	<12	#	<12	#				
1.2.4-T	rimethylbenzene	<9 µg/kg	TM116	<9		<9					
sec-Bu	tylbenzene	<10 µg/kg	TM116	<10	#	<10	#				
4-Isopr	opyltoluene	<11 µg/kg	TM116	<11	М	<11	M				
	hlorobenzene	<6 µg/kg	TM116	<6	м	<6	M				
					м		м				
	hlorobenzene	<5 µg/kg	TM116	<5	м	<5	м				
n-Butyl	benzene	<10 µg/kg	TM116	<10	м	<10	м				
1.2-Dic	hlorobenzene	<12 µg/kg	TM116	<12	м	<12	м				
1.2-Dib e	romo-3-chloropropan	<14 µg/kg	TM116	<14	м	<14	M				
	nyl methyl ether	<15 µg/kg	TM116	<15		<15					
1.2.4-T	richlorobenzene	<6 µg/kg	TM116	<6		<6					
Hexach	lorobutadiene	<12 µg/kg	TM116	<12	#	<12	#				
Naphth		<13 µg/kg	TM116	<13		<13					
	richlorobenzene	<6 µg/kg	TM116	<6	м	<6	м				
1.2.3-1	richiorobenzene	<6 µg/кg	TMITIO	<0	м	<0	м				

Job: H_GRONTMIJ_SOL-27 Attention: Gareth Taylor Client Reference: Order No.:	Validated		ALco	ontrol Labo	oratori	es	Analyt	ical	Servic	es	;		
Leadeding Sigbor U Report N:: 1000/00 Intermediation of the service of the	SDG: Job: Client Reference:			DL-27		Atte	ention:						
Image: second fine	Location:	Stagboro	ough					1003	308				
Image: second fine													
mathemation mathemation and set of the set	# ISO17025 accredited. M mCERTS accredited. aq Aqueous / sottled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * subcontracted test. * % recovery of the surrogate standard to check the efficiency		Depth (m) Sample Type Date Sampled Date Received SDG Ref	2.50 - 3.00 Soil/Solid 23/09/2010 25/09/2010 100927-62	Soil/Solid 22/09/2010 25/09/2010 100927-62		0.30 Soil/Solid 22/09/201 25/09/201 100927-62	0 0 2	0.30 Soil/Solid 23/09/2010 25/09/2010 100927-62		0.30 Soil/Solid 23/09/2010 25/09/2010 100927-62	0.65 Soil/Solid 23/09/201 25/09/201 100927-62	0 0 2
Congont Absents of unitary Methal Series Methal Series 	the samples are not corrected			2154297	2154275		2154269		2154276		2104201	2154262	
Material Screen Phenols, Total monohyde Mager Soil Organic Matter (SOM)Funds, MOR(S)Index MO	Component	LOD/Units											
Image Image <th< td=""><td>Material Screen</td><td>-</td><td></td><td>NO ACM Detected</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	Material Screen	-		NO ACM Detected									
pH pH pH1 pH uns 1 pH uns d1 mag that that that that pH1 pH uns that 	Phenols, Total monohydric		TM062 (S)										
pH 1pH Unit 1M33 1mm 7.38 7.80	Soil Organic Matter (SOM)	<0.35 %	TM132		6.45	#	2.95	#	1.45	#		0.465	#
Chomum, Hexavalent $20.6 m m m m m m m m m m m m m m m m m m m$	рН	1 pH Units	TM133		7.38		7.78		7.66		8.38	7.82	
Cyanide, Total 1 migkg TM153 Image Image <td>Chromium, Hexavalent</td> <td><0.6 mg/kg</td> <td>TM151</td> <td></td> <td><1.2</td> <td></td> <td><0.6</td> <td></td> <td><0.6</td> <td></td> <td><0.6</td> <td><0.6</td> <td></td>	Chromium, Hexavalent	<0.6 mg/kg	TM151		<1.2		<0.6		<0.6		<0.6	<0.6	
Thiocyanate $< 1 mg/kg$ TM153 Image Image <td>Cyanide, Total</td> <td><1 mg/kg</td> <td>TM153</td> <td></td> <td></td> <td>#</td> <td></td> <td>#</td> <td></td> <td>#</td> <td><1</td> <td></td> <td>#</td>	Cyanide, Total	<1 mg/kg	TM153			#		#		#	<1		#
Antimony $< 0.6 \text{ mg/kg}$ TM181 Image: Model matrix	Thiocyanate	<1 mg/kg	TM153								<1		
Arsenic $< 0.6 m/s m/s m/s$ TM181 $< 0.6 m/s m/s m/s m/s m/s m/s m/s m/s m/s m/s$	Antimony	<0.6 mg/kg	TM181										
Berlum $< 0.6 m g/k g$ TM181 158 105 76.2 128 87 Berllum $< 0.01 m g/k g$ TM181 < 0.845 < 1.01 0.576 < 1.28 0.952 Cadmium $< 0.02 m g/k g$ TM181 < 0.647 0.576 < 1.28 0.952 Cadmium $< 0.02 m g/k g$ TM181 < 0.647 0.576 0.314 0.647 0.314 0.647 0.314 0.647 0.314 0.647 0.647 0.314 0.647 0.314 0.647 0.314 0.647 0.314 0.647 0.314 0.647 0.314 0.647 0.314 0.647 0.314 0.647 0.647 0.647 0.647 0.647 0.647 0.67 0.67 0.63 0.647 0.69 0.67 0.67 0.67 0.67 0.67 0.67 0.67 0.67 0.67 0.67 0.67 0.67 0.67 0.67 0.67 0.67	Arsenic	<0.6 mg/kg	TM181		8.35		7.55		6.22			6.41	
Image: constraint of constra	Barium	<0.6 ma/ka	TM181		158	М	105	м	76.2	М		87	м
Imply for the sector of the sector						#		#		#	#		#
Image Image <t< td=""><td>· · · · · · · · · · · · · · · · · · ·</td><td>mg/kg</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	· · · · · · · · · · · · · · · · · · ·	mg/kg											
coppercode of the sector of the		mg/kg				м		м		м	м		м
IndexIndexIndexIndexIndexIndexIndexIndexIndexIndexLead $< 0.7 mg/kg$ TM181 $< 0.21 < mg/kg$ $< 0.15 < mg/kg$ $< 0.24 < mg/kg$ < 0						м		м		м	м		м
controlreference<	Copper	<1.4 mg/kg	TM181		42.3	м	28	м	14.7	м		19	м
Mercury < 0.14 mg/kg TM181 Mg/kg IM81 0.212 M 0.155 M 0.24 M 0.428 M 0.428 M 0.364 M Nickel < 0.2 mg/kg TM181 < 106 23.8 M 13.8 M 28.6 M 28.6 M 28.6 M 28.6 M 26.6 M 26.7 M 26.7 M 28.6 M	Lead	<0.7 mg/kg	TM181		52.6	м	20.3	м	17.5	м		10.3	м
Nickel $< 0.2 \text{ mg/kg}$ TM181 Image: Mail of the m	Mercury		TM181		0.212	м	0.155	м	0.24	м	0.428	0.364	м
Selenium 1 mg/kg TM181 1 mg/kg TM181 1 mg/kg TM181 1 mg/kg 1 m	Nickel		TM181		18.6		23.8		13.8		28.6	26.1	
Vanadium <0.2 mg/kg TM181 25.7 27.3 17.9 27.5 27 Zinc <1.9 mg/kg	Selenium	<1 mg/kg	TM181		<1		<1		<1		1.06	1.2	
Zinc 1.9 mg/kg TM181 143 90.7 39.9 124 48.5 Boron, water soluble <1 mg/kg	Vanadium	<0.2 mg/kg	TM181		25.7		27.3		17.9		27.5	27	
Boron, water soluble <1 mg/kg TM222 2.16 1.23 <1 1.86 1.55	Zinc	<1.9 mg/kg	TM181		143		90.7		39.9		124	48.5	
Image: selection of the	Boron, water soluble	<1 mg/kg	TM222		2.16	М	1.23	М	<1	м		1.55	м

Validated		ALcontrol Laboratories Analytical Services										
SDG: Job: Client Reference: Location:		100927- H_GROI	62 NTMIJ_S(DL-27	А	Sustomer:	Grontmij Gareth Taylor 100308					
		Stagbor	ough			order No.: Report No:						
Semi	i Volatile Organic	Compou	nds									
# M	Results Legend ISO17025 accredited. mCERTS accredited.	Custome	r Sample Ref.	WS11	WS9							
aq diss.filt	Aqueous / settled sample. Dissolved / filtered sample.		Depth (m) Sample Type	2.50 - 3.00	0.30							
tot.unfilt *	Total / unfiltered sample. subcontracted test. % recovery of the surrogate		Date Sampled Date Received	Soil/Solid 23/09/2010 25/09/2010	Soil/Solid 23/09/2010 25/09/2010							
	standard to check the efficiency of the method. The results of the		SDG Ref Sample No.(s)	100927-62 2154297	100927-62							
	individual compounds within the samples are not corrected for this recovery.		AGS Reference									
Compo Pheno		LOD/Units <100 µg/kg	Method TM157	<100	<100							
	chlorophenol	<100 µg/kg		<100	<100							
	so-n-dipropylamine	<100 µg/kg		<100	<100							
	enzene	<100 µg/kg		<100	<100							
		<100 µg/kg		<100	<100							
Isopho												
	hloroethane	<100 µg/kg		<100	<100							
	hlorocyclopentadiene	<100 µg/kg		<100	<200							
	hlorobutadiene	<100 µg/kg		<100	<100							
	hlorobenzene	<100 µg/kg		<100	<100							
n-Dioc	tyl phthalate	<100 µg/kg	TM157	<100	<100							
Dimeth	nyl phthalate	<100 µg/kg	TM157	<100	<100							
Diethy	l phthalate	<100 µg/kg	TM157	<100	<100							
n-Dibu	tyl phthalate	<100 µg/kg	TM157	<100	<100							
Dibenz	zofuran	<100 µg/kg	TM157	<100	<100							
Carba	zole	<100 µg/kg	TM157	<100	<100							
Butylb	enzyl phthalate	<100 µg/kg	TM157	<100	<100							
bis(2-E	Ethylhexyl) phthalate	<100 µg/kg	TM157	231	<100							
bis(2-0	Chloroethoxy)methane	<100 µg/kg	TM157	<100	<100							
bis(2-0	Chloroethyl)ether	<100 µg/kg	TM157	<100	<100							
Azobe	nzene	<100 µg/kg	TM157	<100	<100							
4-Nitro	phenol	<100 µg/kg	TM157	<100	<100							
4-Nitro	aniline	<100 µg/kg	TM157	<100	<100							
4-Meth	nylphenol	<100 µg/kg	TM157	<100	<100							
	rophenylphenylether	<100 µg/kg		<100	<100							
	roaniline	<100 µg/kg		<100	<100							
4-Chlo	ro-3-methylphenol	<100 µg/kg		<100	<100							
	nophenylphenylether	<100 µg/kg		<100	<100							
	aniline	<100 µg/kg		<100	<100							
	phenol	<100 µg/kg		<100	<100							
	aniline	<100 µg/kg		<100	<100							
	lylphenol	<100 µg/kg		<100	<100							
	Trichlorobenzene	<100 µg/kg		<100	<100							
	rophenol	<100 µg/kg		<100	<100							
	nitrotoluene	<100 µg/kg		<100	<100							
	nitrotoluene	<100 µg/kg	TM157	<100	<100							
2,4-Dir	nethylphenol	<100 µg/kg	TM157	<100	<100							
2,4-Dio	chlorophenol	<100 µg/kg	TM157	<100	<100							
2,4,6-1	Trichlorophenol	<100 µg/kg	TM157	<100	<100							
2,4,5-1	Frichlorophenol	<100 µg/kg	TM157	<100	<100							

Validated		ALcontrol Laboratories Analytical Services										
SDG: Job: Client Reference:	10092 H_GR0	7-62 ONTMIJ_S(OL-27	А	ustomer: ttention: order No.:	Grontmij Gareth Taylor 100308						
Location:	Stagbo	brough			eport No:							
Semi Volatile Org												
Results Legend # ISO17025 accredited. M mCERTS accredited. Aqueous / stelled sampling stelled sampling Idiss.filt Dissolved / filtered sampling subcontracted test. ** * subcontracted test. ** % recovery of the surror standard to check the effort on pounds we the samples are not comfort this recovery.	e. ole. gate ficiency ts of the L	ner Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Ref ab Sample No.(s) AGS Reference	WS11 2.50 - 3.00 Soil/Solid 23/09/2010 25/09/2010 100927-62 2154297	WS9 Soil/Solid 23/09/2010 25/09/2010 100927-62 2154281								
Component 1,4-Dichlorobenzene	<100 µg/	-	<100	<100								
1,3-Dichlorobenzene	<100 µg/	kg TM157	<100	<100								
1,2-Dichlorobenzene	<100 µg/	kg TM157	<100	<100								
2-Chloronaphthalene	<100 µg/		<100	<100	_							
2-Methylnaphthalene	<100 µg/	-	150	<100								
		-										
Acenaphthylene	<100 µg/	-	<100	<100								
Acenaphthene	<100 µg/		<100	<100								
Anthracene	<100 µg/	kg TM157	<100	<100								
Benzo(a)anthracene	<100 µg/	kg TM157	<100	<100								
Benzo(b)fluoranthene	<100 µg/	kg TM157	<100	<100								
Benzo(k)fluoranthene	<100 µg/	kg TM157	<100	<100								
Benzo(a)pyrene	<100 µg/	kg TM157	<100	<100								
Benzo(g,h,i)perylene	<100 µg/	kg TM157	<100	<100								
Chrysene	<100 µg/	kg TM157	<100	<100								
Fluoranthene	<100 µg/	kg TM157	<100	164								
Fluorene	<100 µg/		<100	<100								
Indeno(1,2,3-cd)pyrene	<100 µg/		<100	<100								
Phenanthrene	<100 µg/		<100	242								
Pyrene	<100 µg/	-	<100	146								
Naphthalene	<100 µg/	kg TM157	<100	<100								
Dibenzo(a,h)anthracene	<100 µg/	kg TM157	<100	<100								
		_										
		_										
]			
		_										
		_										
		_										

SDG: lob: Client Reference: Location:	100927-6 H_GRON Stagboro	ITMIJ_SC)L-27		Customer: Attention: Order No.: Report No:	Grontmij Gareth Taylor 100308			
TPH CWG (S)									
Results Legend # ISO17025 accredited. M mCERTS accredited. q Aqueous / settled sample. diss.fit Disolved / filtered sample. otumfit Total / unfiltered sample. subcontracted test. % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected	Lab S A(Sample Ref. Depth (m) Sample Type Date Sampled Vate Received SDG Ref Sample No.(s) SS Reference	WS11 2.50 - 3.00 Soil/Solid 23/09/2010 25/09/2010 100927-62 2154297	WS9 0.30 Soli/Solid 23/09/2010 25/09/2010 100927-62 2154281)				
Component Aliphatics >C12-C16	LOD/Units <100 μg/kg	Method TM173	6020	7990					
Aliphatics >C16-C21	<100 µg/kg	TM173	4940	9510					
Aliphatics >C21-C35	<100 µg/kg	TM173	13200	47000					
Aliphatics >C35-C44	<100 µg/kg	TM173	1210	9040					
Aromatics >EC12-EC16	<100 µg/kg	TM173	8750	7580					
Aromatics >EC16-EC21	<100 µg/kg	TM173	9650	17100					
Aromatics >EC21-EC35	<100 µg/kg	TM173	19500	53800					
Aromatics >EC35-EC44	<100 µg/kg	TM173	3950	18500					
Aromatics >EC40-EC44	<100 µg/kg	TM173	951	6610					
Total Aliphatics >C12-C44	<100 µg/kg	TM173	25300	73500					
Total Aromatics	<100 µg/kg	TM173	41800	97000					
>EC12-EC44									
Total Aliphatics >C5-35	<100 µg/kg	TM173	24500	64500					
Total Aliphatics >C5-C44	<100 µg/kg	TM173	25700	73500					
Total Aromatics >C5-35	<100 µg/kg	TM173	38200	78500					
Total Aromatics >C6-C44	<100 µg/kg	TM173	42100	97000					
Total Aliphatics & Aromatics	<100 µg/kg	TM173	62700	143000					
>C5-35 Total Aliphatics & Aromatics	<100 µg/kg	TM173	67800	171000					
>C5-C44 GRO Surrogate %	%	TM089	66	73					
recovery** GRO >C5-C12	<44 µg/kg	TM089	641	<44					
Methyl tertiary butyl ether	<5 µg/kg	TM089	<5	<5					
(MTBE)				#	#				
Benzene	<10 µg/kg	TM089		<10 M	м				
Toluene	<2 µg/kg	TM089	4.72	<2 M	м				
Ethylbenzene	<3 µg/kg	TM089	15.3	<3 M	м				
m,p-Xylene	<6 µg/kg	TM089	<6	<6 M	M				
o-Xylene	<3 µg/kg	TM089	3.54	<3					
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	M <10	M				
Aliphatics >C6-C8	<10 µg/kg	TM089	16.5	<10					
Aliphatics >C8-C10	<10 µg/kg	TM089	198	<10					
Aliphatics >C10-C12	<10 µg/kg	TM089	156	<10					
•									
Total Aliphatics >C5-C12	<10 µg/kg	TM089	376	<10					
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10					
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10					
Aromatics >EC8-EC10	<10 µg/kg	TM089	156	<10					
Aromatics >EC10-EC12	<10 µg/kg	TM089	104	<10					
Total Aromatics	<10 µg/kg	TM089	266	<10					
>EC5-EC12 m,p,o-Xylene	<10 µg/kg	TM089	<10	<10					
BTEX, Total	<10 µg/kg	TM089	23.6	<10					
	.5 5		-	-					

SDG: Job: Client Reference:	100927-6 H_GRON	32 ITMIJ_SO	L-27		Customer: Attention: Order No.:	Gront Garet	tmij th Taylor		
Location:	Stagboro	ugh			Report No:	10030	08		
VOC MS (S)									
Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.fitt Disolved / filtered sample. tot.unfilt Total / unfiltered sample. * Sk recovery of the surrogate standard to check the efficient of the method. The results of t individual compounds within the samples are not corrected for this recovery.	cy he Lab S	Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s) GS Reference	WS11 2.50 - 3.00 Soil/Solid 23/09/2010 25/09/2010 100927-62 2154297	WS9 0.30 Soil/Solid 23/09/2010 25/09/2010 100927-62 2154281					
Component Dibromofluoromethane**	LOD/Units %	Method TM116	101	99.4					
Toluene-d8**	%	TM116	79.9	94.9					
4-Bromofluorobenzene**	%	TM116	163	130					
Dichlorodifluoromethane	<4 µg/kg	TM116	<4 M	<4	м				
Chloromethane	<7 µg/kg	TM116	<7 #	<7	#				
Vinyl Chloride	<10 µg/kg	TM116	<10 #	<10	#				
Bromomethane	<13 µg/kg	TM116	<13 M	<13	м				
Chloroethane	<14 µg/kg	TM116	<14 M	<14	м				
Trichlorofluorormethane	<6 µg/kg	TM116	<6 M	<6	M				
1.1-Dichloroethene	<10 µg/kg	TM116	<10 #	<10	#				
Carbon Disulphide	<7 µg/kg	TM116	47.1 M	<7					
Dichloromethane	<10 µg/kg	TM116	58.5	<10	M				
Methyl Tertiary Butyl Ether	<11 µg/kg	TM116	# <11	<11	#				
trans-1-2-Dichloroethene	<11 µg/kg	TM116	M <11	<11	M			 	
1.1-Dichloroethane	<8 µg/kg	TM116	M <8	<8	M				
cis-1-2-Dichloroethene	<5 µg/kg	TM116	M <5	<5	M				
2.2-Dichloropropane	<12 µg/kg	TM116	M <12	<12	M				
Bromochloromethane	<14 µg/kg	TM116	<14 M	<14	M				
Chloroform	<8 µg/kg	TM116		<8	M			 	
1.1.1-Trichloroethane	<7 μg/kg	TM116	-8 M <7	<7	M			 	
			м		м			 	
1.1-Dichloropropene	<11 µg/kg	TM116	<11 M	<11	м				
Carbontetrachloride	<14 µg/kg	TM116	<14 M	<14	м				
1.2-Dichloroethane	<5 µg/kg	TM116	<5 M	<5	м				
Benzene	<9 µg/kg	TM116	13.6 M	<9	м				
Trichloroethene	<9 µg/kg	TM116	<9 M	<9	M				
1.2-Dichloropropane	<12 µg/kg	TM116	<12 M	<12	м				
Dibromomethane	<9 µg/kg	TM116	<9 M	<9	M				
Bromodichloromethane	<7 µg/kg	TM116	<7 M	<7	M				
cis-1-3-Dichloropropene	<14 µg/kg	TM116	<14 M	<14	M				
Toluene	<5 µg/kg	TM116	15.4	<5	M				
trans-1-3-Dichloropropene	<14 µg/kg	TM116	M <14	<14	IVI				
1.1.2-Trichloroethane	<10 µg/kg	TM116	<10	<10					
1.3-Dichloropropane	<7 µg/kg	TM116		<7	M			 	
Tetrachloroethene	<5 µg/kg	TM116	# 23.6	<5	#			 	
Dibromochloromethane	<13 µg/kg	TM116	M <13	<13	M			 	
1.2-Dibromoethane	<12 µg/kg	TM116	M <12	<12	M				
Chorobenzene	<5 µg/kg	TM116	<5 M	<5	M			 	
1.1.1.2-Tetrachloroethane	<10 µg/kg	TM116	<10 ×5 M	<10	м			 	
			м		м				
Ethylbenzene	<4 µg/kg	TM116	38.7 M	<4	м				

SDG: Job: Client	Reference:	100927-6 H_GRON	62 NTMIJ_SO)L-27			Customer: Attention: Order No.:		ontmij reth Taylor		
Locat		Stagboro	ugh				Report No::	100	0308		
VOC	MS (S)										
	Results Legend ISO17025 accredited.	Customer	Sample Ref.	WS11		WS9					
M aq diss.filt tot.unfilt *	mCERTS accredited. Adqueous / settled sample. Disolved / filtered sample. Total / unfiltered sample. subcontracted test. % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	Lab S A(Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s) GS Reference	2.50 - 3.00 Soil/Solid 23/09/2010 25/09/2010 100927-62 2154297		0.30 Soil/Solid 23/09/2010 25/09/2010 100927-62 2154281					
Compoi p/m-Xyl		LOD/Units <14 µg/kg	Method TM116	25.8		<14					
o-Xylen		<10 µg/kg	TM116	<10	#	<10	#				
					м		м				
Styrene		<10 µg/kg	TM116	<10	м	<10	м				
Bromof		<10 µg/kg	TM116	<10	м	<10	м			 	
Isoprop	ylbenzene	<5 µg/kg	TM116	<5	м	<5	м				
1.1.2.2-	Tetrachloroethane	<10 µg/kg	TM116	<10	#	<10	#				
1.2.3-Tı	ichloropropane	<17 µg/kg	TM116	<17		<17					
Bromob	enzene	<10 µg/kg	TM116	<10	м	<10	M			 	
Propylb	enzene	<11 µg/kg	TM116	<11	м	<11	M				
	otoluene	<9 µg/kg	TM116	<9	м	<9	м				
	imethylbenzene		TM116	<8	м	<8	м				
		<8 µg/kg			#		#				
4-Chlor	otoluene	<12 µg/kg	TM116	<12	м	<12	м				
tert-But	ylbenzene	<12 µg/kg	TM116	<12	#	<12	#				
1.2.4-Tr	imethylbenzene	<9 µg/kg	TM116	<9	#	<9	#				
sec-But	ylbenzene	<10 µg/kg	TM116	<10		<10					
4-Isopro	pyltoluene	<11 µg/kg	TM116	<11	м	<11	M				
1.3-Dict	nlorobenzene	<6 µg/kg	TM116	<6	М	<6	M				
1.4-Dict	nlorobenzene	<5 µg/kg	TM116	<5	м	<5	м				
	penzene	<10 µg/kg	TM116	<10	м	<10	м				
-					м		м				
	nlorobenzene	<12 µg/kg	TM116	<12	м	<12	м				
е	romo-3-chloropropan	<14 µg/kg	TM116	<14	м	<14	м				
	yl methyl ether	<15 µg/kg	TM116	<15		<15					
1.2.4-Tr	ichlorobenzene	<6 µg/kg	TM116	<6	#	<6	#				
Hexach	lorobutadiene	<12 µg/kg	TM116	<12	#	<12	#				
Naphtha	alene	<13 µg/kg	TM116	<13		<13					
1.2.3-Tr	ichlorobenzene	<6 µg/kg	TM116	<6	м	<6	м				
		10.00	-	-	м	-	м				
_											



Table of Results - Appendix

G N	umber : 10092	27-62		Client	H_GRONTMIJ_S	OL		Client Ref :					
POF	RT KEY						R	esults expressed as (e.g.) 1.03E-07 is equivale	nt to 1.03x10			
OP	No Determination Pos	ssible	#	ISO 17025 Accredited			Subcontracted Test	м	M MCERTS Accredited				
Ð	No Fibres Detected		PFD	Possible Fibres Detected		»	Result previously reported (Incremental reports only)	EC	Equivalent Carbon (Aromatics C8-C35)				
Method detection limits are not always achievable due to various circumstances beyond our control													
ľ	Method No		Refere	nce			Description		Wet/Dry Sample ¹	Surrogate Corrected			
	PM001				Preparation of Sample	es for Metals	nalysis						
	PM024	Modified BS 1377			Soil preparation inclue Containing Material	ling homoger	isation, moisture screens of soils for Asbe	stos					
	TM001	In - house Method			Determination of asbe	estos containi	ng material by screening on solids						
	TM062 (S)	National Grid Property Collection & Analysis of Sites version 1 Sec 3.9	of Samples fro		Determination of Pher	nols in Soils b	/ HPLC						
	TM089	Modified: US EPA Meth	hods 8020 &	602	Determination of Gase Headspace GC-FID (C		ydrocarbons (GRO) and BTEX (MTBE) con	npounds by					
	TM116	Modified: US EPA Meth 610 & 602	hod 8260, 81	20, 8020, 624,	Determination of Vola	tile Organic C	ompounds by Headspace / GC-MS						
	TM132	In - house Method			ELTRA CS800 Operato	ors Guide							
	TM133	BS 1377: Part 3 1990;	BS 6068-2.5		Determination of pH i	n Soil and Wa	ter using the GLpH pH Meter						
	TM151	Method 3500D, AWWA	4/APHA, 20th	Ed., 1999	Determination of Hex	avalent Chror	ium using Kone analyser						
	TM153	Method 4500A,B,C, I, 1999	M Awwa/Ap	HA, 20th Ed.,	Determination of Tota the 'Skalar SANS+ Sys		e (Easily Liberatable) Cyanide and Thiocy ted Flow Analyser	anate using					
	TM157	HP 6890 Gas Chromat 5973 Mass Selective D	,	'	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone								
	TM173	Analysis of Petroleum Environmental Media - Criteria			Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID								
	TM181	US EPA Method 6010B	3		Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES								
	TM222	In-House Method			Determination of Hot Spectrometer	Water Solub	e Boron in Soils (10:1 Water:soil) by IRIS	Emission					

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C.

NA = not applicable.

APPENDIX

APPENDIX

- Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH₄ by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.
- 2. Samples will be run in duplicate upon request, but an additional charge may be incurred.
- 3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.
- 4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
- 5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
- 6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.
- 7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.
- 8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.
- 9. NDP No determination possible due to insufficient/unsuitable sample.
- 10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals total metals must be requested separately.
- 11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.
- 12. Results relate only to the items tested
- Surrogate recoveries Most of our organic methods include surrogates, the recovery of which is monitored and reported.
 For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 130 %.
- 14. **Product analyses** Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
- 15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).
- 16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).
- 17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
- 18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.
- 19. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
- 19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
- 21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.
- 22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.
- 23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

	LIQUID	MATRICES EXTRACTION SUMMARY	
ANALYSIS	EXTRACTION SOLVENT	ЕХТКАСТІОN МЕТНОD	SISATANA
PAH MS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
PCB 7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
PCB TOTAL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GS MS
SVOC	DCM	LIQUID/LIQUID SHAKE	GC MS
FREE SULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PEST OCP/OPP	DCM	LIQUID/LIQUID SHAKE	GC MS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GC MS
PHENOLS MS TPH by INFRA RED (IR)	DCM TCE	SOLID PHASE EXTRACTION LIQUID/LIQUID EXTRACTION	GC MS HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID EXTRACTION	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GC FID

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
Solvent Extractable Matter	D&C	DCM	SOXTHERM	GRAVIMETRIC
Cyclohexane Ext. Matter	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
Thin Layer Chromatography	D&C	DCM	SOXTHERM	IATROSCAN
Elemental Sulphur	D&C	DCM	SOXTHERM	HPLC
Phenols by GCMS	WET	DCM	SOXTHERM	GC-MS
Herbicides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
Pesticides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Min oil)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Cleaned up)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH CWG by GC	D&C	HEXANE:ACETONE	END OVER END	GC-FID
PCB tot / PCB con	D&C	HEXANE:ACETONE	END OVER END	GC-MS
Polyaromatic Hydrocarbons (MS)	WET	HEXANE:ACETONE	Microwave TM218.	GC-MS
C8-C40 (C6-C40)EZ Flash	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Polyaromatic Hydrocarbons Rapid GC	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Semi Volatile Organic Compounds	WET	DCM:ACETONE	SONICATE	GC-MS

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content.

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -

Trace – Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in

MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Asbestos Type

Common Name

Chrysotile Amosite Crocidolite Fibrous Actinolite Fibrous Anthophyllite Fibrous Tremolite White Asbestos Brown Asbestos Blue Asbestos --



Grontmij Radcliffe House 3rd Floor Blenheim Court, Lode Iane Solihull West Midlands B912AA Attention:

Gareth Taylor

CERTIFICATE OF ANALYSIS

Date:	18 October 2010		
Customer:	H_GRONTMIJ_SOL-27		
Sample Delivery Group (SDG):	100923-110	Report No.:	100345
Your Reference:			
Location:	Stagborough		

We received 25 samples on Thursday September 23, 2010 and 10 of these samples were scheduled for analysis which was completed on Monday October 18, 2010. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Asbestos testing - we are not accredited for screening soil samples for asbestos fibres. We are only accredited to identify asbestos fibres in bulk material (ACM).

Approved By:

enton

Iain Swinton Operations Director - Land UK & Ireland



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Validated	ALcontrol La	aboratories Analy	vtical Services
SDG:	100923-110	Customer:	Grontmij
Job:	H_GRONTMIJ_SOL-27	Attention:	Gareth Taylor
Client Reference:		Order No.:	
Location:	Stagborough	Report No:	100345

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
2129825	WS1			20/09/2010
2129814	WS1		0.30	20/09/2010
2129807	WS1		0.65	20/09/2010
2129832	WS1		2.10 - 2.30	20/09/2010
2129842	WS2			20/09/2010
2129685	WS2		0.30	20/09/2010
2129798	WS2		0.60	20/09/2010
2129795	WS2		1.50 - 1.70	20/09/2010
2129690	WS3			20/09/2010
2129848	WS3		0.35	20/09/2010
2129702	WS3		0.65	20/09/2010
2129709	WS3		1.20 - 1.50	20/09/2010
2129904	WS3		1.20 - 1.50	20/09/2010
2129721	WS4			21/09/2010
2129749	WS4		0.35	21/09/2010
2129715	WS4		0.65	21/09/2010
2129728	WS4		1.65 - 1.85	21/09/2010
2129733	WS4		3.50 - 3.80	21/09/2010
2129740	WS5			21/09/2010
2129746	WS5		0.30	21/09/2010
2129763	WS5		0.65	21/09/2010
2129771	WS5		1.30 - 1.55	21/09/2010
2129776	WS6			21/09/2010
2129757	WS6		0.35	21/09/2010
2129785	WS6		0.70	21/09/2010

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated	ALcontrol La	abora	tor	ies	; A	n	al	yti	са	18	Se	۶r	vic	e	S
SDG: 100923-110 Job: H_GRONTI Client Reference: Stagboroug	MIJ_SOL-27			Cus Atte Ord Rep	entio er N	on: Io.:		(Groi Gare 100:	eth ⁻	Та	ylo	r		
SOLID															
Results Legend	Lab Sample No(s)			2129702	2129709	2129721	2129728	2129733	2129746		2129757	2129798		2129814	2129825
X Test No Determination Possible	Customer Samp	ole Ref.		WS3	WS3	WS4	WS4	WS4	WSb		WS6	WS2		WS1	WS1
	AGS Ref														
	Depth (m)		0.65	1 20 - 1 50		1.65 - 1.85	3.50 - 3.80	0.30	0000	0.35	0.60		0.30	
	Containe	r	400g Tub 250g Amber Jar	20ml Glass Vial used in volati 60g VOC	250g Amber Jar 400g Tub	250g Amber Jar 400g Tub	400g Tub	400g Tub 250r Amber Iar	250g Amber Jar	250g Amber Jar	∠oug Amber Jan 400g Tub	400g Tub	400g Tub 250g Amber Jar	60g VOC	400g Tub 250g Amber Jar
Asbestos Containing Material Screen	All	NDPs: 0 Tests: 2	x	ē											X
Boron Water Soluble	All	NDPs: 0 Tests: 9	x		×	×	,	<mark>,</mark>	x	x	X	<u>,</u>	x		x
CEN Readings	All	NDPs: 0 Tests: 1			v										
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 2	x		<u> </u>								x		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 1			×										
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 4	Y		×			<u>,</u>	Ħ				Y		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 4	^ v		×		, ,						x		
GRO by GC-FID (S)	All	NDPs: 0 Tests: 4	^		^ X				(<u>∧</u>	x	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 9	×			x	x	x	,		x	X	×		X
Mercury Dissolved	All	NDPs: 0 Tests: 1			×										
Metals by iCap-OES (Soil)	Antimony	NDPs: 0 Tests: 2	x										x	Ħ	
	Arsenic	NDPs: 0 Tests: 9	x		X	×		<mark>.</mark>	X	x	X	- -	x		X
	Barium	NDPs: 0 Tests: 9	x		×	×			×	×			× X		× X
	Beryllium	NDPs: 0 Tests: 9	x		x	x	, ,		X	x	×		X		X
	Cadmium	NDPs: 0 Tests: 9	x		^ X	×			×	^ X	X		× X		^ X
	Chromium	NDPs: 0 Tests: 9	x		x	x) 		x	x	X		x		x

Validated	ALcontrol La	abora	tc	ori	e	S	A	na	al;	yti	Ci	al	S	e	rv	ic	e	S			
SDG: 100923-110 Job: H_GRONTM Client Reference: Image: Client Reference				1	٩tt	en	ome tioi r No	n:					mij h T		lor						
Location: Stagborough	ı						rt N				10	034									
SOLID					-																
					Τ				Т		Τ				Τ		Τ				
Results Legend	Lab Sample N	lo(s)		2076212		2129709	2129721	2120120	2129728	2129/33	0400700	2129746	2129757		2129798		2129814	2129825			
X Test No Determination Possible	Customer Samp	ole Ref.		WS3		WS3	WS4	t.	WS4	WS4	Wie 4	WS5	WS6		WS2		WS1	WS1			
	AGS Ref																				
	Depth (m)		0.00	2	1.20 - 1.50		1.00 - 1.00	1 65 - 1 85	3.50 - 3.60	0 50 00	0.30	0.35		0.60	0.00	0.30				
	Containe	r	250g Amber Jar	400g Tub	20ml Glass Vial used in volatile		400g Tu 250g Ambe	250g Ambe	400g Tu	400g Tub 250g Amber lar	250g Ambe	400g Tu	400g Tu 250g Ambe	250g Ambe	400g Tu	400g Tu	OA 609	400g Tu 250g Ambe			
			f Jar	ē (ed in volatile	Đ	r Jar	r Jar			n Jar	ē	r Jar	ır Jar		Ē	C	r lb			
Metals by iCap-OES (Soil)	Copper	NDPs: 0 Tests: 9	x				x	x	>	<mark>(</mark>	x		<mark>x</mark>	x)	c I)	ĸ			
	Lead	NDPs: 0 Tests: 9	x				x	x)	<mark><</mark>	x		×	x)	c l)	×			
	Mercury	NDPs: 0 Tests: 9	x				x	x)	<mark>(</mark>	X		×	x	- - -	(>	×			
	Nickel	NDPs: 0 Tests: 9	x				x	x)	C	x		×	x	,	()	×			
	Selenium	NDPs: 0 Tests: 9	x				x	X)	<pre></pre>	x			x		()	×			
	Vanadium	NDPs: 0 Tests: 9	x				x	x)	<pre></pre>	x		x	x	,	c l)	×			
	Zinc	NDPs: 0 Tests: 9	x				x	x)	<pre></pre>	x		x	x)	()	×			
рН	All	NDPs: 0 Tests: 9		X			×		×	X		x	x		x	X		x			
Sample description	All	NDPs: 0 Tests: 10	x			<mark>x</mark> 2	x	x	>	<pre></pre>	x		x	x	>	<u>د</u>)	×			
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 4	x			x)	C					>		ſ				
SVOC MS (W) - Aqueous	All	NDPs: 0 Tests: 1				x			ſ								1				
Total Organic Carbon	All	NDPs: 0 Tests: 9	x				x	X)	C	x		x	x))	×			
TPH by IR Oils and Greases	All	NDPs: 0 Tests: 1				x					ſ						ſ				
TPH CWG GC (S)	All	NDPs: 0 Tests: 4	x			x			,	C					>		1				
VOC MS (S)	All	NDPs: 0 Tests: 4		,	<mark>(</mark>	x			ſ)	C						x				
VOC MS (W)	All	NDPs: 0 Tests: 1				x			t						1						

Validated	ALcontrol La	ALcontrol Laboratories Analytical Services											
SDG:	100923-110	Customer:	Grontmij										
Job:	H_GRONTMIJ_SOL-27	Attention:	Gareth Taylor										
Client Reference:		Order No.:											
Location:	Stagborough	Report No:	100345										
Sample Descriptions													

Grain Sizes											
very fine	<0.063m	m	fine	0.063mm - 0.1mm	medium	0.1mm -	2mm	coarse	2mm - 10mm	very coarse	>10mm
Lab Sample No	o(s)	Custome	r Sample Ref	Depth (m)	(Colour	Descri	ption	Grain size	Inclusions	Inclusions 2
2129702		V	VS3	0.65	Lig	ht Brown	Loamy	Sand	0.1 - 2 mm	Stones	None
2129709		V	VS3	1.20 - 1.50	Dai	rk Brown	Sar	nd	0.1 - 2 mm	Stones	None
2129721		٧	VS4		Dai	rk Brown	Top :	Soil	0.063 - 0.1 mm	Stones	Vegetation
2129728		٧	VS4	1.65 - 1.85	Lig	ht Brown	Sandy	Clay	0.1 - 2 mm	Stones	None
2129733		٧	VS4	3.50 - 3.80	Dai	rk Brown	Sar	nd	0.1 - 2 mm	Stones	None
2129746		٧	VS5	0.30	Lig	ht Brown	Clay L	oam	0.063 - 0.1 mm	Stones	None
2129757		٧	VS6	0.35	Lig	ht Brown	Sandy	Loam	0.1 - 2 mm	Stones	None
2129798		٧	VS2	0.60	Lig	ht Brown	Clay L	oam	0.063 - 0.1 mm	Stones	None
2129814		٧	VS1	0.30	Lig	ht Brown	Silty Cla	y Loam	0.063 - 0.1 mm	Stones	None
2129825		V	VS1		Dai	rk Brown	Sandy	Loam	0.1 - 2 mm	Stones	None

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated	ALcontrol Laboratorio	es Analyti	ical Services
Client Reference:	100923-110 H_GRONTMIJ_SOL-27	Order No.:	Grontmij Gareth Taylor
Location:	Stagborough	Report No:	100345

Test Completion Dates

	-	1		1	1	1		1	1	
Lab Sample No(s)	2129702	2129709	2129721	2129728	2129733	2129746	2129757	2129798	2129814	2129825
Customer Sample Ref.	WS3	WS3	WS4	WS4	WS4	WS5	WS6	WS2	WS1	WS1
AGS Ref.										
Depth	0.65	1.20 - 1.50		1.65 - 1.85	3.50 - 3.80	0.30	0.35	0.60	0.30	
•			00115							00115
Туре	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Asbestos Containing Material Screen	11/10/2010									11/10/2010
Boron Water Soluble	13/10/2010		13/10/2010	13/10/2010	12/10/2010	13/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010
CEN 2:1 Leachate (1 Stage)		11/10/2010								
CEN Readings		13/10/2010								
Cyanide Comp/Free/Total/Thiocyanate	12/10/2010								12/10/2010	
Dissolved Metals by ICP-MS		14/10/2010								
EPH CWG (Aliphatic) GC (S)	13/10/2010	13/10/2010			13/10/2010				13/10/2010	
EPH CWG (Aromatic) GC (S)	13/10/2010	13/10/2010			13/10/2010				13/10/2010	
GRO by GC-FID (S)	18/10/2010	13/10/2010			15/10/2010				12/10/2010	
Hexavalent Chromium (s)	13/10/2010		13/10/2010	13/10/2010	13/10/2010	13/10/2010	13/10/2010	13/10/2010	13/10/2010	13/10/2010
Mercury Dissolved		14/10/2010								
Metals by iCap-OES (Soil)	14/10/2010		14/10/2010	14/10/2010	14/10/2010	14/10/2010	15/10/2010	15/10/2010	15/10/2010	14/10/2010
pH	12/10/2010		12/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010
Sample description	11/10/2010	11/10/2010	11/10/2010	11/10/2010	11/10/2010	11/10/2010	11/10/2010	11/10/2010	11/10/2010	11/10/2010
Semi Volatile Organic Compounds	13/10/2010	13/10/2010			13/10/2010				13/10/2010	
SVOC MS (W) - Aqueous		15/10/2010								
Total Organic Carbon	13/10/2010		13/10/2010	13/10/2010	12/10/2010	13/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010
TPH by IR Oils and Greases		14/10/2010								
TPH CWG GC (S)	18/10/2010	13/10/2010			15/10/2010				13/10/2010	
VOC MS (S)	15/10/2010	15/10/2010			18/10/2010				15/10/2010	
VOC MS (W)		13/10/2010								

Validated		ALco	ontrol La	bo	oratorie	S	Analyti	ica	I Services	6		
SDG: Job: Client Reference:	100923-1 H_GRON	110				Cus Atte	stomer: ention: ler No.:	Gro				
Location:	Stagboro	ough			I	Rep	ort No:	1003	345			
Results Legend # ISO17025 accredited.	Customer	Sample Ref.	WS1		WS1		WS2		WS3	WS3	WS4	-
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * subcontracted test. ** % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	[Lab	Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s) GS Reference	Soil/Solid 20/09/2010 23/09/2010 100923-110 2129825		0.30 Soli/Solid 20/09/2010 23/09/2010 100923-110 2129814		0.60 Soli/Solid 20/09/2010 23/09/2010 100923-110 2129798)	0.65 Soli/Solid 20/09/2010 23/09/2010 100923-110 2129702	1.20 - 1.50 Soil/Solid 20/09/2010 23/09/2010 100923-110 2129709	Soil/Solid 21/09/2010 23/09/2010 100923-110 2129721	
Component	LOD/Units	Method								11.1		4
Moisture	%	PM114								11.1		
Moisture content ratio	%	PM114								12.4		
Dry matter content ratio	%	PM114								89		
Asbestos Containing Material Screen	-	TM001	No ACM Detecte	d					No ACM Detected			
Soil Organic Matter (SOM)	<0.35 %	TM132	2.78		2.26		7.78		1.1		8.86	_
рН	1 pH Units	TM133	6.67	#	7.93	#	5.21	#	# 7.03		7.26	
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	м	<0.6	М	<0.6	М	M <0.6		<0.6	<u>1</u>
Cyanide, Total	<1 mg/kg	TM153		#	<1	#		#	# <1		#	#
Thiocyanate	<1 mg/kg	TM153		_	<1	М			M <1			_
Antimony	<0.6 mg/kg	TM181		_	1.67	м						
						#			#			
Arsenic	<0.6 mg/kg	TM181	6.3	м	5.4	м	10.5	м	6.52 M		8.29	л
Barium	<0.6 mg/kg	TM181	70.6	#	61.3	#	167	#	42.7 #		161	#
Beryllium	<0.01 mg/kg	TM181	0.677		0.599		1.46		0.606 M		1.05 N	
Cadmium	<0.02 mg/kg	TM181	0.501	м	0.445	м	0.827	м	0.362 M		0.917 N	
Chromium	<0.9 mg/kg	TM181	12.7	м	13.9	м	17.6	м	17.9 M		14.9	
Copper	<1.4 mg/kg	TM181	19.5		21.5		35.8		9.17		44.4	
Lead	<0.7 mg/kg	TM181	29.8	м	20.2	м	38.5	м	М 16.7		127	
Mercury	<0.14	TM181	<0.14	м	<0.14	М	<0.14	М	M <0.14		<0.14	1
Nickel	mg/kg <0.2 mg/kg	TM181	13.8	М	15.1	М	37.1	М	M 12.9		17	1
Selenium	<1 mg/kg	TM181	<1	М	<1	М	1.96	М	M		1.05	1
Vanadium	<0.2 mg/kg	TM181	20.9	#	15.7	#	27.9	#	# 22.5		19.2	¥
Zinc	<1.9 mg/kg	TM181	68.3	#	57.4	#	107	#	47.4			#
Boron, water soluble		TM222	<1	м	<1	м	1.41	м			<1 212	л
Boron, water soluble	<1 mg/kg	1111222	<1	м	<1	м	1.41	M	M		<1 N	1
												-
				_								_
												-
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Validated]	ALco	ontrol Lab	oratories	Analy	tical Servic	es	
SDG: Job: Client Reference:	100923-1 H_GRON		DL-27	Att	stomer: tention: der No.:	Grontmij Gareth Taylor		
Location:	Stagboro	ugh		-	port No:	100345		
Semi Volatile Organic								
Kessuits Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.fitt Disolved / fitered sample. subcontracted test. * % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	e Lab s	Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s) GS Reference	WS1 0.30 Soli/Solid 20/09/2010 23/09/2010 100923-110 2129814	WS3 0.65 Soil/Solid 20/09/2010 23/09/2010 100923-110 2129702	WS3 1.20 - 1.5 Soil/Soli 20/09/20 23/09/20 100923-1 2129705	d 10 10 10		
Component Phenol	LOD/Units <100 µg/kg	Method TM157	<100	<100	<100			
Pentachlorophenol	<100 µg/kg	TM157	<100	<100	<100			
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100	<100	<100			
Nitrobenzene	<100 µg/kg	TM157	<100	<100	<100			
		TM157	<100	<100	<100			
Isophorone	<100 µg/kg							
Hexachloroethane	<100 µg/kg	TM157	<100	<100	<100			
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100	<200	<100			
Hexachlorobutadiene	<100 µg/kg	TM157	<100	<100	<100			
Hexachlorobenzene	<100 µg/kg	TM157	<100	<100	<100			
n-Dioctyl phthalate	<100 µg/kg	TM157	<100	<100	<100			
Dimethyl phthalate	<100 µg/kg	TM157	<100	<100	<100			
Diethyl phthalate	<100 µg/kg	TM157	<100	<100	<100			
n-Dibutyl phthalate	<100 µg/kg	TM157	<100	<100	<100			
Dibenzofuran	<100 µg/kg	TM157	<100	343	<100			
Carbazole	<100 µg/kg	TM157	<100	<100	<100			
Butylbenzyl phthalate	<100 µg/kg	TM157	<100	<100	<100			
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100	<100	115			
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100	<100	<100			
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100	<100	<100			
Azobenzene	<100 µg/kg	TM157	<100	<100	<100			
4-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100			
4-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100			
4-Methylphenol	<100 µg/kg	TM157	<100	<100	<100			
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100	<100	<100			
4-Chloroaniline	<100 µg/kg	TM157	<100	<100	<100			
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100	<100	<100			
4-Bromophenylphenylether	<100 µg/kg	TM157	<100	<100	<100			
3-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100			
2-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100			
2-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100			
2-Methylphenol	<100 µg/kg	TM157	<100	<100	<100			
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100	<100	<100			
2-Chlorophenol	<100 µg/kg	TM157	<100	<100	<100			
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100			
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100			
2,4-Dimethylphenol	<100 µg/kg	TM157	<100	<100	<100			
2,4-Dichlorophenol	<100 µg/kg	TM157	<100	<100	<100			
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100			
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100			
_,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	.00 µg/ng		-100	-100	-100			

Clien Loca [:]	t Reference: tion:	H_GRON Stagboro	ITMIJ_SO uqh	L-27	Or	tention: der No.: port No:	Grontmij Gareth Taylor 100345	
					_			
# M aq diss.filt tot.unfilt *	Volatile Organic Results Logend ISO17025 accredited. MCERTS accredited. Aqueous / settied sample. Dissolved / filtered sample. Total / unfiltered sample. Subcontracted test. % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	Customer	Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s) 3S Reference	WS1 0.30 Soil/Solid 20/09/2010 23/09/2010 100923-110 2129814	WS3 0.65 Soii/Solid 20/09/2010 23/09/2010 100923-110 2129702	WS3 1.20 - 1.50 Soil/Solid 20/09/2010 23/09/2010 100923-11C 2129709		
Compo	hent chlorobenzene	LOD/Units <100 µg/kg	Method TM157	<100	<100	<100		
	chlorobenzene	<100 µg/kg	TM157	<100	<100	<100		
	chlorobenzene	<100 µg/kg	TM157	<100	<100	<100		
	ronaphthalene	<100 µg/kg	TM157	<100	<100	<100		
2-Meth	ylnaphthalene	<100 µg/kg	TM157	<100	227	<100		
Acenar	ohthylene	<100 µg/kg	TM157	<100	<100	<100		
Acenaj	phthene	<100 µg/kg	TM157	<100	585	<100		
Anthra	cene	<100 µg/kg	TM157	<100	<100	<100		
Benzo	(a)anthracene	<100 µg/kg	TM157	<100	<100	<100		
	(b)fluoranthene	<100 µg/kg	TM157	<100	<100	<100		
	(k)fluoranthene	<100 µg/kg	TM157	<100	<100	<100		
	(a)pyrene	<100 µg/kg	TM157	<100	<100	<100		
	(g,h,i)perylene	<100 µg/kg	TM157	<100	<100	<100		
Chryse	ne	<100 µg/kg	TM157	<100	<100	<100		
Fluorar	nthene	<100 µg/kg	TM157	<100	<100	<100		
Fluorer	ne	<100 µg/kg	TM157	<100	278	<100		
Indeno	(1,2,3-cd)pyrene	<100 µg/kg	TM157	<100	<100	<100		
Phena	nthrene	<100 µg/kg	TM157	<100	257	<100		
Pyrene	•	<100 µg/kg	TM157	<100	<100	<100		
Naphth		<100 µg/kg	TM157	<100	290	<100		
	o(a,h)anthracene	<100 µg/kg	TM157	<100	<100	<100		
				-100	-100	~100		
								1

Job: Clien Locat	t Reference: tion:	100923-1 H_GRON Stagboro	ITMIJ_SC)L-27		Customer: Attention: Order No.: Report No:	Grontmij Gareth Taylor 100345	
PH (CWG (S)							
# M aq diss.filt ot.unfilt *	Results Legend ISO17025 accredited. mCERTS accredited. Aqueous / settled sample. Dissolved / filtered sample. Total / unfiltered sample. Total / unfiltered sample. Subcontracted test. % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	I C Lab S A(Sample Ref. Depth (m) Sample Type Date Sampled late Received SDG Ref Sample No.(s) 3S Reference	WS1 0.30 Soii/Solid 20/09/2010 23/09/2010 100923-110 2129814	WS3 0.65 Soli/Solid 20/99/2010 23/09/2010 100923-110 2129702	23/09/2010		
Compo Aliphat	nent ics >C12-C16	LOD/Units <100 µg/kg	Method TM173	4460	6220	472		
Niphat	cs >C16-C21	<100 µg/kg	TM173	6150	1670	117		
	cs >C21-C35	<100 µg/kg	TM173	12600	4390	3880		
	ics >C35-C44	<100 µg/kg	TM173	1910	<100	<100		
· ·	ics >EC12-EC16	<100 µg/kg	TM173	6820	406	<100		
	ics >EC16-EC21	<100 µg/kg	TM173	10400	<100	<100		
	ics >EC21-EC35	<100 µg/kg	TM173	20100	<100	6850		
	ics >EC35-EC44	<100 µg/kg	TM173	9700	<100	<100		
Aromat	ics >EC40-EC44	<100 µg/kg	TM173	4260	<100	<100		
Total A	liphatics >C12-C44	<100 µg/kg	TM173	25100	12300	4460		
Total A	romatics -FC44	<100 µg/kg	TM173	47000	406	6850		
	liphatics >C5-35	<100 µg/kg	TM173	23200	12300	4470		
Total A	liphatics >C5-C44	<100 µg/kg	TM173	25100	12300	4470		
Total A	romatics >C5-35	<100 µg/kg	TM173	37300	406	6850		
Total A	romatics >C6-C44	<100 µg/kg	TM173	47000	406	6850		
Total A	liphatics & Aromatics	<100 µg/kg	TM173	60600	12700	11300		
>C5-35		<100 µg/kg	TM173	72200	12700	11300		
>C5-C4		%	TM089	99	124	121		
recove	·y**							
	C5-C12	<44 µg/kg	TM089	<44	<44	<44		
Methyl (MTBE	tertiary butyl ether)	<5 µg/kg	TM089	<5 #	<5	<5 #		
Benzer	ie	<10 µg/kg	TM089	<10 M	<10	<10 M		
Toluen	e	<2 µg/kg	TM089	<2 M	<2	<2 M		
Ethylbe	enzene	<3 µg/kg	TM089	3.26 M	<3			
m,p-Xy	lene	<6 µg/kg	TM089	<6	<6	<6		
o-Xyler	ie	<3 µg/kg	TM089	M <3	<3	M <3		
Aliphat	ics >C5-C6	<10 µg/kg	TM089	M<10	<10	M <10		
Aliphat	ics >C6-C8	<10 µg/kg	TM089	<10	<10	<10		
Aliphat	ics >C8-C10	<10 µg/kg	TM089	<10	<10	<10		
	ics >C10-C12	<10 µg/kg	TM089	<10	<10	<10		
	liphatics >C5-C12	<10 µg/kg	TM089	16.3	<10	<10		
	ics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10		
	ics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10		
	ics >EC8-EC10	<10 µg/kg	TM089	<10	<10	<10		
Aromat	ics >EC10-EC12	<10 µg/kg	TM089	<10	<10	<10		
Total A >EC5-E	romatics EC12	<10 µg/kg	TM089	13	<10	<10		
m,p,o->		<10 µg/kg	TM089	<10	<10	<10		
BTEX,	Total	<10 µg/kg	TM089	<10	<10	<10		

		-		ntrol Lal				
SDG: lob:		100923-1 H_GRON		DL-27		Customer: Attention:	Grontmij Gareth Taylor	
Clien	t Reference:					Order No.:	·	
Locat		Stagboro	ugh			Report No:	100345	
VOC	MS (S) Results Legend	Customer	Sample Ref.	14/04	W(00	WS3		
	ISO17025 accredited. mCERTS accredited.	Customer	Sample Ker.	WS1	WS3	W53		
diss.filt	Aqueous / settled sample. Dissolved / filtered sample. Total / unfiltered sample.		Depth (m) Sample Type	0.30 Soil/Solid	0.65 Soil/Solid	1.20 - 1.5 Soil/Solid		
*	subcontracted test. % recovery of the surrogate		Date Sampled Date Received	20/09/2010 23/09/2010	20/09/2010	20/09/201		
	standard to check the efficiency of the method. The results of the		SDG Ref Sample No.(s)	100923-110 2129814	100923-110 2129702			
	individual compounds within the samples are not corrected for this recovery.		GS Reference					
Compo	nent	LOD/Units %	Method	400	405	00.5		
	ofluoromethane**		TM116	108	105	99.5		
Toluene		%	TM116	93.3	96.4	99.8		
4-Brom	ofluorobenzene**	%	TM116	110	109	97.6		
Dichlor	odifluoromethane	<4 µg/kg	TM116	<4	<4 M	<4 M		
Chloror	nethane	<7 µg/kg	TM116	<7				
Vinyl C	hloride	<10 µg/kg	TM116	<10	<10	<10		
Bromor	nethane	<13 µg/kg	TM116	<13	# <13	# <13		
Chloroe	ethane	<14 µg/kg	TM116	<14	M <14	M <14		
Trichlor	ofluorormethane	<6 µg/kg	TM116	<6	M <6	M <6		
1.1-Dic	hloroethene	<10 µg/kg	TM116	<10	M <10	M <10		
	Disulphide	<7 µg/kg	TM116		# <7	# <7		
	omethane		TM116		M <10	M <10		
		<10 µg/kg			#	#		
	Tertiary Butyl Ether	<11 µg/kg	TM116		<11 M	<11 M		
trans-1-	-2-Dichloroethene	<11 µg/kg	TM116	<11 I	<11 M	<11 M		
1.1-Dic	hloroethane	<8 µg/kg	TM116	<8 I	<8	<8 M		
cis-1-2-	Dichloroethene	<5 µg/kg	TM116	<5	<5 M	<5 M		
2.2-Dic	hloropropane	<12 µg/kg	TM116	<12	<12 M	<12 M		
Bromod	chloromethane	<14 µg/kg	TM116	<14	<14	<14		
Chlorof	orm	<8 µg/kg	TM116	<8	M <8	M <8		
1.1.1-T	richloroethane	<7 µg/kg	TM116	<7	M <7	M <7		
1.1-Dic	hloropropene	<11 µg/kg	TM116	<11	M <11	M <11		
Carbon	tetrachloride	<14 µg/kg	TM116	<14	M <14	M <14		
	hloroethane	<5 µg/kg	TM116		M <5	M <5		
Benzen		<9 µg/kg	TM116		M <9	M <9		
	oethene		TM116		VI <9 <9	M <9		
		<9 µg/kg			м	м		
	hloropropane	<12 µg/kg	TM116		<12 M	<12 M		
	omethane	<9 µg/kg	TM116		<9 M	<9 M		
Bromod	lichloromethane	<7 µg/kg	TM116	<7	<7 M	<7 M		
cis-1-3-	Dichloropropene	<14 µg/kg	TM116	<14	<14 M	<14 M		
Toluene	e	<5 µg/kg	TM116	<5	<5 M			
trans-1-	-3-Dichloropropene	<14 µg/kg	TM116	<14	<14	<14		
1.1.2-T	richloroethane	<10 µg/kg	TM116	<10	<10	<10		
1.3-Dic	hloropropane	<7 µg/kg	TM116	<7	M <7	M <7		
Tetrach	loroethene	<5 µg/kg	TM116	<5	# <5	# <5		
	ochloromethane	<13 µg/kg	TM116		M <13	M <13		
	romoethane		TM116		VI <12	M <12		
		<12 µg/kg			м	м		
	enzene	<5 µg/kg	TM116		<5 M	<5 M		
	Tetrachloroethane	<10 µg/kg	TM116		<10	<10 M		
Ethylbe	nzene	<4 µg/kg	TM116	<4	<4 M	<4 M		

	Validated	_	ALUU	ntrol La	Solut		/ mary c				
SDG: Job:		100923-1 H_GRON		DL-27			stomer: tention:	Gront Garet	mij h Taylor		
Clien [:] Locat	t Reference: tion:	Stagboro					der No.: port No:	10034	15		
	MS (S)					-					
	Results Legend ISO17025 accredited.	Customer	Sample Ref.	WS1	V	VS3	WS3				
M aq diss.filt tot.unfilt * **	mCERTS accredited. Aqueous / settled sample. Dissolved / filtered sample. Total / unfiltered sample. subcontracted test. % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected	Lab S	Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s) GS Reference	0.30 Soil/Solid 20/09/2010 23/09/2010 100923-110 2129814	Soi 20/0 23/0 1009	0.65 I/Solid 19/2010 19/2010 023-110 29702	1.20 - 1.50 Soil/Solid 20/09/2010 23/09/2010 100923-110 2129709))			
Compo		LOD/Units	Method								
p/m-Xy	lene	<14 µg/kg	TM116	<14	#	<14 #	<14				
o-Xyler	ne	<10 µg/kg	TM116	<10	м.	<10 N	<10				
Styrene	•	<10 µg/kg	TM116	<10		<10 N	<10				
Bromof	form	<10 µg/kg	TM116	<10		<10	<10				
Isoprop	bylbenzene	<5 µg/kg	TM116	<5		<5	<5				
1.1.2.2	-Tetrachloroethane	<10 µg/kg	TM116	<10		N <10	<10				
1.2.3-T	richloropropane	<17 µg/kg	TM116	<17		# <17	<17				
	penzene	<10 µg/kg	TM116	<10	M .	N <10	<10				
	penzene	<11 µg/kg	TM116	<11	м	×11					
	otoluene	<9 µg/kg	TM116	<9	м	№ <9					
					м	N					
	rimethylbenzene	<8 µg/kg	TM116	<8	#	<8 #	E				
	rotoluene	<12 µg/kg	TM116	<12	м	<12 N					
tert-But	tylbenzene	<12 µg/kg	TM116	<12	#	<12 #	<12				
1.2.4-T	rimethylbenzene	<9 µg/kg	TM116	<9	#	<9 #	<9				
sec-Bu	tylbenzene	<10 µg/kg	TM116	<10		-10 N	<10				
4-Isopr	opyltoluene	<11 µg/kg	TM116	<11		<11	<11				
1.3-Dic	hlorobenzene	<6 µg/kg	TM116	<6		№	<6				
1.4-Dic	hlorobenzene	<5 µg/kg	TM116	<5	м	№ <5	<5				
n-Butyl	benzene	<10 µg/kg	TM116	<10	M	№ <10	<10				
1.2-Dic	hlorobenzene	<12 µg/kg	TM116	<12	M	№ <12	<12				
	romo-3-chloropropan	<14 µg/kg	TM116	<14	М	№ <14					
е	nyl methyl ether	<15 µg/kg	TM116	<15	м	№ <15					
	richlorobenzene	<6 µg/kg	TM116	<6	#	<6 #					
	nlorobutadiene	<12 µg/kg	TM116	<12		<12	<12				
Naphth	alene	<13 µg/kg	TM116	<13	M	<13 N	<13				
1.2.3-T	richlorobenzene	<6 µg/kg	TM116	<6		<6 N	<6				

Validated		ALco	ontrol La	ab	oratories	s A	nalyti	ca	I Service	S	
SDG: Job: Client Reference:	100923-1 H_GRON		DL-27		Δ	ttent	omer: tion: `No.:	Groi Gare	ntmij eth Taylor		
Location:	Stagboro	ugh						1003	345		
											Τ
Results Legend # ISO17025 accredited.	Customer	Sample Ref.	WS4		WS4		WS5		WS6		1
M mCERTS accredited. aq Aqueous / settled sample. diss.fitt Dissolved / filtered sample. tot.unfitt Total / unfiltered sample. * subcontracted test. * % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within	E Lab	Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s)	1.65 - 1.85 Soil/Solid 21/09/2010 23/09/2010 100923-110 2129728		3.50 - 3.80 Soil/Solid 21/09/2010 23/09/2010 100923-110 2129733		0.30 Soil/Solid 21/09/2010 23/09/2010 100923-110 2129746		0.35 Soii/Solid 21/09/2010 23/09/2010 100923-110 2129757		
the samples are not corrected for this recovery.		GS Reference									
Component	LOD/Units <0.35 %	Method TM132	<0.25		0.14		4.74		4.05		 4
Soil Organic Matter (SOM)	<0.35 %	1101132	<0.35	#	8.14	#	4.74	#	4.05	#	
рН	1 pH Units	TM133	8.42	м	8.27	м	6.12	м	7.93		
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6		<0.6		<0.6		<1.2		1
Arsenic	<0.6 mg/kg	TM181	30.8	#	12.1	#	9	#	3.13	#	-
Barium		TM181	361	м	342	м	166	м	174	n	_
	<0.6 mg/kg			#		#		#		#	
Beryllium	<0.01 mg/kg	TM181	11	м	6.08		1.52	м	0.224		
Cadmium	<0.02	TM181	3.86		0.925		0.883		0.237	-	1
Chromium	mg/kg <0.9 mg/kg	TM181	32.7	М	23.2	м	18.6	м	8.61	Λ	-
				м		м		м	N	n	4
Copper	<1.4 mg/kg	TM181	114	м	85.4	м	31.3	м	12.1	Λ	
Lead	<0.7 mg/kg	TM181	186	м	29.1	м	35.5	м	16	^	
Mercury	<0.14	TM181	<0.14		<0.14		<0.14		<0.14		1
Nickel	mg/kg <0.2 mg/kg	TM181	116	м	81.2	м	35.2	м	6.68	Λ	-
				М		м		м		n	_
Selenium	<1 mg/kg	TM181	1.61	#	1.2	#	1.89	#	<1	#	
Vanadium	<0.2 mg/kg	TM181	102	#	75.6	#	27.1	#	11.6	#	
Zinc	<1.9 mg/kg	TM181	1380		262		212		37.7		1
Boron, water soluble	<1 mg/kg	TM222	3.56	М	4.97	м	2.16	м		Λ	-
			0.00	м		м	2.10	м		n	
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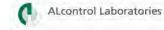
	Validated]	ALco	ontrol Lab	oratories	Analy	tical	Services	6	
	t Reference:		110 NTMIJ_S(Cu Att Or	stomer: cention: der No.:	Gror Gare	ntmij eth Taylor		
Loca	tion:	Stagbord	bugh		Re	port No:	1003	345		
Semi	Volatile Organic				-				1	
diss.filt tot.unfilt * **	Results Legend ISO17025 accredited. MCERT3 accredited. Aqueous / settied sample. Dissolved / filtered sample. subcontracted test. % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	Lab	r Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s)	WS4 3.50 - 3.80 Soil/Solid 21/09/2010 23/09/2010 100923-110 2129733						
Compo Phenol		LOD/Units <100 µg/kg	Method TM157	<100						
Pentac	chlorophenol	<100 µg/kg	TM157	<100						
	so-n-dipropylamine	<100 µg/kg	TM157	<100						
Nitrobe			TM157	<100						
		<100 µg/kg								
Isopho		<100 µg/kg	TM157	<100						
Hexacl	hloroethane	<100 µg/kg	TM157	<100						
Hexacl	hlorocyclopentadiene	<100 µg/kg	TM157	<100						
Hexacl	hlorobutadiene	<100 µg/kg	TM157	<100						
Hexacl	hlorobenzene	<100 µg/kg	TM157	<100						
n-Dioc	tyl phthalate	<100 µg/kg	TM157	<100						
Dimeth	nyl phthalate	<100 µg/kg	TM157	<100						
Diethyl	phthalate	<100 µg/kg	TM157	<100						
n-Dibu	tyl phthalate	<100 µg/kg	TM157	<100						
Dibenz		<100 µg/kg	TM157	<100						
Carbaz		<100 µg/kg	TM157	<100						
-	enzyl phthalate	<100 µg/kg	TM157	<100						
	thylhexyl) phthalate	<100 µg/kg	TM157	1580						
bis(2-C	Chloroethoxy)methane	<100 µg/kg	TM157	<100						
bis(2-C	Chloroethyl)ether	<100 µg/kg	TM157	<100						
Azobei	nzene	<100 µg/kg	TM157	<100						
4-Nitro	phenol	<100 µg/kg	TM157	<100						
4-Nitro	aniline	<100 µg/kg	TM157	<100						
4-Meth	ylphenol	<100 µg/kg	TM157	<100						
4-Chlo	rophenylphenylether	<100 µg/kg	TM157	<100						
	roaniline	<100 µg/kg	TM157	<100						
	ro-3-methylphenol	<100 µg/kg	TM157	<100						
	nophenylphenylether	<100 µg/kg	TM157	<100						
	aniline	<100 µg/kg	TM157	<100						
	phenol	<100 µg/kg	TM157	<100						
2-Nitro		<100 µg/kg	TM157	<100						
2-Meth	ylphenol	<100 µg/kg	TM157	<100						
1,2,4-T	richlorobenzene	<100 µg/kg	TM157	<100						
2-Chlo	rophenol	<100 µg/kg	TM157	<100						
2,6-Dir	nitrotoluene	<100 µg/kg	TM157	<100						
2,4-Dir	nitrotoluene	<100 µg/kg	TM157	<100						
2,4-Dir	nethylphenol	<100 µg/kg	TM157	<100						
	chlorophenol	<100 µg/kg	TM157	<100						
	richlorophenol	<100 µg/kg	TM157	<100						
2,4,5-T	richlorophenol	<100 µg/kg	TM157	<100						

	Validated		ALCO	ontrol Lab	oratories	Analy	tical	Services	S	
DG:		100923-2	110		Cus	stomer:	Gron	ıtmij		
lob:			NTMIJ_SC	DL-27		ention:		th Taylor		
	t Reference:					ler No.:		, -		
ocat		Stagboro	bugh			oort No:	1003	345		
	Volatile Organic									
	Results Legend ISO17025 accredited.		Sample Ref.	WS4						
м	mCERTS accredited. Aqueous / settled sample.									
diss.filt	Dissolved / filtered sample.		Depth (m) Sample Type	3.50 - 3.80 Soil/Solid						
•	Total / unfiltered sample. subcontracted test.		Date Sampled	21/09/2010						
	% recovery of the surrogate standard to check the efficiency		Date Received SDG Ref	23/09/2010 100923-110						
	of the method. The results of the individual compounds within	Lau	Sample No.(s)	2129733						
	the samples are not corrected for this recovery.	A	GS Reference							
Compo		LOD/Units	Method							
1,4-Dic	hlorobenzene	<100 µg/kg	TM157	<100						
1,3-Dic	hlorobenzene	<100 µg/kg	TM157	<100						
1,2-Dic	hlorobenzene	<100 µg/kg	TM157	<100						
2-Chlor	onaphthalene	<100 µg/kg	TM157	<100						
2-Meth	ylnaphthalene	<100 µg/kg	TM157	<100						
Acenap	hthylene	<100 µg/kg	TM157	<100						
Acenap	ohthene	<100 µg/kg	TM157	<100						
Anthrac	cene	<100 µg/kg	TM157	<100						
Benzo(a)anthracene	<100 µg/kg	TM157	<100						
)fluoranthene	<100 µg/kg	TM157	<100						
	k)fluoranthene	<100 µg/kg	TM157	<100						
	a)pyrene	<100 µg/kg	TM157	<100						
	g,h,i)perylene	<100 µg/kg	TM157	<100						
Chryse		<100 µg/kg	TM157	<100						
Fluoran		<100 µg/kg	TM157	127						
Fluoren		<100 µg/kg	TM157	<100						
	(1,2,3-cd)pyrene	<100 µg/kg	TM157	<100						
Phenar		<100 µg/kg	TM157	249						
Pyrene		<100 µg/kg	TM157	<100						
Naphth	alene	<100 µg/kg	TM157	<100						
	o(a,h)anthracene	<100 µg/kg	TM157	<100						

SDG:	100923-1		ntrol Lab	C	stomor	Gror	atmii	
SDG: Job:	100923-1 H_GRON)L-27		stomer: ention:	Gror Gare	ttmij eth Taylor	
Client Reference:				Ord	ler No.:		-	
Location:	Stagboro	ugh		Rep	oort No:	1003	345	
TPH CWG (S) Results Legend				1				
# ISO17025 accredited. M mCERTS accredited.	Customer	Sample Ref.	WS4					
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m) Sample Type	3.50 - 3.80 Soil/Solid					
tot.unfilt Total / unfiltered sample. * subcontracted test. ** % recovery of the surrogate	I	Date Sampled	21/09/2010 23/09/2010					
standard to check the efficiency of the method. The results of the		SDG Ref Sample No.(s)	100923-110 2129733					
individual compounds within the samples are not corrected		GS Reference	2129733					
for this recovery. Component	LOD/Units	Method						
Aliphatics >C12-C16	<100 µg/kg	TM173	6800					
Aliphatics >C16-C21	<100 µg/kg	TM173	7580					
Aliphatics >C21-C35	<100 µg/kg	TM173	18700					
Aliphatics >C35-C44	<100 µg/kg	TM173	1880					
Aromatics >EC12-EC16	<100 µg/kg	TM173	12300					
Aromatics >EC16-EC21	<100 µg/kg	TM173	29200					
Aromatics >EC21-EC35	<100 µg/kg	TM173	60600					
Aromatics >EC35-EC44	<100 µg/kg	TM173	11100					
Aromatics >EC40-EC44	<100 µg/kg	TM173	3150					
Total Aliphatics >C12-C44	<100 µg/kg	TM173	35000					
Total Aromatics	<100 µg/kg	TM173	113000					
>EC12-EC44 Total Aliphatics >C5-35	<100 µg/kg	TM173	33200					
Total Aliphatics >C5-C44	<100 µg/kg	TM173	35100					
Total Aromatics >C5-35		TM173						
	<100 µg/kg		102000					
Total Aromatics >C6-C44	<100 µg/kg	TM173	113000					
Total Aliphatics & Aromatics >C5-35	<100 µg/kg	TM173	135000					
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	148000					
GRO Surrogate % recovery**	%	TM089	34					
GRO >C5-C12	<44 µg/kg	TM089	116					
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5 #					
Benzene	<10 µg/kg	TM089	<10					
Toluene	<2 µg/kg	TM089	3.69					
Ethylbenzene	<3 µg/kg	TM089	4.92					
m,p-Xylene	<6 µg/kg	TM089	M <6					
o-Xylene	<3 µg/kg	TM089	M <3					
Aliphatics >C5-C6	<10 µg/kg	TM089	M <10					
Aliphatics >C6-C8	<10 µg/kg	TM089	11.1					
Aliphatics >C8-C10	<10 µg/kg	TM089	29.5					
Aliphatics >C10-C12	<10 µg/kg	TM089	23.4					
Total Aliphatics >C5-C12	<10 µg/kg	TM089	66.4					
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10					
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10					
Aromatics >EC8-EC10	<10 µg/kg	TM089	28.3					
Aromatics >EC10-EC12	<10 µg/kg	TM089	16					
Total Aromatics >EC5-EC12	<10 µg/kg	TM089	49.2					
m,p,o-Xylene	<10 µg/kg	TM089	<10					
BTEX, Total	<10 µg/kg	TM089	<10					

	Validated		ALco	ontrol Labor	atories Analy	tical Service	S
SDG: Job:		100923 H_GRO	-110 NTMIJ_S	DL-27	Customer: Attention:	Grontmij Gareth Taylor	
	t Reference: tion:	Stagbor			Order No.: Report No:	100345	
	MS (S)	Clagbol	cagn				
#	Results Legend ISO17025 accredited.	Custom	er Sample Ref.	WS4			
M aq diss.filt tot.unfilt *	mCERTS accredited. Aqueous / settled sample. Dissolved / filtered sample. Total / unfiltered sample. subcontracted test. % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected	La	Depth (m) Sample Type Date Sampled Date Received SDG Ref b Sample No.(s) AGS Reference	3.50 - 3.80 Soil/Solid 21/09/2010 23/09/2010 100923-110 2129733			
	for this recovery.	LOD/Units	Method				
	nofluoromethane**	%	TM116	113			
Toluen	e-d8**	%	TM116	72.3			
4-Brom	nofluorobenzene**	%	TM116	153			
Dichlor	odifluoromethane	<4 µg/kg	TM116	<4 M			
Chloro	methane	<7 µg/kg	TM116	M <7 #			
Vinyl C	hloride	<10 µg/kg	TM116	#			
Bromo	methane	<13 µg/kg	TM116	// # <13			
Chloro	ethane	<14 µg/kg	TM116	<14			
Trichlo	rofluorormethane	<6 µg/kg	TM116				
1.1-Dic	chloroethene	<10 µg/kg	TM116	<u> </u>			
Carbor	n Disulphide	<7 µg/kg	TM116	<7 M			
Dichlor	omethane	<10 µg/kg	TM116	90.4			
Methyl	Tertiary Butyl Ether	<11 µg/kg	TM116	# <11			
trans-1	-2-Dichloroethene	<11 µg/kg	TM116	M <11			
1.1-Dic	hloroethane	<8 µg/kg	TM116	<u>M</u> <8			
cis-1-2	-Dichloroethene	<5 µg/kg	TM116	<u>M</u> <5			
2.2-Dic	hloropropane	<12 µg/kg	TM116	M <12			
Bromo	chloromethane	<14 µg/kg	TM116	M <14			
Chloro	form	<8 µg/kg	TM116	M 13.6			
1.1.1-T	richloroethane	<7 µg/kg	TM116				
1.1-Dic	hloropropene	<11 µg/kg	TM116	<u>M</u>			
Carbor	ntetrachloride	<14 µg/kg	TM116	<u>M</u> <14			
1.2-Dic	hloroethane	<5 µg/kg	TM116	M <5			
Benzei	ne	<9 µg/kg	TM116	M 23.7			
Trichlo	roethene	<9 µg/kg	TM116	<u>M</u> <9			
1.2-Dic	hloropropane	<12 µg/kg	TM116	<u>M</u> <12			
	nomethane	<9 µg/kg	TM116	M <9			
	dichloromethane	<7 µg/kg	TM116				
	-Dichloropropene	<14 µg/kg		<u>M</u> <14			
Toluen		<5 µg/kg	TM116	13.9 M			
	-3-Dichloropropene	<14 µg/kg		M			
	richloroethane	<10 µg/kg		<10			
	chloropropane	<7 µg/kg	TM116	M			
	nloroethene	<5 µg/kg	TM116	#			
	nochloromethane	<13 µg/kg		<13 <13			
	promoethane	<13 µg/kg		<13 M <12			
	penzene		TM116	<12 M <5			
	-Tetrachloroethane	<5 µg/kg <10 µg/kg		<5 <u>M</u> <10			
				м			
Ethylbe	enzene	<4 µg/kg	TM116	12.3 M			

	Validated]	ALco	ntrol L	ab	oratories	Analy	tica	I Services	5	
SDG:		100923-	110				stomer:	Gro	ntmij		
Job:			NTMIJ_SC	DL-27		Att	ention:		eth Taylor		
	t Reference:						der No.:				
Locat	tion:	Stagbord	bugh			Re	port No:	100	345		
voc	MS (S)										
	Results Legend ISO17025 accredited. mCERTS accredited.	Customer	Sample Ref.	WS4							
aq	Aqueous / settled sample. Dissolved / filtered sample.		Depth (m)	3.50 - 3.80							
tot.unfilt	Total / unfiltered sample. subcontracted test.		Sample Type Date Sampled	Soil/Solid 21/09/2010							
**	% recovery of the surrogate standard to check the efficiency		Date Received SDG Ref	23/09/2010							
	of the method. The results of the individual compounds within	Lau	Sample No.(s)	100923-110 2129733							
	the samples are not corrected for this recovery.	A	GS Reference								
Compo	nent	LOD/Units	Method								
p/m-Xy	lene	<14 µg/kg	TM116	<14	#						
o-Xyler	ie	<10 µg/kg	TM116	<10	м						
Styrene)	<10 µg/kg	TM116	<10							
Bromof	orm	<10 µg/kg	TM116	<10	м						
Isoprop	ylbenzene	<5 µg/kg	TM116	<5	М						
	Tetrachloroethane	<10 µg/kg	TM116	<10	М						
	richloropropane		TM116	<17	#						
		<17 µg/kg			М						
	benzene	<10 µg/kg	TM116	<10	М						
Propylb	benzene	<11 µg/kg	TM116	<11	м						
2-Chlor	otoluene	<9 µg/kg	TM116	<9	м						
1.3.5-T	rimethylbenzene	<8 µg/kg	TM116	<8	#						
4-Chlor	rotoluene	<12 µg/kg	TM116	<12							
tert-But	ylbenzene	<12 µg/kg	TM116	<12	М						
1.2.4-T	rimethylbenzene	<9 µg/kg	TM116	<9	#						
	tylbenzene	<10 µg/kg	TM116	<10	#						
					м						
	opyltoluene	<11 µg/kg	TM116	<11	м						
	hlorobenzene	<6 µg/kg	TM116	<6	м						
1.4-Dic	hlorobenzene	<5 µg/kg	TM116	<5	м						
n-Butyl	benzene	<10 µg/kg	TM116	<10	м						
1.2-Dic	hlorobenzene	<12 µg/kg	TM116	<12							
	romo-3-chloropropan	<14 µg/kg	TM116	<14	м						
e Tert-an	nyl methyl ether	<15 µg/kg	TM116	<15	М						
1.2.4-T	richlorobenzene	<6 µg/kg	TM116	<6							
	lorobutadiene	<12 µg/kg	TM116	<12	#						
Naphth		<13 µg/kg	TM116	<13	М						
1.2.3-T	richlorobenzene	<6 µg/kg	TM116	<6	м						



REF-CEN12457-3

Client Reference			Client Location		Stagbo	orough	
Mass Sample taken (kg)	0.197		Moisture Conte	ent Ratio (%)	12.4		
Mass of dry sample (kg)	0.175		Dry Matter Con	tent Ratio (%)	89.0		
Particle Size <4mm	>95%						
	2 30 70						
Case							
SDG	100923-110						
Lab Sample Number(s)	2129709						
Sampled Date	20-Sep-2010						
Customer Sample Ref.	WS3						
Depth (m)	1.20 - 1.50						
Solid Waste Analysis							
-							
Total Organic Carbon (%) Loss on Ignition (%)		-			-	-	-
Sum of BTEX (mg/kg)	<	0.01			-	-	-
Sum of 7 PCBs (mg/kg)		-			-	-	-
1ineral Oil (mg/kg)		-			-	-	-
PAH Sum of 17 (mg/kg)		-			-	-	-
oH (pH Units)		-			-	-	-
ANC to pH 6 (mol/kg) ANC to pH 4 (mol/kg)		-			-	-	-
	Conc	ⁿ in 2:1	2:1	conc ⁿ			
Eluate Analysis	eluate	e (mg/l) C ₂	leached (mg/kg) A22		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.000228	<0.00012	0.000456	<0.0012	-	-	-
Barium		-	-	-	-	-	-
Cadmium	<0.0001	<0.0001	<0.0002	<0.001	-	-	-
Chromium	0.00049	<0.00022	0.00098	<0.0022	-	-	-
Copper	0.000885	<0.00085	0.00177	<0.0085	-	-	-
Aercury Dissolved (CVAF)	<0.0001	<0.00001	<0.00002	<0.0001	-	-	-
Molybdenum	-	-	-	-	-	-	-
Nickel	0.000836	<0.00015	0.00167	<0.0015	-	-	-
ead	0.000331	<0.00002	0.000662	<0.0002	-	-	-
Antimony	-	-	-	-	-	-	-
Selenium	<0.00039	<0.00039	<0.00078	<0.0039	-	-	-
Zinc	0.00268	<0.00041	0.00536	<0.0041	-	-	-
Chloride	-	-	-	-	-	-	-
Fluoride	-	-	-	-	-	-	-
Sulphate (soluble)	-	-	-	-	-	-	-
Fotal Dissolved Solids	-	-	-	-	-	-	-
Fotal Monohydric Phenols (W)	-	-	-	-	-	-	-
Dissolved Organic Carbon	-	-	-	-	-	-	-
		1	1				

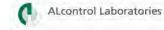
Leach Test Information

Date Prepared	11-Oct-2010
pH (pH Units)	6.79
Conductivity (µS/cm)	99.70
Temperature (°C)	21.80
Volume Leachant (Litres)	0.328
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates



REF-CEN12457-3

Client Reference			Client Location		Stagl	oorough	
Mass Sample taken (kg)	0.197		Moisture Conte	nt Ratio (%)	12.4		
Mass of dry sample (kg)	0.175			tent Ratio (%)	89.0		
Particle Size <4mm	>95%				05.0		
	29370						
Case							
SDG	100923-110						
Lab Sample Number(s)	2129709						
Sampled Date	20-Sep-2010						
Customer Sample Ref.	WS3						
Depth (m)	1.20 - 1.50						
Solid Waste Analysis							
Total Organic Carbon (%)		-			-		-
Loss on Ignition (%)		-			-	-	-
Sum of BTEX (mg/kg)	<	0.01			-	-	-
Sum of 7 PCBs (mg/kg) Mineral Oil (mg/kg)		-			-	-	-
PAH Sum of 17 (mg/kg)		-			-	-	-
pH (pH Units)		-			-	-	-
ANC to pH 6 (mol/kg)		-			-	-	-
ANC to pH 4 (mol/kg)	-	-		-	-	-	-
Eluate Analysis	eluate	¹ in 2:1 (mg/l) C ₂	leached	conc ⁿ (mg/kg) \22		es for compliance lea S EN 12457-3 at L/S	
	Result	Lineth of Data stress					
		Limit of Detection	Result	Limit of Detection			
1,1,1,2-Tetrachloroethane	<0.0013	<0.0013	<0.0026	<0.013	-	-	-
	<0.0013 <0.0013	<0.0013 <0.0013	<0.0026 <0.0026	<0.013 <0.013	-	-	-
1,1,1-Trichloroethane	<0.0013	<0.0013	<0.0026	<0.013		-	-
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane	<0.0013 <0.0013 <0.0052 <0.0022	<0.0013 <0.0013 <0.0052 <0.0022	<0.0026 <0.0026 <0.0104 <0.0044	<0.013 <0.013 <0.052 <0.022	-	-	-
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane	<0.0013 <0.0013 <0.0052 <0.0022 <0.0012	<0.0013 <0.0013 <0.0052 <0.0022 <0.0012	<0.0026 <0.0026 <0.0104 <0.0044 <0.0024	<0.013 <0.013 <0.052 <0.022 <0.012	- - - -	- - - -	-
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane	 <0.0013 <0.0013 <0.0052 <0.0022 <0.0012 <0.0012 	<0.0013 <0.0013 <0.0052 <0.0022 <0.0012 <0.0012	<0.0026 <0.0026 <0.0104 <0.0044 <0.0024 <0.0024	<0.013 <0.013 <0.052 <0.022 <0.012 <0.012	-	-	-
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,1-Dichloropropene	 <0.0013 <0.0013 <0.0052 <0.0022 <0.0012 <0.0012 <0.0013 	<0.0013 <0.0013 <0.0052 <0.0022 <0.0012 <0.0012 <0.0013	<0.0026 <0.0026 <0.0104 <0.0044 <0.0024 <0.0024 <0.0026	<0.013 <0.013 <0.052 <0.022 <0.012 <0.012 <0.013	- - - - - -	- - - - - -	
1,1,1-Trichloroethane 1,1,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,1-Dichloropropene 1,2,3-Trichlorobenzene	 <0.0013 <0.0013 <0.0052 <0.0022 <0.0012 <0.0012 <0.0013 <0.0031 	<0.0013 <0.0013 <0.0052 <0.0022 <0.0012 <0.0012 <0.0013 <0.0031	<0.0026 <0.0026 <0.0104 <0.0044 <0.0024 <0.0024 <0.0026 <0.0062	<0.013 <0.013 <0.052 <0.022 <0.012 <0.012 <0.013 <0.031	- - - - -	- - - - -	- - - -
1,1,1-Trichloroethane 1,1,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,1-Dichloropropene 1,2,3-Trichlorobenzene	 <0.0013 <0.0013 <0.0052 <0.0022 <0.0012 <0.0012 <0.0013 <0.0031 <0.0078 	<0.0013 <0.0013 <0.0052 <0.0022 <0.0012 <0.0012 <0.0013	<0.0026 <0.0026 <0.0104 <0.0044 <0.0024 <0.0024 <0.0026 <0.0026 <0.0056	<0.013 <0.013 <0.052 <0.022 <0.012 <0.012 <0.013	- - - - - -	- - - - - -	- - - - - -
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,1-Dichloropropene 1,2,3-Trichlorobenzene 1,2,3-Trichloropropane 1,2,4-Trichlorobenzene	 <0.0013 <0.0013 <0.0052 <0.0022 <0.0012 <0.0012 <0.0013 <0.0031 <0.0078 <0.0023 	<0.0013 <0.0013 <0.0052 <0.0012 <0.0012 <0.0013 <0.0031 <0.0078 <0.0023	<0.0026 <0.0026 <0.0104 <0.0024 <0.0024 <0.0024 <0.0026 <0.0062 <0.0156 <0.0046	<0.013 <0.013 <0.052 <0.022 <0.012 <0.012 <0.013 <0.031 <0.078 <0.023	- - - - - -	- - - - - - - - - - -	- - - - - -
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,1-Dichloropropene 1,2,3-Trichlorobenzene 1,2,3-Trichloropropane 1,2,4-Trichlorobenzene	 <0.0013 <0.0013 <0.0052 <0.0022 <0.0012 <0.0012 <0.0013 <0.0031 <0.0078 	<0.0013 <0.0013 <0.0052 <0.0022 <0.0012 <0.0012 <0.0013 <0.0031 <0.0078	<0.0026 <0.0026 <0.0104 <0.0044 <0.0024 <0.0024 <0.0026 <0.0026 <0.0062 <0.0156	<0.013 <0.013 <0.052 <0.022 <0.012 <0.012 <0.013 <0.031 <0.078	- - - - - -	- - - - - - - - - -	- - - - - - - - - - - - - -
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,1-Dichloropropene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,2,4-Trimethylbenzene	 <0.0013 <0.0013 <0.0052 <0.0022 <0.0012 <0.0012 <0.0013 <0.0031 <0.0078 <0.0023 	<0.0013 <0.0013 <0.0052 <0.0012 <0.0012 <0.0013 <0.0031 <0.0078 <0.0023	<0.0026 <0.0026 <0.0104 <0.0024 <0.0024 <0.0024 <0.0026 <0.0062 <0.0156 <0.0046	<0.013 <0.013 <0.052 <0.022 <0.012 <0.012 <0.013 <0.031 <0.078 <0.023	- - - - - -	- - - - - - - - - - -	- - - - - - - - - - - - - - - - - - -
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,1-Dichloropropene 1,2,3-Trichlorobenzene 1,2,3-Trichlorobenzene 1,2,4-Trinethylbenzene 1,2,4-Trimethylbenzene 1,2-Dibromo-3-Chloropropane	 <0.0013 <0.0013 <0.0052 <0.0022 <0.0012 <0.0013 <0.0013 <0.0031 <0.0078 <0.0017 	<0.0013 <0.0013 <0.0052 <0.0022 <0.0012 <0.0013 <0.0031 <0.0078 <0.0023 <0.0017	<0.0026 <0.0026 <0.0104 <0.0024 <0.0024 <0.0026 <0.0026 <0.0062 <0.0156 <0.0046 <0.0034	<0.013 <0.013 <0.052 <0.022 <0.012 <0.012 <0.013 <0.031 <0.078 <0.023 <0.017	- - - - - - - - - - - -	- - - - - - - - - - - - -	- - - - - - - - - - - - - -
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,1-Dichloropropene 1,2,3-Trichlorobenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,2,4-Trinethylbenzene 1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane	 <0.0013 <0.0013 <0.0052 <0.0022 <0.0012 <0.0012 <0.0013 <0.0031 <0.0078 <0.0017 <0.0098 	<0.0013 <0.0013 <0.0052 <0.0022 <0.0012 <0.0012 <0.0013 <0.0031 <0.0078 <0.0023 <0.0017 <0.0098	<0.0026 <0.0026 <0.0104 <0.0044 <0.0024 <0.0024 <0.0026 <0.0026 <0.0062 <0.0156 <0.0046 <0.0034 <0.0196	<0.013 <0.013 <0.052 <0.022 <0.012 <0.012 <0.013 <0.031 <0.078 <0.023 <0.017 <0.098	- - - - - - - - - - - - - -	- - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - - -
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,1-Dichloropropene 1,2,3-Trichlorobenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,2,4-Trimethylbenzene 1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane 1,2-Dichlorobenzene	<0.0013	<0.0013 <0.0013 <0.0052 <0.0022 <0.0012 <0.0013 <0.0031 <0.0078 <0.0023 <0.0017 <0.0098 <0.0023	<0.0026 <0.0026 <0.0104 <0.0024 <0.0024 <0.0026 <0.0026 <0.0156 <0.0046 <0.0034 <0.0196 <0.0046	<0.013 <0.013 <0.052 <0.022 <0.012 <0.012 <0.013 <0.031 <0.078 <0.023 <0.017 <0.098 <0.023	- - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - - - - -	
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,1-Dichloropropene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,2,4-Trimethylbenzene 1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichlorobenzene	<0.0013	<0.0013 <0.0013 <0.0052 <0.0012 <0.0012 <0.0013 <0.0013 <0.0078 <0.0023 <0.0017 <0.0098 <0.0023 <0.0023	<0.0026 <0.0026 <0.0104 <0.0024 <0.0024 <0.0024 <0.0026 <0.0026 <0.0056 <0.0046 <0.0034 <0.0196 <0.0046 <0.0046	<0.013 <0.013 <0.052 <0.022 <0.012 <0.012 <0.013 <0.031 <0.078 <0.023 <0.017 <0.098 <0.023 <0.023 <0.023		- - - - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - - - - -
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethene 1,1-Dichloropropene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,2,4-Trimethylbenzene 1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloropena	<0.0013	<0.0013 <0.0013 <0.0052 <0.0022 <0.0012 <0.0013 <0.0013 <0.0078 <0.0023 <0.0017 <0.0098 <0.0023 <0.0037 <0.0033	<0.0026 <0.0026 <0.0104 <0.0024 <0.0024 <0.0026 <0.0026 <0.0056 <0.0046 <0.0034 <0.0196 <0.0046 <0.0074 <0.0074	<0.013 <0.013 <0.052 <0.022 <0.012 <0.012 <0.013 <0.031 <0.078 <0.023 <0.017 <0.098 <0.023 <0.017 <0.098 <0.023 <0.037 <0.033	- - - - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - - - - -
1,1,1,2-Tetrachloroethane 1,1,1-Trichloroethane 1,1,2-Z-Tetrachloroethane 1,1,2-Trichloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloropropene 1,2,3-Trichlorobenzene 1,2,3-Trichlorobenzene 1,2,4-Trimethylbenzene 1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichlorobenzene 1,2-Dichloropthane 1,2-Dichloropthane 1,2-Dichloropthane 1,2-Dichloropthane 1,2-Dichloropthane 1,3,5-Trichlorobenzene 1,3,5-Trichlorobenzene 1,3,5-Trinethylbenzene	<0.0013	<0.0013 <0.0013 <0.0052 <0.0022 <0.0012 <0.0012 <0.0013 <0.0031 <0.0078 <0.0023 <0.0017 <0.0098 <0.0023 <0.0037 <0.0033 <0.0033	<0.0026 <0.0026 <0.0104 <0.0024 <0.0024 <0.0026 <0.0026 <0.0056 <0.0046 <0.0034 <0.0196 <0.0046 <0.0074 <0.0066 <0.006	<0.013 <0.013 <0.052 <0.022 <0.012 <0.012 <0.013 <0.031 <0.078 <0.023 <0.023 <0.017 <0.098 <0.023 <0.023 <0.037 <0.033 <0.03		- - - - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - - - - -
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloropropene 1,2,3-Trichlorobenzene 1,2,3-Trichlorobenzene 1,2,4-Trinethylbenzene 1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane 1,2-Dichlorobenzene 1,2-Dichloropenane 1,2-Dichloropenane 1,2-Dichloropenane 1,2-Dichloropenane 1,2-Dichloropenane 1,2-Dichloropenane 1,3,5-Trichlorobenzene	<0.0013	<0.0013 <0.0013 <0.0052 <0.0022 <0.0012 <0.0012 <0.0013 <0.0031 <0.0078 <0.0023 <0.0017 <0.0098 <0.0023 <0.0023 <0.0037 <0.0033 <0.003 <0.003	<0.0026 <0.0026 <0.0104 <0.0024 <0.0024 <0.0026 <0.0026 <0.0056 <0.0056 <0.0046 <0.0034 <0.0034 <0.0196 <0.0046 <0.0074 <0.0066 <0.006	<0.013 <0.013 <0.052 <0.022 <0.012 <0.012 <0.013 <0.031 <0.078 <0.023 <0.023 <0.017 <0.098 <0.023 <0.023 <0.037 <0.033 <0.03 <0.03		- - - - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - - - - -

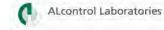
Leach Test Information

Date Prepared	11-Oct-2010
pH (pH Units)	6.79
Conductivity (µS/cm)	99.70
Temperature (°C)	21.80
Volume Leachant (Litres)	0.328
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates



REF-CEN12457-3

Client Reference			Client Location		Stagt	orough	
Mass Sample taken (kg)	0.197		Moisture Conte	nt Ratio (%)	12.4		
	0.175			tent Ratio (%)	89.0		
			Dry Matter Con		09.0		
Particle Size <4mm	>95%						
Case							
SDG	100923-110						
Lab Sample Number(s)	2129709						
Sampled Date	20-Sep-2010						
Customer Sample Ref.	WS3						
Depth (m)	1.20 - 1.50						
Solid Waste Analysis							
Total Organic Carbon (%)		-			-	-	-
Loss on Ignition (%)		-			-	-	-
Sum of BTEX (mg/kg)		.01			-	-	-
Sum of 7 PCBs (mg/kg) Mineral Oil (mg/kg)		-			-	-	-
PAH Sum of 17 (mg/kg)		-			-	-	-
pH (pH Units)		-			-	-	-
ANC to pH 6 (mol/kg)		-			-	-	-
ANC to pH 4 (mol/kg)		-			-	-	-
Eluate Analysis	eluate	in 2:1 (mg/l) 2-	leached	conc ⁿ (mg/kg) 122		es for compliance lea S EN 12457-3 at L/S	-
	Result	Limit of Detection	Result	Limit of Detection			
1,3-Dichloropropane	<0.0022	<0.0022	<0.0044	<0.022	-	-	-
1,4-Dichlorobenzene	<0.0027	<0.0027	<0.0054	<0.027	-	-	-
2,2-Dichloropropane	<0.0038	<0.0038	<0.0076	<0.038	-	-	-
2,4,5-Trichlorophenol	<0.001	<0.001	<0.002	<0.01	-	-	-
2,4,6-Trichlorophenol	<0.001	<0.001	<0.002	<0.01	-	-	-
2,4-Dichlorophenol	<0.001	<0.001	<0.002	<0.01	-	-	-
2,4-Dimethylphenol	<0.001	<0.001	<0.002	<0.01	-	-	-
2,4-Dinitrotoluene	<0.001	<0.001	<0.002	<0.01	-	-	-
2,6-Dinitrotoluene	<0.001	<0.001	<0.002	<0.01	-	-	-
2-Chloronaphthalene	<0.001	<0.001	<0.002	<0.01	-	-	-
2-Chlorophenol	<0.001	<0.001	<0.002	<0.01	-	-	-
2-Chlorotoluene	<0.0019	<0.0019	<0.0038	<0.019	-	-	-
2-Methylnaphthalene	<0.001	<0.001	<0.002	<0.01	-	-	-
2-Methylphenol	<0.001	<0.001	<0.002	<0.01	-	-	-
2-Nitroaniline	<0.001	<0.001	<0.002	<0.01	-	-	-
2-Nitrophenol	<0.001	<0.001	<0.002	<0.01	-	-	-
3-Nitroaniline	<0.001	<0.001	<0.002	<0.01	-	-	-
			-	-	-	-	-
4-Bromofluorobenzene	-	-	-		-	-	

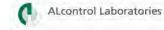
Leach Test Information

Date Prepared	11-Oct-2010
pH (pH Units)	6.79
Conductivity (µS/cm)	99.70
Temperature (°C)	21.80
Volume Leachant (Litres)	0.328
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates



REF-CEN12457-3

Client Reference			Client Location		Stagl	orough	
Mass Sample taken (kg)	0.197		Moisture Conte	nt Ratio (%)	12.4		
Mass of dry sample (kg)	0.175		Drv Matter Con	tent Ratio (%)	89.0		
Particle Size <4mm	>95%				0510		
	25570						
Case							
SDG	100923-110						
Lab Sample Number(s)	2129709						
Sampled Date	20-Sep-2010						
Customer Sample Ref.	WS3						
Depth (m)	1.20 - 1.50						
Solid Waste Analysis							
Total Organic Carbon (%)		-					
Loss on Ignition (%)		-			-	-	-
Sum of BTEX (mg/kg)	<().01					-
Sum of 7 PCBs (mg/kg)		-			-	-	-
Mineral Oil (mg/kg) PAH Sum of 17 (mg/kg)		-			-	-	-
pH (pH Units)		-			-	-	-
ANC to pH 6 (mol/kg)		-			-	-	-
ANC to pH 4 (mol/kg)		-			-	-	
Eluate Analysis	eluate	¹ in 2:1 ₂ (mg/l) C₂	leached	conc ⁿ (mg/kg) 122		es for compliance le S EN 12457-3 at L/S	
	Result						
	Result	Limit of Detection	Result	Limit of Detection	-		
4-Chloro-3-methylphenol	<0.001	<0.001	Result <0.002	Limit of Detection <0.01	-	-	-
					-	-	-
4-Chloroaniline	<0.001	<0.001	<0.002	<0.01			
4-Chloroaniline 4-Chlorophenylphenylether	<0.001 <0.001 <0.001 <0.0019	<0.001 <0.001 <0.001 <0.0019	<0.002 <0.002 <0.002 <0.0038	<0.01 <0.01 <0.01 <0.019	-	-	-
4-Chloroaniline 4-Chlorophenylphenylether 4-Chlorotoluene 4-Isopropyltoluene	<0.001 <0.001 <0.001 <0.0019 <0.0026	<0.001 <0.001 <0.001 <0.0019 <0.0026	<0.002 <0.002 <0.002 <0.0038 <0.0052	<0.01 <0.01 <0.01 <0.019 <0.026	- - - -		
4-Chloroaniline 4-Chlorophenylphenylether 4-Chlorotoluene 4-Isopropyltoluene 4-Methylphenol	 <0.001 <0.001 <0.001 <0.0019 <0.0026 <0.001 	<0.001 <0.001 <0.001 <0.0019 <0.0026 <0.001	<0.002 <0.002 <0.002 <0.0038 <0.0052 <0.002	<0.01 <0.01 <0.01 <0.019 <0.026 <0.01	- - - - -	- - - - -	- - - -
4-Chloroaniline 4-Chlorophenylphenylether 4-Chlorotoluene 4-Isopropyltoluene 4-Methylphenol 4-Nitroaniline	 <0.001 <0.001 <0.001 <0.0019 <0.0026 <0.001 <0.001 	<0.001 <0.001 <0.001 <0.0019 <0.0026 <0.001 <0.001	<0.002 <0.002 <0.002 <0.0038 <0.0052 <0.002 <0.002	<0.01 <0.01 <0.01 <0.019 <0.026 <0.01 <0.01	- - - - - -	- - - - - -	- - - - - -
4-Chloroaniline 4-Chlorophenylphenylether 4-Chlorotoluene 4-Isopropyltoluene 4-Methylphenol 4-Nitroaniline 4-Nitrophenol	 <0.001 <0.001 <0.001 <0.0019 <0.0026 <0.001 <0.001 <0.001 	<0.001 <0.001 <0.001 <0.0019 <0.0026 <0.001 <0.001 <0.001	<0.002 <0.002 <0.0038 <0.0052 <0.002 <0.002 <0.002	<0.01 <0.01 <0.01 <0.019 <0.026 <0.01 <0.01 <0.01	- - - - -	- - - - -	- - - -
4-Chloroaniline 4-Chlorophenylphenylether 4-Chlorotoluene 4-Isopropyltoluene 4-Methylphenol 4-Nitroaniline 4-Nitrophenol Acenaphthene	 <0.001 <0.001 <0.001 <0.0019 <0.0026 <0.001 <0.001 <0.001 <0.001 <0.001 	<0.001 <0.001 <0.001 <0.0019 <0.0026 <0.001 <0.001 <0.001	<0.002 <0.002 <0.003 <0.0052 <0.002 <0.002 <0.002 <0.002 <0.002	<0.01 <0.01 <0.01 <0.019 <0.026 <0.01 <0.01 <0.01 <0.01	- - - - - - - - -	- - - - - - - -	- - - - - - - - -
4-Chlorophenylphenylether 4-Chlorophenylphenylether 4-Chlorotoluene 4-Isopropyltoluene 4-Methylphenol 4-Nitrophenol Acenaphthene Acenaphthylene	<0.001	<0.001 <0.001 <0.001 <0.0026 <0.001 <0.001 <0.001 <0.001 <0.001	<0.002 <0.002 <0.003 <0.0052 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002	<0.01 <0.01 <0.01 <0.019 <0.026 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01	- - - - - - - - - - - -	- - - - - - - - -	- - - - - - - - - -
4-Chlorophenylphenylether 4-Chlorophenylphenylether 4-Chlorotoluene 4-Isopropyltoluene 4-Methylphenol 4-Nitroaniline 4-Nitrophenol Acenaphthene Acenaphthylene Anthracene	 <0.001 <0.001 <0.001 <0.0019 <0.0026 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 	<0.001 <0.001 <0.001 <0.0019 <0.0026 <0.001 <0.001 <0.001 <0.001 <0.001	<0.002 <0.002 <0.0038 <0.0052 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002	<0.01 <0.01 <0.01 <0.019 <0.026 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01	- - - - - - - - - - - - -	- - - - - - - - - - - -	- - - - - - - - - - - - - - - -
4-Chloroaniline 4-Chlorophenylphenylether 4-Chlorotoluene 4-Isopropyltoluene 4-Methylphenol 4-Nitroaniline 4-Nitrophenol Acenaphthene Acenaphthylene Anthracene Azobenzene	<0.001	<0.001 <0.001 <0.001 <0.0019 <0.0026 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.002 <0.002 <0.0038 <0.0052 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002	<0.01 <0.01 <0.01 <0.019 <0.026 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01	- - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - -	- - - - - - - - - - - - -
-Chlorophenylphenylether -Chlorophenylphenylether -Chlorotoluene -Isopropyltoluene -Nethylphenol -Nitrophenol -Nitrophenol Acenaphthene Acenaphthylene Accenaphthylene Acobenzene Benzene Benzene	<0.001	<0.001 <0.001 <0.001 <0.0019 <0.0026 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.002 <0.002 <0.003 <0.0052 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002	<0.01 <0.01 <0.01 <0.026 <0.026 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01	- - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - - - -	
4-Chlorophenylphenylether 4-Chlorophenylphenylether 4-Chlorotoluene 4-Isopropyltoluene 4-Isopropyltoluene 4-Nitrophenol 4-Nitrophenol Acenaphthylene Acenaphthylene Acenaphthylene Banzene Benzo(a)anthracene	<0.001	<0.001 <0.001 <0.001 <0.0026 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.0013 <0.001	<0.002 <0.002 <0.003 <0.0052 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002	<0.01 <0.01 <0.01 <0.019 <0.026 <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 <0.013 <0.01	- - - - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - - - - -
4-Chlorophenylphenylether 4-Chlorophenylphenylether 4-Chlorotoluene 4-Isopropyltoluene 4-Methylphenol 4-Nitroaniline 4-Nitrophenol Acenaphthylene Accenaphthylene Accenaphthylene Accenaphthylene Benzene Benzene Benzo(a)anthracene Benzo(a)pyrene	<0.001	<0.001 <0.001 <0.001 <0.0019 <0.0026 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.002 <0.002 <0.003 <0.0052 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002	<0.01 <0.01 <0.01 <0.019 <0.026 <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	- - - - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - - - - -
4-Chlorophenylphenylether 4-Chlorophenylphenylether 4-Chlorotoluene 4-Isopropyltoluene 4-Methylphenol 4-Nitroaniline 4-Nitrophenol Acenaphthylene Accenaphthylene Accenaphthylene Benzene Benzene Benzo(a)anthracene Benzo(b)fluoranthene	<0.001	<0.001 <0.001 <0.001 <0.0019 <0.0026 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.002 <0.002 <0.002 <0.0038 <0.0052 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002	<0.01 <0.01 <0.01 <0.019 <0.026 <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	- - - - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - - - - -	
4-Chloroaniline 4-Chlorophenylphenylether 4-Chlorotoluene 4-Isopropyltoluene 4-Methylphenol 4-Nitrophenol 4-Nitrophenol Acenaphthene Acenaphthylene Anthracene Benzene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(ghi)perylene	<0.001	<0.001 <0.001 <0.001 <0.0019 <0.0026 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.002 <0.002 <0.003 <0.0052 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002	<0.01 <0.01 <0.01 <0.019 <0.026 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01		- - - - - - - - - - - - - - - - - - -	
4-Chloro-3-methylphenol 4-Chloroaniline 4-Chlorophenylphenylether 4-Chlorotoluene 4-Isopropyltoluene 4-Isopropyltoluene 4-Methylphenol 4-Nitrophenol 4-Nitrophenol Acenaphthene Acenaphthene Acenaphthylene Anthracene Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Bis(2-chloroethoxy)methane	<0.001	<0.001 <0.001 <0.001 <0.0019 <0.0026 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.002 <0.002 <0.002 <0.0052 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002	<0.01 <0.01 <0.01 <0.019 <0.026 <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	- - - - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - - - - -	

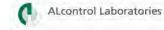
Leach Test Information

Date Prepared	11-Oct-2010
pH (pH Units)	6.79
Conductivity (µS/cm)	99.70
Temperature (°C)	21.80
Volume Leachant (Litres)	0.328
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates



REF-CEN12457-3

Client Reference			Client Location		Stagl	orough	
Mass Sample taken (kg)	0.197		Moisture Conte	nt Ratio (%)	12.4		
Mass of dry sample (kg)	0.175			tent Ratio (%)	89.0		
Particle Size <4mm	>95%				05.0		
	>95%						
Case							
SDG	100923-110						
Lab Sample Number(s)	2129709						
Sampled Date	20-Sep-2010						
Customer Sample Ref.	WS3						
Depth (m)	1.20 - 1.50						
Solid Waste Analysis							
Total Organic Carbon (%)		-			-	-	-
Loss on Ignition (%)		-			-	-	-
Sum of BTEX (mg/kg)		0.01			-	-	-
Sum of 7 PCBs (mg/kg) Mineral Oil (mg/kg)		-			-	-	-
PAH Sum of 17 (mg/kg)		-			-	-	-
pH (pH Units)		-			-	-	-
ANC to pH 6 (mol/kg)		-			-	-	-
ANC to pH 4 (mol/kg)		-			-	-	-
	Conc ^r eluate	' in 2:1 (mg/l)		conc ⁿ (mg/kg)	l imit valu	es for compliance lea	aching test
Eluate Analysis		C2		(iiig/ kg) 2 ₂		S EN 12457-3 at L/S	-
Eluate Analysis						-	-
Bis(2-chloroethyl)ether	Result <0.001	C2 Limit of Detection <0.001	Result <0.002	Limit of Detection <0.01	using B	S EN 12457-3 at L/S	-
Bis(2-chloroethyl)ether	Result	Limit of Detection	Result	22 Limit of Detection	using B	S EN 12457-3 at L/S	5 10 l/kg
Bis(2-chloroethyl)ether Bis(2-ethylhexyl) phthalate	Result <0.001	C2 Limit of Detection <0.001	Result <0.002	Limit of Detection <0.01	using B	S EN 12457-3 at L/S	5 10 l/kg -
Bis(2-chloroethyl)ether Bis(2-ethylhexyl) phthalate Boron	Result <0.001	C2 Limit of Detection <0.001 <0.002	Result <0.002	Limit of Detection <0.01	using B - -	S EN 12457-3 at L/S - -	5 10 l/kg - -
Bis(2-chloroethyl)ether Bis(2-ethylhexyl) phthalate Boron Bromobenzene	Result <	C2 Limit of Detection <0.001 <0.002 <0.0094	Result <0.002	22 Limit of Detection <0.01 <0.02 <0.094	using B - - -	S EN 12457-3 at L/S - - -	; 10 /kg - - -
Bis(2-chloroethyl)ether Bis(2-ethylhexyl) phthalate Boron Bromobenzene Bromochloromethane	Result <0.001	Limit of Detection <0.001	Result <0.002	Limit of Detection <0.01	using B - - - - -	S EN 12457-3 at L/S - - - - - -	: 10 /kg - - - - -
Eluate Analysis Bis(2-chloroethyl)ether Bis(2-ethylhexyl) phthalate Boron Bromobenzene Bromochloromethane Bromodichloromethane Bromoform	Result <0.001	Limit of Detection <0.001	Result <0.002	22 Limit of Detection <0.01 <0.02 <0.094 <0.02 <0.019	using B - - - - - - - - - -	S EN 12457-3 at L/S - - - - - - -	: 10 /kg - - - - - - -
Bis(2-chloroethyl)ether Bis(2-ethylhexyl) phthalate Boron Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane	Result <	Limit of Detection <0.001	Result <0.002	Limit of Detection <0.01	using B - - - - - - -	S EN 12457-3 at L/S	: 10 I/kg - - - - - - - - -
Bis(2-chloroethyl)ether Bis(2-ethylhexyl) phthalate Boron Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane	Result Result <	Limit of Detection <0.001	Result <0.002	Limit of Detection <0.01	using B - - - - - - - - - -	S EN 12457-3 at L/S	: 10 I/kg - - - - - - - - - - - -
Bis(2-chloroethyl)ether Bis(2-ethylhexyl) phthalate Boron Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane Butylbenzyl phthalate	Result <0.001	Limit of Detection <0.001	Result <0.002	Limit of Detection <0.01	using B - - - - - - - - - -	S EN 12457-3 at L/S	: 10 I/kg - - - - - - - - - - - -
Bis(2-chloroethyl)ether Bis(2-ethylhexyl) phthalate Boron Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane Butylbenzyl phthalate Carbazole	Result <0.001	Limit of Detection <0.001	Result <0.002	Limit of Detection <0.01	using B - - - - - - - - - - - - - -	S EN 12457-3 at L/S	: 10 1/kg - - - - - - - - - - - - - - - - - - -
Bis(2-chloroethyl)ether Bis(2-ethylhexyl) phthalate Boron Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane Butylbenzyl phthalate Carbazole Carbazole	Result Result <	Limit of Detection <0.001	Result <0.002	Limit of Detection <0.01	using B - - - - - - - - - - - - - - - - - -	S EN 12457-3 at L/S	; 10 1/kg - - - - - - - - - - - - - - - - - - -
Bis(2-chloroethyl)ether Bis(2-ethylhexyl) phthalate Boron Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane Butylbenzyl phthalate Carbazole Carbon Disulphide Carbontetrachloride	Result Result <	Limit of Detection <0.001	Result <0.002	Limit of Detection <0.01	using B - - - - - - - - - - - - - - - - - - -	S EN 12457-3 at L/S	; 10 1/kg - - - - - - - - - - - - - - - - - - -
Bis(2-chloroethyl)ether Bis(2-ethylhexyl) phthalate Boron Bromobenzene Bromochloromethane Bromodichloromethane Bromodichloromethane Bromomethane Butylbenzyl phthalate Carbazole Carbon Disulphide Carbontetrachloride Chlorobenzene	Result Result <td>Limit of Detection <0.001</td> <0.002	Limit of Detection <0.001	Result <0.002	Limit of Detection <0.01	using B - - - - - - - - - - - - - - - - - - -	S EN 12457-3 at L/S	; 10 l/kg - - - - - - - - - - - - - - - - - - -
Bis(2-chloroethyl)ether Bis(2-ethylhexyl) phthalate Boron Bromobenzene Bromodichloromethane Bromodichloromethane Bromoform Bromomethane Butylbenzyl phthalate Carbazole Carbon Disulphide Carbontetrachloride Chlorobenzene Chloroethane	Result Result <0.001	Limit of Detection <0.001	Result <0.002	Limit of Detection <0.01	using B - - - - - - - - - - - - - - - - - - -	S EN 12457-3 at L/S	: 10 l/kg - - - - - - - - - - - - - - - - - - -
Bis(2-chloroethyl)ether Bis(2-ethylhexyl) phthalate Boron Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane Butylbenzyl phthalate Carbazole Carbazole Carbon Disulphide Carbontetrachloride Chloroethane Chloroethane	Result Result <td>Limit of Detection <0.001</td> <0.002	Limit of Detection <0.001	Result <0.002	Limit of Detection <0.01	using B - - - - - - - - - - - - - - - - - - -	S EN 12457-3 at L/S	; 10 l/kg - - - - - - - - - - - - - - - - - - -
Bis(2-chloroethyl)ether Bis(2-ethylhexyl) phthalate Boron Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane Butylbenzyl phthalate Carbazole Carbon Disulphide Carbon Disulphide Carbontetrachloride Chlorobenzene Chloroethane Chloroform Chloroform	Result Result <td>Limit of Detection <0.001</td> <0.002	Limit of Detection <0.001	Result <0.002	Limit of Detection <0.01	using B	S EN 12457-3 at L/S	: 10 1/kg - - - - - - - - - - - - - - - - - - -
Bis(2-chloroethyl)ether Bis(2-ethylhexyl) phthalate Boron Bromobenzene Bromochloromethane Bromodichloromethane	Result Result <td>Limit of Detection <0.001</td> <0.002	Limit of Detection <0.001	Result <0.002	Limit of Detection <0.01	using B	S EN 12457-3 at L/S	; 10 1/kg - - - - - - - - - - - - -
Bis(2-ethylhexyl) phthalate Boron Bromobenzene Bromochloromethane Bromodichloromethane Bromoform Bromomethane Butylbenzyl phthalate Carbazole Carbon Disulphide Carbontetrachloride Chlorobenzene Chloroethane Chloroothane Chloromethane Chloromethane Chrysene	Result Result 0.001 0.002 <td>Limit of Detection <0.001</td> <0.002	Limit of Detection <0.001	Result <0.002	Limit of Detection <0.01	using B	S EN 12457-3 at L/S	: 10 1/kg - - - - - - - - - - - - -

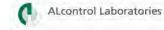
Leach Test Information

Date Prepared	11-Oct-2010
pH (pH Units)	6.79
Conductivity (µS/cm)	99.70
Temperature (°C)	21.80
Volume Leachant (Litres)	0.328
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates



REF-CEN12457-3

Client Reference			Client Location		Stagt	oorough	
Mass Sample taken (kg)	0.197		Moisture Content Ratio (%)		12.4		
Mass of dry sample (kg)	0.175			tent Ratio (%)	89.0		
Particle Size <4mm	>95%				05.0		
	>95%						
Case							
SDG	100923-110						
Lab Sample Number(s)	2129709						
Sampled Date	20-Sep-2010						
Customer Sample Ref.	WS3						
Depth (m)	1.20 - 1.50						
Solid Waste Analysis							
Total Organic Carbon (%)		-			-	-	-
Loss on Ignition (%)		-			-	-	-
Sum of BTEX (mg/kg)	<	0.01			-	-	-
Sum of 7 PCBs (mg/kg) Mineral Oil (mg/kg)		-			-	-	-
PAH Sum of 17 (mg/kg)		-			-	-	-
pH (pH Units)		-			-	-	-
ANC to pH 6 (mol/kg)		-			-	-	-
ANC to pH 4 (mol/kg)		-			-	-	-
Eluate Analysis	eluate	' in 2:1 (mg/l) C2	2:1 conc ⁿ leached (mg/kg) A2 ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Dibenzo(a,h)anthracene	<0.001	<0.001	<0.002	<0.01	-	-	-
Dibenzofuran	< 0.001	< 0.001	.0.002				
		\$0.001	<0.002	<0.01	-	-	-
Dibromochloromethane	<0.0017	<0.0017	<0.002	<0.01 <0.017	-	-	-
							-
Dibromofluoromethane	<0.0017	<0.0017		<0.017	-	-	
Dibromofluoromethane Dibromomethane	<0.0017	<0.0017	<0.0034	<0.017	-	-	-
Dibromofluoromethane Dibromomethane Dichlorodifluoromethane	<0.0017 - <0.0027	<0.0017 - <0.0027	<0.0034 - <0.0054	<0.017 - <0.027	-	-	-
Dibromofluoromethane Dibromomethane Dichlorodifluoromethane Dichloromethane	<0.0017 - <0.0027 <0.007	<0.0017 - <0.0027 <0.007	<0.0034 - <0.0054 <0.014	<0.017 - <0.027 <0.07	- - - -	- - - -	-
Dibromofluoromethane Dibromomethane Dichlorodifluoromethane Dichloromethane Dichloromethane	<0.0017 - <0.0027 <0.007 <0.0037	<0.0017 - <0.0027 <0.007 <0.0037	<0.0034 - <0.0054 <0.014 <0.0074	<0.017 - <0.027 <0.07 <0.037	- - - - -	- - - - -	
Dibromofluoromethane Dibromomethane Dichlorodifluoromethane Dichloromethane Dicthyl phthalate Dimethyl phthalate	 <0.0017 - <0.0027 <0.007 <0.0037 <0.001 	<0.0017 - <0.0027 <0.007 <0.0037 <0.001	<0.0034 - <0.0054 <0.014 <0.0074 <0.002	<0.017 - <0.027 <0.07 <0.037 <0.01	- - - - -	- - - - -	
Dibromofluoromethane Dibromomethane Dichlorodifluoromethane Dichloromethane Dichloromethalate Dimethyl phthalate Di-n-butyl phthalate	 <0.0017 - <0.0027 <0.007 <0.0037 <0.001 <0.001 	<0.0017 - <0.0027 <0.007 <0.0037 <0.001 <0.001	<0.0034 - <0.0054 <0.014 <0.0074 <0.002 <0.002	<0.017 - <0.027 <0.07 <0.037 <0.01 <0.01	- - - - - - -	- - - - - - -	- - - - - -
Dibromofluoromethane Dibromomethane Dichlorodifluoromethane Dichloromethane Diethyl phthalate Dimethyl phthalate Di-n-butyl phthalate Di-n-Octyl phthalate	 <0.0017 - <0.0027 <0.007 <0.0037 <0.001 <0.001 <0.001 	<0.0017 - <0.0027 <0.007 <0.0037 <0.001 <0.001 <0.001	<0.0034 - <0.0054 <0.014 <0.0074 <0.002 <0.002 <0.002	<0.017 - <0.027 <0.07 <0.037 <0.01 <0.01 <0.01	- - - - - - - - -	- - - - - - - - - - -	- - - - - - - -
Dibromofluoromethane Dibromomethane Dichlorodifluoromethane Dichloromethane Dichloromethane Dichloromethale Dichloromethalate Di-n-butyl phthalate Di-n-Octyl phthalate Ethylbenzene	 <0.0017 - <0.0027 <0.007 <0.0037 <0.001 <0.001 <0.001 <0.001 <0.001 	<0.0017 - <0.0027 <0.007 <0.0037 <0.001 <0.001 <0.001 <0.001	<0.0034 - <0.0054 <0.014 <0.0074 <0.002 <0.002 <0.002 <0.002 <0.01	<0.017 - <0.027 <0.07 <0.037 <0.01 <0.01 <0.01 <0.01 <0.05	- - - - - - - - - -	- - - - - - - - - - - -	- - - - - - - - - - -
Dibromofluoromethane Dibromomethane Dichlorodifluoromethane Dichloromethane Dichloromethane Dichloromethane Dichloromethalate Di-n-butyl phthalate Di-n-Octyl phthalate Ethylbenzene Fluoranthene	 <0.0017 - <0.0027 <0.007 <0.0037 <0.001 <0.001 <0.001 <0.001 <0.005 <0.0025 	<0.0017 - <0.0027 <0.007 <0.0037 <0.001 <0.001 <0.001 <0.005 <0.0025	<0.0034 - <0.0054 <0.014 <0.0074 <0.002 <0.002 <0.002 <0.002 <0.01 <0.005	<0.017 - <0.027 <0.07 <0.037 <0.01 <0.01 <0.01 <0.05 <0.025	- - - - - - - - - - -	- - - - - - - - - - - -	- - - - - - - - - - -
Dibromofluoromethane Dibromomethane Dichlorodifluoromethane Dichloromethane Diethyl phthalate Dimethyl phthalate Di-n-butyl phthalate Di-n-Octyl phthalate Ethylbenzene Fluoranthene	 <0.0017 - <0.0027 <0.007 <0.0037 <0.001 <0.001 <0.001 <0.005 <0.0025 <0.001 	<0.0017 - <0.0027 <0.007 <0.0037 <0.001 <0.001 <0.001 <0.005 <0.0025 <0.001	<0.0034 - <0.0054 <0.014 <0.0074 <0.002 <0.002 <0.002 <0.01 <0.005 <0.002	<0.017 - <0.027 <0.07 <0.037 <0.01 <0.01 <0.01 <0.01 <0.05 <0.025 <0.01		- - - - - - - - - - - - - - - - -	- - - - - - - - - - - - -
Dibromofluoromethane Dibromomethane Dichlorodifluoromethane Dichloromethane Dichloromethane Diethyl phthalate Di-n-butyl phthalate Di-n-Octyl phthalate Di-n-Octyl phthalate Ethylbenzene Fluoranthene Fluorene Hexachlorobenzene	 <0.0017 - <0.0027 <0.007 <0.0037 <0.001 <0.001 <0.001 <0.005 <0.0025 <0.001 <0.001 	<0.0017 - <0.0027 <0.007 <0.0037 <0.001 <0.001 <0.001 <0.005 <0.0025 <0.001 <0.001	<0.0034 - <0.0054 <0.014 <0.0074 <0.002 <0.002 <0.002 <0.01 <0.005 <0.002 <0.002	<0.017 - <0.027 <0.07 <0.037 <0.01 <0.01 <0.01 <0.05 <0.025 <0.01 <0.01 <0.01		- - - - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - -
Dibromofluoromethane Dibromomethane Dichlorodifluoromethane Dichloromethane Dichloromethane Diethyl phthalate Di-n-butyl phthalate Di-n-Octyl phthalate Ethylbenzene Fluoranthene Fluorene Hexachlorobenzene Hexachlorobutadiene	<0.0017	<0.0017 - <0.0027 <0.007 <0.0037 <0.001 <0.001 <0.001 <0.005 <0.0025 <0.001 <0.001 <0.001 <0.001	<0.0034 - <0.0054 <0.014 <0.0074 <0.002 <0.002 <0.002 <0.01 <0.005 <0.002 <0.002 <0.002 <0.002	<0.017 - <0.027 <0.07 <0.037 <0.01 <0.01 <0.01 <0.05 <0.025 <0.025 <0.01 <0.01 <0.01 <0.01		- - - - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - - - - -
Dibromofluoromethane Dibromomethane Dichlorodifluoromethane Dichloromethane Diethyl phthalate Di-n-butyl phthalate Di-n-Octyl phthalate Ethylbenzene Fluoranthene Fluorene Hexachlorobenzene Hexachlorobutadiene Hexachlorocyclopentadiene	<0.0017	<0.0017 - <0.0027 <0.007 <0.0037 <0.001 <0.001 <0.005 <0.0025 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.0034 - <0.0054 <0.014 <0.002 <0.002 <0.002 <0.002 <0.01 <0.005 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002	<0.017 - <0.027 <0.07 <0.037 <0.01 <0.01 <0.05 <0.025 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.025 <0.01 <0.01 <0.025 <0.01 <0.01 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.025 <0.01 <0.025 <0.01 <0.025 <0.01 <0.025 <0.01 <0.01 <0.025 <0.01 <0.01 <0.01 <0.025 <0.01 <0.01 <0.01 <0.01 <0.025 <0.01 <0.01 <0.01 <0.01 <0.025 <0.01 <0.01 <0.01 <0.01 <0.025 <0.01 <0.01 <0.01 <0.01 <0.025 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.025 <0.01 <0.01 <0.01 <0.01 <0.025 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <		- - - - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - - - - -
Dibromochloromethane Dibromofluoromethane Dibromomethane Dichlorodifluoromethane Dichlorodifluoromethane Dichloromethane Dichloromethane Dichloromethane Diethyl phthalate Di-n-butyl phthalate Di-n-Octyl phthalate Ethylbenzene Fluoranthene Fluoranthene Hexachlorobenzene Hexachlorobutadiene Hexachlorobutadiene Hexachloroethane Indeno (1,2,3-cd) Pyrene	<0.0017	<0.0017 - <0.0027 <0.007 <0.0037 <0.001 <0.001 <0.005 <0.0025 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.0025 <0.0025 <0.001	<0.0034 - <0.0054 <0.014 <0.0074 <0.002 <0.002 <0.002 <0.01 <0.005 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.005 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <	<0.017 - <0.027 <0.07 <0.037 <0.01 <0.01 <0.05 <0.025 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.025 <0.025 <0.01			- - - - - - - - - - - - - - - - - - -

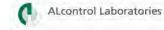
Leach Test Information

Date Prepared	11-Oct-2010
pH (pH Units)	6.79
Conductivity (µS/cm)	99.70
Temperature (°C)	21.80
Volume Leachant (Litres)	0.328
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates



REF-CEN12457-3

Client Reference		Client Location		Stag	oorough		
Mass Sample taken (kg)	0.197		Moisture Content Ratio (%)		12.4	0	
Mass of dry sample (kg)	0.175			tent Ratio (%)	89.0		
			Dry Matter Con		09.0		
Particle Size <4mm	>95%						
Case							
SDG	100923-110						
Lab Sample Number(s)	2129709						
Sampled Date	20-Sep-2010						
Customer Sample Ref.	WS3						
Depth (m)	1.20 - 1.50						
Solid Waste Analysis							
Total Organic Carbon (%)		-	I			-	· ·
Loss on Ignition (%)		-			-	-	-
Sum of BTEX (mg/kg)		0.01			-	-	-
Sum of 7 PCBs (mg/kg) Mineral Oil (mg/kg)		-			-	-	-
PAH Sum of 17 (mg/kg)		-					-
pH (pH Units)		-			-	-	-
ANC to pH 6 (mol/kg)		-			-	-	-
ANC to pH 4 (mol/kg)		-			-	-	-
Eluate Analysis	Conc ⁿ in 2:1 eluate (mg/l) C ₂		2:1 conc ⁿ leached (mg/kg) A2 ₂		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
sophorone	<0.001	<0.001	<0.002	<0.01	-	-	-
Isopropylbenzene	<0.0014	<0.0014	<0.0028	<0.014	-	-	-
Naphthalene	< 0.0035	< 0.0035	< 0.007	< 0.035		-	
					-	-	-
	<0.002	<0.002	<0.004	<0.02	-	-	-
n-Butylbenzene Nitrobenzene	<0.002 <0.001	<0.001	<0.002	<0.02 <0.01	-	-	-
n-Butylbenzene Nitrobenzene	<0.002			<0.02	-	-	-
n-Butylbenzene Nitrobenzene N-nitrosodi-n-propylamine	<0.002 <0.001	<0.001	<0.002	<0.02 <0.01	-	-	
n-Butylbenzene Nitrobenzene N-nitrosodi-n-propylamine o-Xylene	<0.002 <0.001 <0.001	<0.001 <0.001	<0.002 <0.002	<0.02 <0.01 <0.01		-	-
n-Butylbenzene Nitrobenzene N-nitrosodi-n-propylamine o-Xylene p/m-Xylene	<0.002 <0.001 <0.001 <0.0017	<0.001 <0.001 <0.0017	<0.002 <0.002 <0.0034	<0.02 <0.01 <0.01 <0.017	- - - -	- - - -	-
n-Butylbenzene Nitrobenzene N-nitrosodi-n-propylamine o-Xylene p/m-Xylene Pentachlorophenol	<0.002 <0.001 <0.001 <0.0017 <0.0025	<0.001 <0.001 <0.0017 <0.0025	<0.002 <0.002 <0.0034 <0.005	<0.02 <0.01 <0.01 <0.017 <0.025	- - - -	- - - -	-
n-Butylbenzene Nitrobenzene N-nitrosodi-n-propylamine o-Xylene p/m-Xylene Pentachlorophenol Phenanthrene	 <0.002 <0.001 <0.001 <0.0017 <0.0025 <0.001 	<0.001 <0.001 <0.0017 <0.0025 <0.001	<0.002 <0.002 <0.0034 <0.005 <0.002	<0.02 <0.01 <0.01 <0.017 <0.025 <0.01	- - - - - -	- - - - - -	-
n-Butylbenzene Nitrobenzene N-nitrosodi-n-propylamine o-Xylene p/m-Xylene Pentachlorophenol Phenanthrene Phenol	 <0.002 <0.001 <0.001 <0.0017 <0.0025 <0.001 <0.001 	<0.001 <0.001 <0.0017 <0.0025 <0.001 <0.001	<0.002 <0.002 <0.0034 <0.005 <0.002 <0.002	<0.02 <0.01 <0.01 <0.017 <0.025 <0.01 <0.01	- - - - - - -	- - - - - - -	-
n-Butylbenzene Nitrobenzene N-nitrosodi-n-propylamine o-Xylene o/m-Xylene Pentachlorophenol Phenanthrene Phenol Phenol	 <0.002 <0.001 <0.001 <0.0017 <0.0025 <0.001 <0.001 <0.001 	<0.001 <0.001 <0.0017 <0.0025 <0.001 <0.001 <0.001	<0.002 <0.002 <0.0034 <0.005 <0.002 <0.002 <0.002	<0.02 <0.01 <0.01 <0.017 <0.025 <0.01 <0.01 <0.01	- - - - - - - - - - -	- - - - - - - - - -	- - - - - -
n-Butylbenzene Nitrobenzene N-nitrosodi-n-propylamine o-Xylene o/m-Xylene Pentachlorophenol Phenanthrene Phenol Propylbenzene Pyrene	 <0.002 <0.001 <0.001 <0.0017 <0.0025 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 	<0.001 <0.001 <0.0017 <0.0025 <0.001 <0.001 <0.001 <0.0026	<0.002 <0.002 <0.0034 <0.005 <0.002 <0.002 <0.002 <0.002	<0.02 <0.01 <0.01 <0.017 <0.025 <0.01 <0.01 <0.01 <0.01 <0.01	- - - - - - - - - - - -	- - - - - - - - - - - -	- - - - - -
n-Butylbenzene Nitrobenzene N-nitrosodi-n-propylamine o-Xylene o/m-Xylene Pentachlorophenol Phenanthrene Phenol Propylbenzene Pyrene Sec-Butylbenzene	<0.002	<0.001 <0.001 <0.0017 <0.0025 <0.001 <0.001 <0.001 <0.0026 <0.001	<0.002 <0.002 <0.0034 <0.005 <0.002 <0.002 <0.002 <0.002 <0.0052 <0.002	<0.02 <0.01 <0.01 <0.017 <0.025 <0.01 <0.01 <0.01 <0.026 <0.01	- - - - - - - - - - - - -	- - - - - - - - - - - - - - - - -	- - - - - -
n-Butylbenzene Nitrobenzene N-nitrosodi-n-propylamine D-Xylene D-Xylene Pentachlorophenol Phenalthrene Phenol Propylbenzene Pyrene Sec-Butylbenzene Styrene	 <0.002 <0.001 <0.001 <0.0017 <0.0025 <0.001 <0.001 <0.001 <0.001 <0.0026 <0.001 <0.0017 	<0.001 <0.001 <0.0017 <0.0025 <0.001 <0.001 <0.001 <0.0026 <0.001 <0.0017	<0.002 <0.002 <0.0034 <0.005 <0.002 <0.002 <0.002 <0.0052 <0.0052 <0.002	<0.02 <0.01 <0.01 <0.017 <0.025 <0.01 <0.01 <0.01 <0.026 <0.01 <0.01 <0.01 <0.01	- - - - - - - - - - - - - -	- - - - - - - - - - - - - - -	- - - - - - - - - - -
n-Butylbenzene Nitrobenzene N-nitrosodi-n-propylamine o-Xylene o/m-Xylene Pentachlorophenol Phenanthrene Phenol Propylbenzene Pyrene Sec-Butylbenzene Styrene Tert-amyl methyl ether	<0.002	<0.001 <0.001 <0.0017 <0.0025 <0.001 <0.001 <0.001 <0.0026 <0.001 <0.0017 <0.0012	<0.002 <0.002 <0.0034 <0.005 <0.002 <0.002 <0.002 <0.0052 <0.002 <0.002 <0.002	<0.02 <0.01 <0.01 <0.017 <0.025 <0.01 <0.01 <0.01 <0.026 <0.01 <0.017 <0.017 <0.012	- - - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - - - - -	- - - - - - - - - - -
n-Butylbenzene Nitrobenzene Nitrobenzene N-nitrosodi-n-propylamine o-Xylene p/m-Xylene Pentachlorophenol Phenanthrene Phenol Propylbenzene Pyrene Sec-Butylbenzene Styrene Tert-amyl methyl ether Tert-butyl methyl ether Tert-Butylbenzene	 <0.002 <0.001 <0.001 <0.0017 <0.0025 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.0017 <0.0017 <0.0012 <0.001 	<0.001 <0.001 <0.0017 <0.0025 <0.001 <0.001 <0.001 <0.0026 <0.001 <0.0017 <0.0012 <0.0012	<0.002 <0.002 <0.0034 <0.005 <0.002 <0.002 <0.002 <0.002 <0.002 <0.002 <0.0034 <0.0024 <0.002	<0.02 <0.01 <0.01 <0.017 <0.025 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 <0.017 <0.012 <0.012 <0.01	- - - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - - - - -	- - - - - - - - - - -

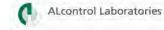
Leach Test Information

Date Prepared	11-Oct-2010
pH (pH Units)	6.79
Conductivity (µS/cm)	99.70
Temperature (°C)	21.80
Volume Leachant (Litres)	0.328
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

Stated limits are for guidance only and ALcontrol cannot be held responsible for any discrepancies with current legislation

Mcerts Certification does not apply to leachates



REF-CEN12457-3

Client Reference			Client Location	1	Stagbo	orough	
Mass Sample taken (kg)	0.197		Moisture Cont	ent Ratio (%)	12.4		
Mass of dry sample (kg)	0.175			ntent Ratio (%)	89.0		
Particle Size <4mm	>95%						
	~5570						
Case							
SDG	100923-110						
ab Sample Number(s)	2129709						
Sampled Date	20-Sep-2010						
Customer Sample Ref.	WS3						
Depth (m)	1.20 - 1.50						
Solid Waste Analysis							
otal Organic Carbon (%)		-			-	-	-
loss on Ignition (%)		-			-	-	-
Sum of BTEX (mg/kg) Sum of 7 PCBs (mg/kg)	<	0.01			-	-	-
Mineral Oil (mg/kg)		-			-	-	-
PAH Sum of 17 (mg/kg)		-			-	-	-
oH (pH Units)		-			-	-	-
NC to pH 6 (mol/kg)		-			-	-	-
NC to pH 4 (mol/kg)	_	-		-	-	-	-
iluate Analysis	Conc ⁿ in 2:1 eluate (mg/l) C ₂		leache	conc ⁿ d (mg/kg) A22	Limit values for compliance leaching using BS EN 12457-3 at L/S 10 l/k		
-	Result	Limit of Detection	Result	Limit of Detection	_		
oluene	<0.0014	<0.0014	<0.0028	<0.014	-	-	-
oluene-d8	-	-	-	-	-	-	-
РН	<1	<1	<2	<1	-	-	-
rans-1,2-Dichloroethene	<0.0019	<0.0019	<0.0038	<0.019	-	-	-
rans-1,3-Dichloropropene	<0.0035	<0.0035	<0.007	<0.035	-	-	-
richloroethene	<0.0025	<0.0025	<0.005	<0.025	-	-	-
richlorofluoromethane	<0.0013	<0.0013	<0.0026	<0.013	-	-	-
/anadium	0.000312	<0.00024	0.000624	<0.0024	-	-	-
/inyl Chloride	<0.0012	<0.0012	<0.0024	<0.012	-	-	-
each Test Information		I	I	I			

Date Prepared	11-Oct-2010
pH (pH Units)	6.79
Conductivity (µS/cm)	99.70
Temperature (°C)	21.80
Volume Leachant (Litres)	0.328
Volume of Eluate VE1 (Litres)	

Solid Results are expressed on a dry weight basis, after correction for moisture content where applicable

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Table of Results - Appendix

G N	umber : 100	923-110		Client :	H_GRONTMIJ_S	OL		Client Ref :		
POI	RT KEY							Results expressed as	(e.g.) 1.03E-07 is equival	ent to 1.03x10
DP	No Determination P	ossible	#	ISO 17025 Accredited			Subcontracted Test	м	MCERTS Accre	dited
FD	No Fibres Detected		PFD	Possible Fibres Detected		»	Result previously reported (Incremental reports only)	EC	Equivalent Carl (Aromatics C8	
	Method No	e not always acmevable	Refere				Description		Wet/Dry Sample ¹	Surrogate Corrected
	PM001				Preparation of Sample	es for Metals	Analysis			
	PM024	Modified BS 1377			Soil preparation includ Containing Material	ding homoger	isation, moisture screens of soils fo	or Asbestos		
	PM114				Leaching Procedure for	or CEN Two S	tage BatchTest 2:1/8:1 Cumulative			
	PM115				Leaching Procedure for	or CEN One S	tage Leach Test 2:1 & 10:1 1 Step			
	PM115				Leaching Procedure for	or CEN One S	tage Leach Test 2:1 & 10:1 1 Step			
	TM001	In - house Method			Determination of asbe	estos containi	ng material by screening on solids			
	TM089	Modified: US EPA Met	hods 8020 &	602	Determination of Gase Headspace GC-FID (C		ydrocarbons (GRO) and BTEX (MTE	BE) compounds by		
	TM116	Modified: US EPA Met 610 & 602	hod 8260, 83	20, 8020, 624,	Determination of Vola	itile Organic C	compounds by Headspace / GC-MS			
	TM132	In - house Method			ELTRA CS800 Operato	ors Guide				
	TM133	BS 1377: Part 3 1990	;BS 6068-2.5		Determination of pH i	n Soil and Wa	ter using the GLpH pH Meter			
	TM151	Method 3500D, AWW	A/APHA, 20th	n Ed., 1999	Determination of Hexa	avalent Chron	nium using Kone analyser			
	TM152	Method 3125B, AWW	A/APHA, 20th	e Ed., 1999	Analysis of Aqueous S	Samples by IC	P-MS			
	TM153	Method 4500A,B,C, I, 1999	M AWWA/AF	PHA, 20th Ed.,	Determination of Tota the 'Skalar SANS+ Sys		ee (Easily Liberatable) Cyanide and ated Flow Analyser	Thiocyanate using		
	TM157	HP 6890 Gas Chroma 5973 Mass Selective I			Determination of SVO	C in Soils by	GC-MS extracted by sonication in D	CM/Acetone		
	TM173	Analysis of Petroleum Environmental Media Criteria			Determination of Spec	ciated Extract	able Petroleum Hydrocarbons in So	ils by GC-FID		
	TM176	EPA 8270D Semi-Vola Chromatography/Mas			Determination of SVO	Cs in Water b	y GCMS			
	TM181	US EPA Method 6010			Determination of Rout	tine Metals in	Soil by iCap 6500 Duo ICP-OES			
	TM183	BS EN 23506:2002, (E 38924 3	3S 6068-2.74	:2002) ISBN 0 580	Determination of Trac Fluorescence Spectro		ury in Waters and Leachates by PSA	A Cold Vapour Atomic		
	TM208	Modified: US EPA Met	hod 8260b 8	. 624			compounds by Headspace / GC-MS	in Waters		
	TM222	In-House Method			Determination of Hot Spectrometer	Water Solub	e Boron in Soils (10:1 Water:soil) b	y IRIS Emission		
	TM235	The Determination of Solvent Extraction, In Gravimetry 1983, HM	fra red Absor		-	I Petroleum H	lydrocarbons (TPH) in Waters By Ir	ıfra-Red		

Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

Notification of Non-Conforming Work

SDG Numb Client		l00923-110 H_GRONTMIJ_SOL	-		Location Order No.	Stagborough	
lient Refe		Gareth Taylor			Report No. Date Received	100345 23/09/2010 18:37:	52
ample lumber	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Com	ponent Name	Comment
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	Alipha	atics >C10-C12	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	Aliphati	cs >C10-C12 raw	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	Alipl	hatics >C5-C6	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	Alipha	tics >C5-C6 raw	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	Alipl	hatics >C6-C8	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	Alipha	tics >C6-C8 raw	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	Aliph	atics >C8-C10	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		ics >C8-C10 raw	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		tics >EC10-EC12	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		s >EC10-EC12 raw	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		atics >EC5-EC7	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		cs >EC6-EC7 raw	Volatile container not received
129704 129704	WS3 WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		atics >EC7-EC8 cs >EC7-EC8 raw	Volatile container not received
		1.20 - 1.50 1.20 - 1.50		GRO by GC-FID (S)		s >EC8 -EC10 raw	Volatile container not received
129704 129704	WS3 WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S) GRO by GC-FID (S)		tics >EC8-EC10 raw	Volatile container not received Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S) GRO by GC-FID (S)	Aloma	Benzene	Volatile container not received
129704	WS3 WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S) GRO by GC-FID (S)	Bonze	ene Uncorrected	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S) GRO by GC-FID (S)		BTEX, Total	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		hylbenzene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		izene Uncorrected	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		0 >C10-C12	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		RO >C5-C10	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		RO >C5-C12	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		RO >C5-C6	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		RO >C6-C7	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		RO >C6-C8	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	G	RO >C7-C8	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	GF	RO >C8-C10	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		ogate % recovery**	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	GRO TOT (C5-C12) Uncorrected	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	GRO_ban	dC (>C10-C12) raw	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	GRO_ba	ndC (>C5-C6) raw	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	GRO_ba	ndC (>C6-C7) raw	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	GRO_ba	ndC (>C7-C8) raw	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	GRO_bai	ndC (>C8-C10) raw	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	m & p X	ylene Uncorrected	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	m	,p,o-Xylene	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	r	n,p-Xylene	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	Methyl tertia	ry butyl ether (MTBE)	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	MTB	E Uncorrected	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	o Xyle	ene Uncorrected	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		o-Xylene	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		E Uncorrected	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)	tert-Amyl r	methyl ether (TAME)	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		Toluene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		ne Uncorrected	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		iphatics >C5-C12	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		hatics C5-C12 raw	Volatile container not received
129704	WS3 WS3	1.20 - 1.50	SOLID	GRO by GC-FID (S)		matics >EC5-EC12	Volatile container not received
129704 129704	WS3	1.20 - 1.50 1.20 - 1.50	SOLID	GRO by GC-FID (S) VOC MS (S)		atics >EC6-EC12 raw p-1,2,2-Trifluoroethane (TIC)	Volatile container not received Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	1.1.1.2-	Tetrachloroethane	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)		Trichloroethane	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)		Tetrachloroethane	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)		Trichloroethane	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)		Dichloroethane	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)		Dichloroethene	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)		ichloropropene	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)		richlorobenzene	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)		Trichloropropane	Volatile container not received
129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)		richlorobenzene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)		rimethylbenzene	Volatile container not received



ALcontrol Laboratories A

Alcontrol Laboratories Analytical Services

Notification of Non-Conforming Work

Sample Number	Customer Sample Ref.	Depth (m)	Matrix	Test Name	Component Name	Comment
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	1.2-Dibromo-3-chloropropane	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	1.2-Dibromoethane	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	1.2-Dichlorobenzene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	1.2-Dichloroethane	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	1.2-Dichloropropane	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	1.3.5-Trimethylbenzene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	1.3-Dichlorobenzene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	1.3-Dichloropropane	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	1.4-Dichlorobenzene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	2.2-Dichloropropane	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	2-Chlorotoluene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	4-Bromofluorobenzene**	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	4-Chlorotoluene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	4-Isopropyltoluene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Benzene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Bromobenzene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Bromochloromethane	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Bromodichloromethane	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Bromoform	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Bromomethane	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Carbon disulphide	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Carbontetrachloride	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Chlorobenzene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Chloroethane	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Chloroform	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Chloromethane	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Chorobenzene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	cis-1-2-Dichloroethene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	cis-1-3-Dichloropropene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Dibromochloromethane	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Dibromofluoromethane**	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Dibromomethane	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Dichlorodifluoromethane	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Dichloromethane	Volatile container not received
2129704 2129704	WS3 WS3	1.20 - 1.50 1.20 - 1.50	SOLID SOLID	VOC MS (S) VOC MS (S)	Dilution Ethylbenzene	Volatile container not received Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Hexachlorobutadiene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Isopropylbenzene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	LCS Reagent	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Methyl Tertiary Butyl Ether	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Naphthalene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	n-Butylbenzene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	o-Xylene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	p/m-Xylene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Propylbenzene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	sec-Butylbenzene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Styrene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Tert-amyl methyl ether	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	tert-Butylbenzene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Tetrachloroethene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	TIC Instructions	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Toluene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Toluene-d8**	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	trans-1-2-Dichloroethene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	trans-1-3-Dichloropropene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Trichloroethene	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Trichlorofluoromethane	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Trichlorofluorormethane	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	Vinyl Chloride	Volatile container not received
2129704	WS3	1.20 - 1.50	SOLID	VOC MS (S)	VOC TIC	Volatile container not received

APPENDIX

APPENDIX

- Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH₄ by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.
- 2. Samples will be run in duplicate upon request, but an additional charge may be incurred.
- 3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.
- 4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
- 5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
- 6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.
- 7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.
- 8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.
- 9. NDP No determination possible due to insufficient/unsuitable sample.
- 10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals total metals must be requested separately.
- 11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.
- 12. Results relate only to the items tested
- Surrogate recoveries Most of our organic methods include surrogates, the recovery of which is monitored and reported.
 For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 130 %.
- 14. **Product analyses** Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
- 15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).
- 16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).
- 17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
- 18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.
- 19. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
- 19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
- 21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.
- 22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.
- 23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

	LIQUID	MATRICES EXTRACTION SUMMARY	
ANALYSIS	EXTRACTION SOLVENT	ЕХТКАСТІОN МЕТНОD	SISATANA
PAH MS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
PCB 7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
PCB TOTAL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GS MS
SVOC	DCM	LIQUID/LIQUID SHAKE	GC MS
FREE SULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PEST OCP/OPP	DCM	LIQUID/LIQUID SHAKE	GC MS
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GC MS
PHENOLS MS TPH by INFRA RED (IR)	DCM TCE	SOLID PHASE EXTRACTION LIQUID/LIQUID EXTRACTION	GC MS HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID EXTRACTION	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GC FID

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
Solvent Extractable Matter	D&C	DCM	SOXTHERM	GRAVIMETRIC
Cyclohexane Ext. Matter	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
Thin Layer Chromatography	D&C	DCM	SOXTHERM	IATROSCAN
Elemental Sulphur	D&C	DCM	SOXTHERM	HPLC
Phenols by GCMS	WET	DCM	SOXTHERM	GC-MS
Herbicides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
Pesticides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Min oil)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Cleaned up)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH CWG by GC	D&C	HEXANE:ACETONE	END OVER END	GC-FID
PCB tot / PCB con	D&C	HEXANE:ACETONE	END OVER END	GC-MS
Polyaromatic Hydrocarbons (MS)	WET	HEXANE:ACETONE	Microwave TM218.	GC-MS
C8-C40 (C6-C40)EZ Flash	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Polyaromatic Hydrocarbons Rapid GC	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Semi Volatile Organic Compounds	WET	DCM:ACETONE	SONICATE	GC-MS

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content.

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -

Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in

MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Asbestos Type

Common Name

Chrysotile Amosite Crocidolite Fibrous Actinolite Fibrous Anthophyllite Fibrous Tremolite White Asbestos Brown Asbestos Blue Asbestos --



Grontmij Radcliffe House 3rd Floor Blenheim Court, Lode Iane Solihull West Midlands B912AA Attention:

Gareth Taylor

CERTIFICATE OF ANALYSIS

Date:	15 October 2010		
Customer:	H_GRONTMIJ_SOL-27		
Sample Delivery Group (SDG):	101006-33	Report No.:	100215
Your Reference:			
Location:	Stagborough		

We received 29 samples on Wednesday October 06, 2010 and 12 of these samples were scheduled for analysis which was completed on Friday October 15, 2010. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Asbestos testing - we are not accredited for screening soil samples for asbestos fibres. We are only accredited to identify asbestos fibres in bulk material (ACM).

Approved By:

enton

Iain Swinton Operations Director - Land UK & Ireland



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Validated	ALcontrol La	ALcontrol Laboratories Analytical Services									
SDG:	101006-33	Customer:	Grontmij								
Job:	H_GRONTMIJ_SOL-27	Attention:	Gareth Taylor								
Client Reference:		Order No.:									
Location:	Stagborough	Report No:	100215								

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
2192932	HP10			04/10/2010
2193052	HP10		0.30	04/10/2010
2193080	HP10		0.60	04/10/2010
2193172	HP11			04/10/2010
2192937	HP11		0.35	04/10/2010
2193098	HP11		0.65	04/10/2010
2192820	HP2		0.05	03/10/2010
2192875	HP2		0.30	03/10/2010
2193102	HP2		0.65	03/10/2010
2192975	HP3			03/10/2010
2192968	HP3		0.30	03/10/2010
2192894	HP3		0.65	03/10/2010
2192813	HP4			03/10/2010
2192862	HP4		0.30	03/10/2010
2192922	HP4		0.35	03/10/2010
2192746	HP4		0.65	03/10/2010
2192833	HP6			03/10/2010
2192827	HP6		0.30	03/10/2010
2193002	HP6		0.65	03/10/2010
2192800	HP7			03/10/2010
2192899	HP7		0.30	03/10/2010
2192768	HP7		0.60	03/10/2010
2192914	HP8			03/10/2010
2192841	HP8		0.30	03/10/2010
2192759	HP8		0.65	03/10/2010
2193148	HP9			04/10/2010
2193068	HP9		0.30	04/10/2010
2192906	HP9		0.65	04/10/2010
2193020	NO ID			

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated	ALcontrol L	abora	tc	ori	es	Α	n	al	yt	ic	a	18	Se	er۱	/ic	ce	s
Client Reference:	ITMIJ_SOL-27			¢	Atte Orde	tom ntio er N	n: o.:			Ga	are	eth '	Та	ylo	r		
Location: Stagboro	ugn			F	kep	ort l	NO	:		10	002	215)				
SOLID							Т								Т		
Results Legend	Lab Sample I	No(s)	2192768	2192813	2192827	ZHYZBEZ		2192875		2192906	2192914	2192937	2192975		2193052	2193068	2193172
X Test No Determination	Customer Sam	ple Ref.	HP7	HP4	HP6	н г 4	į	HP2		HP9	HP8	HP11	HP3		HP10	HP9	HP11
Possible	AGS Re	f.															
	Depth (m	1)	0.60		0.30	0.30		0.30		0.65		0.35			0.30	0.30	
	Containe	er.	400g Tub	400g Tub 250g Amber Jar	250g Amber Jar	250g Amber Jar	250g Amber Jar	400g Tub	250g Amber Jar	60g VOC	250g Amber Jar 400g Tub	400g Tub	400g Tub 250g Amber Jar	1kg TUB	250g Amber Jar	250g Amber Jar	400g Tub 250g Amber Jar
Asbestos Containing Material Screen	All	NDPs: 0 Tests: 1							(
Boron Water Soluble	All	NDPs: 0 Tests: 12	x	X	x	x	x		×	2	x x		x		x	x	x
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 1						 	<mark>.</mark>								
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 1							x								
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 1							×								
GRO by GC-FID (S)	All	NDPs: 0 Tests: 1	-							x							
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 12	x	x	×		<mark>(</mark>	x >	<mark><</mark>	2	x	x	x	x	×	<mark>(</mark>	x
Metals by iCap-OES (Soil)	Antimony	NDPs: 0 Tests: 1	_						×								
	Arsenic	NDPs: 0 Tests: 12	x	x	x	x	x		×	2	x x		x		x	x	x
	Barium	NDPs: 0 Tests: 12	x	x	x	x	x		×	2	x x		x		x	x	×
	Beryllium	NDPs: 0 Tests: 12	x	x	x	x	x		×	2	<mark>x</mark> x		x		x	x	x
	Cadmium	NDPs: 0 Tests: 12	x	x	x	×	x		×	2	<mark>x</mark> x		x		x	x	×
	Chromium Copper	NDPs: 0 Tests: 12	x	x	x	x	x		x		<mark>x</mark> x		x		x	x	x
	Lead	NDPs: 0 Tests: 12 NDPs: 0	x	x	×	×	x		x	2	<mark>x</mark> x		x		x	x	x
	Mercury	Tests: 12 NDPs: 0	x	x	×	×	x		x	2	<mark>x</mark> x		x		x	x	x
		Tests:	x	x	x	x	x		x	2	x x		x		x	x	x

Validated	ALcontrol La	bora	tc	ori	e	S	Aı	na		yti	ic	a		Se	e r ۱	/i	ce	S
SDG:101006-33Job:H_GRONTMClient Reference:Stagborough				A C	Att Dro	sto teni der poi	tior No	n: D.:			Ga	are	ntm eth 215	Та	ylo	r		
SOLID			_															
Results Legend	Lab Sample N	o(s)	2192768	2192813		2192827	2192862	C/876LZ	740001		2192914	0400044	2192937	2192975		2193052	2193068	2193172
X Test No Determination Possible	Customer Samp	le Ref.	HP7	HP4		HP6	HP4	HPZ	5		HP9	5	HP11	HP3		HP10	HP9	HP11
Possible	AGS Ref.								T		T					T		
	Depth (m)	1	0.60			0.30	0.30	0.30	0.00		0.65		0.35			0.30	0.30	
	Container		400g Tub	400g Tub 250g Amber Jar	250g Amber Jar	400g Tub	400g Tub 250a Amber Jar	250g Amber Jar	Anna Tub	250g Amber Jar	-100g VOC	250g Amber Jar	400g Tub	400g Lub 250g Amber Jar	1kg TUB	250g Amber Jar	250g Amber Jar	400g Tub 250g Amber Jar
Metals by iCap-OES (Soil)	Nickel	NDPs: 0 Tests: 12	x	x	x		×.	x		x)	< x		x		x	x	x
	Selenium	NDPs: 0 Tests: 12	x	x	x		ĸ	x		x)	< x		x		x	x	x
	Vanadium Zinc	NDPs: 0 Tests: 12	x	x	x		K	x		x	>	<mark>< x</mark>		x		x	x	x
		NDPs: 0 Tests: 12	x	x	x		ĸ	x		x	>	<mark>(</mark> X		x		x	x	x
pH	All	NDPs: 0 Tests: 12	x	x		x	×	,	< >	()	<mark><</mark>	x	×	x)	(x
Phenols by HPLC (S)	All	NDPs: 0 Tests: 1							×	<mark>د</mark>								
Sample description	All	NDPs: 0 Tests: 12	x	x	×		K	X		x)	<		X		x	X	x
Semi Volatile Organic Compounds	All	NDPs: 0 Tests: 1								x								
Total Organic Carbon	All	NDPs: 0 Tests: 12	x	x	x		×.	x		x	>	< x		x		x	x	x
TPH CWG GC (S)	All	NDPs: 0 Tests: 1								×								
VOC MS (S)	All	NDPs: 0 Tests: 1									x					1		

ALcontrol Laboratories Analytical Services Validated SDG: 101006-33 Grontmij **Customer:** Job: H_GRONTMIJ_SOL-27 Attention: Gareth Taylor **Client Reference:** Order No.: Stagborough **Report No:** 100215 Location: **Sample Descriptions**

very fine <0.0	063mm fine	0.063mm - 0.1mm	medium	0.1mm -	2mm	coarse	2mm - 10mm	very coarse	>10mm		
Lab Sample No(s)	Customer Sample Ref	Depth (m)	C	olour	Descr	ription	Grain size	Inclusions	Inclusions 2		
2192768	HP7	0.60	Dar	k Brown	Sandy	/ Loam	0.1 - 2 mm	Stones	N/A		
2192813	HP4		Dar	k Brown	Sandy	y Clay	0.1 - 2 mm	Stones	Vegetation		
2192827	HP6	0.30	Dar	k Brown	Sandy	y Clay	0.1 - 2 mm	Stones	N/A		
2192862	HP4	0.30	Dar	k Brown	Sa	and	0.1 - 2 mm	Stones	N/A		
2192875	HP2	0.30	Dar	k Brown	Sa	and	0.1 - 2 mm	Stones	N/A		
2192906	HP9	0.65	Ligh	nt Brown	Clay	Loam	0.063 - 0.1 mm	Stones	None		
2192914	HP8		Dar	k Brown	Sa	and	0.1 - 2 mm	Stones	N/A		
2192937	HP11	0.35	Dar	k Brown	Sa	and	0.1 - 2 mm	Stones	N/A		
2192975	HP3		Dar	k Brown	Sandy	y Clay	0.1 - 2 mm	Stones	Vegetation		
2193052	HP10	0.30	Dar	k Brown	Sandy Clay		0.1 - 2 mm	Stones	Vegetation		
2193068	HP9	0.30		Grey	Sandy	Sandy Clay 0.1 - 2 mm		andy Clay 0.1 - 2 mm Sto		Stones	N/A
2193172	HP11		Dar	k Brown	Loamy	y Sand	0.1 - 2 mm	Stones	Vegetation		

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Validated	ALcontrol Laboratories Analytical Services								
SDG: Job: Client Reference:	101006-33 H_GRONTMIJ_SOL-27	Customer: Attention: Order No.:	Grontmij Gareth Taylor						
Location:	Stagborough	Report No:	100216						

Test Completion Dates

Lab Sample No(s)	2192768	2192813	2192827	2192862	2192875	2192906	2192914	2192937	2192975	2193052
Customer Sample Ref.	HP7	HP4	HP6	HP4	HP2	HP9	HP8	HP11	HP3	HP10
AGS Ref.										
Depth	0.60		0.30	0.30	0.30	0.65		0.35		0.30
Туре	SOLID									
	002.5	00215	00215	001.0	00115		002.0	00215	00215	00215
Asbestos Containing Material Screen						11/10/2010				
Boron Water Soluble	12/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010	13/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010
Cyanide Comp/Free/Total/Thiocyanate						12/10/2010				
EPH CWG (Aliphatic) GC (S)						13/10/2010				
EPH CWG (Aromatic) GC (S)						13/10/2010				
GRO by GC-FID (S)						14/10/2010				
Hexavalent Chromium (s)	11/10/2010	11/10/2010	11/10/2010	11/10/2010	11/10/2010	13/10/2010	11/10/2010	11/10/2010	11/10/2010	13/10/2010
Metals by iCap-OES (Soil)	12/10/2010	12/10/2010	13/10/2010	12/10/2010	12/10/2010	14/10/2010	12/10/2010	12/10/2010	13/10/2010	12/10/2010
pH	12/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010	11/10/2010	12/10/2010	12/10/2010	12/10/2010	11/10/2010
Phenols by HPLC (S)						12/10/2010				
Sample description	08/10/2010	08/10/2010	08/10/2010	08/10/2010	08/10/2010	11/10/2010	08/10/2010	08/10/2010	08/10/2010	08/10/2010
Semi Volatile Organic Compounds						13/10/2010				
Total Organic Carbon	12/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010	13/10/2010	12/10/2010	12/10/2010	12/10/2010	12/10/2010
TPH CWG GC (S)						14/10/2010				
VOC MS (S)						15/10/2010				

Lab Sample No(s)	2193068	2193172
Customer Sample Ref.	HP9	HP11
AGS Ref.		
Depth	0.30	
Туре	SOLID	SOLID
Boron Water Soluble	12/10/2010	12/10/2010
Hexavalent Chromium (s)	13/10/2010	11/10/2010
Metals by iCap-OES (Soil)	13/10/2010	13/10/2010
pН	11/10/2010	12/10/2010
Sample description	08/10/2010	08/10/2010
Total Organic Carbon	12/10/2010	12/10/2010

Validated	ALcontrol Laboratories Analytical Services												
SDG: Job: Client Reference:	101006-3 H_GRON		DL-27		A	Atte			ntmij eth Taylor				
Location:	Stagboro	ugh					ort No:	1002	216				
Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aquocus' sottled sample. diss.fitt Disolved / filtered sample. tot.unfit subcontracted test. * % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	E Lab	Sample Ref. Depth (m) Sample Type Date Sampled Jate Received SDG Ref Sample No.(s) GS Reference	HP10 0.30 Soil/Solid 04/10/2010 06/10/2010 101006-33 2193052		HP11 Soil/Solid 04/10/2010 06/10/2010 101006-33 2193172		HP11 0.35 Soil/Solid 04/10/2010 06/10/2010 101006-33 2192937		HP2 0.30 Soil/Solid 03/10/2010 06/10/2010 101006-33 2192875	HP3 Soil/Solid 03/10/2010 06/10/2010 101006-33 2192975		HP4 Soil/Solid 03/10/2010 06/10/2010 101006-33 2192813	
Component Soil Organic Matter (SOM)	LOD/Units <0.35 %	Method TM132	5.41		8.38	_	4.84		1.55	5.64		7.12	
	<0.35 %	111132	5.41	#		#		#	1.55	5.64	#	7.12	#
рН	1 pH Units	TM133	7.68	м	7.24	м	7.25	м	7.77 M	5.86	м	7.11	м
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	#	<0.6	#	<0.6	#	<0.6	<0.6	#	<0.6	#
Arsenic	<0.6 mg/kg	TM181	11.2	м	11.4	м	10.7	м	5.18 M	9.92	м	10.8	м
Barium	<0.6 mg/kg	TM181	206	WI #	109	WI #	140	wi #	105 #	99.9	#	177	#
Beryllium	<0.01	TM181	1.21		1.08		1.07		0.663	1.21		1.83	
Cadmium	mg/kg <0.02 mg/kg	TM181	0.994	м	0.852	м	0.784	м	0.485 M	0.64	м	1.13	м
Chromium	<0.9 mg/kg	TM181	32		16.3		16.6		13.1	19.9		21.8	
Copper	<1.4 mg/kg	TM181	31.2	м	76.6	м	35.9	м	<u>М</u> 15.5	31.2	м	158	м
Lead	<0.7 mg/kg	TM181	37.9	м	89	M	57.4	м	19.2	52.1	м	134	M
Mercury	<0.14	TM181	0.37	м	0.308	M	0.469	м	0.456	0.19	м	0.215	M
Nickel	mg/kg <0.2 mg/kg	TM181	28.9	М	24.2	м	21.8	м	M 13.2	23	M	32.1	м
Selenium	<1 mg/kg	TM181	1.39	м	1.42	м	1.04	м	M <1	1.09	м	1.15	м
Vanadium	<0.2 mg/kg	TM181	26.7	#	22.6	#	23.4	#	# 17.1	24.5	#	27.4	#
Zinc	<1.9 mg/kg	TM181	167	#	218	#	153	#	# 54.1	136	#	242	#
Boron, water soluble	<1 mg/kg	TM222	<1	м	1.36	м	<1	м	M <1	<1	M	<1	м
				М		М		М	М		M		м
													_
													_
													_

Validated	ALcontrol Laboratories Analytical Services												
SDG: Job: Client Reference:	101006-3 H_GRON		DL-27		Atte	stomer: ention: er No.:		ntmij eth Taylor					
Location:	Stagboro	ugh			Rep	ort No:	100	216					
Results Legend	Customer	Sample Ref.	HP4	HP6		HP7		HP8		HP9		HP9	
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. subcontracted test. * % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	Lab S A	Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s) GS Reference	0.30 Soil/Solid 03/10/2010 06/10/2010 101006-33 2192862	0.30 Soil/Soi 03/10/20 06/10/20 101006- 219282	10 10 33	0.60 Soil/Solid 03/10/201 06/10/201 101006-3: 2192768	0 0 3	Soii/Solid 03/10/2010 06/10/2010 101006-33 2192914		0.30 Soii/Solid 04/10/2010 06/10/2010 101006-33 2193068		0.65 Soil/Solid 04/10/2010 06/10/2010 101006-33 2192906	
Component Asbestos Containing	LOD/Units -	Method TM001										No ACM Detecte	ed
Material Screen Phenols, Total monohydric	<0.025	TM062 (S)										<0.025	_
	mg/kg												м
Soil Organic Matter (SOM)	<0.35 %	TM132	1.5	3.28 #	#	6.02	#	1.84	#	7.79	#	7.05	#
рН	1 pH Units	TM133	7.39	8.15 M	м	6.72	м	6.73	м	7.01	м	7.56	м
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	<0.6		<0.6		<0.6		<0.6		<0.6	
Cyanide, Total	<1 mg/kg	TM153		#	#		#		#		#	<1	# M
Thiocyanate	<1 mg/kg	TM153										<1	
Antimony	<0.6 mg/kg	TM181										<0.6	м
Arsenic	<0.6 mg/kg	TM181	5.91	6.9		9.73		25.1		9.84		12.2	#
Barium	<0.6 mg/kg	TM181	53.3	M 130	м	141	м	75.2	м	116	М	119	м
Beryllium	<0.01	TM181	0.574	# 0.94	#	1.73	#	0.792	#	1.47	#	2.47	#
Cadmium	mg/kg <0.02	TM181	0.361	0.572		1.4		0.562		1.03		0.912	м
	mg/kg		I	м	M		м		м		М		м
Chromium	<0.9 mg/kg	TM181		15 M	м	20.6	м	14.1	м	17.2	м	24.3	м
Copper	<1.4 mg/kg	TM181	14.5	21.4 M	м	41	м	15.2	м	38.3	м	41.1	м
Lead	<0.7 mg/kg	TM181	19.2	28.6 VI	м	49.9	м	25	м	43.7	м	48.6	м
Mercury	<0.14 mg/kg	TM181	0.484	<0.14		0.215	м	0.496	м	0.231	м	<0.14	м
Nickel	<0.2 mg/kg	TM181	13.2	22.6 M		42.9	M	14.2	м	41.2	м	47.9	м
Selenium	<1 mg/kg	TM181	<1	<1		1.84		<1		1.12		1.06	
Vanadium	<0.2 mg/kg	TM181	19.2	# 20.1	#	28.3	#	18.4	#	22.1	#	36.9	#
Zinc	<1.9 mg/kg	TM181	46.8	# 89.6		284	#	66	#	214	#	279	#
Boron, water soluble	<1 mg/kg	TM222	<1	M 1.14	м	2.56	М	<1	м	2.6	М	3.85	М
				M	М		М		м		М		м
						<u> </u>		<u> </u>					
						1							
						<u> </u>		<u> </u>					
						<u> </u>							
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	Validated		ALco	ontrol Lab	oratories	s Analy	vtica	I Services	5	
SDG		101006-3	33		С	ustomer:	Gro	ntmij		
Job:	t Reference:	H_GRON	NTMIJ_SC	DL-27		ttention: order No.:	Gar	eth Taylor		
	tion:	Stagbord	ough		-	eport No:	100	216		
Semi	i Volatile Organic					•				
#	Results Legend ISO17025 accredited.		Sample Ref.	HP9						
	mCERTS accredited. Aqueous / settled sample. Dissolved / filtered sample.		Depth (m)	0.65						
	Total / unfiltered sample. subcontracted test.		Sample Type Date Sampled	Soil/Solid 04/10/2010						
**	% recovery of the surrogate standard to check the efficiency of the method. The results of the	,	Date Received SDG Ref	06/10/2010 101006-33						
	individual compounds within the samples are not corrected	Lab	Sample No.(s) GS Reference	2192906						
Compo	for this recovery.	LOD/Units	Method							
Pheno	I	<100 µg/kg	TM157	<100						
Pentac	hlorophenol	<100 µg/kg	TM157	<100						
n-Nitro	so-n-dipropylamine	<100 µg/kg	TM157	<100						
Nitrobe	enzene	<100 µg/kg	TM157	<100						
Isopho	rone	<100 µg/kg	TM157	<100						
Hexac	hloroethane	<100 µg/kg	TM157	<100						
Hexac	hlorocyclopentadiene	<100 µg/kg	TM157	<100						
Hexac	hlorobutadiene	<100 µg/kg	TM157	<100						
Hexac	hlorobenzene	<100 µg/kg	TM157	<100						
n-Dioc	tyl phthalate	<100 µg/kg	TM157	<100						
Dimeth	yl phthalate	<100 µg/kg	TM157	<100						
Diethyl	phthalate	<100 µg/kg	TM157	<100						
	tyl phthalate	<100 µg/kg	TM157	<100						
Dibenz		<100 µg/kg	TM157	197						
Carbaz		<100 µg/kg	TM157	<100						
	enzyl phthalate	<100 µg/kg	TM157	<100						
	Ethylhexyl) phthalate		TM157	<100						
	• • • •	<100 µg/kg								
	Chloroethoxy)methane	<100 µg/kg	TM157	<100						
	Chloroethyl)ether	<100 µg/kg	TM157	<100						
Azobe		<100 µg/kg	TM157	<100						
4-Nitro	phenol	<100 µg/kg	TM157	<100						
4-Nitro	aniline	<100 µg/kg	TM157	<100						
4-Meth	ylphenol	<100 µg/kg	TM157	<100						
4-Chlo	rophenylphenylether	<100 µg/kg	TM157	<100						
4-Chlo	roaniline	<100 µg/kg	TM157	<100						
4-Chlo	ro-3-methylphenol	<100 µg/kg	TM157	<100						
4-Bron	nophenylphenylether	<100 µg/kg	TM157	<100						
3-Nitro	aniline	<100 µg/kg	TM157	<100						
2-Nitro	phenol	<100 µg/kg	TM157	<100						
2-Nitro	aniline	<100 µg/kg	TM157	<100						
2-Meth	ylphenol	<100 µg/kg	TM157	<100						
1,2,4-7	richlorobenzene	<100 µg/kg	TM157	<100						
2-Chlo	rophenol	<100 µg/kg	TM157	<100						
	nitrotoluene	<100 µg/kg	TM157	<100						
	nitrotoluene	<100 µg/kg	TM157	<100						
	nethylphenol	<100 µg/kg	TM157	<100						
	chlorophenol		TM157	<100						
	•	<100 µg/kg								
	richlorophenol	<100 µg/kg	TM157	<100						
2,4,5-1	richlorophenol	<100 µg/kg	TM157	<100						

				ntrol Lab				•	
DG:		101006-3			stomer:	Gror	ntmij oth Toulor		
lob:	t Reference:	H_GRON	ITMIJ_SC	DL-27	ention: ler No.:	Gare	eth Taylor		
_ocat		Stagboro	uah		ort No.:	1002	216		
		-				1002			
	Volatile Organic Results Legend		10S Sample Ref.	HP9					
м	ISO17025 accredited. mCERTS accredited.								
diss.filt	Aqueous / settled sample. Dissolved / filtered sample.		Depth (m) Sample Type	0.65 Soil/Solid					
+	Total / unfiltered sample. subcontracted test.		Date Sampled	04/10/2010					
	% recovery of the surrogate standard to check the efficiency of the method. The results of the		Date Received SDG Ref	06/10/2010 101006-33					
	individual compounds within the samples are not corrected	Lau	Sample No.(s) GS Reference	2192906					
	for this recovery.		Method						
Compo 1,4-Dic	nent hlorobenzene	LOD/Units <100 µg/kg	TM157	<100					
1.3-Dic	hlorobenzene	<100 µg/kg	TM157	<100					
	hlorobenzene	<100 µg/kg	TM157	<100					
	onaphthalene	<100 µg/kg	TM157	<100					
	ylnaphthalene	<100 µg/kg	TM157	562					
				<100					
	hthylene	<100 µg/kg	TM157						
Acenap		<100 µg/kg	TM157	<100					
Anthrac		<100 µg/kg	TM157	<100	 				
	a)anthracene	<100 µg/kg	TM157	236					
	b)fluoranthene	<100 µg/kg	TM157	228					
Benzo(k)fluoranthene	<100 µg/kg	TM157	129					
Benzo(a)pyrene	<100 µg/kg	TM157	167					
Benzo(g,h,i)perylene	<100 µg/kg	TM157	175					
Chryse	ne	<100 µg/kg	TM157	338					
Fluoran	ithene	<100 µg/kg	TM157	506					
Fluoren	ie	<100 µg/kg	TM157	<100					
Indeno	(1,2,3-cd)pyrene	<100 µg/kg	TM157	<100					
Phenar	nthrene	<100 µg/kg	TM157	862					
Pyrene		<100 µg/kg	TM157	431					
Naphth	alene	<100 µg/kg	TM157	301					
Dibenzo	o(a,h)anthracene	<100 µg/kg	TM157	<100					

	101000 0	22			0		0	atmii		
SDG: Job:	101006-3 H_GRON) _27		Custome Attention		Gron	ntmij eth Taylor		
Client Reference:			JL-21		Order No		Gale	an rayioi		
Location:	Stagboro	ugh			Report N	o:	1002	216		
TPH CWG (S)										
Results Legend # ISO17025 accredited.	Customer	Sample Ref.	HP9							
M mCERTS accredited. aq Aqueous / settled sample.		Depth (m)	0.65							
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * subcontracted test.		Sample Type Date Sampled	Soil/Solid 04/10/2010							
** % recovery of the surrogate standard to check the efficiency		ate Received SDG Ref	06/10/2010 101006-33							
of the method. The results of the individual compounds within		Sample No.(s)	2192906							
the samples are not corrected for this recovery.	A	GS Reference								
Component Aliphatics >C12-C16	LOD/Units <100 μg/kg	Method TM173	18700							
Aliphatics >C16-C21	<100 µg/kg	TM173	12600							
Aliphatics >C21-C35	<100 µg/kg	TM173	23900							
Aliphatics >C35-C44	<100 µg/kg	TM173	2280							
Aromatics >EC12-EC16	<100 µg/kg	TM173	16500							
Aromatics >EC16-EC21	<100 µg/kg	TM173	36300							
Aromatics >EC21-EC35	<100 µg/kg	TM173	92600							
Aromatics >EC35-EC44	<100 µg/kg	TM173	20900							
Aromatics >EC40-EC44	<100 µg/kg	TM173	6020							
Total Aliphatics >C12-C44	<100 µg/kg	TM173	57500							
Total Aromatics	<100 µg/kg	TM173	166000							
>EC12-EC44 Total Aliphatics >C5-35	<100 µg/kg	TM173	55200							
Total Aliphatics >C5-C44	<100 µg/kg	TM173	57500							
Total Aromatics >C5-35	<100 µg/kg	TM173	145000							
Total Aromatics >C6-C44	<100 µg/kg	TM173	166000							
Total Aliphatics & Aromatics	<100 µg/kg	TM173	201000							
>C5-35 Total Aliphatics & Aromatics	<100 µg/kg	TM173	224000							
>C5-C44 GRO Surrogate %	%	TM089	15							
recovery**										
GRO >C5-C12	<44 µg/kg	TM089	<44							
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	#						
Benzene	<10 µg/kg	TM089	<10	и						
Toluene	<2 µg/kg	TM089	6.72	и						
Ethylbenzene	<3 µg/kg	TM089	12.3							
m,p-Xylene	<6 µg/kg	TM089	<6	4						
o-Xylene	<3 µg/kg	TM089	<3	4						
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	4						
Aliphatics >C6-C8	<10 µg/kg	TM089	<10							
Aliphatics >C8-C10	<10 µg/kg	TM089	<10							
Aliphatics >C10-C12	<10 µg/kg	TM089	<10							
Total Aliphatics >C5-C12	<10 µg/kg	TM089	<10							
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10							
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10							
Aromatics >EC8-EC10	<10 µg/kg	TM089	13.4							
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10							
Total Aromatics >EC5-EC12	<10 µg/kg	TM089	23.5							
m,p,o-Xylene	<10 µg/kg	TM089	<10							
BTEX, Total	<10 µg/kg	TM089	19							

Validated	ALcontrol Laboratories Analytical Services								
SDG: Job: Client Reference:	101006-3 H_GRON	ITMIJ_SC)L-27		Customer: Attention: Order No.:	Gar	ontmij reth Taylor		
Location:	Stagboro	ugn			Report No:	100	216		
YOCC MS (S) Results Legend # ISO17025 accredited. M mCERTS accredited. IdesRist accredited. aq Aqueous / settled sample. diss.fitti Discolved / fittered sample. tot.unfitt Total / unfiltered sample. * subcontracted test. ** % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected for this recovery.	Lab	Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Ref Sample No.(s) GS Reference	HP9 0.65 Soil/Solid 04/10/2010 06/10/2010 101006-33 2192906						
Component Dibromofluoromethane**	LOD/Units %	Method TM116	99.1						
	%								
Toluene-d8**		TM116	78.4						
4-Bromofluorobenzene**	%	TM116	154						
Dichlorodifluoromethane	<4 µg/kg	TM116		м					
Chloromethane	<7 µg/kg	TM116		#					
Vinyl Chloride	<10 µg/kg	TM116	<10	#					
Bromomethane	<13 µg/kg	TM116	<13	м					
Chloroethane	<14 µg/kg	TM116	<14	м					
Trichlorofluorormethane	<6 µg/kg	TM116	<6	м					
1.1-Dichloroethene	<10 µg/kg	TM116	<10	#					
Carbon Disulphide	<7 µg/kg	TM116	<7	и					
Dichloromethane	<10 µg/kg	TM116	<10						
Methyl Tertiary Butyl Ether	<11 µg/kg	TM116	<11	#					
trans-1-2-Dichloroethene	<11 µg/kg	TM116	<11	М					
1.1-Dichloroethane	<8 µg/kg	TM116	<8	М					
cis-1-2-Dichloroethene	<5 µg/kg	TM116	<5	М					
2.2-Dichloropropane	<12 µg/kg	TM116	<12	м					
Bromochloromethane	<14 µg/kg	TM116	<14	М					
Chloroform	<8 µg/kg	TM116		м					
1.1.1-Trichloroethane	<7 µg/kg	TM116		м					
1.1-Dichloropropene	<11 µg/kg	TM116		м					
Carbontetrachloride		TM116		м					
	<14 µg/kg			м					
1.2-Dichloroethane	<5 µg/kg	TM116		м					
Benzene	<9 µg/kg	TM116		м					
Trichloroethene	<9 µg/kg	TM116		м					
1.2-Dichloropropane	<12 µg/kg	TM116		м					
Dibromomethane	<9 µg/kg	TM116	<9	м					
Bromodichloromethane	<7 µg/kg	TM116	<7	м					
cis-1-3-Dichloropropene	<14 µg/kg	TM116	<14	м					
Toluene	<5 µg/kg	TM116	23.7	м					
trans-1-3-Dichloropropene	<14 µg/kg	TM116	<14						
1.1.2-Trichloroethane	<10 µg/kg	TM116	<10	м					
1.3-Dichloropropane	<7 µg/kg	TM116	<7						
Tetrachloroethene	<5 µg/kg	TM116	6.7	#					
Dibromochloromethane	<13 µg/kg	TM116	<13	M					
1.2-Dibromoethane	<12 µg/kg	TM116	<12	M					
Chorobenzene	<5 µg/kg	TM116	<5	М					
1.1.1.2-Tetrachloroethane	<10 µg/kg	TM116	<10	м					
Ethylbenzene	<4 µg/kg	TM116	69.1	м					
			1	M					

Validated	ALcontrol Laboratories Analytical Services								
SDG: Job: Client Reference:		33 NTMIJ_SC			Custe Atter Orde	omer: Gr ntion: Ga r No.:	ontmij reth Taylor		
Location:	Stagboro	ough			Repo	ort No: 10	0216		
VOCC MS (S) Results Legend # ISO17025 accredited. mCERTS accredited. aq Aqueous / settled sample. tot.unfitt Total / unfiltered sample. * subcontracted test. * % recovery of the surrogate standard to check the efficiency of the method. The results of the individual compounds within the samples are not corrected	c Lab	Sample Ref. Depth (m) Sample Type Date Sampled Jate Received SDG Ref Sample No.(s) GS Reference	HP9 0.65 Soil/Solid 04/10/2010 06/10/2010 101006-33 2192906						
for this recovery. Component	LOD/Units	Method							
p/m-Xylene	<14 µg/kg	TM116	<14	#					
o-Xylene	<10 µg/kg	TM116	<10	м					
Styrene	<10 µg/kg	TM116	<10	м					
Bromoform	<10 µg/kg	TM116	<10						
Isopropylbenzene	<5 µg/kg	TM116	<5	м					
1.1.2.2-Tetrachloroethane	<10 µg/kg	TM116	<10	М					
1.2.3-Trichloropropane	<17 µg/kg	TM116	<17	#					
Bromobenzene	<10 µg/kg	TM116	<10	М					
Propylbenzene	<11 µg/kg	TM116	<11	М					
2-Chlorotoluene	<9 µg/kg	TM116	<9	М					
1.3.5-Trimethylbenzene	<8 µg/kg	TM116	<8	М					
4-Chlorotoluene	<12 µg/kg	TM116	<12	#					
tert-Butylbenzene	<12 µg/kg	TM116	<12	М					
1.2.4-Trimethylbenzene	<9 µg/kg	TM116	<9	#					
sec-Butylbenzene	<10 µg/kg	TM116	<10	#					
				М					
4-Isopropyltoluene	<11 µg/kg	TM116	<11	М					
1.3-Dichlorobenzene	<6 µg/kg	TM116	<6	М					
1.4-Dichlorobenzene	<5 µg/kg	TM116	<5	М					
n-Butylbenzene	<10 µg/kg	TM116	<10	М					
1.2-Dichlorobenzene	<12 µg/kg	TM116	<12	М					
1.2-Dibromo-3-chloropropan e	<14 µg/kg	TM116	<14	М					
1.2.4-Trichlorobenzene	<6 µg/kg	TM116	<6	#					
Hexachlorobutadiene	<12 µg/kg	TM116	<12						
Naphthalene	<13 µg/kg	TM116	<13	м					
1.2.3-Trichlorobenzene	<6 µg/kg	TM116	<6	м					
e Tert-amyl methyl ether 1.2.4-Trichlorobenzene Hexachlorobutadiene Naphthalene	<15 μg/kg <6 μg/kg <12 μg/kg <13 μg/kg	TM116 TM116 TM116 TM116 TM116	<15 <6 <12 <13	#					



Table of Results - Appendix

G N	umber : 10100	06-33		Client	H_GRONTMIJ_S	OL		Client Ref :				
POF	RT KEY						R	esults expressed as (e.g.) 1.03E-07 is equivale	nt to 1.03x10		
DP	No Determination Po	ssible	#	ISO 17025 Accredited		* Subcontracted Test M MCERTS						
FD	No Fibres Detected		PFD	Possible Fibres Detected	cted » Result previously reported EC Equivalent C (Incremental reports only)							
Methe	od detection limits are	not always achievable o	due to vario	us circumstances beyond	our control				Wet/Dec	Currente		
I	Method No		Refere	nce			Description		Wet/Dry Sample ¹	Surrogate Corrected		
	PM001				Preparation of Sample	es for Metals	Analysis					
	PM024	Modified BS 1377			Soil preparation inclue Containing Material	ling homoger	isation, moisture screens of soils for Asbe	stos				
	TM001	In - house Method			Determination of asbe	estos containi	ng material by screening on solids					
	TM062 (S)	National Grid Property Collection & Analysis of Sites version 1 Sec 3.9	of Samples fro		Determination of Phenols in Soils by HPLC							
	TM089	Modified: US EPA Meth	hods 8020 &	602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)							
	TM116	Modified: US EPA Meth 610 & 602	hod 8260, 81	20, 8020, 624,	Determination of Vola	tile Organic C	ompounds by Headspace / GC-MS					
	TM132	In - house Method			ELTRA CS800 Operato	ors Guide						
	TM133	BS 1377: Part 3 1990;	BS 6068-2.5		Determination of pH i	n Soil and Wa	ter using the GLpH pH Meter					
	TM151	Method 3500D, AWWA	4/APHA, 20th	Ed., 1999	Determination of Hex	avalent Chror	nium using Kone analyser					
	TM153	Method 4500A,B,C, I, 1999	m awwa/ap	HA, 20th Ed.,	Determination of Tota the 'Skalar SANS+ Sys		e (Easily Liberatable) Cyanide and Thiocy ted Flow Analyser	anate using				
	TM157	HP 6890 Gas Chromat 5973 Mass Selective D	,	,	Determination of SVOC in Soils by GC-MS extracted by sonication in DCM/Acetone							
	TM173	Analysis of Petroleum Environmental Media - Criteria			Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID							
	TM181	US EPA Method 6010B	3		Determination of Rout	tine Metals in	Soil by iCap 6500 Duo ICP-OES					
	TM222	In-House Method			Determination of Hot Spectrometer	Water Solub	e Boron in Soils (10:1 Water:soil) by IRIS	Emission				

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C.

NA = not applicable.

APPENDIX

APPENDIX

- Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH₄ by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.
- 2. Samples will be run in duplicate upon request, but an additional charge may be incurred.
- 3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.
- 4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
- 5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
- 6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.
- 7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.
- 8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.
- 9. NDP No determination possible due to insufficient/unsuitable sample.
- 10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals total metals must be requested separately.
- 11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.
- 12. Results relate only to the items tested
- Surrogate recoveries Most of our organic methods include surrogates, the recovery of which is monitored and reported.
 For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 130 %.
- 14. **Product analyses** Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
- 15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).
- 16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).
- 17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
- 18. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.
- 19. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
- 19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
- 21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.
- 22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.
- 23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

LIQUID MATRICES EXTRACTION SUMMARY										
ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	SISATANA							
PAH MS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS							
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID							
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID							
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID							
PCB 7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS							
PCB TOTAL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GS MS							
SVOC	DCM	LIQUID/LIQUID SHAKE	GC MS							
FREE SULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC							
PEST OCP/OPP	DCM	LIQUID/LIQUID SHAKE	GC MS							
TRIAZINE HERBS	DCM	LIQUID/LIQUID SHAKE	GC MS							
PHENOLS MS TPH by INFRA RED (IR)	DCM TCE	SOLID PHASE EXTRACTION LIQUID/LIQUID EXTRACTION	GC MS HPLC							
MINERAL OIL by IR	TCE	LIQUID/LIQUID EXTRACTION	HPLC							
GLYCOLS	NONE	DIRECT INJECTION	GC FID							

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
Solvent Extractable Matter	D&C	DCM	SOXTHERM	GRAVIMETRIC
Cyclohexane Ext. Matter	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
Thin Layer Chromatography	D&C	DCM	SOXTHERM	IATROSCAN
Elemental Sulphur	D&C	DCM	SOXTHERM	HPLC
Phenols by GCMS	WET	DCM	SOXTHERM	GC-MS
Herbicides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
Pesticides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Min oil)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Cleaned up)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH CWG by GC	D&C	HEXANE:ACETONE	END OVER END	GC-FID
PCB tot / PCB con	D&C	HEXANE:ACETONE	END OVER END	GC-MS
Polyaromatic Hydrocarbons (MS)	WET	HEXANE:ACETONE	Microwave TM218.	GC-MS
C8-C40 (C6-C40)EZ Flash	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Polyaromatic Hydrocarbons Rapid GC	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Semi Volatile Organic Compounds	WET	DCM:ACETONE	SONICATE	GC-MS

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content.

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -

Trace – Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in

MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Asbestos Type

Common Name

Chrysotile Amosite Crocidolite Fibrous Actinolite Fibrous Anthophyllite Fibrous Tremolite White Asbestos Brown Asbestos Blue Asbestos --



Unit 7-8 Hawarden Business Park Manor Road (off Manor Lane) Hawarden Deeside CH5 3US Tel: (01244) 528700 Fax: (01244) 528701 email: mkt@alcontrol.com Website: www.alcontrol.com

Grontmij Radcliffe House 3rd Floor Blenheim Court, Lode Iane Solihull West Midlands B912AA

Attention: Gareth Taylor

Please note that these lab results relate to multiple sites the relevant addresses to this site are those on Stagborough Way, Herondale, Stafford Lane and Swallowfields Drive.

CERTIFICATE OF ANALYSIS

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 10 June 2011 H_GRONTMIJ_SOL 110602-58

Part 2a Assistance 133432

We received 29 samples on Thursday June 02, 2011 and 25 of these samples were scheduled for analysis which was completed on Friday June 10, 2011. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan Operations Manager



CERTIFICATE OF ANALYSIS

Validated

SDG:	110602-58	Location:	Part 2a Assistance	Order Number:
Job:	H_GRONTMIJ_SOL-54	Customer:	Grontmij	Report Number: 133432
Client Reference:		Attention:	Gareth Taylor	Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
3588820	1 NEWLANDS LANE FIVEWAYS		0.30	31/05/2011
3588809	10 WESTGATE			31/05/2011
3588808	11 GOODWOOD			31/05/2011
3588826	11 NEWLANDS COURT FIVEWAYS		0.30	31/05/2011
3588818	110 STAFFORD LANE			31/05/2011
3588805	121 ARMITAGE ROAD			31/05/2011
3588806	125 ARMITAGE ROAD			31/05/2011
3588811	2 SANDOWN			31/05/2011
3588819	21 HERONDALE			31/05/2011
3588807	3 SLADE VIEW RISE			31/05/2011
3588787	3A BLAKE CLOSE			31/05/2011
3588810	4 KEMPTON			31/05/2011
3588813	41 SWALLOWFIELDS			31/05/2011
3588822	5 NEWLANDS COURT FIVEWAYS		0.30	31/05/2011
3588814	73 STAGBOROUGH			31/05/2011
3588815	8 STAGBOROUGH WAY			31/05/2011
3588788	83 BLAKE CLOSE			31/05/2011
3588823	9 NEWLANDS COURT FIVEWAYS		0.30	31/05/2011
3588803	99 ARMITAGE ROAD			31/05/2011
3588802	FIVEWAYS 1 NEWLANDS LANE			31/05/2011
3588798	FIVEWAYS 11 NEWLANDS COURT			31/05/2011
3588799	FIVEWAYS 5 NEWLANDS COURT			31/05/2011
3588800	FIVEWAYS 9 NEWLANDS COURT			31/05/2011
3588795	VIEW ST. 32 FOSTERS AVE.			31/05/2011
3588793	VIEW ST. 53 VIEW ST.			31/05/2011
3588797	VIEW ST. 9 WARD ST.			31/05/2011
3588790	VIEW ST. WS2		1.20	31/05/2011
3588791	VIEW ST. WS3		1.10	31/05/2011
3588789	VIEW ST. WS4		1.60	31/05/2011

Only received samples which have had analysis scheduled will be shown on the following pages.

ALcontrol Labor	ratories	С	ER	TIF	IC	ΑΤΙ	ΞC)F /	١N	AL	YS.	SIS	;									E	 Valid
	602-58 RONTMIJ_SOL-54	Location Custome Attentior	er:	Gro	ntmi	Assis ij Taylc		e							R	epo	rt M	uml Ium dec	ıbe		133432	2	
LIQUID Results Legend X Test	Lab Sample	No(s)	3588802	3588811	3588807	3588787	3588810 3588791	3588789	3588799	3588800	3588809 3588797	3588808	3588819	3588795	3588793	3588814	3588788	3588818	3588805	3588806			
No Determination Possible	Custom Sample Refe		FIVEWAYS 1	2 SANDOWN	3 SLADE VIEW	3A BLAKE CLOSE	4 KEMPTON VIEW ST. WS3	VIEW ST. WS4	FIVEWAYS 5	FIVEWAYS 9	10 WESTGATE VIEW ST. 9 WARD	11 GOODWOOD	21 HERONDALE	VIEW ST. 32	VIEW ST. 53 VIEW 41	73 STAGBOROUGH	83 BLAKE CLOSE	110 STAFFORD	121 ARMITAGE	125 ARMITAGE			
	AGS Refer	ence																					
	Depth (n)		- 10	<u>۲</u>		1.10	1.60															
	Contain	er	1l green glass bottle	11 green glass bottle	1l green glass bottle	1l green glass bottle 1l green glass bottle	1l green glass bottle Vial	Vial 1l green glass bottle	11 green glass bottle	1l green glass bottle	11 green glass bottle 11 green glass bottle	1l green glass bottle	1l green glass bottle	11 green glass bottle	11 green glass bottle	green glass	11 green glass bottle	green glass	glass	11 green glass hottle			
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 25		x x		x x		x			x x												
Mercury Dissolved	All	NDPs: 0 Tests: 25	x	x x	x	x x	x	x	x >	(X	x x	x	x x	x	x x	x	x >	x	x	×			
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 25	x	x x	x	x x	x	x	x >	(<mark>x</mark>	x x	x	x x	x	x x	x	x >	x	x	×			
VOC MS (W)	All	NDPs: 0 Tests: 3		2	<mark>(</mark>		x	×															

CERTIFICATE OF ANALYSIS

Validated

 SDG:
 110602-58
 Location:
 Part 2a Assistance
 Order Number:

 Job:
 H_GRONTMIJ_SOL-54
 Customer:
 Grontmij
 Report Number:
 133432

 Client Reference:
 Attention:
 Gareth Taylor
 Superseded Report:
 13432

$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Results Legend # ISO17025 accredited.	Cu	istomer Sample R	99 ARMITAGE ROA D	121 ARMITAGE RO AD	125 ARMITAGE RO AD	83 BLAKE CLOSE	3A BLAKE CLOSE	FIVEWAYS 5 NEWL ANDS COURT
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Non-conforming work. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted test. ** % recovery of the surrogate standar check the efficiency of the method. results of individual compounds will samples aren't corrected for the rec (F) Trigger breach confirmed	The I thin I :overy	Sample Type Date Sampled Date Received SDG Ref ab Sample No.(s) AGS Reference	31/05/2011 02/06/2011 110602-58	31/05/2011 02/06/2011 110602-58	31/05/2011 02/06/2011 110602-58	31/05/2011 02/06/2011 110602-58	31/05/2011 02/06/2011 110602-58	31/05/2011 02/06/2011 110602-58
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		1		0.367	0.327	0.881	0.297	0.301	2.25
undug/lug		µg/l		#	#	#	#	#	#
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		µg/l		#	#	#	#	#	#
And the second secon	Boron (diss.filt)	<9.4 µg/					#	#	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Cadmium (diss.filt)	<0.1 µg/	TM152						
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Chromium (diss.filt)		TM152						
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Copper (diss.filt)	<0.85	TM152	288	9.02	5.51	24.7	740	266
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Lead (diss.filt)	<0.02	TM152	0.107	0.293	1.09	0.165	0.311	0.266
Zinc (diss.filt) <0.41 µq/l TM152 TM152 74.4 # 7.67 # 29.2 # 14.5 # 606 # 94.9 # Mercury (diss.filt) <0.01	Nickel (diss.filt)		TM152	2.16	1.01	1.4	0.993	4.32	1.19
μq/l μg/l # # # # # Mercury (diss.filt) <0.01	Zinc (diss.filt)	1	TM152						
		T	TM183						
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CERTIFICATE OF ANALYSIS

Results Legend # ISO17025 accredited.	Ci	ustomer Sample R	11 GOODWOOD	21 HERONDALE	4 KEMPTON	FIVEWAYS 9 NEWL ANDS COURT	FIVEWAYS 11 NEW LANDS COURT	FIVEWAYS 1 NEWL ANDS LANE
M mCERTS accredited. § Non-conforming work. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate standarcheck the efficiency of the method. results of individual compounds with samples aren't corrected for the rec (F) Trigger breach confirmed	The thin I	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588808	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588819	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588810	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588800	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588798	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588802
Component	LOD/Units	Method						
Antimony (diss.filt)	<0.16 µg/l	TM152	0.344 #	0.266 #	0.421 #	0.489 #	0.381 #	0.246 #
Arsenic (diss.filt)	<0.12 µg/l	TM152	1.85 #	2.08 #	2.03 #	2.22 #	1.94 #	2.06 #
Boron (diss.filt)	<9.4 µg/i	I TM152	96.5 #	#	# 88.8 #	92.2 #	113 #	# 80.7 #
Cadmium (diss.filt)	<0.1 µg/	I TM152	<0.1	# <0.1 #	<0.1	<0.1	0.101	<0.1
Chromium (diss.filt)	<0.22	TM152	# 14.2	11.2	# 12.8	# 14.1	# 13.1	# 8.22 #
Copper (diss.filt)	μ <u>q/l</u> <0.85	TM152	# 49	# 96.6	# 32.7	# 176	# 48.5	# 73.3
Lead (diss.filt)	μg/l <0.02	TM152	# 0.109	# 0.184	# 0.093	# 0.048	# 0.057	# 0.231
Nickel (diss.filt)	μ <u>g/l</u> <0.15	TM152	# 1.68	# 0.594	# 1.6	# 0.559	# 1.02	# 1.79
Zinc (diss.filt)	μg/l <0.41	TM152	# 21.6	# 18	# 7.11	# 6.25	# 9.53	# 8.76
Mercury (diss.filt)	μ <u>q/l</u> <0.01	TM183	# <0.01	# <0.01	# <0.01	# <0.01	# <0.01	# <0.01
	µg/l		#	#	#	#	#	#
					<u> </u>			

CERTIFICATE OF ANALYSIS

Results Legend	C	ustomer Sample R	2 SANDOWN	3 SLADE VIEW RI	110 STAFFORD LA	73 STAGBOROUGH	8 STAGBOROUGH W	41 SWALLOWFIELD
# ISO17025 accredited. M mCERTS accredited. § Non-conforming work. aq Aqueous / settied sample. diss.fitt Dissolved / fittered sample. totunfit Total / unfittered sample. * Subcontractor test.		Depth (m) Sample Type Date Sampled Date Received	Water(GW/SW) 31/05/2011 02/06/2011	SE Water (GW/SW) 31/05/2011 02/06/2011	NE	Water(GW/SW) 31/05/2011 02/06/2011	AY Water (GW/SW) 31/05/2011 02/06/2011	S Water(GW/SW) 31/05/2011 02/06/2011
% recovery of the surrogate standa check the efficiency of the method. results of individual compounds wi samples aren't corrected for the rec (F) Trigger breach confirmed	The thin	SDG Ref Lab Sample No.(s) AGS Reference	110602-58 3588811	110602-58 3588807	110602-58 3588818	110602-58 3588814	110602-58 3588815	110602-58 3588813
Component	LOD/Units							
Antimony (diss.filt)	<0.16 µg/l	TM152	0.202 #	0.426	0.303 #	0.246 #	0.239 #	0.298 #
Arsenic (diss.filt)	<0.12 µq/l	TM152	1.92 #	1.85 #	2.03 #	2.32 #	2.03 #	2.16 #
Boron (diss.filt)	<9.4 µg/	/I TM152	107 #	128 #	123 #	135 #	118 #	123 #
Cadmium (diss.filt)	<0.1 µg/	/I TM152	0.201 #	<0.1 #	0.179	0.142 #	0.276 #	0.108 #
Chromium (diss.filt)	<0.22 µg/l	TM152	12.5 #	13.3 #	11.2 #	13.5 #		11.3 #
Copper (diss.filt)	<0.85 µg/l	TM152	118 #	175 #	120 #	19.2 #	91.2 #	9.23 #
Lead (diss.filt)	<0.02 µg/l	TM152	0.862 #	0.042 #	0.329 #	0.121 #	0.398 #	0.126 #
Nickel (diss.filt)	<0.15 µg/l	TM152	4.46 #	1.69 #	1.06 #	1.49 #	15.3 #	0.697 #
Zinc (diss.filt)	<0.41 µg/l	TM152	295 #	26 #	29.9 #	6.85 #	356 #	2.69 #
Mercury (diss.filt)	<0.01 μg/l	TM183	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 #

CERTIFICATE OF ANALYSIS

Validated

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 110602-58
 Location:
 Part 2a Assistance
 Order Number:

 Job:
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 Customer:
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 Report Number:
 133432

 Client Reference:
 Attention:
 Gareth Taylor
 Superseded Report:
 13432

$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Results Legend	Cu	Istomer Sample R	VIEW ST. 32 FOS	VIEW ST. 53 VIE	VIEW ST. 9 WARD	VIEW ST. WS2	VIEW ST. WS3	VIEW ST. WS4
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$ \begin{array}{c cluster total unifiered same same standard set. $									
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	diss.filt Dissolved / filtered sample.								
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	* Subcontracted test.								
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$, receivery of the bullegue bulleu	The							
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	results of individual compounds with	thin L		3588795	3588793	3588797	3588790	3588791	3588789
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		covery	AGS Reference						
$\begin{array}{ c c c c c c c } \hline \begin boxec matrix b$	Component	LOD/Units							
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Antimony (diss.filt)		TM152						
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Arcopio (digo filt)		TM152				0.525	11	0.010
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Arsenic (diss.liit)		11/11/52						
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Boron (diss.filt)		TM152						
And the second secon		p-5							
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Cadmium (diss.filt)	<0.1 µg/l	TM152						
$\begin{array}{ c c c c c c c } \hline \begin{tabular}{ c c c c c c c } \hline \begin{tabular}{ c c c c c c c } \hline \begin{tabular}{ c c c c c c c } \hline \begin{tabular}{ c c c c c c c } \hline \begin{tabular}{ c c c c c c c } \hline \begin{tabular}{ c c c c c c c } \hline \begin{tabular}{ c c c c c c c } \hline \begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Chromium (diss filt)	<0.22	TM152						
$\begin{array}{c c c c c c c c c c c c c c c c c c c $			1101132						
$\begin{array}{ c c c c c c c c c } \hline \begin{tabular}{ c c c c c c c } \hline \end{tabular} & \end{tabuar} & \$	Copper (diss.filt)		TM152						
$\begin{array}{c c c c c c c c c c c c c c c c c c c $					#		#	#	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Lead (diss.filt)	<0.02	TM152						
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		1	714450						
Vanadium (diss.filt) < 0.24 $\mu g/l TM1521 m m m m m m m m m m m m m m m m m m m$	Nickel (diss.filt)		IM152						
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Vanadium (diss filt)	1	TM152	#	#	#			
Zinc (diss.filt) <0.41 µg/l TM152 175 175 # 661 # 293 # 15.9 # 4.05 # <0.41 # Mercury (diss.filt) <0.01			1101102						
μg/l μg/l # # # # Mercury (diss.filt) <0.01	Zinc (diss.filt)	T. Contraction of the second s	TM152	175	661	293			
		µg/l		#	#	#	#		#
h h h h h h Image: Sector	Mercury (diss.filt)		TM183						
Image: series of the series		µg/l		#	#	#	#	#	#
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ALcontrol Laboratories CERTIFICATE OF ANALYSIS					S		Validated	
	110602-58 H_GRONTMIJ	I_SOL-54	Location: Customer: Attention:	Part 2a Assistand Grontmij Gareth Taylor		Order Number: Report Number: Superseded Repo	133432 ort:	
Results Legend # ISO17025 accredited. M mCERTS accredited. § Non-conforming work. aq Aqueous / settled sample. Dissolved / filtered sample. * Subcontracted test. * * % recovery of the surrogacheck the efficiency of the results of individual comp samples aren't corrected 1 (F) Trigger breach confirmed	e. e method. The ounds within for the recovery	Customer Sample R Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	10 WESTGATE Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588809					
component Antimony (diss.filt)	LOD/U		0.203					
Arsenic (diss.filt)	µg/l <0.1		2.18	#				
Boron (diss.filt)	µg/l <9.4		106	#				
Cadmium (diss.filt)	<0.1		<0.1	#				
		Ĵ		#				
Chromium (diss.filt)	<0.2 µg/l		13.9	#				
Copper (diss.filt)	8.0> ا/وµ		27.6	#				
Lead (diss.filt)	0.0> /ايو/		0.066	#				
Nickel (diss.filt)	<0.1 μg/l	5 TM152	1.47	#				
Zinc (diss.filt)		1 TM152	9.15	#				
Mercury (diss.filt)	<0.0	1 TM183	<0.01					
	µg/l			#				
		_						
		_						

CERTIFICATE OF ANALYSIS

PAH Sec NG - Auguo16 W Bit Minimization Bit Minimiz	PAH S	Spec MS - Aqueous	5 (W)							
Image: Section decision	#			Customer Sample R				83 BLAKE CLOSE	3A BLAKE CLOSE	
Naphthalene (aq) $< 0.1 \ \mu ql$ TM178 $< 0.1 \ \#$ $< 0.1 \ \#$ $< 0.1 \ \#$ $< 0.1 \ \#$ $< 0.1 \ \#$ $< 0.1 \ \#$ $< 0.1 \ \#$ $< 0.1 \ \#$ $< 0.1 \ \#$ $< 0.1 \ \#$ $< 0.015 \ \#$ $< 0.015 \ \#$ $< 0.015 \ \#$ $< 0.015 \ \#$ $< 0.015 \ \#$ $< 0.015 \ \#$ $< 0.015 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$ $< 0.011 \ \#$	aq diss.filt tot.unfilt *	Non-conforming work. Aqueous / settled sample. Dissolved / filtered sample. Total / unfiltered sample. Subcontracted test. % recovery of the surrogate standar check the efficiency of the method. results of individual compounds wit samples aren't corrected for the rec	The thin	Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s)	Water(GW/SW) 31/05/2011 02/06/2011 110602-58	Water(GW/SW) 31/05/2011 02/06/2011 110602-58	Water(GW/SW) 31/05/2011 02/06/2011 110602-58	31/05/2011 02/06/2011 110602-58	31/05/2011 02/06/2011 110602-58	Water(GW/SW) 31/05/2011 02/06/2011 110602-58
Ace and then (aq) <0.05 TM178 <0.015 <0.015 <0.015 <0.015 <0.015 <0.015 <0.015 <0.015 <0.015 <0.015 <0.015 <0.015 <0.015 <0.015 <0.015 <0.015 <0.015 <0.015 <0.015 <0.015 <0.015 <0.015 <0.015 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.017 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013 <0.013					-0.1	-0.4	-0.4	0.11	-0.4	10.4
Image: constraint of the constr	Naphtr	nalene (aq)	<0.1 µ	ig/i IM178						
Image: Market			µg/l		#	#	#	#	#	#
Fluoranthene (aq) < 0.017 $µq/l$ TM178 luq/l < 0.017 luq/l < 0.012 luq/l < 0.014 luq/l < 0.017 luq/l < 0.017 luq/l < 0.017 luq/l < 0.017 luq/l < 0.016 luq/l <t< td=""><td>Acena</td><td>phthylene (aq)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	Acena	phthylene (aq)								
$\mu q / l\mu q / l<$	Fluora	nthene (aq)	<0.01	7 TM178			<0.017		#	<0.017
Phenanthrene (aq) <0.022 TM178 <0.022 (0.022) (0.021) (0.014) (0.013) <th< td=""><td>Anthra</td><td>cene (aq)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	Anthra	cene (aq)								
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Phena	nthrene (aq)	<0.02	2 TM178	<0.022	<0.022	<0.022	<0.022	<0.022	<0.022
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Fluore	ne (aq)	<0.01	4 TM178						
$\mu q/l$ $\mu q/l$ $m q$ <td>Chryse</td> <td>ene (aq)</td> <td><0.01</td> <td>3 TM178</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Chryse	ene (aq)	<0.01	3 TM178						
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Pyrene	e (aq)	<0.01		<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Benzo	(a)anthracene (aq)	<0.01							
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Benzo	(b)fluoranthene (aq)	<0.02							
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Benzo	(k)fluoranthene (aq)	<0.02							
Dibenzo(a,h)anthracene (aq) <0.016 µq/l TM178 (m) <0.016 (m) <0.014 (m)	Benzo	(a)pyrene (aq)	<0.00							
Benzo(g,h,i)perylene (aq) <0.016 TM178 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016 <0.016		zo(a,h)anthracene	<0.01	6 TM178	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016
Indeno(1,2,3-cd)pyrene <0.014 TM178 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014 <0.014		(g,h,i)perylene (aq)	<0.01	6 TM178	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016
PAH, Total Detected µg/l TM178 none detected none detected none detected 0.11 none detected none detected		o(1,2,3-cd)pyrene	<0.01	4 TM178	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014
Image: series of the series	PAH, 1			TM178		none detected			none detected	
Indext of the second										
Image: series of the series										
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Image: Second										

CERTIFICATE OF ANALYSIS

PAH Spec MS - Aqueous Results Legend								
# ISO17025 accredited. M mCERTS accredited.		ustomer Sample R	11 GOODWOOD	21 HERONDALE	4 KEMPTON	FIVEWAYS 9 NEWL ANDS COURT	FIVEWAYS 11 NEW LANDS COURT	FIVEWAYS 1 NEWL ANDS LANE
Mon-conforming work. S Non-conforming work. aq Aqueous / settido sample. diss.fitt Dissolved / filtered sample. tot.unfitt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate standar check the efficiency of the method. results of individual compounds will samples aren't corrected for the rec	The thin	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588808	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588819	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588810	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588800	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588798	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588802
(F) Trigger breach confirmed Component	LOD/Units	s Method						
Naphthalene (aq)	<0.1 µg/		<0.1	<0.1	<0.1	<0.1	0.121	<0.1
Acenaphthene (aq)	<0.015	TM178	# <0.015 #	# <0.015 #	# <0.015 #	# <0.015 #	# <0.015 #	# <0.015 #
Acenaphthylene (aq)	μg/l <0.011 μq/l	TM178	* <0.011 #	* <0.011 #	* <0.011 #	# <0.011 #	* <0.011 #	<0.011 #
Fluoranthene (aq)	<0.017 µg/l	TM178	<0.017 #	<0.017 #	<0.017 #	<0.017 #	<0.017 #	<0.017 #
Anthracene (aq)	<0.015 µg/l	TM178	<0.015 #	<0.015 #	<0.015 #	<0.015 #	<0.015 #	<0.015 #
Phenanthrene (aq)	<0.022 µg/l		<0.022 #	<0.022 #	<0.022 #	<0.022 #	<0.022 #	<0.022 #
Fluorene (aq)	<0.014 µg/l		<0.014 #	<0.014 #	<0.014 #	<0.014 #	<0.014 #	<0.014 #
Chrysene (aq)	<0.013 µg/l	TM178	<0.013 #	<0.013 #	<0.013 #	<0.013 #	<0.013 #	<0.013 #
Pyrene (aq)	<0.015 μg/l	TM178	<0.015 #	<0.015 #	<0.015 #	<0.015 #	<0.015 #	<0.015 #
Benzo(a)anthracene (aq)	<0.017 µg/l	TM178	<0.017 #	<0.017 #	<0.017 #	<0.017 #	<0.017 #	<0.017 #
Benzo(b)fluoranthene (aq)	<0.023 µg/l	TM178	<0.023 #	<0.023 #	<0.023 #	<0.023 #	<0.023 #	<0.023 #
Benzo(k)fluoranthene (aq)	<0.027 µg/l	TM178	<0.027 #	<0.027 #	<0.027 #	<0.027 #	<0.027 #	<0.027 #
Benzo(a)pyrene (aq)	<0.009 µg/l	TM178	<0.009 #	<0.009 #	<0.009 #	<0.009 #	<0.009 #	<0.009 #
Dibenzo(a,h)anthracene (aq)	<0.016 µg/l	TM178	<0.016 #	<0.016 #	<0.016 #	<0.016 #	<0.016 #	<0.016 #
Benzo(g,h,i)perylene (aq)	<0.016 µg/l	TM178	<0.016 #	<0.016 #	<0.016 #	<0.016 #	<0.016 #	<0.016 #
Indeno(1,2,3-cd)pyrene (ag)	<0.014 µg/l	TM178	<0.014 #	<0.014 #	<0.014 #	<0.014 #	<0.014 #	<0.014 #
PAH, Total Detected USEPA 16 (aq)	µg/l	TM178	none detected	none detected	none detected	none detected	0.121	none detected

CERTIFICATE OF ANALYSIS

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			Attention. Ga			Superseded Repo		
PAH Spec MS - Aqueous Results Legend								
Results Legend # ISO17025 accredited. M mCERTS accredited.		Customer Sample R	2 SANDOWN	3 SLADE VIEW RI SE	110 STAFFORD LA NE	73 STAGBOROUGH	8 STAGBOROUGH W AY	41 SWALLOWFIELD S
m mcErx1s accreated. § Non-conforming work. aq Aqueous / settled sample. diss.fitt Disolved / fittered sample. tot.unfitt Total / unfittered sample. * Subcontracted test. ** % recovery of the surrogate standa check the efficiency of the method. results of individual compounds w samples aren't corrected for the re (F) Trigger breach confirmed	. The ithin	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588811	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588807	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588818	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588814	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588815	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588813
Component	LOD/Unit	s Method						
Naphthalene (aq)	<0.1 µg		<0.1	0.103	0.131	<0.1	<0.1	<0.1
Acenaphthene (aq)	<0.015 µg/l	5 TM178	# <0.015 #	# <0.015 #	# <0.015 #	# <0.015 #	# <0.015 #	# <0.015 #
Acenaphthylene (aq)	<0.011 µg/l	TM178	<0.011 #	<0.011 #	<0.011 #	<0.011 #	<0.011 #	<0.011 #
Fluoranthene (aq)	<0.017 µg/l	7 TM178	<0.017 #	<0.017 #	<0.017 #	<0.017 #	<0.017 #	<0.017 #
Anthracene (aq)	<0.015 µg/l		<0.015 #	<0.015 #	<0.015 #	<0.015 #	<0.015 #	<0.015 #
Phenanthrene (aq)	<0.022 µg/l		<0.022 #	<0.022 #	<0.022 #	<0.022 #	<0.022 #	<0.022 #
Fluorene (aq)	<0.014 µg/l		<0.014 #	<0.014 #	<0.014 #	<0.014 #	<0.014 #	<0.014 #
Chrysene (aq)	<0.013 µg/l		<0.013 #	<0.013 #	<0.013 #	<0.013 #	<0.013 #	<0.013 #
Pyrene (aq)	<0.015 µg/l		<0.015 #	<0.015 #	<0.015 #	<0.015 #	<0.015 #	<0.015 #
Benzo(a)anthracene (aq)	<0.017 µg/l		<0.017 #	<0.017 #	<0.017 #	<0.017 #	<0.017 #	<0.017 #
Benzo(b)fluoranthene (aq)	<0.023 µg/l		<0.023 #	<0.023 #	<0.023 #	<0.023 #	<0.023 #	<0.023 #
Benzo(k)fluoranthene (aq)	<0.027 µg/l		<0.027 #	<0.027 #	<0.027 #	<0.027 #	<0.027 #	<0.027 #
Benzo(a)pyrene (aq)	<0.009 µg/l		<0.009 #	<0.009 #	<0.009 #	<0.009 #	<0.009 #	<0.009 #
Dibenzo(a,h)anthracene (aq)	<0.016 µg/l		<0.016 #	<0.016 #	<0.016 #	<0.016 #	<0.016 #	<0.016 #
Benzo(g,h,i)perylene (aq)	<0.016 µg/l		<0.016 #	<0.016 #	<0.016 #	<0.016 #	<0.016 #	<0.016 #
Indeno(1,2,3-cd)pyrene (aq)	<0.014 µg/l		<0.014 #	<0.014 #	<0.014 #	<0.014 #	<0.014 #	<0.014 #
PAH, Total Detected USEPA 16 (aq)	µg/l	TM178	none detected	0.103	0.131	none detected	none detected	none detected
		_						

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CERTIFICATE OF ANALYSIS

PAH Spec N	NS - Aqueous								
# ISO17025	Results Legend accredited. accredited.		Customer Sample R	VIEW ST. 32 FOS TERS AVE.	VIEW ST. 53 VIE W ST.	VIEW ST. 9 WARD ST.	VIEW ST. WS2	VIEW ST. WS3	VIEW ST. WS4
§ Non-confo aq Aqueous / diss.filt Dissolved tot.unfilt Total / unf * Subcontra ** % recover check the results of samples a	orming work. / settled sample. I / filtered sample. filtered sample.	Гhe hin overy	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588795	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588793	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588797	1.20 Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588790	1.10 Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588791	1.60 Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588789
Component Naphthalene	(au)	LOD/Uni <0.1 μ		0.104	<0.1	<0.1	<0.1	<0.1	<0.1
				#	#	#	#	#	#
Acenaphthene	e (aq)	0.01؛ µg/l	5 TM178	<0.015 #	<0.015 #	<0.015 #	<0.015 #	0.0225 #	0.0156 #
Acenaphthyle	ne (aq)	<0.01 [,] µg/l	1 TM178	<0.011 #	<0.011 #	<0.011 #	<0.011 #	0.0181 #	<0.011 #
Fluoranthene	(aq)	<0.01 µg/l	7 TM178	<0.017 #	<0.017 #	<0.017 #	<0.017 #	0.981 #	0.465 #
Anthracene (a	ad)	<0.01 µg/l	5 TM178	<0.015 #	<0.015 #	<0.015 #	<0.015 #	0.0538 #	0.0302 #
Phenanthrene	e (aq)	<0.022 µg/l	2 TM178	<0.022 #	<0.022 #	<0.022 #	<0.022 #	0.217 #	0.13 #
Fluorene (aq)		<0.014	4 TM178	<0.014 #	<0.014 #	<0.014 #	<0.014 #	<0.014 #	<0.014
Chrysene (aq)	µg/l <0.013	3 TM178	# <0.013 #	<0.013	# <0.013 #	# <0.013 #	# 0.935 #	# 0.434 #
Pyrene (aq)		μg/l <0.01	5 TM178	<0.015	# <0.015	<0.015	<0.015	1.11	# 0.559
Benzo(a)anth	racene (aq)	µg/l <0.01	7 TM178	# <0.017 #	# <0.017	# <0.017	# <0.017 #	# 0.565 #	# 0.283 #
Benzo(b)fluor	anthene (aq)	μg/l <0.023 μg/l	3 TM178	# <0.023 #	# <0.023 #	# <0.023 #	# <0.023 #	# 0.625 #	# 0.279 #
Benzo(k)fluora	anthene (aq)	<0.02	7 TM178	<0.027 #	# <0.027 #	<0.027 #	<0.027 #	# 0.815 #	0.33
Benzo(a)pyre	ne (aq)	µg/l <0.009	9 TM178	# <0.009 #	<0.009 #	<0.009 #	<0.009 #	# 0.916 #	0.352 #
Dibenzo(a,h)a	anthracene	μ <u>g/l</u> <0.016 μg/l	6 TM178	# <0.016 #	# <0.016 #	# <0.016 #	<0.016 #	# 0.112 #	0.0359
(aq) Benzo(g,h,i)po	erylene (aq)	<0.016 μg/l	6 TM178	<0.016 #	<0.016 #	<0.016 #	<0.016 #	0.689 #	0.198 #
Indeno(1,2,3-	cd)pyrene	<0.014	4 TM178	<0.014 #	<0.014 #	<0.014	<0.014 #	0.54 #	0.164 #
(aq) PAH, Total De USEPA 16 (ad		µg/l µg/l	TM178	0.104	none detected	none detected	none detected	7.6	3.28
	ч <i>у</i>								

ALcontrol Laboratories CERTIFICATE OF ANALYSIS									
SDG: Job:	110602-58 H_GRONTM	IJ_SOL-54	Location: Customer:	Part 2a Assistance Grontmij			Order Number: Report Number:	133432	
Client Reference:			Attention:	Ga	reth Taylor		Superseded Repo	rt:	
PAH Spec MS - Ac Results Lege	JUEOUS (W)	Customer Sample R	10 WESTGATE						
ISO17025 accredited. M mCERTS accredited. Mon-conforming work. aq Aqueous / settled samp diss.filt Dissolved / filtered samp Subcontracted test. ** % recovery of the surre check the efficiency of results of individual co samples aren't correct	nple. e. ogate standard to the method. The mpounds within	Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) ACS Reference	Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588809						
(F) Trigger breach confirm	ed								
Component Naphthalene (aq)	LOD/ <0.1	Units Method I μg/I TM178	<0.1						
Acenaphthene (aq)	<0.	015 TM178	<0.015	#					
Acenaphthylene (aq)	μς <0.1	g/l 011 TM178	<0.011	#					
Fluoranthene (aq)	μ <u>ς</u> <0.	a/l 017 TM178	<0.017	#					
Anthracene (aq)	μς		<0.015	#					
Phenanthrene (aq)	μς		<0.013	#					
	μς	μ /Ι		#					
Fluorene (aq)	μς	1 1	<0.014	#					
Chrysene (aq)	μς		<0.013	#					
Pyrene (aq)	.0> μα	015 TM178 g/l	<0.015	#					
Benzo(a)anthracene (a	aq) <0. μο	017 TM178 1/l	<0.017	#					
Benzo(b)fluoranthene		023 TM178	<0.023	#					
Benzo(k)fluoranthene	(aq) <0.	027 TM178	<0.027	#					
Benzo(a)pyrene (aq)		009 TM178	<0.009						
Dibenzo(a,h)anthracer		016 TM178	<0.016	#					
(aq) Benzo(g,h,i)perylene (016 TM178	<0.016	#					
Indeno(1,2,3-cd)pyren		014 TM178	<0.014	#					
(aq) PAH, Total Detected	<u>μς</u> μ	g/l g/l TM178	none detected	# 1					
USEPA 16 (aq)				\neg					
				\neg					
				\neg					
				-					

ALcontrol Laboratories CERTIFICATE OF ANALYSIS Validated												
SDG: 110602-58 Job: H_GRONTMIJ_SOL-54 Client Reference: 1000000000000000000000000000000000000			Location: Customer: Attention:	Gro	Part 2a Assistance Grontmij Gareth Taylor				Order Number: Report Number: 133432 Superseded Report:			
VOC MS (W)			Attention.	Ga					Superseueu Report.			
Results Legend C # ISO17025 accredited. M M mCERTS accredited. M § Non-conforming work. aq aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. subcontracted test. * Subcontracted test. * % recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery (F) Trigger breach confirmed		Customer Sample R Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	VIEW ST. WS2 1.20 Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588790		VIEW ST. WS3 1.10 Water(GW/SW) 31/05/2011 02/06/2011 110602-58 3588791		1.60 Water(GW/SW 31/05/2011 02/06/2011 110602-58 3588789	W)				
Component Toluene-d8**	LOD/L %		98.2	_	99		99.3					
Methyl tertiary butyl eth	ier <1.6	μg/l TM208	<1.6		<1.6		<1.6					
(MTBE) Benzene	<1.3		<1.3	#	<1.3	#	<1.3	#				
Toluene	<1.4		<1.4	#	<1.4	#	<1.4	#				
Ethylbenzene	<2.5		<2.5	#	<2.5	#	<2.5	#				
m,p-Xylene	<2.5		<2.5	#	<2.5	#	<2.5	#				
				#		#		#				
o-Xylene	<1.7	΄μg/l TM208	<1.7	#	<1.7	#	<1.7	#				
						_						
						-						

ALcontrol Laboratories Validated **CERTIFICATE OF ANALYSIS** 110602-58 SDG: Location: Part 2a Assistance Order Number: H_GRONTMIJ_SOL-54 133432 Job: Customer: Grontmij Report Number: Client Reference: Attention: Gareth Taylor Superseded Report:

Table of Results - Appendix

REPOF	RT KEY						Res	ults expressed as (e.g.) 1.03E-07 is equivale	nt to 1.03x10-7			
NDP	No Determinatio	Determination Possible # ISO 17025 Accredited				*	MCERTS Accred	MCERTS Accredited					
NFD	FD No Fibres Detected PFD Possible Fibres Detected					»	Result previously reported (Incremental reports only)	EC	Equivalent Carbon (Aromatics C8-C35)				
ote: Method detection limits are not always achievable due to various circumstances beyond our control													
Method No Reference						Description Wet/Dry Surr Sample 1 Corr							
	TM152	Method 3125B, AW	IA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS									
	TM178	Modified: US EPA	Method 8	100	Determination of Polynuclear Aromatic Hydrocarbons (PAH) by GC-MS in Waters								
	TM183 BS EN 23506:2002, (BS 6068-2.74:2002) ISBN 0 580 38924 3					Determination of Trace Level Mercury in Waters and Leachates by PSA Cold Vapour Atomic Fluorescence Spectrometry							
	TM208 Modified: US EPA Method 8260b & 624				Determination of Volatile Organic Compounds by Headspace / GC-MS in Waters								

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

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CERTIFICATE OF ANALYSIS

Validated

 SDG:
 110602-58

 Job:
 H_GRONTMIJ_SOL-54

 Client Reference:

Location:Part 2a AssistanceCustomer:GrontmijAttention:Gareth Taylor

Order Number: Report Number: 133432 Superseded Report:

Test Completion Dates

Lab Sample No(s)	3588803	3588805	3588806	3588788	3588808	3588787	3588799	3588800	3588798	3588802
Customer Sample Ref.	99 ARMITAGE ROA D	121 ARMITAGE RO AD	125 ARMITAGE RO AD	83 BLAKE CLOSE	11 GOODWOOD	3A BLAKE CLOSE	FIVEWAYS 5 NEWL ANDS COURT	FIVEWAYS 9 NEWL ANDS COURT	FIVEWAYS 11 NEW LANDS COURT	FIVEWAYS 1 NEWL ANDS LANE
AGS Ref.										
Depth										
Туре	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Dissolved Metals by ICP-MS	08-Jun-2011	08-Jun-2011	08-Jun-2011	08-Jun-2011	07-Jun-2011	08-Jun-2011	09-Jun-2011	09-Jun-2011	08-Jun-2011	08-Jun-2011
Mercury Dissolved	07-Jun-2011	07-Jun-2011	08-Jun-2011	07-Jun-2011	07-Jun-2011	08-Jun-2011	08-Jun-2011	08-Jun-2011	07-Jun-2011	08-Jun-2011
PAH Spec MS - Aqueous (W)	09-Jun-2011	09-Jun-2011	09-Jun-2011	09-Jun-2011	09-Jun-2011	09-Jun-2011	09-Jun-2011	09-Jun-2011	09-Jun-2011	09-Jun-2011

Lab Sample No(s)	3588819	3588810	3588811	3588807	3588818	3588814	3588815	3588813	3588795	3588793
Customer Sample Ref.	21 HERONDALE	4 KEMPTON	2 SANDOWN	3 SLADE VIEW RI SE	110 STAFFORD LA NE	73 STAGBOROUGH	STAGBOROUGH W AY	41 SWALLOWFIELD S	VIEW ST. 32 FOS TERS AVE.	VIEW ST. 53 VIE W ST.
AGS Ref.										
Depth										
Туре	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Dissolved Metals by ICP-MS	08-Jun-2011	08-Jun-2011	08-Jun-2011	08-Jun-2011	08-Jun-2011	08-Jun-2011	08-Jun-2011	08-Jun-2011	08-Jun-2011	09-Jun-2011
Mercury Dissolved	07-Jun-2011	08-Jun-2011	08-Jun-2011	07-Jun-2011	07-Jun-2011	08-Jun-2011	07-Jun-2011	07-Jun-2011	07-Jun-2011	08-Jun-2011
PAH Spec MS - Aqueous (W)	09-Jun-2011	09-Jun-2011	09-Jun-2011	09-Jun-2011	09-Jun-2011	09-Jun-2011	09-Jun-2011	09-Jun-2011	09-Jun-2011	09-Jun-2011

Lab Sample No(s)	3588809	3588797	3588790	3588791	3588789
Customer Sample Ref.	10 WESTGATE	VIEW ST. 9 WARD ST.	VIEW ST. WS2	VIEW ST. WS3	VIEW ST. WS4
AGS Ref.					
Depth			1.20	1.10	1.60
Туре	LIQUID	LIQUID	LIQUID	LIQUID	LIQUID
Dissolved Metals by ICP-MS	07-Jun-2011	10-Jun-2011	08-Jun-2011	08-Jun-2011	09-Jun-2011
Mercury Dissolved	07-Jun-2011	07-Jun-2011	07-Jun-2011	07-Jun-2011	08-Jun-2011
PAH Spec MS - Aqueous (W)	09-Jun-2011	09-Jun-2011	09-Jun-2011	09-Jun-2011	09-Jun-2011
VOC MS (W)			09-Jun-2011	09-Jun-2011	09-Jun-2011

CERTIFICATE OF ANALYSIS

SDG:	110602-58	Location:	Part 2a Assistance
Job:	H_GRONTMIJ_SOL-54	Customer:	Grontmij
Client Reference:		Attention:	Gareth Taylor

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenois monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute themajor part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 -C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Order Number: Report Number: Superseded Report:

SOLID MATRICES EXTRACTION SUMMARY

133432

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS		
SOLVENT EXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC		
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC		
THIN LAYER CHROMATOGRAPHY	D&C	DOM	SOXTHERM	IATROSCAN		
ELEMENTALSULPHUR	D&C	DOM	SOXTHERM	HPLC		
PHENOLSBYGOMS	WET	DOM	SOXTHERM	GCMS		
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GCMS		
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GCMS		
EPH (DRO)	D&C	HEXANEACETONE	END OVEREND	GCFID		
EPH (MINOL)	D&C	HEXANEACETONE	END OVEREND	GCFID		
EPH (OLEANED UP)	D&C	HEXANEACETONE	END OVEREND	GCFID		
EPH CMG BYGC	D&C	HEXANEACETONE	END OVEREND	GCFID		
PCB TOT / PCB CON	D&C	HEXANEACETONE	END OVEREND	GCMS		
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MCROWAVE TM218.	GCMS		
08-040(06-040) EZ FLASH	WET	HEXANEACETONE	SHAVER	GCFZ		
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANEACETONE	SHAVER	900 EZ		
SEM VOLATILEORGANIC COMPOUNDS	WET	DOMAGETONE	SONICATE	GCMS		

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
BH	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
EPHONG	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
MINERAL OIL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
POB 700NGENERS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
POB TOTAL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
SVOC	DOM	LIQUID'LIQUID SHAKE	GCMS
FREESULPHUR	DOM	SOLD PHASE EXTRACTION	HPLC
PEST COP/OPP	DOM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DOM	LIQUID'LIQUID SHAKE	GCMS
PHENOLSMS	DOM	SOLID PHASE EXTRACTION	GCMS
TFH by INFRARED (IR)	TCE	LIQUID/LIQUID SHAKE	HPLC
MINERAL OIL by IR	TCE	LIQUID'LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GCMS

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratorice (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratorices (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

Asbestos Type

Chrysnile

Amosite

Orodolite

Fibrous Adinoite

Fibrous Anthophylite

Fibra & Trendie

Common Name

White Ashestos

BrownAsbestos

Blue Asbestos

-

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.



Grontmij Radcliffe House 3rd Floor Blenheim Court, Lode Iane Solihull West Midlands B912AA

Attention: Gareth Taylor

CERTIFICATE OF ANALYSIS

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 09 July 2011 H_GRONTMIJ_SOL 110622-95

Stagborough 138581

We received 8 samples on Wednesday June 22, 2011 and 8 of these samples were scheduled for analysis which was completed on Saturday July 09, 2011. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan Operations Manager



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CERTIFICATE OF ANALYSIS

Validated

SDG:	110622-95	Location:	Stagborough	Order Number:	
Job:	H_GRONTMIJ_SOL-27	Customer:	Grontmij	Report Number: 138581	
Client Reference:		Attention:	Gareth Taylor	Superseded Report:	

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
3724065	S01		0.50	20/06/2011
3724067	S02		0.20	20/06/2011
3724068	S03		0.10	20/06/2011
3724069	S04		0.10	20/06/2011
3724070	S05		0.40	20/06/2011
3724072	SW01			20/06/2011
3724073	SW02			20/06/2011
3724074	SW03			20/06/2011

Only received samples which have had analysis scheduled will be shown on the following pages.

ALcontrol Labo	ratories	-							
						OF ANA	OF ANALYSIS		
	622-95 GRONTMIJ_SOL-27	Location Custome Attentior	er:	G	Stagborough Grontmij Gareth Taylor		Order Number: Report Number: Superseded Report:	Report Number: 138581	
LIQUID Results Legend	Lab Sample	No(s)	3724072	3724074 3724073	040				
No Determination Possible	Custome Sample Refe		SW01	SW03					
	AGS Refere	ence							
	Depth (n	1)							
	Containe	ər	1l green glass bottle	11 green glass bottle	All				
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 3		x					
Mercury Dissolved	All	NDPs: 0 Tests: 3	x	x>	<mark>د</mark>				
Metals by iCap-OES Dissolved (W) All	NDPs: 0 Tests: 3	x	x >	(
PAH Spec MS - Aqueous (W)	All	NDPs: 0 Tests: 3	x	x>	<mark>د</mark>				

	aborator	ies	-				~
SDG:	110622-95		Location	ER	Sta		
Job:		MIJ_SOL-27	Custome	er:	Gr	ontr	m
Client Reference:			Attentior	1:	Ga	reti	n
SOLID Results Legend		Lab Sampl	e No(s)	3724065	372	372	372
		P.		4065	4068	4069	4070
	- 41			┼┼			_
No Determina Possible	ation	Custor					
		Sample Re		S01	S02	S04	S05
	-			┼┼			-
		AGS Refe	rence				
							_
		Depth	(m)).50	0.10). 10).).40
	-			22	2 22	21	22
				50g Ar	50g Ar	50g Ar	50a Ar
		Contai	ner	nber J	nber J	nber J	nber J
				250g Amber Jar (AL	ar (AL	ar (AL	ar (AL
Metals by iCap-OES (Soil)	Arsenic	NDPs: 0 Tests: 5	П			٦
			163(3, 5	X	x x	X	X
		Boron	NDPs: 0 Tests: 5				
		<u></u>		X	x x	X	x
		Cadmium	NDPs: 0 Tests: 5		x x	X	
		Chromium	NDPs: 0	^ .	× ×	•	^
			Tests: 5	x	x x	X	x
	-	Copper	NDPs: 0				_
			Tests: 5	x	x x	X	x
		Lead	NDPs: 0				-
			Tests: 5	X	x x	X	x
		Mercury	NDPs: 0 Tests: 5				
				X	x	X	x
		Nickel	NDPs: 0 Tests: 5				
		Vanadium	NDDa: 0	X	x x	X	X
		vanaululli	NDPs: 0 Tests: 5	v,	v v	y,	y
		Zinc	NDPs: 0		x x	^	^
			Tests: 5	x	x x	X	x
PAH by GCMS		All	NDPs: 0				_
			Tests: 5	X	x x	X	X
Sample description		All	NDPs: 0				_
			Tests: 5	X	x x	X	X
							-

CERTIFICATE OF ANALYSIS

Validated

SDG: 110622-95 Job: H_GRONTMIJ_SOL-27 Client Reference: Hereit Content	Location: Customer: Attention:	Stagborough Grontmij Gareth Taylor	Order Number: Report Number: Superseded Report:	138581
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Sample Descriptions

Grain Sizes							
very fine <0.	063mm fine ().063mm - 0.1mm m	edium 0.1mm	i - 2mm coa	rse 2mm - 10	Omm very co	arse >10m
Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
3724065	S01	0.50	Dark Brown	Top Soil	0.1 - 2 mm	Stones	Crushed Brick
3724067	S02	0.20	Dark Brown	Top Soil	0.1 - 2 mm	Stones	Crushed Brick
3724068	S03	0.10	Dark Brown	Top Soil	0.1 - 2 mm	Stones	Crushed Brick
3724069	S04	0.10	Dark Brown	Top Soil	0.1 - 2 mm	Stones	Crushed Brick
3724070	S05	0.40	Dark Brown	Top Soil	0.063 - 0.1 mm	Stones	Crushed Brick

These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally ocurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

CERTIFICATE OF ANALYSIS

Validated

	0622-95 GRONTMIJ_SC)L-27	Location: Customer: Attention:	Gr	agborough ontmij areth Taylor			Order Number: Report Number: Superseded Repo	138581 ort:		
Results Legend	Cus	stomer Sample R	S01		S02	S03		S04	S05		SW01
# ISO17025 accredited. M mCERTS accredited. § Non-conforming work. aq Aqueous / settled sample. diss.fit Dissolved / filtered sample. * Subcontracted test. * % recovery of the surrogate statcheck the efficiency of the meth results of individual compounds samples aren't corrected for the (F) Trigger breach confirmed	od. The La s within La e recovery	Depth (m) Sample Type Date Sampled Date Received SDG Ref ab Sample No.(s) AGS Reference	0.50 Soil/Solid 20/06/2011 22/06/2011 110622-95 3724065		0.20 Soli/Solid 20/06/2011 22/06/2011 110622-95 3724067	0.10 Soil/Solid 20/06/2011 22/06/2011 110622-95 3724068		0.10 Soil/Solid 20/06/2011 22/06/2011 110622-95 3724069	0.40 Soii/Solid 20/06/201 22/06/201 110622-95 3724070	1	Water(GW/SW) 20/06/2011 22/06/2011 110622-95 3724072
Component Arsenic (diss.filt)	LOD/Units <0.12	Method TM152					+				0.926
Boron (diss.filt)	μg/l <9.4 μg/l	TM152									# 153
Cadmium (diss.filt)	<0.1 µg/l	TM152									# 0.134
Chromium (diss.filt)	<0.22 µg/l	TM152									# 5.68 #
Copper (diss.filt)	<0.85	TM152									4.32
Lead (diss.filt)	μ <u>g</u> /l <0.02	TM152									# 0.186
Nickel (diss.filt)	μ <u>g/l</u> <0.15	TM152					-				# <0.15
Vanadium (diss.filt)	μ <u>g</u> /l <0.24	TM152									# <0.24
Zinc (diss.filt)	μg/l <0.41	TM152									22.5
	µg/l										#
Mercury (diss.filt)	<0.01 µg/l	TM183									<0.01 #
Hardness, Total as CaCO3	<1 mg/l	TM228									146 #
Arsenic	<0.6 mg/kg	TM181	8.61	М	8.76 M	9.55	м	13.4 M	6.97	М	
Boron	<0.7 mg/kg	TM181	11.3	#	16.4 #	17.2	#	13.6 #	7.65	#	
Cadmium	<0.02	TM181	0.586	м	0.602 M	0.679	м	0.746 M	0.442	M	
Chromium	mg/kg <0.9	TM181	16		27.6	18.8		66.3	13.5		
Copper	mg/kg <1.4	TM181	28.9	M	M 29.3	31.5	M	M 56.1	19	M	
Lead	mg/kg <0.7	TM181	37.3	<u>M</u>	45.8	42.4	M	53.8	32.7	M	
Mercury	mg/kg <0.14	TM181	<0.14	M	M <0.14	<0.14	M	M <0.14	<0.14	M	
Nickel	mg/kg <0.2	TM181	24.7	Μ	M 28.7	28.7	M	M 33.3	18.4	M	
Vanadium	mg/kg <0.2	TM181	25.6	М	M 51.8	28	M	M 27.8	19.7	M	
Zinc	mg/kg <1.9	TM181	140	#	# 143	173	#	# 203	93.3	#	
	mg/kg			Μ	М		М	М		М	
	_										
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	-						+				
	_						-				
	_						-				

CERTIFICATE OF ANALYSIS

Validated

Results Legend # ISO17025 accredited. M mCERY3 accredited. § Non-conforming work. aq Aqueous / settide sample. diss.filt Dissolved / filtered sample. totunfilt Total / unfiltered sample. * Subcontracted test.		Customer Sample R Depth (m) Sample Type Date Sampled Date Received	SW02 Water(GW/SW) 20/06/2011 22/06/2011	SW03 Water(GW/SW) 20/06/2011 22/06/2011			
** % recovery of the surrogate standa check the efficiency of the method. results of individual compounds wi samples aren't corrected for the rec (F) Trigger breach confirmed	The thin covery	SDG Ref Lab Sample No.(s) AGS Reference	110622-95 3724073	110622-95 3724074			
Component	LOD/Unit		0.616	0.988			
Arsenic (diss.filt)	<0.12 µg/l		#	#			
Boron (diss.filt)	<9.4 µç		180 #	349 #			
Cadmium (diss.filt)	<0.1 µg	g/l TM152	<0.1 #	0.101 #			
Chromium (diss.filt)	<0.22 µg/l	TM152	4.54 #	7.34 #			
Copper (diss.filt)	<0.85 µg/l	TM152	2.86 #	4.78 #			
Lead (diss.filt)	<0.02 µg/l	TM152	0.152 #	0.267 #			
Nickel (diss.filt)	<0.15	TM152	<0.15 #	0.648			
Vanadium (diss.filt)	μ <u>g/l</u> <0.24	TM152	<0.24	<0.24			
Zinc (diss.filt)	μg/l <0.41	TM152	# 8.11	# 9.84			
Mercury (diss.filt)	μg/l <0.01	TM183	# <0.01	# <0.01			
Hardness, Total as CaCO3	µg/l <1 mg/	/I TM228	# 168	# 254			
			#	#			
		_					

Validated

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ALcontrol Labor					FICATE OF A			<u> </u>		
SDG: 11062 Job: H_GF Client Reference: H_GF	22-95 RONTMIJ_	_SOL-27	Location: Customer: Attention:	Gr	agborough rontmij areth Taylor			Order Number: Report Number: Superseded Repo	138581 ort:	
AH by GCMS										
Results Legend # ISO17025 accredited. m mcCERTS accredited. § Non-conforming work. aq Aqueous / settled sample. tiss.filt Dissolved / filtered sample. t.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the sturrogate standiche efficiency of the method results of individual compounds with samples aren't corrected for the re (F) Trigger breach confirmed	ard to . The rithin	Customer Sample R Depth (m) Sample Type Date Sampled Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.50 Soil/Solid 20/06/2011 22/06/2011 110622-95 3724065		0.20 Soil/Solid 20/06/2011 22/06/2011 110622-95 3724067	0.10 Soii/Solid 20/06/2011 22/06/2011 110622-95 3724068		0.10 Soil/Solid 20/06/2011 22/06/2011 110622-95 3724069	0.40 Soil/Solid 20/06/2011 22/06/2011 110622-95 3724070	
component	LOD/Un	its Method								
laphthalene-d8 %	%	TM218	95		95.7	96		95.5	92.8	
ecovery** Acenaphthene-d10 %	%	TM218	94.7		95.2	98.6		97.8	93.1	_
ecovery** Phenanthrene-d10 %	%	TM218	93.4		93.5	96.6		96	91.2	
ecovery** Chrysene-d12 %	%	TM218	94.5		94.3	95.9		95	90.2	
ecovery**										
Perylene-d12 % recovery**	%	TM218	91		92	96.2		95.1	89.5	
Naphthalene	<9 µg/	kg TM218	70.3	М	134 M	120	М	107 M	45.8	М
Acenaphthylene	<12 µg/kg		<12	м	14.3 M	20.8	м	74.3 M	<12	м
Acenaphthene	<8 µg/		<8	M	9.59 M	9.98	м	23.9 M	<8	M
Fluorene	<10		11.8		12.7	<10		48.2	<10	
Phenanthrene	μg/kg <15	TM218	263	Μ	M 388	390	М	M 941	169	M
Anthracene	µg/kg <16		32.5	Μ	M 44.8	54.9	М	M 154	37.9	M
Fluoranthene	µg/kg <17		186	Μ	315	343	М	M 1240		м
	µg/kg			Μ	М		М	M		м
Pyrene	<15 µg/kg		162	М	251 M	287	М	931 M		м
Benz(a)anthracene	<14 µg/kg		110	М	175 M	206	М	609 M	63.1	м
Chrysene	<10 µg/kg	TM218	114	м	174 M	188	м	519 M	65.3	м
Benzo(b)fluoranthene	<15	TM218	150		260	318		719	84.9	
Benzo(k)fluoranthene	µg/kg <14		47.9	Μ	M 77.4	72.4	М	M 221	22.9	M
Benzo(a)pyrene	µg/kg <15		89.8	М	M 151	172	М	M 493	49.8	M
Indeno(1,2,3-cd)pyrene	μ <u>g/kg</u> <18		62.2	Μ	M 107	120	М	M 251	31	M
	µg/kg			М	М		М	M		м
Dibenzo(a,h)anthracene	<23 µg/kg		<23	М		42	М	78.9 M		м
Benzo(g,h,i)perylene	<24 µg/kg		131	М	205 M	211	М	348 M	58.5	М
PAH, Total Detected USEPA 16	<118 µg/kg	3 TM218	1430		2350	2550		6760	809	
JOLTA 10	µg/kg									_
		-								
	<u> </u>	_								

CERTIFICATE OF ANALYSIS

Validated

PAH Spec MS - Aqueous (W)

PAH Spec MS - Aqueo						 	
Results Legend ISO17025 accredited. M mCERTS accredited. M mCERTS accredited. S Non-conforming work. aq Aqueous / settled sample. diss.fit Dissolved / fittered sample. tot.unfitt Total / unfittered sample. Subcontracted test. % recovery of the surrogate star check the efficiency of the meth results of individual compounds samples aren't corrected for the	ndard to od. The La	tomer Sample R Depth (m) Sample Type Date Sampled Date Received SDG Ref b Sample No.(s) AGS Reference	SW01 Water(GW/SW) 20/06/2011 22/06/2011 110622-95 3724072	SW02 Water(GW/SW) 20/06/2011 22/06/2011 110622-95 3724073	SW03 Water(GW/SW) 20/06/2011 22/06/2011 110622-95 3724074		
(F) Trigger breach confirmed							
Component	LOD/Units	Method					
Naphthalene (aq)	<0.1 µg/l	TM178	<0.1 #	<0.1 #	0.114 #		
Acenaphthene (aq)	<0.015 µg/l	TM178	<0.015 #	<0.015 #	<0.015 #		
Acenaphthylene (aq)	<0.011 µg/l	TM178	<0.011 #	<0.011 #	<0.011 #		
Fluoranthene (aq)	<0.017 µg/l	TM178	0.0548 #	0.0191 #	<0.017 #		
Anthracene (aq)	<0.015 µg/l	TM178	<0.015 #	<0.015 #	<0.015 #		
Phenanthrene (aq)	<0.022 µg/l	TM178	<0.022 #	<0.022 #	<0.022 #		
Fluorene (aq)	<0.014 µg/l	TM178	<0.014 #	<0.014 #	<0.014 #		
Chrysene (aq)	<0.013 µg/l	TM178	0.0515 #	0.0203 #	<0.013 #		
Pyrene (aq)	<0.015 µg/l	TM178	0.0593 #	0.018 #	<0.015 #		
Benzo(a)anthracene (aq)	<0.017 µg/l	TM178	0.0429 #	0.0226 #	<0.017 #		
Benzo(b)fluoranthene (aq)	<0.023 µg/l	TM178	0.0296 #	<0.023 #	<0.023 #		
Benzo(k)fluoranthene (aq)	<0.027 µg/l	TM178	0.0368 #	<0.027 #	<0.027 #		
Benzo(a)pyrene (aq)	<0.009 µg/l	TM178	0.0332 #	<0.009 #	<0.009 #		
Dibenzo(a,h)anthracene (aq)	<0.016 µg/l	TM178	<0.016 #	<0.016 #	<0.016 #		
Benzo(g,h,i)perylene (aq)	<0.016 µg/l	TM178	0.0226 #	<0.016 #	<0.016 #		
Indeno(1,2,3-cd)pyrene	<0.014	TM178	0.0198	<0.014 #	<0.014		
(aq) PAH, Total Detected USEPA 16 (aq)	µg/l µg/l	TM178	# 0.35	0.08	# 0.114		

CERTIFICATE OF	ANALYSIS

Validated

- <u></u> -					
SDG: Job: Client Reference:	110622-95 H_GRONTMIJ_SOL-27	Location: Customer: Attention:	Stagborough Grontmij Gareth Taylor	Order Number: Report Number: Superseded Report:	138581
		,	Saroar rajion		

Table of Results - Appendix

EPO	RT KEY		_			_		Results expressed as (e.g	.) 1.03E-07 is equivale	nt to 1.03x10-7	
NDP	No Determination	n Possible	#	ISO 17025 Accredited		*	Subcontracted Test	м	MCERTS Accredited		
NFD	No Fibres Detected PFD Possible Fibres Detected			»	Result previously reported (Incremental reports only)	EC	Equivalent Carbon (Aromatics C8-C35)				
te: Meth	od detection limits	are not always achievable	due to vario	us circumstances beyond our	control						
N	lethod No		Refe	ence			Description		Wet/Dry Sample ¹	Surrogate Corrected	
	PM001				Preparation	on of San	nples for Metals Analysis				
	PM024	Modified BS 1377			Soil prepa soils for A						
	TM001	In - house Method			Determination of asbestos containing material by screening on solids						
	TM152	Method 3125B, AV	WWA/APH	HA, 20th Ed., 1999	Analysis o	of Aqueou	is Samples by ICP-MS				
	TM178	Modified: US EPA	Method 8	3100	Determina GC-MS in		ocarbons (PAH) by				
	TM181	US EPA Method 6	010B		Determina ICP-OES	ation of R	outine Metals in Soil by iC	ap 6500 Duo			
	TM183	BS EN 23506:200 0 580 38924 3	2, (BS 60	68-2.74:2002) ISBN			race Level Mercury in Wat ur Atomic Fluorescence S				
	TM218	Microwave extract	ion – EPA	method 3546	Microwave extraction - EPA method 3546						
	TM228	US EPA Method 6	010B		Determina ICP-OES		lajor Cations in Water by i	Cap 6500 Duo			

¹ Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.

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SDG:

Job:

CERTIFICATE OF ANALYSIS

110622-95 Location: Stagborough Order Number: H_GRONTMIJ_SOL-27 138581 Customer: Grontmij Report Number: Client Reference: Attention: Gareth Taylor Superseded Report:

Test Completion Dates

Lab Sample No(s)	3724065	3724067	3724068	3724069	3724070	3724072	3724073	3724074
Customer Sample Ref.	S01	S02	S03	S04	S05	SW01	SW02	SW03
AGS Ref.								
Depth	0.50	0.20	0.10	0.10	0.40			
Туре	SOLID	SOLID	SOLID	SOLID	SOLID	LIQUID	LIQUID	LIQUID
Asbestos Containing Material Screen	07-Jul-2011	07-Jul-2011	07-Jul-2011	07-Jul-2011	07-Jul-2011			
Dissolved Metals by ICP-MS						04-Jul-2011	04-Jul-2011	04-Jul-2011
Mercury Dissolved						05-Jul-2011	05-Jul-2011	05-Jul-2011
Metals by iCap-OES (Soil)	08-Jul-2011	08-Jul-2011	08-Jul-2011	08-Jul-2011	08-Jul-2011			
Metals by iCap-OES Dissolved (W)						04-Jul-2011	04-Jul-2011	04-Jul-2011
PAH by GCMS	09-Jul-2011	09-Jul-2011	09-Jul-2011	09-Jul-2011	09-Jul-2011			
PAH Spec MS - Aqueous (W)						07-Jul-2011	07-Jul-2011	07-Jul-2011
Sample description	01-Jul-2011	01-Jul-2011	01-Jul-2011	01-Jul-2011	01-Jul-2011			

CERTIFICATE OF ANALYSIS

SDG:	110622-95	Location:	Stagborough
Job:	H_GRONTMIJ_SOL-27	Customer:	Grontmij
Client Reference:		Attention:	Gareth Taylor

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenois monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute themajor part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 -C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Order Number: Report Number: 138581 Superseded Report:

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	d/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
SOLVENT EXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVIMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
THIN LAYER CHROMATOGRAPHY	D&C	DOM	SOXTHERM	IATROSCAN
ELEMENTALSULPHUR	D&C	DOM	SOXTHERM	HPLC
PHENOLSBYGOMS	WET	DOM	SOXTHERM	GCMS
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GCMS
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANEACETONE	END OVEREND	GCFID
EPH (MINOL)	D&C	HEXANEACETONE	END OVEREND	GCFID
EPH (OLEANED UP)	D&C	HEXANEACETONE	END OVEREND	GCFID
EPH CWG BYGC	D&C	HEXANEACETONE	END OVEREND	GCFID
PCB TOT / PCB CON	D&C	HEXANEACETONE	ENDOWEREND	GCMS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MCROWAVE TM218.	GCMS
08-040(06-040) EZ FLASH	WET	HEXANEACETONE	SHAVER	GCEZ
POL VAROMATIC HYDROCARBONS RAPID GC	WET	HEKANEACETONE	SHAVER	900 EZ
SEM VOLATILEORGANIC COMPOUNDS	WET	DOMACETONE	SONICATE	GCMS

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
BH	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
EPHONG	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
MINERAL OIL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
POB 700NGENERS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
POB TOTAL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
SVOC	DOM	LIQUID'LIQUID SHAKE	GCMS
FREESULPHUR	DOM	SOLD PHASE EXTRACTION	HPLC
PEST COP/OPP	DOM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DOM	LIQUID'LIQUID SHAKE	GCMS
PHENOLSMS	DOM	SOLID PHASE EXTRACTION	GCMS
TFH by INFRARED (IR)	TCE	LIQUID/LIQUID SHAKE	HPLC
MINERAL OIL by IR	TCE	LIQUID'LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT INJECTION	GCMS

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratorices (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

Asbestos Type

Chrysnile

Amosite

Orodolite

Fibrous Adinoite

Fibrous Anthophylite

Fibra & Trendie

Common Name

White Ashestos

BrownAsbestos

Blue Asbestos

-

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

APPENDIX E

												-	1				
	TABLE 1 - G	GAS MON	ITORING E	ATA													
Site:	Stagborou	ab															Job No.
			1														JUD 140.
Monito	ring Well S	Pipe	g & Testi	ng Reco Gas	rd												Weather
ВН	Date	Internal Diameter mm	Monitored By	Rel. Pressure	Flow I/h	CH4 %	CH4 GSV	CO2	CO ₂ GSV	02 %	CO ppm	H2S ppm	PID CF ppm	HEX %	LEL %	Gas Analyser	Atmospheric Pressure mbar
BH01 BH01	12/10/2010		MJH	0.58 NM	-0.1	w/w 0	0	v/v 3.8	-0.0038	v/v 15.2	0	0	NM	NM NM	0	GA2000 +Flow pod	1003 997
BH01	26/10/2010 09/11/2010		GVT MJH	NM	0	0	0	0.7 2.4	0	14.5 19.2	0	0	NM	NM	0	GA2000 +Flow pod GA2000 +Flow pod	NM
BH01	23/11/2010		MJH	NM	0.2	0	0	2	0.004	18.8	0	0	NM	NM	0	GA2000 +Flow pod	NM
BH02 BH02	12/10/2010 26/10/2010		MJH GVT	0.42 NM	0.1 -0.1	0	0 -0.0018	3.8 10.7	0.0038	13.2	0	0	NM NM	NM NM	0	GA2000 +Flow pod GA2000 +Flow pod	1003 996
BH02 BH02	09/11/2010 23/11/2010		MUH MUH	NM NM	0.1	0	0	2.7	0.0027	17.4	0	0	NM NM	NM NM	0	GA2000 +Flow pod GA2000 +Flow pod	NM NM
BH02	31/05/2011		RJH	0	0.1	0.7	0.0007	10	0.01	0.4	0	-10	1.5	0.101	37.6	GFM435	1011
BH02 BH02	20/06/2011 01/07/2011		RJH RJH	0	0	-0.1	0	3	0	16.7 0	2	0	0.9	0		GFM435 GFM435	999
BH02	15/07/2011		RJH	0	0	1	0	11.4	0	0.3	0	0	1.5	0.078	34.2	GFM436	1003
BH03	12/10/2010		MJH	0.38	0.1	0	0	4.1	0.0041	13.2	0	0	NM	NM	0	GA2000 +Flow pod	1003
BH03 BH03	26/10/2010 09/11/2010		GVT MJH	NM NM	0.2	0	0	0.6 2.6	0.0012	15.9 17.9	0	0	NM NM	NM NM	0	GA2000 +Flow pod GA2000 +Flow pod	997 NM
BH03	23/11/2010		MUH	NM	0.2	0	0	2.2	0.0044	17.9	0	0	NM	NM	0	GA2000 +Flow pod	NM
WS01 WS01	12/10/2010 26/10/2010		MJH GVT	0.37 NM	0.1	0	0	3.8	0.0038	14.4	0	0	NM NM	NM	0	GA2000 +Flow pod GA2000 +Flow pod	1003 997
WS01	09/11/2010		MJH	NM	0.1	0	0	2.8	0.0028	17.6	0	0	NM	NM	0	GA2000 +Flow pod	NM
WS01	23/11/2010		MJH	NM	-0.1	0	0	2.9	-0.0029	16.9	0	0	NM	NM	0	GA2000 +Flow pod	NM
WS02 WS02	12/10/2010 26/10/2010		MJH GVT	0.60 NM	0.1	0	0	1.6 3.5	0.0016	14.6 14.1	0	0	NM NM	NM NM	0	GA2000 +Flow pod GA2000 +Flow pod	1001 997
W\$02 W\$02	09/11/2010 23/11/2010		MUH	NM NM	0.1 NM	0 NM	0 NM	2.8 NM	0.0028 NM	18.9 NM	0 NM	0 NM	NM NM	NM NM	0 NM	GA2000 +Flow pod GA2000 +Flow pod	NM NM
WS03	12/10/2010		MJH	0.56	0.1	0	0	1.9	0.0019	14.4	0	0	NM	NM	0	GA2000 +Flow pod	1001
WS03	12/10/2010 26/10/2010 09/11/2010		GVT	NM	0	0	0	2.4	0	15.4	0	0	NM	NM	0	GA2000 +Flow pod	997
WS03 WS03	09/11/2010 23/11/2010		MJH	NM NM	0	0	0	3.1 1.8	0	14.2 18.7	0	0	NM NM	NM NM	0	GA2000 +Flow pod GA2000 +Flow pod	NM NM
WS04	12/10/2010		MJH	0.44	0.1	0	0	2.2	0.0022	13.5	0	0	NM	NM	0	GA2000 +Flow pod	1002
WS04 WS04	26/10/2010 09/11/2010		GVT MJH	NM NM	0	0	0	1.1	0	15.4 17.8	0	0	NM NM	NM NM	0	GA2000 +Flow pod GA2000 +Flow pod	996 NM
WS04	23/11/2010 WS5 = 73		MJH	NM	0.1	0	0	2.6	0.0026	18.0	0	0	NM	NM	0	GA2000 +Flow pod	NM
WS05	stagboro 12/10/2010		MUH	0.38	-0.1	0	0	1.4	-0.0014	14.1	0	0	NM	NM	0	GA2000 +Flow pod	1001
WS05 WS05	26/10/2010 09/11/2010		GVT MJH	NM NM	0.1	0	0	8.8 7.8	0	3.7 8.1	0	0	NM NM	NM NM	0	GA2000 +Flow pod GA2000 +Flow pod	997 NM
W\$05 W\$05	23/11/2010 31/05/2011		MJH RJH	NM 0.00	0.1	0	0	2.1	0.0021	18.3	-1	0 -10	NM 0.8	NM 0	0	GA2000 +Flow pod GFM435	NM 1010
WS05 WS05	20/06/2011		RJH RJH	NM	NM	NM	NM NM	NM	NM	NM NM	NM NM	NM NM	NM NM	NM NM	NM NM		1014
WS05	15/07/2011		RJH	0.00	0.00	-0.30	0.00	7.30	0.00	12.10	0.00	0.00	0.80	0.00	0.00	GFM435	1004
WS06	12/10/2010		MJH	0.60	-0.1	0	0	4	-0.004	15.7	0	0	NM	NM	0	GA2000 +Flow pod	1002
WS06 WS06	26/10/2010 09/11/2010		GVT MJH	NM	0.2 0.1	0	0	2	0.004	15.4 17.8	0	0	NM NM	NM NM	0	GA2000 +Flow pod GA2000 +Flow pod	997 NM
WS06	23/11/2010		MJH	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	GA2000 +Flow pod	NM
WS07 WS07	12/10/2010 26/10/2010		MJH GVT	0.38 NM	-0.1	0	0	1.7	-0.0017	15.0	0	0	NM NM	NM	0	GA2000 +Flow pod GA2000 +Flow pod	1003 997
WS07	09/11/2010		MJH	NM	-0.3 0.1	0	0	4.3 3	0.003	16.3	0	0	NM	NM	0	GA2000 +Flow pod	997 NM
WS07	23/11/2010		MJH	NM	0.1	0	0	2.2	0.0022	18.0	0	0	NM	NM	0	GA2000 +Flow pod	
WS08 WS08	12/10/2010 26/10/2010		MJH GVT	0.60 NM	0.1 NM	0 NM	0 NM	3 NM	0.003 NM	14.3 NM	0 NM	0 NM	NM NM	NM NM	0 NM	GA2000 +Flow pod NM	1001 NM
WS08 WS08	09/11/2010		MUH MUH	NM	0.1	0	0	3.1 2.8	0.0031	19.1 18.3	0	0	NM NM	NM NM	0	GA2000 +Flow pod GA2000 +Flow pod	NM NM
	WS9 = 41 Swallowfids																
WS09 WS09	12/10/2010 26/10/2010		MJH GVT	0.38 NM	0.4 -0.3	0	0	4.6 6.2	0.0184	13.6 13.7	0	0	NM NM	NM NM	0	GA2000 +Flow pod GA2000 +Flow pod	1003 997
WS09 WS09	09/11/2010 23/11/2010		MJH MJH	NM NM	0.01	0	0	3.5 2.8	0.00035	18.5 16.7	0	0	NM NM	0 NM	0	GA2000 +Flow pod GA2000 +Flow pod	NM NM
WS09 WS09	31/05/2011 20/06/2011		RJH RJH	0.00 NM	0 NM	-0.2 NM	NM	1.4 NM	NM	18.2 NM	1 NM	-10 NM	0.9 NM	0 NM	0 NM	GFM435	1011
WS09 WS09	20/06/2011 01/07/2011		RJH	NM 0.00	NM 0.00	NM -0.10	NM 0.00	NM 2.90	NM 0.00	NM 18.00	NM 0.00	NM -10.00	NM 0.90	NM 0.00	NM 0.00	GFM435	1014
WS09	15/07/2011		RJH	0.00	0.00	-0.10	0.00	2.70	0.00	18.70	0.00	0.00	0.90	0.00	0.00	GFM435	1004
WS10	12/10/2010		MJH	NM	NM	NM	NM	NM 1.2	NM	NM 16.1	NM	NM	NM NM	NM	NM	GA2000 +Flow pod GA2000 +Flow pod	NM 997
WS10 WS10	09/11/2010		GVT MJH	NM	0 NM	0 NM	0 NM	1.3 NM	0 NM	16.1 NM	0 NM	0 NM	NM	NM	0 NM	GA2000 +Flow pod	997 NM
WS10	23/11/2010		MJH	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	GA2000 +Flow pod	NM
WS11 WS11	12/10/2010 25/10/2010		MJH GVT	0.40 NM	0.1 NM	0 NM	0 NM	2.7 NM	0.0027 NM	12.1 NM	0 NM	0 NM	NM NM	NM NM	0 NM	GA2000 +Flow pod NM	1003 NM
WS11 WS11	09/11/2010 23/11/2010		MJH MJH	NM NM	NM 0.1	NM 0	NM 0	NM 1.3	NM 0.0013	NM 17.8	NM 0	NM 0	NM NM	NM NM	NM 0	NM GA2000 +Flow pod	NM NM
WS12	12/10/2010		MJH	0.58	0.1	0	0	2	0.002	14.2	0	0	NM	NM	0	GA2000 +Flow pod	1001
WS12	26/10/2010	-	GVT	NM	-0.2	0	0	0.2	-0.0004	16.6	0	0	NM	NM	0	GA2000 +Flow pod GA2000 +Flow pod GA2000 +Flow pod	997
WS12 WS12	09/11/2010 23/11/2010		MJH	NM	NM 0.1	NM 0	NM 0	NM 2.9	NM 0.0029	NM 17.6	NM 0	NM 0	NM NM	NM NM	NM 0	GA2000 +Flow pod GA2000 +Flow pod	NM NM
WS13A	12/10/2010		MUH	0.58	0.1	0	0	3.2	0.0032	13.1	0	0	NM	NM	0	GA2000 +Flow pod	1002
WS13A WS13A	25/10/2010 09/11/2010		GVT MJH	NM NM	0	0	0	3 1.3	0	15.1 19.2	0	0	NM NM	NM NM	0	GA2000 +Flow pod GA2000 +Flow pod	997 NM
WS13A	23/11/2010		MJH	NM	0.1	0	0	2.8	0.0028	18.8	0	0	NM	NM	0	GA2000 +Flow pod	NM
WS14 WS14	12/10/2010 26/10/2010	-	MUH GVT	0.59 NM	-0.1	0	0	1.8 2.9	-0.0018	14.4 14.5	0	0	NM NM	NM NM	0	GA2000 +Flow pod GA2000 +Flow pod	1001 997
WS14	09/11/2010		MUH	NM	-0.1	0	0	1.4	-0.0014	14.4	0	0	NM	NM	0	GA2000 +Flow pod	NM
WS14	23/11/2010		MJH	NM	0.1	0.2	0.0002	2.6	0.0026	18.5	0	0	NM	NM	8.1	GA2000 +Flow pod	NM
WS15 WS15	12/10/2010 26/10/2010		MJH GVT	0.38 NM	0.1 -0.1	0	0	4.4 1.3	0.0044	11.7 15.8	0	0	NM NM	NM NM	0	GA2000 +Flow pod GA2000 +Flow pod	1003 997
WS15 WS15	09/11/2010 23/11/2010		MUH MUH	NM NM	0.01 NM	0 NM	0 NM	2 NM	0.0002 NM	19.8 NM	0 NM	0 NM	NM NM	NM NM	0 NM	GA2000 +Flow pod GA2000 +Flow pod	NM NM
WS16 WS16	12/10/2010 25/10/2010		MUH GVT	0.60 NM	0.1	0	0	1.8	0.0018	13.4	0	0	NM	NM	0	GA2000 +Flow pod GA2000 +Flow pod	1001
WS16	09/11/2010		MJH	NM	-0.1	0	0	1.6	-0.0016	18.3	0	0	NM	NM	0	GA2000 +Flow pod	NM
WS16	23/11/2010	I	MJH	NM	0.2	0	0	1.8	0.0036	19.0	0	0	NM	NM	0	GA2000 +Flow pod	NM

Part 2a Work\002 - E Cannock Rd (Stagt

APPENDIX F

Appendix F: Severity and Probability of Risk in Conceptual Site Models (after CIRIA552, Tables 6.3 to 6.5)

This report draws on guidance presented in CIRIA report 552, "Contaminated Land Risk Assessment, A Guide for Good Practice", wherein the "severity" term in the Conceptual Site Model is classified with reference to the sensitivity of the hazard and the receptor, as follows:

Severity Category	Description	Examples
Severe	Acute risk to human health likely to result in "significant harm" as defined in EPA90, catastrophic damage to buildings or property, acute risk of major pollution of controlled waters, acute risk of harm to ecosystems (as defined in Contaminated Land Regulations 2006)	High cyanide concentrations at the surface of a recreation area Major spillage into controlled waters Explosion, causing building collapse
Medium	Chronic risk to human health likely to result in "significant harm" as defined in EPA90, chronic pollution of sensitive controlled waters, significant change at a sensitive ecosystems or species, significant damage to buildings or structures	Contaminant concentrations at a site in excess of SGVs, GAC or similar screening values Leaching of contaminants to sensitive aquifer Death of a species within a nature reserve
Mild	Pollution of non-sensitive waters, significant damage to buildings, structures, services or crops, damage to sensitive buildings, structures, services or the environment, which nonetheless result in "significant harm"	Pollution to (former) non-aquifer or to non-controlled surface watercourse. Damage to building rendering it unsafe to occupy (e.g. foundation or structural damage)
Minor	Harm, not necessarily resulting in "significant harm" but probably requiring expenditure to resolve or financial loss. Non-permanent risks to human health that are easily mitigated, e.g. by wearing PPE. Easily-repairable damage to structures or services	Contaminant concentrations requiring the wearing of PPE during site work, but no other long-term mitigation. Discolouration of concrete

The likelihood of an event (probability) takes into account both the presence of hazard and receptor and the integrity of the pathway between hazard and receptor, and is assessed as follows:

Category	There is a pollution linkage and:
High	Event is likely in the short term and almost inevitable over the long term. Or,
-	there is evidence of actual harm at/to the receptor
Likely	Event is possible in the short term and likely over the long term
Low	Event is unlikely in the short term and possible over the long term
Unlikely	Event is unlikely, even in the long term



Potential severity and probability have been assessed in the following matrix, to give an overall risk rating:

		Sev	erity	
Probability	Severe	Medium	Mild	Minor
High	Very high	High	Moderate	Low/moderate
Likely	High	Moderate	Low/moderate	Low
Low	Moderate	Low/moderate	Low	Very low
Unlikely	Low/moderate	Low	Very low	Very low

The above risk categories are likely to result in the following actions:

- Very high: urgent intervention / investigation needed, remediation likely to be required
- High: urgent intervention / investigation needed, remediation possibly required in short term and probably required in long term
- $\circ\,$ Moderate: investigation needed to clarify and refine risk; remediation may be required over the long term
- Low: it is possible that harm could arise to a receptor, but if realised, such harm is likely to be, at worst, mild
- Very low: it is possible that harm could arise to a receptor, but if realised, such harm is unlikely to be severe



APPENDIX G

Appendix G – Tier 1 Screen for Protection of Water Pipes

Two publications were reviewed in regard to potential risks to water supply pipes posed by contaminants in the ground:

- "Guidance for the Protection of Water Supply Pipes to be Used in Brownfield Sites" (UK Water Industry Research {UKWIR}, ref 10/WM/03/21, 2010 (re-issued version))
- The Selection of Materials for Water Supply Pipes to be Laid in Contaminated Land (Water Regulations Advisory Scheme {WRAS}, ref 9-04-03, October 2002)

Both reports present methodologies for the assessment of soil conditions and the specification of appropriate pipework materials to mitigate the presence of contaminants.

WRAS Screen

A comparison between the chemical analysis results obtained from samples taken from the top 1.2m of soil at the site and the older WRAS screening values is presented in the table below. Only soils from the top 1.2m of the soil profile have been selected for comparison as 1.2m is the typical maximum depth at which water pipes are laid within the highway – with local service connections to properties typically much shallower. Note, the table below does not constitute a full screen against all WRAS parameters; e.g. sulphate and coal tar have not been tested for.

Analyte	Test Res	ult (mg/kg)	WRAS Threshold Value (mg/kg)
	Maximum	Mean (where max>threshold))	
Sulphate	Not analysed	-	2000
Sulphur	Not analysed	-	5000
Sulphide	Not analysed	-	250
рН	5.21 – 8.63	7.26	<5 or >8
Antimony	<0.6		10
Arsenic	25	8.99	10
Cadmium	2.9	-	3
Chromium (hexavalent)	<1.2	-	25
Chromium (total)	32	-	600
Cyanide (free)	Not analysed	-	25
Cyanide (complexed)	<1 (total CN)	-	250
Lead	130	-	500
Mercury	0.6	-	1
Selenium	2.0	-	3
Thiocyanate	<1	-	50
Coal Tar	Not analysed	-	50
Cyclohexane extractable	Not analysed	-	50
Phenol	0.42	-	5
Polyaromatic	160	13	
Hydrocarbons			50
Toluene extractable	0.69	-	50
Petroleum Hydrocarbons	1210	260	50

WRAS Threshold Screen

Bold values denote exceedance of WRAS threshold value



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The maximum concentrations of arsenic, polyaromatic hydrocarbons and petroleum hydrocarbons, and the maximum soil pH level recorded, exceed the WRAS threshold values. The mean concentration of petroleum hydrocarbons recorded also exceeds the WRAS threshold value.

UKWIR Screen

The UKWIR approach is the most recent and reflects further studies undertaken since the WRAS document was published in 2002. Key features of the UKWIR report include:

- A pipework material-specific assessment procedure (Table 3.1 of the report). This allows chemical analysis results to be compared to various threshold criteria associated with six possible pipework material types
- The discounting of metallic pipework (other than copper or steel/ductile iron with protective wrapping) as a modern pipework material
- The specification of a different chemical testing suite to that recommended in the earlier WRAS document including the use of physio-chemical parameters and exclusion of analysis for metals (given the above discounting of metallic pipework).

The chemical analysis for the site was scheduled prior to the publication of the re-issued UKWIR report (despite a re-issue data of 2010, the report was not available until January 2011). Therefore, some of the parameters required for a UKWIR screen (as summarised in Appendix G) are not available. The available laboratory results from the top 1.2m of soil have been compared to the UKWIR thresholds. The screen indicates that:

- The total VOC (minus BTEX) and total SVOC (minus phenols and cresols) concentrations exceed PE and PVC pipe limits
- BTEX concentrations are generally acceptable for PE pipe with the exception of BH02, but not for PVC pipe
- The mineral oil C11-20 result are acceptable for PE pipework
- Concentrations of mineral oil C21-40 are acceptable for PE pipework.

<u>Summary</u>

The above Tier 1 screen indicates that It is possible that the concentrations of contaminants at the site could adversely effect drinking water quality, depending on the materials used for water distribution (South Staffordshire Water pipes) and local connections to the South Staffordshire Water network (probably installed by the house builder). However, it is generally recognised that the adopted screening values are deliberately set at low concentrations, to provide a precautionary approach.

Further assessment of the potential risk posed by soil contaminants to drinking water quality is discussed in Section 3.2.6.



APPENDIX H



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Memo

Our Reference R817/103912/V1/2011

Project Number 103912

Registered Office Grontmij Limited Grove House Mansion Gate Drive Leeds, LS7 4DN Registered in London No. 2888385

Date 20 September 2011

To Cannock Chase District Council

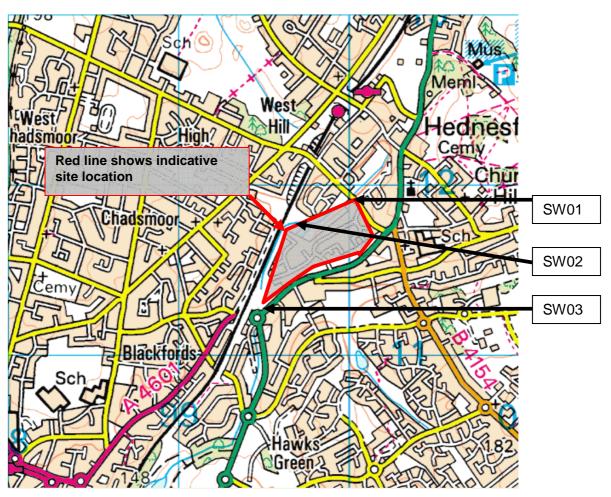
From Grontmij

Subject Stagborough Way

Dear Karen,

Further to our report reference R766/103912/V2/2011 we write to present the results of the additional Surface water monitoring undertaken at Stagborough Way.

Three samples were obtained from the brook by means of grab sampling. The second round of samples was obtained from SW01 to SW03 as per previous monitoring, it should be noted that the water level was significantly higher during the second round of monitoring. Sample locations are shown below:





The first monitoring round identified a minor exceedance of Total Chromium (1.3%) in one of the water samples obtained. While unlikely to be of significance with respect to contaminated land thresholds, this second round of monitoring was undertaken to provide additional confidence in this assessment.

The three water samples were submitted to Alcontrol of Hawarden for chemical analysis for Total Chromium only as detailed in report reference R766/103912/V2/2011.

The results of the analyses are summarised in the Table below, along with a comparison to the most stringent Tier 1 screening values published in the Water Framework Directive Directions 2010 or UK Environmental Quality Standards protective of surface water quality and previous monitoring results.

Sampling round	Contaminant	SW01 (µg/l)	SW02 (µg/l)	SW03 (µg/l)	WFD or EQS Tier 1 Screening Value (µg/l)	Samples >Tier 1 Screening Value
1	Chromium (diss.filt)	5.7	4.5	7.3	7.2	SW03
2	Chromium (diss.filt)	2.3	2.5	3.0	7.2	-

The only Tier 1 screening value exceeded was within sample SW03 in the first sampling round. That concentration of chromium was only marginally in excess of the adopted screening value (by 0.1ug/l). No exceedances of Total Chromium were encountered in any of the samples obtained during monitoring round two, therefore Grontmij do not consider that these results demonstrate that pollution of controlled waters is being caused by virtue of contaminants beneath the site, nor that contaminants beneath the site pose a SPOSH to controlled waters. No further surface water monitoring is therefore recommended at this stage.

Rebecca Hearn Assistant Consultant

E rebecca.hearn@grontmij.co.uk





Grontmij Radcliffe House 3rd Floor Blenheim Court, Lode Iane Solihull West Midlands B912AA

Attention: Gareth Taylor

CERTIFICATE OF ANALYSIS

Date: Customer: Sample Delivery Group (SDG): Your Reference: Location: Report No: 14 September 2011 H_GRONTMIJ_SOL 110907-61

Stagborough 150052

We received 3 samples on Wednesday September 07, 2011 and 3 of these samples were scheduled for analysis which was completed on Wednesday September 14, 2011. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

Sonia McWhan Operations Manager



	ol Laboratories	CEF	RTIFICATE OF ANA	LYSIS		Validated
SDG: Job: Client Reference	110907-61 H_GRONTMIJ_SOL-27 e:	Location: Customer: Attention:	Stagborough Grontmij Gareth Taylor	Order Number: Report Number: Superseded Report:	150052	
		Receiv	ved Sample O	verview		
Lab Sample N	lo(s) Custome	r Sample Ref.	Α	GS Ref. Depth (m)	Sampled Date
4244580		SW01				06/09/2011
4244581		SW02				06/09/2011
4244583		SW03				06/09/2011

Only received samples which have had analysis scheduled will be shown on the following pages.

ALcontrol La	boratorie	es	CI	ER [.]	TIF	CATE OF ANALYSIS			Validated
	110907-61 H_GRONTM	1IJ_SOL-27	Location: Custome Attention	r:	Gror	nij	Order Number: Report Number: Superseded Report:	150052	
LIQUID Results Legend		Lab Sample N	lo(s)	4244581 4244580	4244583				
No Determination Possible	on	Custome Sample Refer	r ence	SW02	SW03				
		AGS Refere	nce						
		Depth (m							
		Containe	r	11plastic (ALE221) 11plastic (ALE221)	1lplastic (ALE221)				
Dissolved Metals by ICP-MS	5 A	ll	NDPs: 0 Tests: 3	<mark>x</mark> x	<mark>(x</mark>				

()

CERTIFICATE OF ANALYSIS

Validated

	Results Legend	Ci	stomer Sample R	SW01	SW02	SW03		
# 1	SO17025 accredited.		istomer Sample R	5001	5002	5003		
M n	mCERTS accredited.							
§ [aq A	Deviating sample. Aqueous / settled sample.		Depth (m)					
diss.filt D	Dissolved / filtered sample.		Sample Type	Water(GW/SW)	Water(GW/SW)	Water(GW/SW)		
tot.unfilt 1	Fotal / unfiltered sample.		Date Sampled	06/09/2011	06/09/2011	06/09/2011		
	Subcontracted test. % recovery of the surrogate standar	d to	Date Received	07/09/2011	07/09/2011	07/09/2011		
	check the efficiency of the method. 1	The .	SDG Ref	110907-61 4244580	110907-61 4244581	110907-61 4244583		
r	results of individual compounds with	nin ^L	ab Sample No.(s) AGS Reference	4244500	4244301	4244505		
(F) 1	samples aren't corrected for the reco Trigger breach confirmed	overy	AG5 Reference					
Compon		LOD/Units	Method					
Chromi	um (diaa filt)			2.26	2.52	2.07		
Chromit	um (diss.filt)	<0.22	TM152	2.26	2.52	2.97		
		µg/l	_	#	#	#		
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SDG:	110907-61		Location:	Stagborough		Order Nu	mber:			
Job:	H GRONTMIJ SC	27- 10	Customer:	Grontmij		Report N		150052		
Client Refer)[-21	Attention:	Gareth Taylor			ded Report:	100032		
			Table of	of Resul	ts -	Appendix				
				JIIICJU	13 - 1	Appendix				
REPORT KEY Results expressed as (e.g.) 1.03E-07 is equivalent to 1.03x10-7										
PORT KE	ľ	_				Re	sults expressed a	as (e.g.) 1.03E-07 is equiv	alent to 1.03x10-7	
	ermination Possible	#	ISO 17025 Accredited		*	Re Subcontracted Test	sults expressed a	as (e.g.) 1.03E-07 is equiv MCERTS Acc		
NDP No De	ermination Possible				*		м	MCERTS Acc	redited	
NDP No De		# PFD	ISO 17025 Accredited Possible Fibres Detected		* »	Subcontracted Test			redited rbon	
NDP No De NFD No Fib	ermination Possible	PFD	Possible Fibres Detected		* »	Subcontracted Test Result previously reported	м	MCERTS Acc Equivalent Ca	redited rbon	
NDP No De NFD No Fib	ermination Possible res Detected ion limits are not always achievable	PFD due to vario	Possible Fibres Detected		* »	Subcontracted Test Result previously reported	м	MCERTS Acc Equivalent Ca	redited rbon	

11:22:18 14/09/2011

ALcontrol	Laboratories		CEI	RTIFICAT	OF ANALYSIS		Validated
SDG: Job: Client Reference:	110907-61 H_GRONTMIJ_SOL	-27	Location: Customer: Attention:	Stagboroug Grontmij Gareth Tay	Report Number:	150052	
					letion Dates		
	Lab Sample No(s)		4244581 SW02	4244583 SW03			
Custo	omer Sample Ref.	5001	5002	3003			
	AGS Ref.						
	Depth						
	Туре	LIQUID	LIQUID	LIQUID			
Dissolved Metals by ICP	P-MS	14-Sep-2011	14-Sep-2011	14-Sep-2011			

CERTIFICATE OF ANALYSIS

SDG:	110907-61	Location:	Stagborough	Order
Job:	H_GRONTMIJ_SOL-27	Customer:	Grontmij	Report
Client Reference:		Attention:	Gareth Taylor	Supers

Appendix

 Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA Leach tests, flash point, ammonium as NH4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as 'no asbestos containing material detected'. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample -similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP -No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals -total metals must be requested separately.

11. Results relate only to the items tested.

12. LODs for wet tests reported on a dry weight basis are not corrected for moisture content.

13. Surrogate recoveries -Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted. Acceptable limits for most organic methods are 70 -130 %.

14. Product analyses -Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials -whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute themajor part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 -C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Order Number: Report Number: 150052 Superseded Report:

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D.C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	analysis
SOLVENTEXTRACTABLE MATTER	D&C	DOM	SOXTHERM	GRAVMETRIC
CYCLOHEXANE EXT. MATTER	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
ELEMENTAL SULPHUR	D&C	DOM	SOXTHERM	HPLC
PHENOLS BY GOMS	WET	DOM	SOXTHERM	GC-MS
HERBICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS
PESTICIDES	D&C	HEXANEACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANEACETONE	ENDOWEREND	GC-FD
EPH (MIN OL)	D&C	HEXANEACETONE	ENDOWEREND	GC-FD
EPH (CLEANED UP)	D&C	HEXANEACETONE	ENDOWEREND	GC-FD
EPH CWGBY GC	D&C	HEXANEACETONE	ENDOWEREND	GC-FID
PCBTOT /POB CON	D&C	HEXANEACETONE	ENDOWEREND	GC-MS
POLYAROMATIC HYDROCARBONS (MS)	WET	HEXANEACETONE	MOROVAVE TM218.	GC-MS
08-040 (06:040) EZ FLASH	WET	HEXANEACETONE	SHAKER	GC-EZ
POLYAROMATIC HYDROCARBONS RAPID GC	WET	HEXANEACETONE	SHAKER	0C-FZ
SEMIVOLATILEORGANIC COMPOUNDS	WET	DOMACETONE	SONICATE	GC-MS

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAHMS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
BH	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
EPH CWG	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
MINERALOIL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCFID
POB 700NGENERS	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
POB TOTAL	HEXANE	STIRREDEXTRACTION(STIR-BAR)	GCMS
SVOC	DOM	LIQUID/LIQUID SHAKE	GCMS
FREESULPHUR	DOM	SOLD PHASE EXTRACTION	HPLC
PEST COP/OPP	DOM	LIQUID/LIQUID SHAKE	GCMS
TRIAZINE HERBS	DOM	LIQUID/LIQUID SHAKE	GCMS
PHENOLSMS	DOM	SOLID PHASE EXTRACTION	GCMS
TFH by INFRARED (IR)	TCE	LIQUID/LIQUID SHAKE	HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID SHAKE	HPLC
GLYCOLS	NONE	DIRECT NJECTION	GCMS

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials or those identified as potentially asbestos containing during sample description which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratorice (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using Alcontrol Laboratorices (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -Trace -Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

Asbestos Type

Chrvenile

Amosite

Onidaite

Fibrous Adindite

Fibrous Anthophylite

Fibrous Trendie

Common Name

WhiteAsheshs

Brown Asbestos

Blue Ashestos

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The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.